

HAINES HIGHWAY

MP 3.5 TO MP 25.3

HAINES, ALASKA



**FINAL REVISED
ENVIRONMENTAL
ASSESSMENT, FINDING
OF NO SIGNIFICANT
IMPACT,
AND
SECTION 4(f)
EVALUATION**

August 2016

DOT&PF Project No. Z686060000
FEDERAL Project No. 0956028



**FEDERAL PROJECT 0956028
IRIS PROJECT Z686060000**

**HAINES HIGHWAY MILEPOST 3.5 TO MILEPOST 25.3
HAINES, ALASKA**

**FINAL REVISED ENVIRONMENTAL ASSESSMENT AND SECTION 4(F)
EVALUATION**

SUBMITTED PURSUANT TO 42 USC 4332(2)(C), 23 USC 138, AND 49 USC 303

By the:


United States Department of Transportation
Federal Highway Administration

And:


State of Alaska Department of Transportation and Public Facilities, Southcoast Region

This action complies with Executive Order 12898, Environmental Justice; Executive Order 11988, Floodplain Management; Executive Order 11990, Protection of Wetlands; Executive Order 13112, Invasive Species; Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks; Executive Order 13007, Indian Sacred Sites; Executive Order 11593, Protection and Enhancement of the Cultural Environment; and Executive Order 13175, Consultation and Coordination with Indian Tribal Governments.

8-15-16
Date of Approval


L. Pat Carroll, P.E., Southcoast Region Preconstruction Engineer
State of Alaska Department of Transportation and Public Facilities

8-15-16
Date of Approval


Al Fletcher, Field Operations Engineer
Federal Highway Administration, Alaska Division

The following persons may be contacted for additional information concerning this:

Hilary Lindh, Regional Environmental Manager
DOT&PF, Southcoast Region
6860 Glacier Highway
Juneau, Alaska 99811-2506
907-465-4499

Al Fletcher, Field Operations Engineer
FHWA, Alaska Division
709 West 9th Street, Room 851
Juneau, Alaska 99802
907-586-7245

Project Summary: The Revised Proposed Action on Haines Highway would improve the highway stability and safety between Milepost 3.5 and Milepost 25.3 by widening shoulders to 6 feet on each side, realigning most curves, providing sight distance to allow for passing zones, and replacing the Chilkat River Bridge with a new bridge that would have a width that matches the proposed roadway. The highway near Milepost 19 and Milepost 23 would be elevated with box culverts to keep the highway open during debris flow events.

NOTICE: PROJECT NAME CHANGE

Throughout the development of this project it has been known by the name Haines Highway MP 3.5 to MP 25.3. The title of the project has been corrected to be more accurate. The old title is used throughout this Final Revised Environmental Assessment and associated documents, but the formal name of the project moving forward is Haines Highway Reconstruction Milepost 3.9 to 25.0. The area studied remains exactly the same, only the title has changed.

TITLE VI POLICY STATEMENT

The State of Alaska Department of Transportation and Public Facilities hereby gives public notice that it is the policy of the State of Alaska Department of Transportation and Public Facilities to assure full compliance with Title VI of the Civil Rights Act of 1964, the Civil Rights Restoration Act of 1987, and related statutes and regulations in all programs and activities. Title VI and related nondiscrimination statutes requires that no person in the United States of America shall, on the grounds of race, color, sex, national origin, disability, or age, be excluded from the participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity for which the State of Alaska Department of Transportation and Public Facilities receives federal financial assistance.

Persons with hearing impairments may call 1-800-770-8973.

LIMITATION OF CLAIMS NOTICE

Per Section 1308 of the Federal Highway Administration Moving Ahead for Progress in the 21st Century Act (MAP-21), a Federal agency may publish a notice in the Federal Register, pursuant to 23 USC §139(l)(1), indicating that one or more Federal agencies have taken final action on permits, licenses, or approvals for a transportation project. If such notice is published, claims seeking judicial review of those Federal agency actions will be barred unless such claims are filed within 150 days after the date of publication of the notice, or within such shorter time period as is specified in the Federal laws pursuant to which judicial review of the Federal agency action is allowed. If no notice is published, then the periods of time that otherwise are provided by the Federal laws governing such claims will apply.

(This Page Left Intentionally Blank)

EXECUTIVE SUMMARY

BACKGROUND

The Haines Highway begins in Haines, Alaska and ends in Haines Junction, Yukon Territory, Canada. The project area is primarily located along the eastern side of the Chilkat River from Milepost 3.5, near the Haines Airport, to Milepost 25.3, north of Klukwan and the Chilkat River Bridge. Except for the project area, the Haines Highway in Alaska is constructed to a 55 mile-per-hour standard, e.g. a total pavement width of 36 feet and curves that allow a vehicle to travel safely at 55 miles per hour under normal weather conditions. The highway generally follows a travel corridor used for centuries by the Chilkat Tlingit as well as the Dalton Trail established in the 1890s from Haines to Klukshu Lake in the Yukon Territory (Gates, 2012). Haines Highway was originally constructed in 1943 and has been periodically upgraded over the years, with the portion from the Bluffs (Milepost 25.3) to the Canadian border (Milepost 40) being the most recently upgraded in 2000. The State of Alaska Department of Transportation and Public Facilities, in partnership with Federal Highway Administration—Alaska Division proposes to upgrade Haines Highway from Milepost 3.5 to Milepost 25.3 to be consistent with the upgraded portions on either side of the proposed project (from Milepost 1 to Milepost 3.5 and from Milepost 25 to the border).

This Final Revised Environmental Assessment was prepared in response to comments received on the Draft Revised Environmental Assessment issued in October 2015 and the public review Environmental Assessment released in July 2013. Comments from the public and agencies stated that the July 2013 Environmental Assessment Proposed Action would result in unacceptable impacts to Chilkat Valley's resources, in particular to fish habitat in the Chilkat River and the Alaska Chilkat Bald Eagle Preserve. The Alaska Chilkat Bald Eagle Preserve is near and adjacent to the Haines Highway from about Milepost 10 through Milepost 23.5. The State of Alaska Department of Transportation and Public Facilities and Federal Highway Administration considered all comments received and developed a Revised Proposed Action that further avoided and minimized impacts to bald eagle and fish habitat; resources of particular concern to residents of Haines and Klukwan. Additional measures have been added to mitigate for impacts to the Chilkat River bank from the proposed hardening of the upgraded roadway embankments.

Purpose and Need for the Project

The Haines Highway is a major highway linking Southeast Alaska with the intercontinental network of roads and is the primary surface transportation link between Southeast Alaska and Interior Alaska. The Haines Highway originates in Haines, Alaska and ends at its intersection with the Alaska Highway in Haines Junction, Yukon Territory, Canada.

The purpose of this project is to address:

- highway deficiencies between Milepost 3.5 and Milepost 25.3;
- bridge deficiencies;
- highway instability and temporary closures caused by debris and water flooding; and
- recreational access deficiencies.

To be consistent with the rest of the Haines Highway from Haines to the Canadian border, the portion of the highway between Milepost 3.5 and Milepost 25.3 would be brought up to design standards for a 55 mile-per-hour design speed. Specific deficiencies are discussed Section 2.0, Purpose and Need.

Revised Proposed Action

The Revised Proposed Action has been developed to address the needs for the project while avoiding or minimizing environmental impacts. As noted above, the Revised Proposed Action was developed to address comments received from the public and agencies after release of the July 2013 Environmental Assessment. A summary of changes to potential impacts that have come about from the highway design changes is given in the following table (Table ES-1).

Table ES-1: Effects of Main Design Changes between the July 2013 Environmental Assessment and the Revised Proposed Alignment

Design Change	Effect
Reduced the extent of passing zones by retaining some existing curves	Reduced the right-of-way acquisition within the Preserve from 3.8 acres to 2.98 acres
	Reduced fill in the Chilkat River from 7.7 acres to 3.6 acres
	Reduced fill in wetlands from 23.6 acres to 22.2 acres, including a reduction of fill in 0.9 acre of high value wetlands near Milepost 10
	Reduced the linear feet of fill in the Chilkat River from 15,550 linear feet to 12,662 linear feet
	Increased the fill in tributary streams by 720 linear feet
Shifted alignment in the Milepost 4 area away from the uphill side of the road	Avoided impacts to cultural resources

In addition to design changes, the State of Alaska Department of Transportation and Public Facilities performed supplemental environmental analyses and proposed additional mitigation measures to compensate for the proposed impacts. The additional design changes and environmental studies undertaken as a result of public and agency comments include:

- minimizing the amount of clearing required adjacent to the Alaska Chilkat Bald Eagle Preserve,
- conducting further environmental studies to address the potential to impact to bald eagles in the project area and to determine the likelihood of significant impacts to bald eagles; the results of the studies indicate no significant impact to bald eagles would likely occur as a result of the project,
- proposing a new turnout at Milepost 20.5 to mitigate for impacts to eagle viewing within the Alaska Chilkat Bald Eagle Preserve; in supplemental environmental surveys, this location was found to be a popular area of concentration for bald eagles, and
- proposing additional mitigation features that include woody debris, rocks and vegetated riverbanks outboard of rock embankment. These features have been developed in consultation with Alaska Department of Fish and Game, United States Fish and Wildlife

Service and National Marine Fisheries Service. These are measures to replace lost riverside fish habitat. The measures consist of installing systems composed of logs, root wads, and boulders selectively placed in and on the riverbank. These systems would support restoration of slope vegetation, modulation of flow velocities and deposition of in-stream sediments for fish habitat.

Public and agency suggestions were made to reduce the design speed standard of 55 miles per hour throughout the highway or at least in the Critical Habitat Area of the Alaska Chilkat Bald Eagle Preserve.

As discussed in more detail in Section 3.0, Alternatives, the State of Alaska Department of Transportation and Public Facilities and the Federal Highway Administration evaluated whether this was a prudent way to minimize impacts. That evaluation concluded that factors including the classification of Haines Highway as a principal arterial, the rolling terrain, the relatively few number of driveways and approach roads, and the operating speeds of motorists on the existing road, all indicate that an appropriate minimum design speed is 55 miles per hour.

The Revised Proposed Action includes the following components.

Improvements to Haines Highway

- Realign sections of the highway and straighten some curves to meet 55 mile-per-hour design standards, with the exception of two curves, and add passing zones (See Figure Set A).
- Widen the roadway shoulders to a continuous 6-foot width and provide minimum sight distance to meet design standards (See Figures 1.2-2 through 1.2-3).
- Construct drainage ditches and upgrade, replace, and/or add new culverts where appropriate.
- Repave and restripe the roadway and add new signage.
- Rehabilitate or relocate driveways, turnout access points, and road intersections (including Chilkat Avenue, Klukwan) to meet design standards.
- Install or upgrade guardrails and other safety features along the highway, where needed (Figure 1.2-3).

- Modify the Haines-Fairbanks Pipeline Gate Valve 4's surrounding concrete vault, to protect the gate valve and provide a safe road embankment.
- Relocate utilities, where required. Maintain access to utilities not relocated.

Replacement of Chilkat River Bridge

- Install a temporary bridge downstream to be used as a construction staging platform.
- Construct a new bridge directly adjacent to, and downstream of, the existing bridge, with the same lane and shoulder widths as the revised proposed road (Figure 1.2-4). The new bridge would be constructed to meet the following criteria:
 - a 55 mile-per-hour design speed,
 - current seismic standards, and
 - accommodation of freight vehicles carrying heavier loads than currently accommodated by the bridge, and
 - consistency with the bridges constructed in the Haines Highway Milepost 24 to the border project.
- Remove existing bridge deck and rail; cut and remove foundation structures, including remnant pilings from previous bridge structures.

Improvements for Highway Protection at Debris and Water Flood Flow Areas

- Raise the grade of the highway 15 to 18 feet from its current elevation at Milepost 19 and Milepost 23.
- Install four to six larger-diameter culverts under the elevated highway, at each debris flow area (Milepost 19, Milepost 23).

Improvements for Recreational Access

- Widen roadway shoulders from 2 feet to 6 feet, to improve safety for non-motorized users.
- Construct parking area for access to the Mount Ripinski Trailhead (Figure 1.2-5).
- Improve surfacing and grading of turnouts within the right-of-way.
- Improve vehicle access to the Chilkat River recreational areas.

Summary of Key Unavoidable Impacts and Mitigation from the Revised Proposed Action

The Revised Proposed Action would result in impacts on the human and natural environment as described below.

- **Wetlands and other Waters of the US and related Fish streams** Approximately 22.2 acres of wetlands and 3.6 acres of other waters of the United States (the Chilkat River) would be filled. Mitigation for unavoidable impacts would, primarily, enhance the highest value of impacted wetlands, fish rearing and passage, by creating and enhancing fish tributaries. The goal is to replace and maintain, at least, the values of the impacted wetlands.
 - 26 culverts in anadromous fish streams would be upgraded and/or constructed resulting in improved fish access to up to 7 miles of habitat above the highway. Temporary impacts to these streams would occur as a result of construction.
 - All impacted fish streams would be replaced, in-kind.
 - Approximately 7,308 linear feet of fish bearing tributaries would be created and/or improved as mitigation for fill in wetland areas (see Table 4.15-3 in the Final Revised Environmental Assessment).
 - To mitigate for impacts to Chilkat River stream banks, one of three different mitigation designs would be constructed to mimic natural fish habitat environment in locations as close to the impact sites as practicable.
 - ◆ Chilkat River fish habitat would be enhanced by placing woody debris in 33 areas.
 - ◆ Vegetated river protrusions would be constructed to mimic the most productive natural stream banks in 18 areas, including new fish wheel sites, based on locations coordinated with the Alaska Department of Fish and Game.
 - ◆ The fish wheel river protrusions would provide hydrologic characteristics necessary for fish wheel installation at six sites.

- **Right-of-Way** Approximately 26 acres of right-of-way would be acquired for highway improvements.
 - Right-of-way acquisition would affect: 7 acres of privately owned property, 7 acres of Native allotments, 5 acres of other state property (non-Section 4(f) property), 4 acres of Chilkat Indian Village land and 3 acres of Alaska Chilkat Bald Eagle Preserve, a Section 4(f) property.
 - To mitigate for land acquisition impacts to the Alaska Chilkat Bald Eagle Preserve, provisions would be made to:
 - ◆ maintain or improve access to Chilkat River recreational areas by improving access to 23 turnouts and parking areas along the roadway corridor, and
 - ◆ 6 acres of existing right-of-way would be relinquished to the Alaska Chilkat Bald Eagle Preserve as 2:1 mitigation to offset right-of-way acquisition impacts.
 - Property acquisition would be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970.

- **Cultural Resources**
 - One historic property would be adversely affected. The Chilkat River Bridge would be removed and replaced. A Memorandum of Agreement has been developed to resolve the adverse effect to the Chilkat River Bridge and is included with Appendix E.

- **Alaska Chilkat Bald Eagle Preserve.** Comments were received on the July 2013 Environmental Assessment stating that impacts to the Alaska Chilkat Bald Eagle Preserve could result in impacts to bald eagle habitat, fish populations, and subsistence that would not be considered *de minimis* under 23 CFR 774.17. Commenters were concerned that an unknown number of trees used by eagles would be cut down by the Proposed Action. In response to such concerns, two eagle perching surveys were conducted in 2013 and 2014 to better understand the use of trees within the proposed project footprint. Additional surveys would be conducted as part of implementation of the proposed project. No trees within the

Alaska Chilkat Bald Eagle Preserve would be cut down. Alaska Statute Section 41.21.612(a) excludes the Haines Highway transportation corridor from the Alaska Chilkat Bald Eagle Preserve.

- Within the lands acquired from the Alaska Chilkat Bald Eagle Preserve, there would be clearing and grubbing to accommodate the realigned highway. These lands are outside the Critical Habitat Area and the Bald Eagle Council Grounds, do not have eagle nest trees, and have no established public access or parking. Several eagles were observed to be perching in trees in this area during the fall 2013 survey. Those perching trees could be cut.
 - Other eagle perching trees would be cut within the right-of-way adjacent to the Alaska Chilkat Bald Eagle Preserve.
 - The State of Alaska Department of Transportation and Public Facilities and the United States Fish and Wildlife Service have identified areas for re-planting of cottonwood trees within the Council Grounds area; e.g. the area that has the highest density of perching eagles during the fall eagle congregation.
 - The State of Alaska Department of Transportation and Public Facilities would be required to obtain bald eagle take permits under the Bald and Golden Eagle Protection Act.
- **Bald Eagles** Nest surveys conducted along the project corridor the highway recorded 45 nests within ½ mile of the centerline of the highway project area. The revised road alignments would move closer to some eagle nests and further away from other nests. Bald eagle researchers evaluated the potential impacts and recommended that the Revised Proposed Action would not have a population effect to the bald eagle population in the Chilkat River region.

Section 4f Evaluation of the Revised Proposed Action

There are five Section 4(f) protected properties that would be affected by the Revised Proposed Action (Table ES-2).

Table ES-2: Properties Protected by Section 4(f) with a Potential Use by the Revised Proposed Action

Property	Type of Site	Use	Intended Section 4(f) Approval Type
Alaska Chilkat Bald Eagle Preserve	Wildlife Preserve	3 acres of right-of-way acquisition and potential to indirectly affect fish, bald eagle, and other wildlife habitat within the Alaska Chilkat Bald Eagle Preserve. Use mitigated by relinquishment of 6.1 acres to the Preserve.	<i>De minimis</i> Finding
Critical Habitat Area	State critical habitat area within the Alaska Chilkat Bald Eagle Preserve	No direct impact; indirect impact at Milepost 19 where the elevation of the highway would result in more natural debris flows into the river. Additional public turnouts in the right-of-way adjacent to the Council Grounds would increase public viewing.	<i>De minimis</i> Finding
Chilkat River Bridge (SKG-247)	Historic Bridge	Demolition/Replacement of Bridge. Adverse effect under Section 106 of the National Historic Preservation Act.	Programmatic Section 4(f) Evaluation and Approval for Federal Highway Administration Projects that Necessitate the Use of Historic Bridges (1983 Programmatic)
Yendistucky (SKG-054)	Historic property	Use minimized by design alteration to avoid the bluff. No adverse effect under Section 106 of the National Historic Preservation Act.	<i>De minimis</i> Finding
Smokehouse Village (SKG-044)	Historic property	Use (fill) in areas without archaeological resources. No adverse effect under Section 106 of the National Historic Preservation Act.	<i>De minimis</i> Finding

The State of Alaska Department of Transportation and Public Facilities and Federal Highway Administration have completed consultation with the officials with jurisdiction over each of the Section 4(f) protected properties and have let each of the officials know of the intent to make *de minimis* impact findings for the Alaska Chilkat Bald Eagle Preserve (including the Critical Habitat Area), Smokehouse Village, and Yendistucky, and a Programmatic Approval for the removal of the Chilkat River Bridge. Removal of the historic bridge appears to comply with the July 5, 1983, “Final Nationwide Section 4(f) Evaluation and Approval for Federal Highway Administration Projects that Necessitate the Use of Historic Bridges.” A Memorandum of Agreement to resolve the adverse effect to the Chilkat River Bridge under the National Historic Preservation Act is included in the Final Revised Environmental Assessment Appendix E.

Use of State Funds

Preliminary engineering was performed, using Federal funds, to document the design criteria and technical issues, as necessary, to sufficiently evaluate alternatives and to assess impacts. Due to funding obligations and pressure to begin the project, the schedule would not accommodate the Federal Highway Administration-required linear sequence of right-of-way acquisition and final design tasks following the completion of the Final Revised Environmental Assessment and the Decision Document. In order to meet the schedule requirements, the State of Alaska Department of Transportation and Public Facilities initiated the right-of-way acquisition efforts and final design efforts using State funds, before completion of the National Environment Policy Act process and Federal Highway Administration approval. The Federal Highway Administration was notified of this action. The Federal Highway Administration will assure that the results of these early activities will not bias the required National Environmental Policy Act process for the Revised Proposed Action.

If the Revised Proposed Action is selected to move forward, the State of Alaska Department of Transportation and Public Facilities will also use State funds to add structural components (beyond what is necessary for current and projected traffic) to the Chilkat River Bridge that would allow the new bridge to support heavier traffic loads. The State of Alaska Department of Transportation and Public Facilities proposes this additional action because the design life of the bridge is 75 years, and the bridge needs to be brought into consistency with the bridges constructed in the Haines Highway Milepost 24 to the border project. The footprint of a bridge that supports heavier loads would be the same as a standard loading bridge, and construction and operation impacts would be the same.

TABLE OF CONTENTS

	<u>Page</u>
TITLE VI POLICY STATEMENT	
LIMITATION OF CLAIMS NOTICE	
EXECUTIVE SUMMARY	I
BACKGROUND	I
1.0 REVISED PROPOSED ACTION	1
1.1 Introduction/Affected Environment.....	1
1.2 Revised Proposed Action Components.....	6
1.3 Use of State Funds	21
2.0 PURPOSE AND NEED.....	23
3.0 ALTERNATIVES.....	27
3.1 Chilkat River Bridge Options	28
3.2 Haines Highway Alternatives Considered but Eliminated	33
4.0 ENVIRONMENTAL CONSEQUENCES	37
4.1 Land Use and Land Management Plans.....	38
4.1.1 Affected Environment.....	38
4.1.2 Environmental Consequences.....	44
4.1.3 Avoidance, Minimization, and Mitigation Measures	46
4.2 Alaska Chilkat Bald Eagle Preserve	47
4.2.1 Affected Environment.....	47
4.2.2 Environmental Consequences.....	54
4.2.3 Avoidance, Minimization, and Mitigation Measures	68
4.3 Right-of-Way.....	75
4.3.1 Affected Environment.....	75
4.3.2 Environmental Consequences.....	75
4.3.3 Avoidance, Minimization, and Mitigation Measures	79
4.4 Encroachments.....	80
4.4.1 Affected Environment.....	80
4.4.2 Environmental Consequences.....	81
4.4.3 Avoidance, Minimization, and Mitigation Measures	82
4.5 Utilities.....	82
4.5.1 Affected Environment.....	82
4.5.2 Environmental Consequences.....	83
4.5.3 Avoidance, Minimization, and Mitigation Measures	83
4.6 Social Conditions and Environmental Justice.....	84
4.6.1 Social Conditions.....	84
4.6.1.1 <i>Affected Environment</i>	84
4.6.1.2 <i>Environmental Consequences</i>	87
4.6.1.3 <i>Avoidance, Minimization, and Mitigation Measures</i>	93
4.6.2 Environmental Justice.....	94
4.6.2.1 <i>Minority or Low-Income Populations</i>	94
4.6.2.2 <i>Determination of Disproportionate High and Adverse Effects</i>	96
4.7 Economy and Subsistence.....	107
4.7.1 Affected Environment.....	107
4.7.2 Environmental Consequences.....	113
4.7.3 Avoidance, Minimization, and Mitigation Measures	116

TABLE OF CONTENTS (cont)

	<u>Page</u>
4.8 Visual	116
4.8.1 Affected Environment.....	116
4.8.2 Environmental Consequences.....	117
4.8.3 Avoidance, Minimization, and Mitigation Measures	119
4.9 Noise	119
4.9.1 Affected Environment.....	119
4.9.2 Environmental Consequences.....	120
4.9.3 Avoidance, Minimization, and Mitigation Measures	121
4.10 Cultural Resources	121
4.10.1 Affected Environment.....	123
4.10.2 Environmental Consequences.....	127
4.10.3 Avoidance, Minimization, and Mitigation Measures	129
4.11 Water Body Involvement, Hydrology, and Water Quality	131
4.11.1 Affected Environment.....	131
4.11.2 Environmental Consequences.....	135
4.11.3 Avoidance, Minimization, and Mitigation Measures	138
4.12 Navigation.....	139
4.12.1 Affected Environment.....	139
4.12.2 Environmental Consequences.....	142
4.12.3 Avoidance, Minimization, and Mitigation Measures	143
4.13 Floodplains.....	143
4.13.1 Affected Environment.....	143
4.13.2 Environmental Consequences.....	144
4.13.3 Avoidance, Minimization, and Mitigation Measures	145
4.13.4 Compliance with Executive Order 11988.....	146
4.14 Wetlands and Other Waters of the United States.....	146
4.14.1 Affected Environment.....	146
4.14.2 Environmental Consequences.....	148
4.14.3 Wetlands Avoidance, Minimization, and Compensatory Mitigation	150
4.15 Fish.....	156
4.15.1 Affected Environment.....	156
4.15.2 Environmental Consequences.....	158
4.15.3 Avoidance, Minimization, and Mitigation for Fish and Essential Fish Habitat Impacts	162
4.16 Wildlife Resources.....	182
4.16.1 Affected Environment.....	182
4.16.2 Environmental Consequences.....	187
4.16.3 Avoidance, Minimization, and Mitigation Measures	188
4.17 Invasive Plant Species.....	189
4.17.1 Affected Environment.....	189
4.17.2 Environmental Consequences.....	190
4.17.3 Avoidance, Minimization, and/or Mitigation Measures	191
4.18 Air Quality	191
4.18.1 Affected Environment.....	191
4.18.2 Environmental Consequences.....	192
4.18.3 Avoidance, Minimization, and Mitigation Measures	192
4.19 Hazardous Waste	192
4.19.1 Affected Environment.....	192
4.19.2 Environmental Consequences.....	196
4.19.3 Avoidance, Minimization, and Mitigation Measures	198
4.20 Construction Impacts	198
4.20.1 Affected Environment.....	198

TABLE OF CONTENTS (cont.)

	<u>Page</u>
4.20.2 Environmental Consequences and Avoidance, Minimization, and Mitigation Measures	199
4.20.3 Summary of Avoidance, Minimization, and Mitigation Measures.....	203
4.21 Cumulative Impacts	203
4.21.1 The Preserve.....	213
4.21.2 Social and Economic Effects (Haines and Klukwan).....	214
4.21.3 Visual Resources.....	215
4.21.4 Historic and Archeological Resources.....	216
4.21.5 Water Quality.....	216
4.21.6 Wetlands	217
4.21.7 Fish and Wildlife.....	217
4.21.8 Greenhouse Gases and Climate Change	220
4.22 Permits and Authorizations.....	221
5.0 SECTION 4(F) EVALUATION.....	225
5.1 Alaska Chilkat Bald Eagle Preserve	227
5.2 Chilkat River Bridge	284
5.3 Smokehouse Village and Yendistucky	319
6.0 ENVIRONMENTAL COMMITMENTS.....	343
6.1 Avoidance, Minimization, and Mitigation.....	343
7.0 COMMENTS AND COORDINATION.....	349
7.1 Project Website	350
7.2 Mailing List of Potential Affected Interests.....	350
7.3 Early and Continuing Coordination Efforts.....	350
7.3.1 December 2005 Scoping	350
7.3.2 March 2009 Scoping.....	351
7.3.3 Meetings with Native Tribal Organizations.....	352
7.3.4 Meetings with Alaska Chilkat Bald Eagle Preserve Advisory Council.....	353
7.3.5 Agency Meetings	354
7.3.6 Public Hearings and Public Comment Periods	356
7.4 Issues of Concern.....	357
8.0 LIST OF PREPARERS.....	391
9.0 REFERENCES	393

TABLE OF CONTENTS (cont)

	<u>Page</u>
PHOTOGRAPHS	
Photograph 2.0-1: Bicyclist on Highway with Narrow Shoulders	26
Photograph 4.10-1: Haines-Fairbanks Pipeline Gate Valve 4	126
Photograph 4.11-1: Debris Flows	133
Photograph 4.12-1: Logjam Underneath Bridge.....	141
Photograph 4.15-1: Fry in Stream Proposed for Enhancement Near MP 13.....	157
Photograph 4.15-2: Fry in Chilkat River Rip Rap Stream Bank Near MP 7.5.....	157
Photograph 4.21-1: Four Mile Point & Sentinel Rock, Haines Porcupine Rd, Circa 1900.....	206
Photograph 4.21-2: Looking Northwest from the Alaska Midland Railway Survey Station 310. (University of Washington Libraries, Special Collections, UW36291).....	207
Photograph 4.21-3: Original Highway Construction Flood Scene MP 6.5, November 1949 (photograph courtesy of the Alaska State Library).....	207
Photograph 4.21-4: Original Highway Construction	213
Photograph 4.21-5: Vegetated Riprap along the Bank of the Chilkat River	219
FIGURES	
Figure 1.1-1: Project Location and Vicinity Map.....	2
Figure 1.2-1: Existing Typical Section	8
Figure 1.2-2: Proposed Typical Section.....	8
Figure 1.2-3: Typical Section with Guardrail.....	9
Figure 1.2-4: Proposed New Chilkat River Bridge Alignment.....	11
Figure 1.2-5: New Mount Ripinski Trailhead Turnout.....	12
Figure 3.1-1: Chilkat River Bridge Options	29
Figure 4.1-1: Haines Borough Comprehensive Plan General Land Status.....	39
Figure 4.2-1: Alaska Chilkat Bald Eagle Preserve	48
Figure 4.2-2: Perch Sites within Council Grounds (MP 18-MP 21).....	53
Figure 4.2-3: Alaska Chilkat Bald Eagle Preserve Right-of-Way	55
Figure 4.2-4: Distance of Eagle Nest from Highway Construction near MP 20.5	65
Figure 4.2-5: Proposed New Public Access Turnout at MP 20.5	73
Figure 4.7-1: 2012 Workers by Industry in the Haines Borough	109
Figure 4.12-1: Chilkat River Bridge Typical Sections	140
Figure 4.15-1: Conceptual View of Proposed Stream Bank Erosion Control	164
Figure 4.15-2: Conceptual Plan for Ballasted Log Clusters	167
Figure 4.15-3: Conceptual Plan for River Protrusion	168
Figure 4.16-1: DOT&PF Animal Crash Events 2000-2011 (1 of 2)	185
Figure 4.19-1: Identified Contaminated Sites	194
Figure 4.21-1: Current Yukon Exploration & Producing Mines.	211
Figure 5.1-1: Alaska Chilkat Bald Eagle Preserve	237
Figure 5.1-2: Alaska Chilkat Bald Eagle Preserve Property 1 of 3	243
Figure 5.2-1: Section 4(f) Properties in Vicinity of the Chilkat River Crossing	295
Figure 5.3-1: Revised Proposed Action in the Vicinity of the Yendistucky Reservation and Smokehouse Village.....	325

TABLE OF CONTENTS (cont.)

Page

TABLES

Table ES-1: Effects of Main Design Changes between the July 2013 Environmental Assessment and the Revised Proposed AlignmentIII

Table ES-2: Properties Protected by Section 4(f) with a Potential Use by the Revised Proposed Action..... IX

Table 1.2-1: Effects of Major Design Changes Between the July 2013 EA and the Revised Proposed Action Alignment.....13

Table 1.2-2: Revised Proposed Action and Affected Resources16

Table 4.1-1: Haines Borough Landownership38

Table 4.2-1: Potential Revised Proposed Action Compliance with Other Preserve Goals58

Table 4.2-2: Changes to Distance Between Haines Highway and Bald Eagle Nests63

Table 4.3-1: Proposed Permanent ROW Acquisitions76

Table 4.3-2: Proposed ROW Acquisition Impacts Excluding Tribal & Public Lands77

Table 4.3-3: Summary of ROW Relinquishment to the Preserve.....79

Table 4.4-1: Encroachments with the Proposed Action Right-of-Way80

Table 4.6-1: Turnouts / Recreational Facilities along the Haines Highway (Mileposts 3.5 to 25.3) Project Corridor (Refer to Appendix A).....88

Table 4.6-2: Haines Borough and Klukwan Racial Composition, 2009-201395

Table 4.6-3: Poverty Guidelines for Alaska, 201496

Table 4.6-4: Household Incomes and Poverty Guidelines.....96

Table 4.6-5: Summary of Revised Proposed Action Impacts on Populations Minority & Non-minority.....98

Table 4.7-1: Haines Borough Employment108

Table 4.7-2: Revised Haines Borough Employment108

Table 4.7-3: Klukwan Employment.....112

Table 4.10-1: Findings of Effect.....124

Table 4.11-1: Hydraulic Changes Due to Revised Proposed Action.....136

Table 4.14-1: Wetland Habitat Types147

Table 4.14-2: Impacts to Wetlands and Waters of the United States149

Table 4.14-3: Impacts for Entire Project to Wetlands & Waters of the U.S. (Acres).....152

Table 4.14-4: Fill in the Chilkat River (in linear feet).....152

Table 4.14-5: Linear Feet of Beneficial Impact in Chilkat River Tributaries154

Table 4.15-1: Revised Proposed Action Impacts to Essential Fish Habitat¹160

Table 4.15-2: Proposed Timing of Chilkat River In-Water Work by Location.....163

Table 4.15-3: Summary of Linear Impacts and Effects to Fish Habitat169

Table 4.16-1: Shift of Alignment into Undisturbed Habitats187

Table 4.17-1: Invasive Plant Species in Haines Highway Project Area190

Table 4.22-1: Required Permits and Approvals Needed for the Revised Proposed Action222

Table 5.0-1: Properties Protected by Section 4(f) with a Potential Use by the Revised Proposed Action.....225

Table 5.1-1: Revised Proposed Activities Within or Adjacent to Preserve238

Table 5.1-2: Summary of Proposed ROW Acquisition in Preserve239

Table 5.1-3: Revised Proposed Action Compliance with other Preserve Goals.....240

Table 5.3-1: Consultation on Potential Impacts Yendistucky & Smokehouse Village327

Table 6.1-1: Proposed Avoidance, Minimization, and Mitigation Measures344

Table 7.4-1: Comment Summary & Response Table361

Table 8.0-1: List of Preparers391

TABLE OF CONTENTS (cont)

Page

ATTACHMENTS

Attachment 5.1-1: Correspondence with Officials with Jurisdiction Regarding the Revised Proposed Action's Potential Affects to the Preserve and CHA	247
Attachment 5.2-1: Photographs	297
Attachment 5.2-2: State Historic Preservation Office/Advisory Council.....	300
Attachment 5.2-3: CRC Memorandum.....	304
Attachment 5.2-4: Memorandum of Agreement.....	307
Attachment 5.3-1: State Historic Preservation Office Documentation.....	329

FIGURE SETS

Figure Set A	Existing and Proposed Right-of-Way
Figure Set B	Alaska Chilkat Bald Eagle Preserve Property Acquisition and Right-of-Way Relinquishment
Figure Set C	Bald Eagle Perch Sites
Figure Set D	Wetland Impacts and Proposed Stream Mitigation

APPENDICES (available on attached CD)

Appendix A.....	Coordination with DNR on Turnout Improvements
Appendix B.....	Socioeconomic Analysis
Appendix C.....	Section 4(f)
Appendix D.....	Stream Habitat Mitigation Plan (now included in Appendix F)
Appendix E.....	Section 106 Consultation
Appendix F.....	Essential Fish Habitat Assessment
Appendix G.....	Bald Eagle Research, Consultation and Conservation Measures
Appendix H.....	Comments and Coordination
Appendix HW.....	Hazardous Waste

(Note - Station numbers may differ slightly in the technical reports in the appendices as a result of minor design shifts that have occurred to avoid sensitive resources)

LIST OF ACRONYMS

AAC	Alaska Administrative Code
AASHTO	American Association of State Highway and Transportation Officials
ABR	ABR, Inc. – Environmental Research and Services
ACHP	Advisory Council on Historic Preservation
ADF&G	Alaska Department of Fish and Game
ADT	Average Daily Traffic
Preserve Advisory Council	Alaska Chilkat Bald Eagle Preserve Advisory Council
AHPA	Alaska Historic Preservation Act
AHRS	Alaska Historic Resources Survey
AKEPIC	Alaska Exotic Plants Information Clearing House
AP&T	Alaska Power and Telephone
APDES	Alaska Pollutant Discharge Elimination System
APE	Area of Potential Effect
ARC	Alaska Road Commission
AS	Alaska Statute
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
BMPs	Best Management Practices
CAP	Corrective Action Plan
CDP	census designated place
CE	Categorical Exclusion
CFR	Code of Federal Regulations
CHA	Critical Habitat Area
CIA	Chilkoot Indian Association
CIV	Chilkat Indian Village
CRC	Cultural Resource Consultants LLC
CWA	Clean Water Act
dBA	A-weighted decibel
DCCED	Alaska Department of Commerce, Community and Economic Development
DCRA	(DCCED) Division of Community and Regional Affairs
DEC	State of Alaska Department of Environmental Conservation
DLWD	State of Alaska Department of Labor and Workforce Development
DMLW	(DNR) Division of Mining, Land and Water
DNR	State of Alaska Department of Natural Resources
DoE	Determination of Eligibility
DOT&PF	State of Alaska Department of Transportation and Public Facilities
DPOR	(DNR) Division of Parks and Outdoor Recreation
DREA	Draft Revised Environmental Assessment
DWC	(ADF&G) Division of Wildlife Conservation
E.O.	Executive Order
EA	Environmental Assessment
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
ESA	Environmental Site Assessment
ESCP	Erosion and Sediment Control Plan
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FREA	Final Revised Environmental Assessment
FUDS	Formerly Used Defense Sites
GIS	Geographic Information Systems
GPR	Ground Penetrating Radar
HHCPP	Haines Highway Corridor Partnership Plan
HMCP	Hazardous Materials Control Plan
IDT	Interdisciplinary Team

LIST OF ACRONYMS (cont)

IPEC	Inside Passage Electric Cooperative, Inc.
LCC	Lynn Canal Conservation
LOS	level of service
LWCF	Land and Water Conservation Fund
M&O	Maintenance and Operations
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MP	Milepost
mph	miles-per-hour
MSFCMA	Magnuson-Stevens Fisheries Conservation and Management Act
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
OHW	ordinary high water
OWJ	officials with jurisdiction
PER	Preliminary Engineering Report
PMP	pipeline milepost
Preserve, the	Alaska Chilkat Bald Eagle Preserve
ROW	right-of-way
S&HI	Stream and Habitat Inventory
SATP	Southeast Alaska Transportation Plan
SR	DOT&PF Southcoast Region
SHI	Sealaska Heritage Institute
SHPO	State Historic Preservation Office(r)
STIP	Statewide Transportation Improvement Program
SWPPP	Storm Water Pollution Prevention Plan
TCP	Traffic Control Plan
U.S.	United States
Uniform Act	Uniform Relocation Assistance and Real Property Acquisition Policies Act
USACE	United States Army Corps of Engineers
USC	United States Code
USCG	United States Coast Guard
USDA	United States Department of Agriculture
USDHHS	United States Department of Health and Human Services
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USNPS	United States National Park Service

1.0 REVISED PROPOSED ACTION

1.1 Introduction/Affected Environment

The State of Alaska Department of Transportation and Public Facilities (DOT&PF), in partnership with the Federal Highway Administration (FHWA), is proposing to address deficiencies on the Haines Highway from Milepost (MP) 3.5 to MP 25.3 (Figure 1.1-1).¹ This Final Revised Environmental Assessment (FREA) is prepared in accordance with the DOT&PF Alaska Environmental Procedures Manual (DOT&PF, 2013a) and FHWA Technical Advisory 6640.8A. The purpose of this document is to provide environmental documentation and analysis in accordance with the National Environmental Policy Act (NEPA) for federally funded projects to:

1. Briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact.
2. Aid an agency's compliance with the NEPA when no environmental impact statement is necessary.
3. Facilitate preparation of a statement when one is necessary.

The U.S. Coast Guard (USCG) is a Cooperating Agency for the Haines Highway MP 3.5 to 25.3 project. Cooperating agencies are defined as any Federal agency, other than a lead agency, that has jurisdiction by law or special expertise with respect to any environmental impact involved in a proposed project or project alternative (40 CFR 1508.5). Please see Section 4.12 Navigation for more information on the USCG's role as a cooperating agency for this project.

¹ Throughout the development of this project it has been known by the name Haines Highway MP 3.5 to MP 25.3. The title of the project has been corrected to be more accurate. The old title is used throughout this Final Revised Environmental Assessment and associated documents, but the formal name of the project moving forward is Haines Highway Reconstruction Milepost 3.9 to 25.0. The figure sets associated with this document show the location of MPs along the highway.

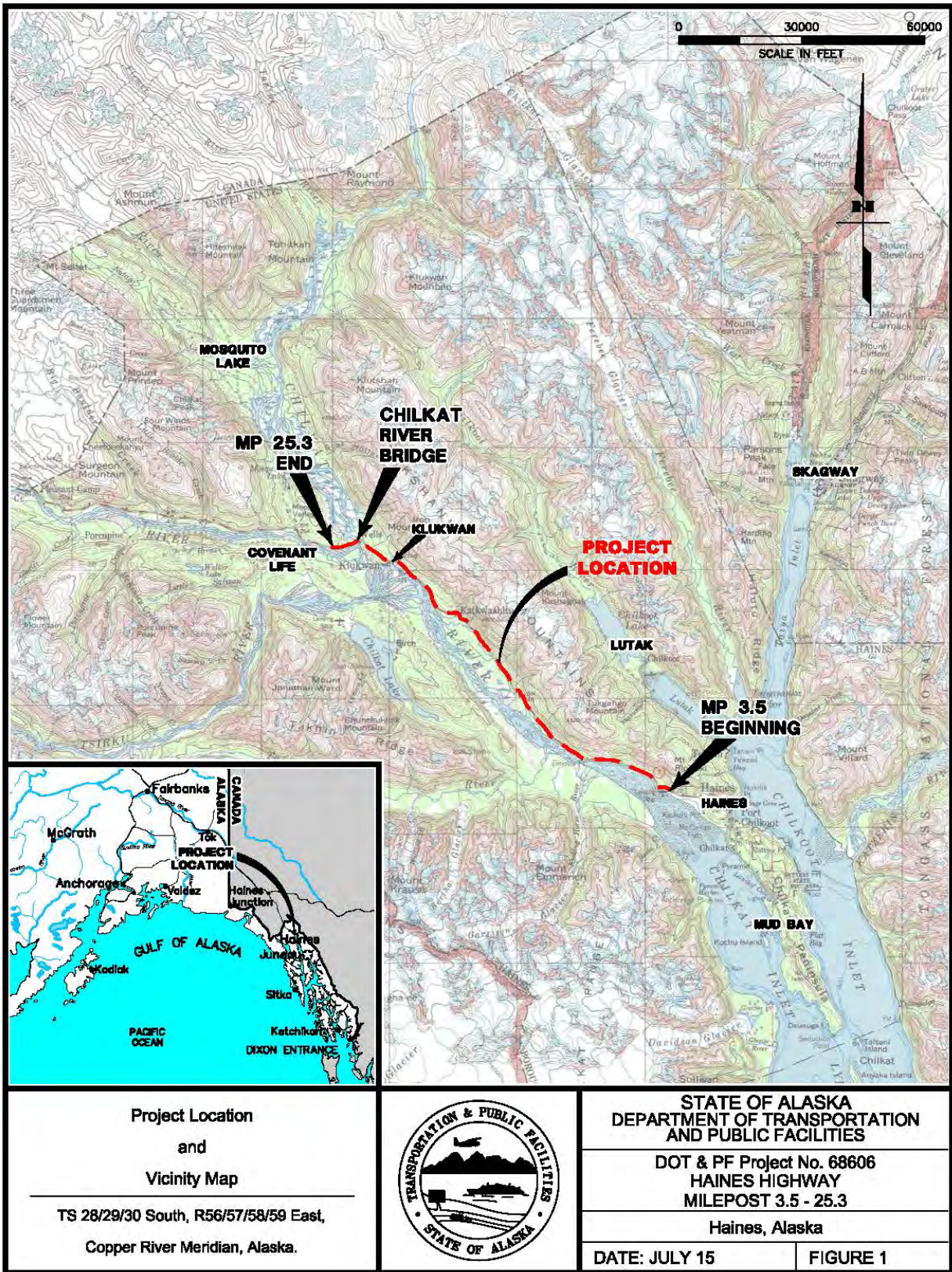


Figure 1.1-1: Project Location and Vicinity Map

Haines Highway begins in Haines, Alaska and ends at the Alaska Highway in Haines Junction, Yukon Territory, Canada. It generally follows a travel corridor used for centuries by the Chilkat Tlingit as well as the Dalton Trail established in the 1890s from Haines to Klukshu Lake in the Yukon Territory (Gates, 2012). From Klukshu Lake, it veers west to join the Alaska Highway at Haines Junction. Haines Highway is one of two major highways connecting Southeast Alaska to the continental highway system via the Alaska Highway and the Alaska Marine Highway System. Haines Highway was originally constructed in 1943 and has been periodically upgraded over the years, with the portion from the bluffs (MP 25.3) to the Canadian border (MP 40) being the most recently upgraded.

Today, Haines Highway functions as a low-volume rural highway and is classified as a principal arterial. The average daily traffic (ADT) counts are less than 600 vehicles per day. Access points to the Haines Highway are infrequent and are typically provided by driveways rather than intersections. Its primary function is to provide for long-distance travel. The secondary purpose is to provide access to local destinations.

The highway has two 12-foot travel lanes and 2-foot shoulders for a total top width of 28 feet (see Figure 1.2-1) and a speed limit of 55 miles-per-hour (mph). A vehicular capacity analysis for the project, completed as a portion of a Preliminary Engineering Report (PER) (DOWL HKM, 2010c, p. 17), concluded that two travel lanes would meet present and future traffic demands for a required design life of 20 years (2035) and a bridge design life of 75 years.

On either side of the proposed project corridor Haines Highway has a pavement width of 36 feet and is constructed to meet the current 55 mph design standard (DOT&PF Southcoast Region [SR], 2005a; American Association of State Highway and Transportation Officials (AASHTO), 2001, 2013). The portion of the Haines Highway within the proposed project corridor does not meet the 55 mph design standards. A road or highway designed to a 55 mph standard has travel lanes and shoulder widths, curves, sight distances, clear zone, and intersections or driveways that provide sufficient maneuverability, decision time, and reaction time to safely operate a vehicle at 55 mph.²

² Specifically the Revised Proposed Action design designation improvement type is reconstruction or “4R” (DOT&PF SR 2005b and 2015).

Haines Highway is on the northeastern side of the Chilkat River, a glacial-fed braided river system that is up to 1 mile wide at the beginning of the project and about 0.1 mile wide at the Chilkat River Bridge near the end of the project. Riverine, wetland, and forest habitats in the Chilkat River Valley support multiple salmon runs and other fish species, which in turn support prey species such as bald eagles, bear, humans, etc.

The Chilkat Valley is within the traditional territory of the Chilkat Tlingit (Emmons, 1991, inset cover map). Subsistence fishing and hunting, and sharing of traditional knowledge are important activities; including gathering of eulachon (also known as hooligan), used mostly for its oil (grease). Eulachon oil was an important trade item for the Chilkat Tlingit and the Chilkat Valley. The trade route (grease trail), for trade between the Coastal and Interior Tribes, roughly follows what is now the Haines Highway corridor. Described by Thomas Thornton (Thornton, 2012, p. 47):

Jilkáat (from the Tlingit/Eyak word for “cache”) Kwáan and Jilkoot (from the Tlingit name for the settlement at Chilkoot Lake, Lkoot) Kwáan comprise the northeastern frontier of coastal Lingít Aaní. Numerous trails, nicknamed “grease trails” due the importance of eulachon grease in trade, coursed overland into what is now Interior Alaska, British Columbia, and Southern Yukon territory. Jilkáat and Jilkoot areas were once united, and they remain closely linked today through proximity, inter-marriage, and other ties. Broadly speaking, the Jilkáat controlled the Chilkat River Valley while the Jilkoot possessed the Chilkoot, Taiya (from the Tlingit Dayéi, “to Pack”), and Skagway river valleys and Lynn Canal north of Berners Bay.

Haines Highway is located adjacent to, and at some points passes through and provides access to the Alaska Chilkat Bald Eagle Preserve (the Preserve). The Preserve hosts the largest congregation of bald eagles (*Haliaeetus leucocephalus*) possibly in the world and attracts high numbers of visitors during the peak eagle gathering period each year. The fall and winter congregation of bald eagles, long recognized as a natural phenomenon, was first given official recognition in 1973 by the state legislature with the establishment of a 4,800-acre Critical Habitat Area (CHA), managed by the Alaska Department of Fish and Game (ADF&G). This action led to the establishment of the Preserve in 1982, under the jurisdiction of both the ADF&G and the State of Alaska Department of Natural Resources (DNR) Division of Parks and

Outdoor Recreation (DPOR). Today, the area in the Preserve totals nearly 50,000 acres, including the original 4,800-acre CHA.

The Preserve is unique in comparison to other units in the state park system. According to the Preserve's Management Plan (DNR Division of Mining, Land and Water (DMLW) and DNR DPOR, September, 2002):

When it established the Preserve, the legislature created a new type of unit unlike any other in the state park system. It required the protection of Preserve resources, especially those related to the Chilkat bald eagles, their associated habitat, and the spawning and rearing areas of anadromous streams in the Chilkat and Chilkoot Rivers. The provisions distinguishing the Preserve from other units of the state park system include giving strong guarantees that traditional uses may continue; excluding from the Preserve private land, University lands, highway corridors, pipeline corridors, and municipal lands; treating Native allotments and pending Native allotments as private lands; giving strong guarantees of access across the Preserve; requiring the favorable consideration of utility corridors across the Preserve if they are compatible with the purposes of the Preserve; and, allowing municipal selections of land in the Preserve.

The Chilkat Valley also provides multiple recreation opportunities, including wildlife viewing, camping, hiking, fishing, hunting, and boating.

In some areas above Haines Highway, the mountain slopes are steep and unstable, resulting in slide areas. Boulders, cobbles, gravels, sands, and silts (collectively referred to as "debris") erode from the Takshanuk Mountains. When debris resting on steep terrain becomes saturated with rain or snowmelt, it flows down the mountainside, sometimes at high rates of speed. These debris flows emerge onto broader valley slopes, losing velocity and depositing the sediments as a fan shape. As a result, debris and water frequently overtop the highway near MP 19 and MP 23. The debris flow areas near MP 19 and MP 23 are designated as the number one and number nine slope stability hazards for the entire state (DOT&PF, 2011b).

Adjacent to Haines Highway is the Haines-Fairbanks Pipeline, constructed in the 1950s to transport fuel from the port at Haines to military bases in the Interior. The portion of the pipeline from Haines to Tok was shut down in 1970. Subsequently, local utility companies have used the abandoned pipeline as a conduit for utility services. The Haines-Fairbanks Pipeline has been

determined to be eligible for the National Register of Historic Places (NRHP) as a discontinuous district. A Haines-Fairbanks Pipeline gate valve, Gate Valve 4, is located within the Revised Proposed Action's footprint near the Chilkat River Bridge. This gate valve has been determined to be part of the NRHP-eligible Pipeline District. Within the project limits there are four known petroleum product releases from the Haines-Fairbanks Pipeline; however, only two areas of contamination are present. Responsibility for those releases rests with the United States (U.S.) Army Corps of Engineers (USACE) under the Formerly Used Defense Sites (FUDS) program.

Haines Highway is a FHWA-designated National Scenic Byway. A requirement of this designation is development of a corridor management plan with community involvement. In 2007, the *Haines Highway Corridor Partnership Plan* (HHCPP) was prepared by the Haines Borough for submission to the FHWA (Haines City and Borough, 2007). The "Haines Highway – Valley of the Eagles" was subsequently designated a National Scenic Byway. The Revised Proposed Action was developed in accord with the HHCPP.

1.2 Revised Proposed Action Components

The Revised Proposed Action would improve the stability and safety of Haines Highway between MP 3.5 and MP 25.3, replace the Chilkat River Bridge, provide highway protection at debris flow areas, and improve intersections, driveways, and recreational turnout accesses.

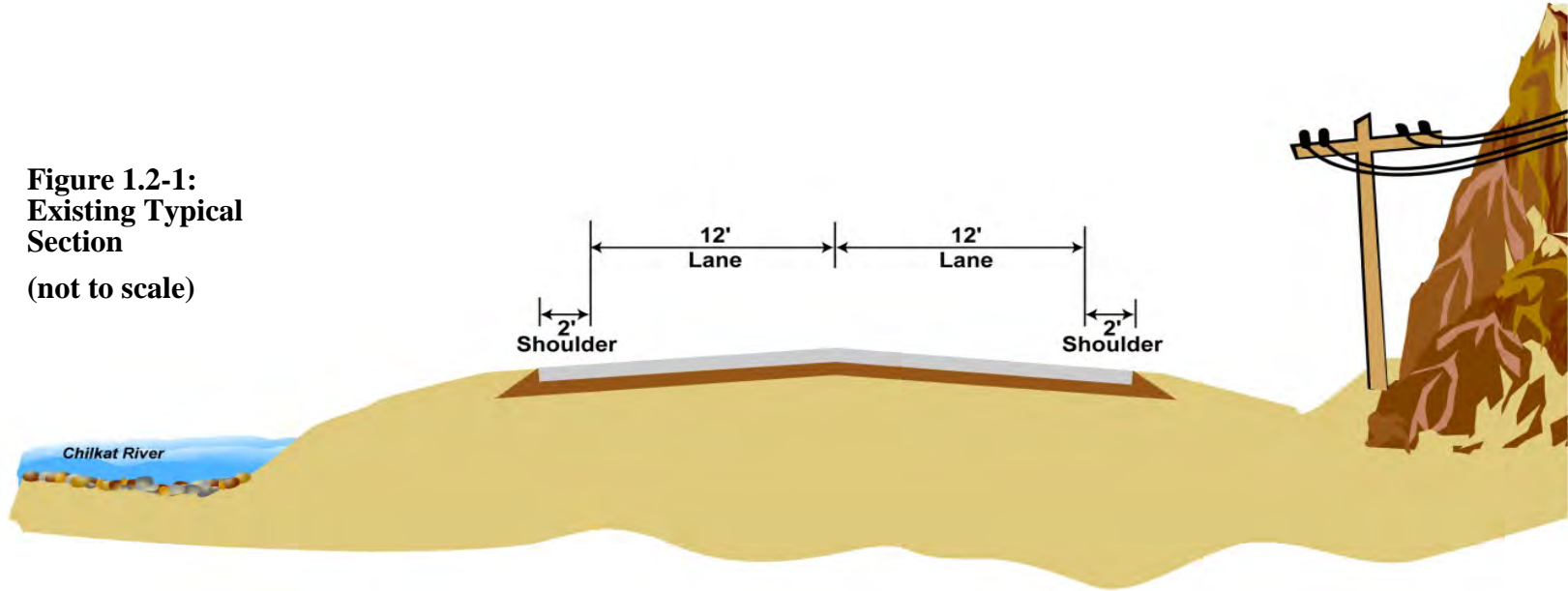
Improvements to Haines Highway

- Realign sections of the highway and adjust or straighten some curves to meet the purpose and need (Section 2.0) to bring the highway up to 55 mph design standards and a desired level of service (LOS) B. To avoid sensitive resources, two curves in the vicinity of MP 13 would not be straightened to a 55 mph design standard.
- Add passing zones.³ The amount of passing zones has decreased in this FREA as compared to the July 2013 EA as described below in "Changes to Design."

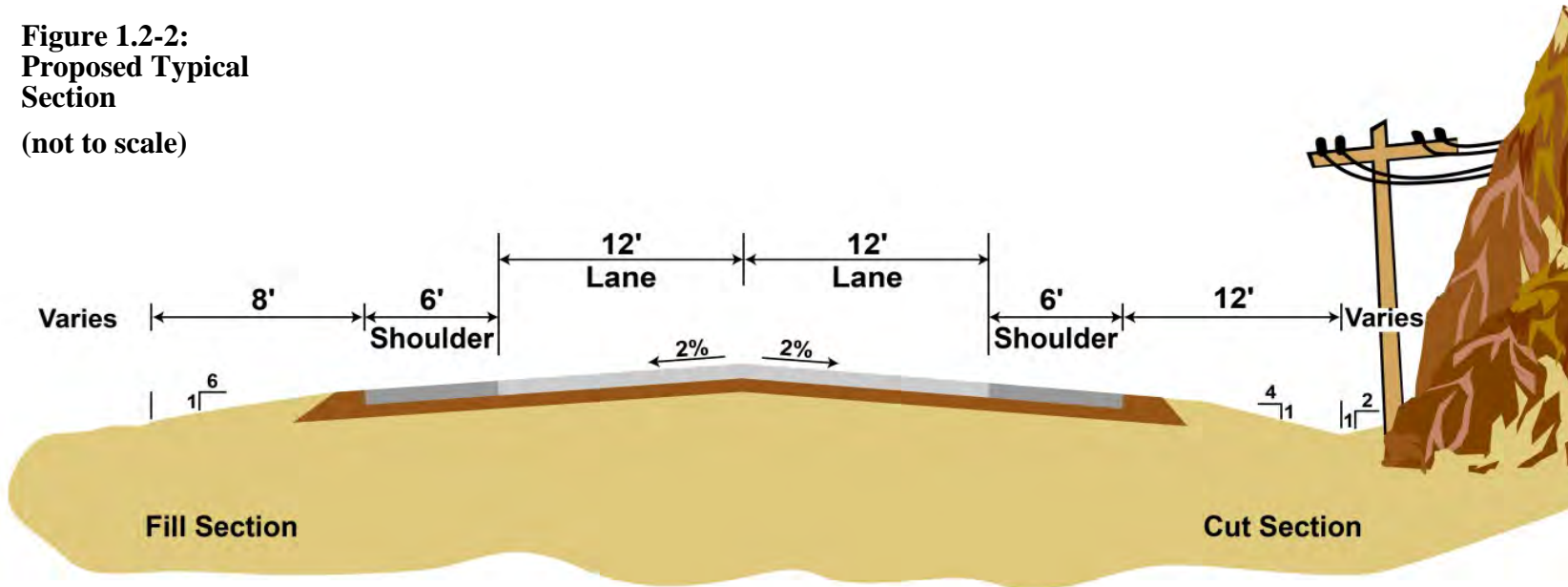
³ A passing zone is an area on the highway route where the roadway geometry and sight distance permits faster vehicles to overtake slower vehicles in the lane normally used by opposing traffic. Dashed yellow centerline markings indicate where passing is permitted on two-lane two-way roadways. Personal communication from Pat Carroll, P.E., DOT&PF, to Jane Gendron, DOT&PF Regional Environmental Impact Manager, May 20, 2013.

- Widen the roadway shoulders to a continuous 6-foot width and provide minimum sight distance to meet design standards (Figures 1.2-1 through 1.2-3).
- Construct drainage ditches and upgrade, replace, and/or add new culverts where appropriate.
- Repave and restripe the roadway and add new signage.
- Rehabilitate or relocate driveways, turnout access points, and road intersections (including Chilkat Avenue, Klukwan), to meet design standards.
- Install or upgrade guardrails and other safety features along the highway, where needed (Figure 1.2-3).
- Modify the Haines-Fairbanks Pipeline Gate Valve 4's surrounding concrete vault to protect the gate valve and provide a safe road embankment.
- Relocate utilities, where required. Maintain access to utilities not relocated.

**Figure 1.2-1:
Existing Typical
Section**
(not to scale)



**Figure 1.2-2:
Proposed Typical
Section**
(not to scale)



Replacement of the Chilkat River Bridge

- Install a temporary bridge downstream to be used as a construction staging platform.
- Construct a new bridge directly adjacent to, and downstream of, the existing bridge, with the same lane and shoulder widths as the revised proposed road (Figure 1.2-4). The vertical clearance between ordinary high water and bottom of the proposed new bridge would increase approximately 6 feet (See Figure 4.12-1) The new bridge would be constructed to meet the following criteria:
 - a 55 mph design speed,
 - current seismic standards, and
 - accommodation of freight vehicles carrying heavier loads than currently accommodated by the bridge, and
 - consistency with the bridges in the Haines Highway MP 24 to the border project.
- Remove existing bridge deck and rail; cut and remove foundation structures, including remnant pilings from previous bridge structures.

Improvements for Highway Protection at Debris and Water Flood Flow Areas

- Raise the grade of the highway from its current elevation 15 to 18 feet at MP 19 and MP 23.
- Install four to six larger-diameter culverts at each debris flow area (MP 19, MP 23).

Improvements for Recreational Access

- Widen roadway shoulders from 2 feet to 6 feet, to improve safety for non-motorized users.
- Construct parking area for access to the Mount Ripinski Trailhead (Figure 1.2-5).
- Improve surfacing and grading of turnouts and parking areas within the right-of-way (ROW).
- Improve vehicle access to the Chilkat River recreational areas.

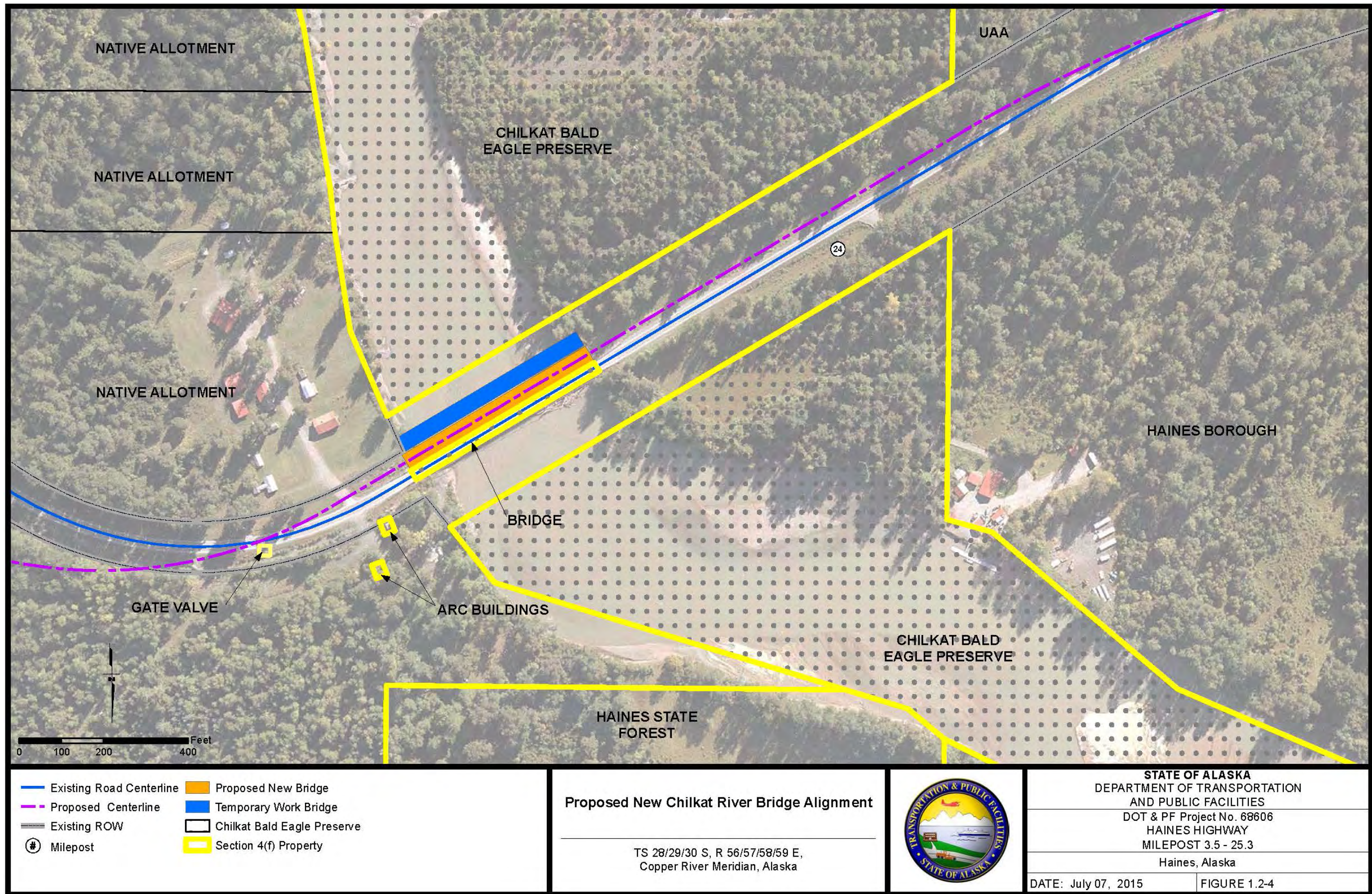


Figure 1.2-4: Proposed New Chilkat River Bridge Alignment

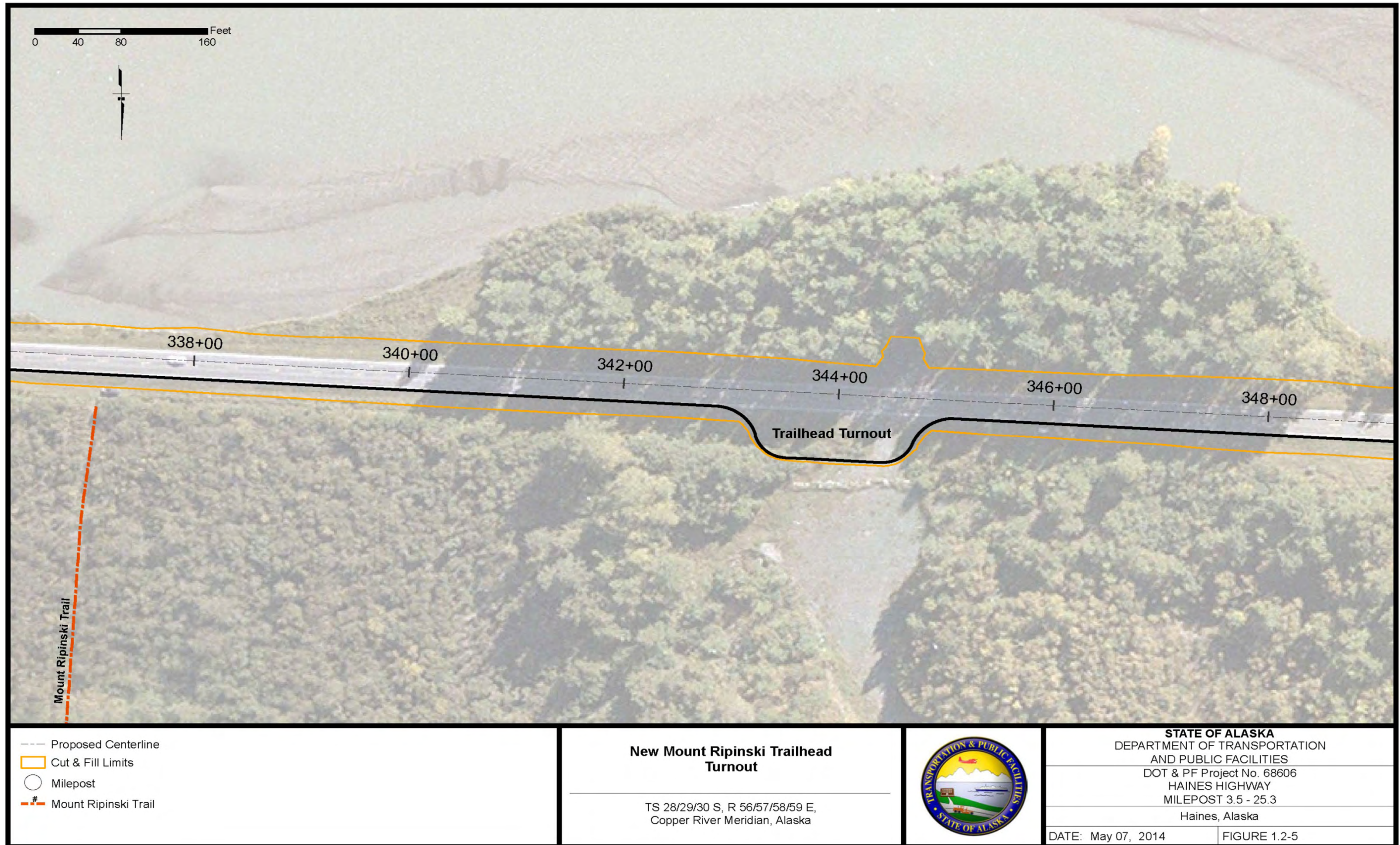


Figure 1.2-5: New Mount Ripinski Trailhead Turnout

The Revised Proposed Action reflects changes that have been made after the public and agencies reviewed the July 2013 EA. Many comments were received asking for improvements with less potential impacts to fish, eagles, and their habitats. To the extent practicable, DOT&PF and FHWA incorporated commenters' suggestions and addressed commenters' concerns. A summary of major design changes and their effects is given in Table 1.2-1.

**Table 1.2-1: Effects of Major Design Changes
Between the July 2013 EA and the Revised Proposed Action Alignment**

Design Change	Effect
Reduced the extent of passing zones by retaining some existing curves	Reduced the ROW acquisition within the Preserve from 3.8 acres to 2.98 acres
	Reduced fill in the Chilkat River from 7.7 acres to 3.6 acres
	Reduced fill in wetlands from 23.6 acres to 22.2 acres, including a reduction of fill in 0.9 acre of high value wetlands near MP 10
	Reduced the linear feet of impacts from fill in the Chilkat River from 15,550 linear feet to 12,662 linear feet
	Increased the fill in tributary streams by 720 linear feet
Shifted alignment in the MP 4 area away from the uphill side of the road	Avoided impacts to cultural resources

In addition to design changes the DOT&PF performed supplemental environmental analyses and proposed additional mitigation measures to compensate for the proposed impacts. The additional design changes and environmental studies undertaken as a result of public and agency comments include:

Changes to Design

- To reduce the project footprint, the DOT&PF modified the alignment by re-analyzing each curve and adjusting, in the most environmentally sensitive areas, to meet minimum design standards and criteria. As a result, the percentage of passing zones was lowered to about 50 percent.

Resulting Changes to Impacts

- The amount of ROW required and associated clearing within the Preserve was reduced from 3.8 acres to 3 acres.

- The amount of fill was:
 - reduced in wetlands from 23.6 acres to 22.2 acres, and
 - reduced in the Chilkat River from 7.7 acres to 3.6 acres, and
 - the length of streams affected was:
 - ◆ reduced by 2,888 linear feet in the Chilkat River, and
 - ◆ increased by 720 linear feet in streams (Chilkat River tributaries).
- The amount of clearing required in the DOT&PF ROW adjacent to the Preserve was minimized.

Resulting Changes to Mitigation

- The DOT&PF conducted further environmental studies to supplement information regarding impacts to bald eagles in the project area and to further assess the likelihood of significant impacts to bald eagles and opportunities for the public to view eagles.
- To mitigate for impacts to eagle viewing within the Preserve, the DOT&PF has proposed a new turnout at MP 20.5, a popular roosting and foraging area during the fall bald eagle congregation. DOT&PF, in coordination with USFWS, has also identified areas for planting cottonwood saplings to mitigate potential effects to roosting and foraging trees.
- To mitigate for impacts caused by the placement of fill along the riverbank of the Chilkat River, the DOT&PF, in consultation with CIV, ADF&G, USFWS, and the National Marine Fisheries Service (NMFS), has developed measures to enhance riverside fish habitat. The proposed mitigation measures include incorporation of logs, rootwads, and boulders selectively placed in and on the riverbank to support riparian vegetation as well as modulate water flow velocities and deposit in-stream sediments for fish use (see Section 4.15, Fish).
- FHWA, DOT&PF and NMFS have completed the Essential Fish Habitat (EFH) consultation. Mitigation site details were discussed in Appendix F, EFH Assessment. In response to comments received concerning the DREA, mitigation measures have been refined and improved through consultation between DOT&PF and CIV, ADF&G, and USFWS.

Public and agency suggestions were made during the July 2013 EA comment period to reduce the design speed standard of 55 mph throughout the highway or at least in the CHA of the Preserve. As discussed in more detail in Section 3.0, Alternatives, the DOT&PF and the FHWA evaluated whether this was a prudent way to minimize impacts. That evaluation concluded that factors such as the classification of Haines Highway as a principal arterial, the rolling terrain, the relatively few number of driveways and approach roads, and the operating speeds of motorists on the existing road, all indicate that an appropriate minimum design speed is 55 mph. Therefore, the proposed design speed of the Revised Proposed Action remains at 55 mph. This design does include elements to improve sight distances, highway shoulders, and other features to safely accommodate motorists operating at appropriate highway traffic speeds.

The Revised Proposed Action components are provided in more detail by highway segment in Table 1.2-2. Figure Set A (Existing and Proposed ROW) includes graphic representations of the existing ROW, proposed ROW acquisitions/ relinquishments, and cut and fill limits of the Revised Proposed Action over aerial photographs.

Construction of the Revised Proposed Action would occur in multiple phases. The order and number of phases would vary depending on funding.

Table 1.2-2: Revised Proposed Action and Affected Resources

Project Area	Revised Proposed Action	Resource	Resources within Project Corridor
All segments of Haines Highway MP 3.5 to MP 25.3	Highway shoulders widened to 6 feet on each side; Highway reconstructed to provide roadway designed to a 55 mph design speed, except for two curves; passing zones would be provided for about 50 percent of the roadway; drainages provided and improved	As stated below	Major resources within the project corridor include the Chilkat River and its tributaries, anadromous fish habitat, adjacent Preserve and CHA, Tlingit village of Klukwan, public river access, recreational turnouts and trailheads, wetlands, cultural resources associated with Chilkat and Chilkoot Tlingit presence in this valley for centuries, multiple subsistence sites, wildlife, utility corridor, including the abandoned historic Haines-Fairbanks Pipeline and the historic Chilkat River Bridge.

Approximate Highway Segment	Revised Proposed Action within Segment	Resource	Summary of Revised Actions that could affect Resources in Segment
MP 3.5 to MP 7.5	Highway and Recreational Access Improvements Minor highway realignment to meet design standards and to avoid sensitive resources	Utilities	Realignment affects utility corridor; relocation of utilities required.
		Wetlands	Wetland fill (7.6 acres) for widening from MP 4.0 to MP 7.5.
		EFH/ Streams	Fill in Chilkat River (0.7 acres) to widen shoulders in 8 areas between MP 4.0 to MP 7.5; 10 anadromous streams temporarily affected by relocation and replacement in kind, 11 streams temporarily affected but benefitted by upgrades to fish passage culverts; and two stream habitat areas improved.
		ROW	ROW acquisition of 1.11 acres of private land in rock cut areas; conservation easement on 0.34 acres of private land needed for stream realignment near MP 5.0.
		Cultural Resources	Shift in alignment results in a non-adverse effect on a historic property.
		Section 4(f)	Shift in alignment results in a proposed Section 4(f) <i>de minimus</i> finding on a historic property.

Table 1.2-2: Revised Proposed Action and Affected Resources

Approximate Highway Segment	Revised Proposed Action within Segment	Resource	Summary of Revised Actions that could affect Resources in Segment
<p style="text-align: center;">MP 7.5 to MP 10</p>	<p>Highway and Recreational Access Improvements</p>	Utilities	Widening affects utility corridor for most of segment; relocation of utilities required.
		Wetlands	Wetland fill (3.4 acres) for widening and realignment at MP 8.0, and from MP 9.5 to past MP 10.
		EFH/Streams	Fill in Chilkat River (2.1 acres) for realignment in 14 areas; fill has been reduced by 4.2 acres; four anadromous streams temporarily affected but benefitted by upgrades to fish passage culverts, and one stream realignment.
		ROW	ROW acquisition of 0.6 acres of private land near MP 10.
<p style="text-align: center;">MP 10 to MP 16.5</p>	<p>Highway and Recreational Access Improvements Minor highway realignment to meet design standards with design exceptions between Station 625 and Station 670 to avoid impacts to sensitive resources</p>	Utilities	Realignment affects utility corridor near MPs 10, 11.5, 13.5 to MP 14.5, and MP 15.5 to MP 16.5; relocation of utilities required.
		Wetlands	Wetland fill (total 9.2 acres) primarily for widening from MP 10 to MP 11.5, wetland fill for realignment from MP 11.5 to MP 12; wetland fill in three areas from MP 12.5 to MP 13.5 for widening; wetland fill near MP 14 for realignment; wetland fill in four areas from MPs 14.5 to 16.5 for widening.
		EFH/Streams	Fill in Chilkat River (0.8 acres) for realignment in 13 areas; nine anadromous streams temporarily affected by relocation and replacement in kind; 10 streams temporarily affected but benefitted by upgrades to fish passage culverts; and several streams realigned away from road.
		ROW	Special use permit from the Preserve near MPs 10 and 12.75 totaling 1.4 acres for stream realignment; ROW acquisition from State of 2.5 acres at MP 12 for mitigation and 1.6 acres from State near MPs 13.5, 14.5, and 15.8.

Table 1.2-2: Revised Proposed Action and Affected Resources

Approximate Highway Segment	Revised Proposed Action within Segment	Resource	Summary of Revised Actions that could affect Resources in Segment
MP 16.5 to MP 17.5	Highway and Recreational Access Improvements Highway realignment	Utilities	Realignment affects utility corridor from MP 16.5 to MP 17.5; relocation of utilities required.
		Wetlands	Wetland fill (1.8 acres) near MP 17 and MP 17.5 for realignment.
		EFH/Streams	Five anadromous streams temporarily affected by relocation and replacement in kind; two streams temporarily affected but benefitted by upgrades to fish passage culverts; and one culvert removed and stream restored to a natural channel along old highway alignment.
		ROW	Special use permit from the Preserve near MP 17 of 0.6 acre for stream realignment; ROW acquisition of 1 acre from State near MP 17; ROW acquisition from the Preserve of 3 acres near MP 17 (relinquish 6.2 acres of existing ROW); and ROW acquisition of 5 acres of private land near MP 17.
		Section 4(f)	ROW acquisition (3 acres) from the Preserve; a <i>de minimis</i> impact finding is proposed.

Table 1.2-2: Revised Proposed Action and Affected Resources

Approximate Highway Segment	Revised Proposed Action within Segment	Resource	Summary of Revised Actions that could affect Resources in Segment
<p align="center">MP 17.5 to MP 20.5</p>	<p>Highway and Recreational Access Improvements and Highway Protection at Debris Flow Areas</p>	<p align="center">Utilities</p>	<p>Realignment affects utility corridor from MPs 19 to 19.5 and MP 20 to MP 20.5; relocation of utilities required.</p>
	<p>Minor highway realignment and major drainage improvements at MP 19 debris flow area</p>	<p align="center">Wetlands</p>	<p>Wetland fill (0.1 acres) for widening in three small areas between MP 17.5 and MP 20.5.</p>
		<p align="center">EFH/Streams</p>	<p>Four anadromous streams temporarily affected by installation of a fish passage culverts; and three upgraded culverts for non-anadromous streams.</p>
		<p align="center">ROW</p>	<p>ROW acquisition of 3.8 acres from Chilkat Indian Village (CIV) near MP 20.5.</p>
<p align="center">MP 20.5 to MP 23</p>	<p>Highway and Recreational Access Improvements and Highway Protection at Debris Flow Areas</p>	<p align="center">Utilities</p>	<p>Realignment affects utility corridor from MP 20.5 to MP 20 and MP 22.5 to MP 23; relocation of utilities required.</p>
	<p>Minor highway realignment and major drainage improvements at MP 23 debris flow area</p>	<p align="center">Wetlands</p>	<p>Wetland fill (0.1 acres) for widening near MP 21.5 and near MP 23.</p>
		<p align="center">ROW</p>	<p>Small ROW acquisition of less than 0.1 acre from Chilkat Indian Village (CIV) at intersection.</p>
		<p align="center">EFH/Streams</p>	<p>One anadromous stream temporarily affected; a new pond rearing habitat created.</p>
<p>Realignment of Chilkat Avenue intersection with Haines Highway</p>			

Table 1.2-2: Revised Proposed Action and Affected Resources

Approximate Highway Segment	Revised Proposed Action within Segment	Resource	Summary of Revised Actions that could affect Resources in Segment
MP 23 to MP 24	Highway and Recreational Access Improvements and Bridge Replacement Highway realignment and construct new bridge including raising the proposed bridge to increase vertical clearance.	Utilities	Realignment affects utility corridor from MP 23 to MP 24; relocation of utilities required.
		Wetlands	Wetland fill (0.1 acres) at Chilkat River Bridge site and near MP 24.
		ROW	Requires partial acquisition of 7.2 acres of Native allotments from MP 23 to MP 24 for highway realignment.
		Section 4(f)	Removal of Chilkat River Bridge (historic property).
			Construct a vault around Haines-Fairbanks Pipeline Gate Valve 4. Determined to not be a use of Section 4(f) property.
Historic Properties	Adverse effect on Chilkat River Bridge from removal and replacement.		
MP 24 to MP 25.3	Highway and Recreational Access Improvements Highway widening only	NA	NA

Logical Termini and Independent Utility

In accordance with the FHWA requirements, proposed projects must connect logical termini, have independent utility, and not restrict the consideration of future transportation alternatives. The Revised Proposed Action makes improvements to a 22 mile section of the existing highway to support that requirement.

Haines Highway begins in Haines and ends at Haines Junction in the Yukon Territory; the entire length of the road is 160 miles; 42 miles are in Alaska. Upgrades have been done to the highway between downtown Haines and the Haines Airport and from MP 25.3 to the Canadian border. Both upgraded sections are constructed to a 55 mph design speed and have 6-foot shoulders. The Revised Proposed Action has logical termini, because it would complete the upgrades to Haines Highway and make the entire highway between Haines and the Canadian border consistent with design standards for a 55 mph design speed. This project has independent utility; no additional upgrades or changes to the highway or intersecting driveways or roadways would be required if the Revised Proposed Action is implemented. The Revised Proposed Action does not restrict considerations of future transportation projects or alternatives.

1.3 Use of State Funds

Preliminary engineering was performed, using Federal funds, to document the design criteria and technical issues, as necessary, to sufficiently evaluate alternatives and to assess impacts. Due to funding obligations and pressure to begin the project, the schedule would not accommodate the FHWA-required linear sequence of ROW acquisition and final design tasks following the completion of the FREA and the Decision Document. In order to meet the schedule requirements, the DOT&PF initiated the ROW acquisition efforts and final design efforts using State funds, before completion of the NEPA process and FHWA approval. The FHWA was notified of this action. The FHWA will assure that the results of these early activities will not bias the required NEPA process for the Revised Proposed Action.

If the Revised Proposed Action is selected to move forward, the DOT&PF will also use State funds to add structural components (beyond what is necessary for current and projected traffic) to the Chilkat River Bridge that would allow the new bridge to support heavier traffic loads. The DOT&PF proposes this additional action because the design life of the bridge is 75 years, and

the bridge needs to be brought into consistency with the bridges constructed in the Haines Highway MP 24 to the border project. The footprint of a bridge that supports heavier loads would be the same as a standard loading bridge, and construction and operation impacts would be the same.

2.0 PURPOSE AND NEED

Project Purpose

The Haines Highway is a major highway linking Southeast Alaska with the intercontinental network of roads and is the primary surface transportation link between Southeast Alaska and Interior Alaska.

The purpose of this project is to address:

- highway deficiencies between MP 3.5 and MP 25.3 and bring the highway up to current design standards for a 55 mph design speed, as practicable, so it is consistent with the adjacent highway segments;
- bridge deficiencies;
- highway instability and temporary closures caused by debris and water flooding; and
- recreational access deficiencies.

Project Need

The project is needed to address the following listed deficiencies found in the 21.8 miles of Haines Highway between MP 3.5 and MP 25.3:

- Highway curves:
 - Eighty-five percent of curves are below minimum curve length and 25 percent are below minimum curve radius for a 55 mph roadway (DOWL HKM, 2010c).
 - Approximately 59 percent of the corridor is a no passing zone.⁴
 - The existing LOS is D, which is an unacceptable level of operations.⁵

⁴ Memorandum from Naomi Hobbs, P.E. DOWL, to Greg Lockwood, P.E., DOT&PF. July 6, 2015. Memorandum included in Appendix H.

⁵ LOS is a measure of the quality of traffic service provided by the highway facilities compared to traffic demand. LOS is rated from A to F with A representing the least congested condition and F representing the highest congestion. AASHTO notes that highway agencies should strive to provide the highest level of service practical and Exhibit 2-32 in AASHTO Geometric Design of Highways and Streets notes that the appropriate level of service for an arterial in rural rolling terrain is LOS B (AASHTO, 2001). LOS B represents reasonably free traffic flow, where drivers have a high level of comfort, roads remain safely below capacity, and posted speed is maintained. LOS D is approaching unstable flow, driver comfort decreases, potential for delays increase, and drivers cannot maintain posted speeds.

- Highway shoulders do not provide:
 - a stable, clear recovery area for drivers that leave the driving lane,
 - emergency storage of disabled vehicles,
 - a continuous and adequate width needed for safe pedestrian or bicycle use,
 - snow management and storage, and
 - space for maintenance vehicles to work safely outside the driving lanes.
- Highway pavement has exceeded its 20-year life expectancy and is showing signs of wear and cracking.
- Driveways entering the highway do not have minimum sight distance for a 55 mph design speed.
- The Chilkat River Bridge is deficient because:
 - The bridge was built in 1958, has exceeded its 50 year life expectancy, and is showing signs of deterioration.
 - The bridge width does not meet the 55 mph design speed standard.
 - The bridge is 24 feet wide and does not match the adjacent 28-foot-wide highway pavement.
 - The bridge does not meet current seismic standards, which places the bridge at increased risk of collapse during a seismic event.
 - The bridge does not adequately pass flood waters, which results in debris build up.
- Saturated debris flows from the mountainsides periodically overtop the highway near MP 19 and MP 23. Improvements are needed to keep the highway open during these events.

- Debris and water flow events erode and damage the highway surface. Between 2004 and 2012, the highway was closed about ten times including a three to four day closure during Thanksgiving of 2005. Most of these closures were for a day or so.⁶
- Debris and water flow events also require frequent maintenance to clean up deposits on the highway. Depths of debris material can be 5 to 20 feet.
- The Haines Highway between MP 3.5 and MP 25.3 has deficiencies for recreational users including vehicles, bicycles, and pedestrians:
 - Many vehicle turnouts do not meet sight distance or intersection criteria for this location. DNR has identified a number of minor driveway issues on twenty-seven existing recreational turnouts along this roadway as it passes through the Preserve.
 - There is no sanctioned parking for the Mount Ripinski Trail. Cars parked near the trail, on the highway, partially obstruct the driving lanes.
 - Pedestrians and bicycles share the highway with vehicles (Photograph 2.0-1).

⁶ Personal communication, Scott Gray, DOT&PF Southeast Region Maintenance Chief, to Jim Scholl, DOT&PF Environmental Analyst, April 2013.



Photograph 2.0-1: Bicyclist on Highway with Narrow Shoulders
(Photo courtesy of Bob Trousil, P.E., DOT&PF, May 2014)

3.0 ALTERNATIVES

Section 2.0 presents the project's purpose and need statement. Briefly, Haines Highway between MP 3.5 and MP 25.3 is deficient in several ways and the purpose of the project is to upgrade the roadway to address these deficiencies. This section describes how potential alternatives were developed, evaluated, and eliminated.

The approach to this project has always focused on upgrading the existing highway. Alternative roadway locations to link Haines with the Canadian or Interior Alaskan road network were not considered because of the presence of an existing road, difficult terrain in the surrounding area, glacial systems to the west, and the sensitivity of the environment between Haines and the Canadian border, e.g. to limit potential adverse impacts, alternative locations were not considered. Various Haines Highway upgrade alternatives were identified during project development, scoping, and during the public review of the July 2013 EA. These upgrade alternatives are:

- Alternative 1 brings the entire roadway up to AASHTO standards for a 55 mph design speed, including 6-foot-wide shoulders on both sides of the highway, and replaces the Chilkat River Bridge. All curves would be straightened. This is the original DOT&PF design concept.⁷
- Alternative 2a brings the roadway up to AASHTO standards for a 55 mph design speed, as practicable, including 6-foot-wide shoulders on both sides of the highway, and replaces the Chilkat River Bridge. The curve at MP 13 would not be straightened. This is the alternative presented in the July 2013 EA Proposed Action.
- Alternative 2b brings the roadway up to AASHTO standards for a 55 mph design speed, as practicable, including 6-foot-wide shoulders on both sides of the highway, and replaces the Chilkat River Bridge. This alternative has less curve adjustments than Alternative 2a. The curve at MP 13 would not be straightened under this alternative either. It has been carried forward because it best meets purpose and need while reducing impacts to the maximum extent practicable. This alternative is the Revised Proposed Action described in Section 1.0 of this FREA.

⁷ It should be noted that the project design designation lists the improvement type as "4R".

- Alternative 3 would bring the roadway up to AASHTO standards for a 50 mph design speed, as practicable, including 4-foot-wide shoulders on both sides of the highway and would replace the Chilkat River Bridge. This alternative was recommended in public and agency comments on the July 2013 EA.
- Alternative 4 is the No Action Alternative. The Haines Highway would not be upgraded and would remain in its existing alignment with 2-foot-wide shoulders on both sides of the highway. The existing Chilkat River Bridge would also not be replaced. As required by the Council on Environmental Quality guidance, the No Action Alternative must be carried forward in an EA and Environmental Impact Statement (EIS).

In addition to these highway upgrade alternatives, several Chilkat River bridge options were considered. One option was found to be the preferred option and was used in the development of the four highway upgrade alternatives (Alternatives 1, 2a, 2b, and 3).

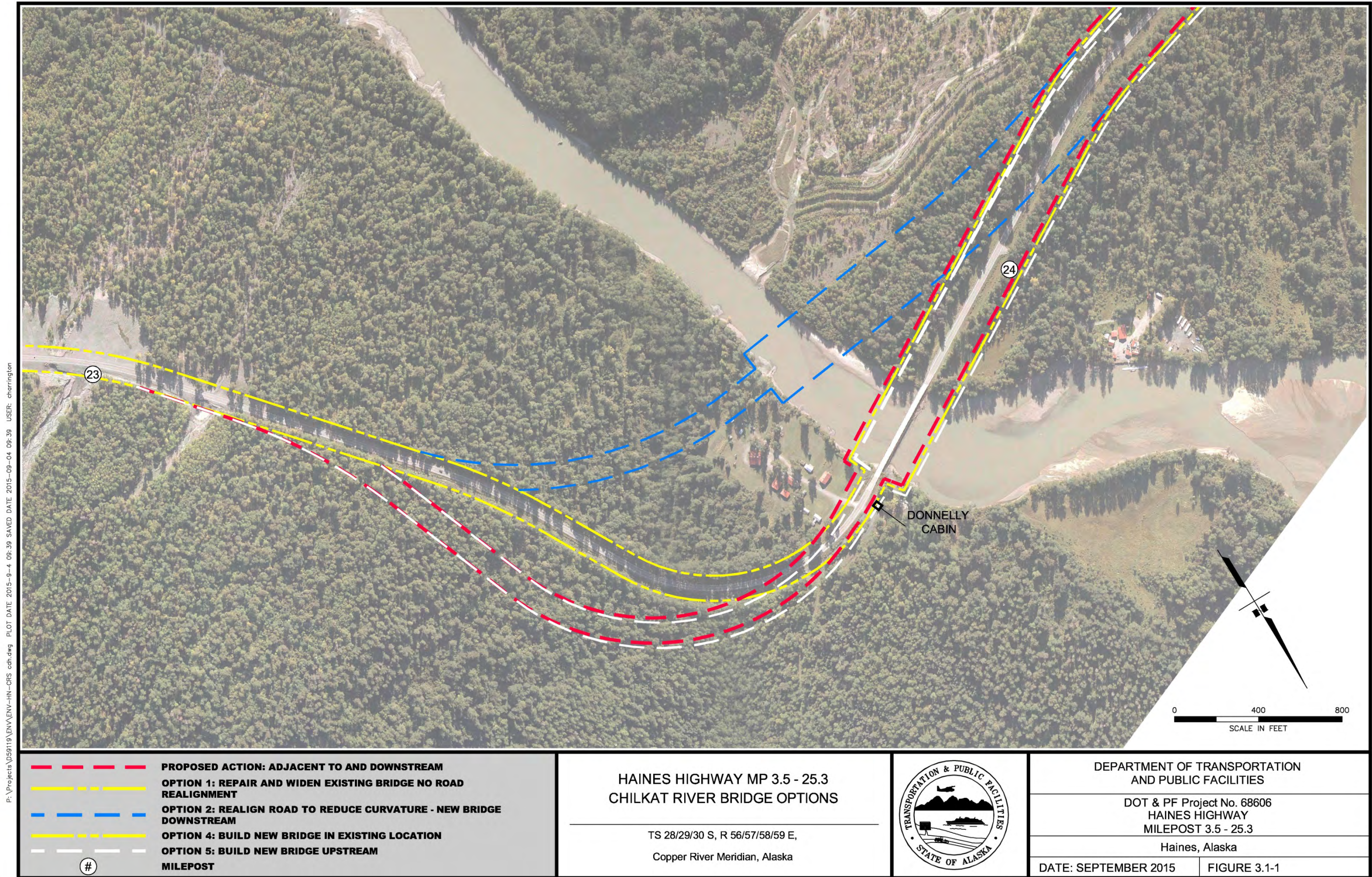
The following subsections provide:

- a description and analysis of bridge options and rationale for the selected option, and
- a description and analysis of Alternatives 1, 2a, and 3, and rationale for eliminating these alternatives from further consideration.

3.1 Chilkat River Bridge Options

As detailed in Section 2.0, Purpose and Need, the Chilkat River Bridge has multiple deficiencies. The construction options evaluated to correct those deficiencies include (Figure: 3.1-1):

- repair and widen the existing bridge (Option 1 in DOT&PF memo dated October 29, 2009 in Appendix C, Section 4(f)),
- rehabilitate the existing bridge and build an adjacent new bridge to provide two one-way traffic lanes (expanded Option 1 in DOT&PF memo dated September 8, 2010 in Appendix C), and
- construct a new bridge (Options 2, 3, 4, and 5):
 - downstream of the existing location and south of the developed lot next to the existing bridge (Option 2 in DOT&PF memo dated October 29, 2009 in Appendix C),



P:\Projects\059119\ENV\ENV-HN-CRS\cdh.dwg PLOT DATE 2015-09-04 09:39 SAVED DATE 2015-09-04 09:39 USER: cherrington

Figure 3.1-1: Chilkat River Bridge Options

(This Page Left Intentionally Blank)

- at the existing location (Option 4 in DOT&PF memo dated September 8, 2010 in Appendix C), and
- upstream of the existing location (Option 5 discussed below),
- downstream, but adjacent to the existing bridge (Option 3: Revised Proposed Action).

Under the “repair and widen” bridge option (Option 1), the existing bridge would be brought up to 55 mph design standards by widening the existing structure and by reconstructing and resurfacing the bridge deck. Reuse of the existing bridge would require widening and strengthening of existing piers to accommodate the wider structure. With the rehabilitation of the existing bridge requiring many new components, including railing, deck, exterior girders, pier caps, and pier piles, the construction cost is more expensive than a complete bridge replacement. In addition, upgrades to the existing bridge would not improve navigational clearances and would adversely affect the historical integrity of the bridge. Based on the above rationale, this option was not carried forward.

Creating two one-way bridges (couplet) by rehabilitating the existing bridge without widening it and building a new bridge adjacent to the existing bridge was also considered (modified Option 1). While technically feasible, this option has similar disadvantages as the “repair and widening” bridge option described previously. Based on similar rationale, this option was also not carried forward.

Construction of a new bridge is the option that was selected to move forward. The existing Chilkat River Bridge would be replaced with a new bridge with a design life of 75 years (AASHTO, 2013). Design standards for bridges require durability beyond highway design life to reduce long-term capital costs. It would be constructed to meet a 55 mph design speed (have a surface area that matches the Revised Proposed Action for Haines Highway) and meet current seismic design standards. To provide for potential future needs, the State of Alaska has decided to fund added costs so that the bridge would be built to accommodate freight vehicles carrying heavier freight loads than can be accommodated by standard bridge designs.

Four locations for the new bridge option were considered; two downstream locations (Option 2 and Option 3, the Revised Proposed Action), the existing bridge location (Option 4), and one upstream location (Option 5).

Two downstream bridge locations were considered; one approximately 820 feet south of the existing bridge (Option 2) and one directly adjacent to the existing bridge (Option 3) (see Figure 3.1-1). The location 820 feet south of the existing bridge would allow improved road alignment and minimize the number of in-river structures, but it was dismissed because it would impact an important subsistence fishing site and an eagle nest, and because it would require acquisition of Preserve land, a Section 4(f) protected resource. Since there are avoidance options, e.g. constructing directly adjacent to or in the same footprint as the existing bridge, Option 2, the farther downstream bridge option, was not carried forward.

Construction of a new bridge in the existing location (Option 4) was also considered but dismissed. This option would avoid or minimize the amount of additional ROW needed. However, costs associated with this option are greater because of the need to build a temporary detour bridge for traffic, a work structure, and the new bridge; essentially build three new bridges. Additional impacts to the Chilkat River would result from this option.

Constructing Option 5, the upstream option, presented several challenges. Upstream of the existing bridge are multiple properties that have been determined eligible for the NRHP, as well as land within the Preserve and the Haines State Forest that has public recreational uses as part of its land management plan. Some historic sites such as the Alaska Road Commission Buildings/Donnelly Cabin Site and public recreational sites are protected from being used in transportation projects under 23 United States Code (USC) 138 and 49 USC 303, commonly called Section 4(f). In general, if there is an avoidance option to using these resources, that avoidance option would be selected. Because there are options that avoid impacting these Section 4(f) resources, Option 5 was not carried forward.

The bridge option directly adjacent to and on the downstream side of the existing bridge (Option 3) has been selected to move forward as the Revised Proposed Action. Construction at this location allows continued use of the existing bridge during construction, requires a minimum of additional ROW, and avoids Section 4(f) property.

Appendix C, Section 4(f), of this FREA contains two memorandums from DOT&PF Statewide Design & Engineering Services Division/Bridge Section describing the bridge options considered and rationale for the selection of constructing a bridge adjacent to and downstream of the existing Chilkat River Bridge.

3.2 Haines Highway Alternatives Considered but Eliminated

Throughout the planning and development of possible highway upgrades between MP 3.5 and MP 25.3, the environmental sensitivity and protected resource constraints such as cultural resources and the Preserve were integral in the design concepts. Multiple variations of highway segment alignments were considered but not carried forward because of their potential for impacts that other alignments avoided or minimized. Following are the primary and comprehensive highway alternatives developed for consideration.

Alternative 1. The initial design concept for the Haines Highway MP 3.5 to MP 25.3 project was to bring the entire roadway up to AASHTO standards for a 55 mph design speed including 6-foot shoulders on both sides of the highway. Under this alternative, all curves would meet the geometric criteria for a 55 mph road. Furthermore, this alternative would provide passing zones in more than 70 percent of the roadway compared to the approximate 41 percent available with the existing roadway. While the project's purpose and need statement would be met by this alternative, it would also require major realignments, generate a large amount of excess material, result in increased potential effects to bald eagle perching and nesting activities, and have adverse effects to an important historic property.

Following consultations with FHWA, the e two substandard curves near MP 13. would be left as is, and the words "as practicable" were added to the purpose and need ("*bring the highway up to current design standards for a 55 mph design speed, as practicable...*"). Alternative 1 was not carried forward.

Alternative 2a. This is the alternative evaluated and documented in the July 2013 EA. This alternative would provide fewer passing zones than Alternative 1 but more than Alternative 2b. For example, availability of passing zones from MP 3.5 to MP 12 would increase to about 70 percent compared to the approximately 40 percent available today. This alignment has similar performance metrics as Alternative 1 except in the few areas where the curves are not improved.

Alternative 2a would meet the project's purpose and need statement and provide for an acceptable LOS for this type of highway. However, comments received from the agencies and public stated that some of the impacts of this alternative could be avoided by retaining more of the existing highway alignment. The July 2013 EA Proposed Action (Alternative 2a) has not been carried forward.

Alternative 3. Multiple comments were received requesting that the highway upgrades be based on a 50 mph design speed with 4-foot-wide shoulders on both sides of the highway to further minimize project impacts. Commenters asked that the existing highway alignment and curves be retained. Constructing the Haines Highway from MP 3.5 to MP 25.3 to a 50 mph design speed with 4-foot-side shoulders would:

- not be consistent with the adjacent segments of the highway, and
- not meet purpose and need because it would not bring the existing highway up to design standards for a 55 mph design speed, as practicable. This alternative would reduce the efficiency of the overall highway corridor function and use as discussed below.

The selection of a 55 mph design speed between Haines and the Canadian border is based on the inherent function and uses of this roadway. Haines Highway is a principal arterial highway linking Southeast Alaska with the intercontinental road network and is the primary surface transportation link between Southeast Alaska and Interior Alaska. AASHTO recommends that roads, with this functional classification for the type of terrain in this location, be designed for speeds in the 60-75 mph range (AASHTO, 2011 p. 448). Trips on these types of roads are typically longer trips with the majority of motorists traveling several miles or even tens of miles per trip. The design speed should be logical to the topography, anticipated operating speed, adjacent land use, and functional classification. Additionally, the design speed should fit the travel desires and habits of nearly all drivers expected to use Haines Highway. The classification of Haines Highway as a principal arterial, the rolling terrain, the relative few number of driveways and approach roads, and the operating speeds of motorists on the existing road all indicate that an appropriate minimum design speed is 55 mph.

Alternative 3 has similar operational performance as the no-build alternative and would not improve the proportion of available passing zones in the corridor from the existing 41 percent.

The alternative would also provide a shoulder width of 4 feet instead of 6 feet. The preferred minimum width for shoulders for a 55 mph low volume roadway is 6 feet (AASHTO, 2001). Note that, 1) To accommodate bicyclists, shoulder widths of greater than 4 feet are recommended if motor vehicle speeds exceed 50 mph, and 2) A shoulder width for bicyclists of at least 5 feet is recommended in highway sections with guardrail because bicyclists generally shy away from a guardrail face (AASHTO, 2012, p. 4-7).

Additionally, this alternative would vary highway width. Driving involves a perception of critical events in the future including a judgement of time-to-collision. Varying roadway width varies the perception of time-to-collision by diminishing driver expectancy of a constant road width creating driver anxiety; a contributing cause of crashes (Institute of Transportation Engineers, 1999).

For the reasons described above, Alternative 3 has not been carried forward. Section 4.0 of this FREA discusses and analyzes resources affected by Alternative 2b, the Revised Proposed Action.

(This Page Left Intentionally Blank)

4.0 ENVIRONMENTAL CONSEQUENCES

This chapter provides a description of the existing human and natural environment and analyzes the potential environmental consequences that could result from the Revised Proposed Action and No-Action Alternative. This is an issues-based EA, meaning that only those resources potentially affected are analyzed in this document. The following resources do not exist within the project corridor and are not analyzed in this FREA:

- Threatened and Endangered Species – No threatened or endangered species would be affected by this project. Most listed species in Southeast Alaska are marine species that would not be affected by the project. Although the project is within the range of the short-tailed albatross (*Phoebastria albatrus*), this species is a seabird and only comes ashore to breed. Breeding areas are only located on two islands in Japan (ADF&G, 2015).
- Farmlands - No prime farmland or farmland of state or local importance is located in the vicinity of the project (U.S. Department of Agriculture [USDA], 2010).
- Coastal Barriers - No Coastal Barrier Resources are located within Alaska (U.S. Fish and Wildlife Service [USFWS], 2010).
- Wild and Scenic Rivers - No designated state or federal wild and scenic rivers are in the vicinity of the project area (U.S. National Park Service [USNPS], 2010).

The following sections describe environmental consequences in terms of direct, indirect and cumulative impacts. Direct impacts are caused by the action and occur at the same time and place. Indirect impacts are reasonably foreseeable impacts caused by the action, but occur later in time or are further removed in distance. Direct and indirect impacts of the alternatives are discussed in each resource category section as are the avoidance and minimization efforts that have been incorporated into the Revised Proposed Action. Mitigation measures and environmental commitments associated with assessed resource impacts are also discussed by resource. Cumulative impacts result from the incremental effects of the action when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts are described in Section 4.21.

4.1 Land Use and Land Management Plans

4.1.1 Affected Environment

This section describes existing landownership, land use, and land use plans for the project area. Land uses in the project area include private residences, commercial properties, and public lands including the Preserve and the DNR Haines State Forest. This section introduces the Preserve while Section 4.2 describes the Preserve and its management plan in more detail.

Landownership - Table 4.1-1 identifies landownership within the Haines Borough. Less than 1 percent of the land in the Haines Borough is owned privately. The vast majority of the land is owned by the federal or state government, as shown in Figure 4.1-1.

Table 4.1-1: Haines Borough Landownership

Owner	Acres	Percent of Total
Tongass National Forest	916,354	54.6%
Haines State Forest	270,000	16.1%
Other State and Federal	224,178	13.4%
Mental Health Trust	159,493	9.5%
Alaska Chilkat Bald Eagle Preserve	49,000	2.9%
Other State Parks	19,209	1.1%
University of Alaska	14,952	0.9%
Native Allotments	11,930	0.7%
Private Ownership	10,424	0.6%
Haines Borough	2,260	0.1%
Total	1,677,800	100.0%

Source: Haines Borough, 2004.

This table does not include land within Klukwan, which is organizationally not part of the Haines Borough, but is surrounded by the Haines Borough. Much of the land within Klukwan is owned by the Chilkat Indian Village (CIV) or tribal members. Native allotments are also present in the study area outside Klukwan. These are part of Haines Borough.

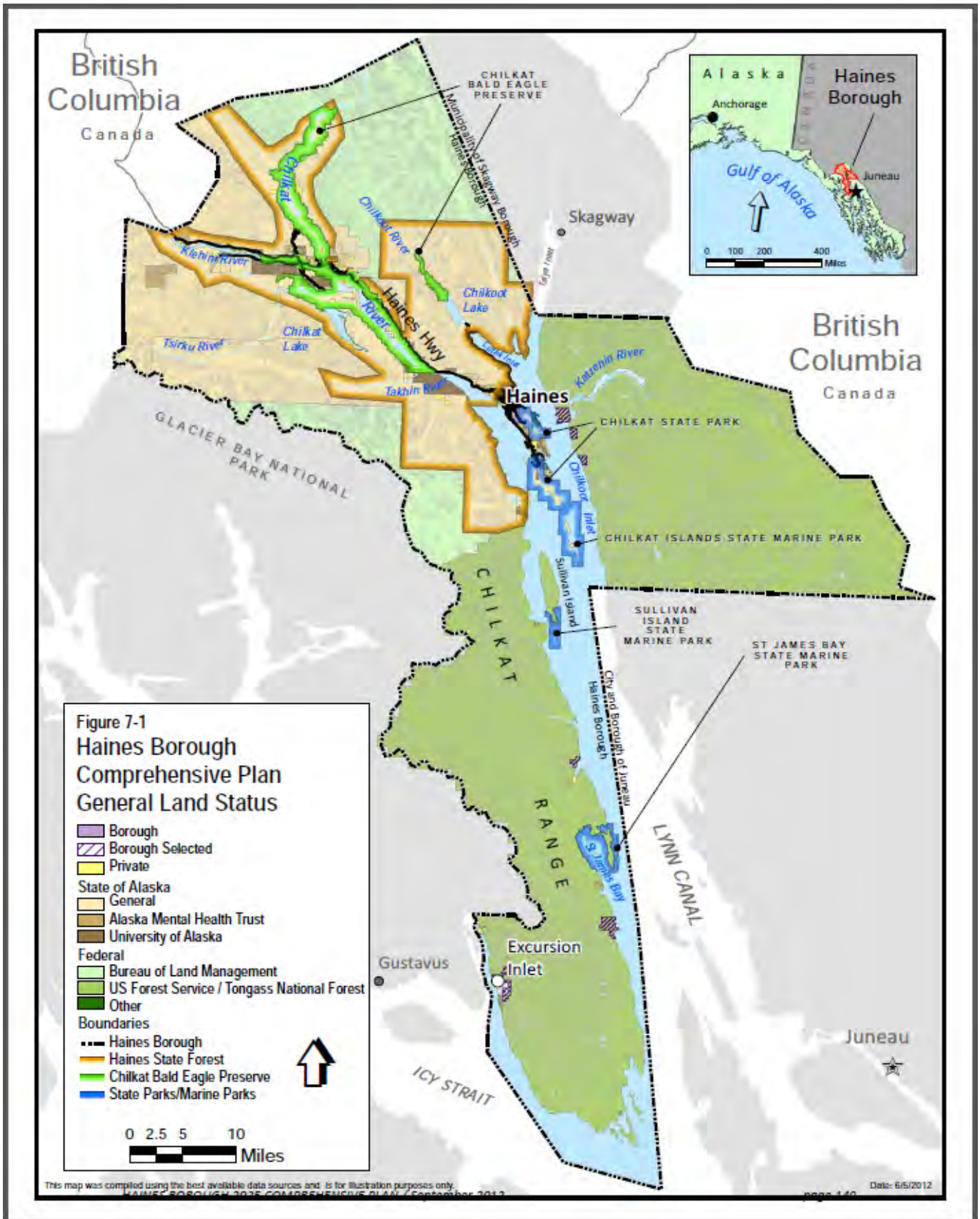


Figure 4.1-1: Haines Borough Comprehensive Plan General Land Status

The majority of the land in the project area is state owned: lands in the Preserve managed by the DNR DPOR, and lands in the Haines State Forest managed by DNR DMLW. The Chilkat River CHA of the Preserve is located at, and downstream of, the confluence of the Chilkat and Tsirku Rivers, and is managed by ADF&G to protect and preserve the natural habitat. The DNR DPOR also has jurisdiction because the CHA is part of the Preserve.

Associated land management plans are discussed below. In addition to these major landholders, parcels of land along the highway are owned by the University of Alaska and by the Alaska Mental Health Trust.

Chilkat Indian Village Constitution (adopted November 7, 2006) – The community of CIV consists of an area of approximately 1,900 acres. Klukwan, the name of the village, is taken from the Tlingit phrase “Tlakw Aan” which means “Eternal Village” or “The Village That Has Always Been.” The seven-member Tribal Council represents CIV in all undertakings to manage, promote, and control all the economic affairs and enterprises of the village. Pertinent to the Revised Proposed Action, the council is responsible for: village lands; contracts and agreements with federal, state, and local governments; protection of the natural environment and resources of the village; and the preservation, protection, and cultivation of their culture and customs. The Tribal Council decides about village land use plans and project developments. However, permanent disposition of tribal lands must be approved by the voting membership of CIV (CIV, 2014).

Currently CIV has no approved land use plan (See Appendix H, Comments and Coordination).⁸

Haines Borough Code (Haines Borough Code, Title 18, Land Use/Development) – All lands within Haines Borough are subject to the Borough's adopted land use policies and ordinances. Lands in the vicinity of the project area consist primarily of state lands used for recreation and other uses, as well as privately owned lands used for residences and commercial businesses. The study area is zoned General Use Planning/Zoning District under the Borough's land use and development code. This zoning allows for a broad range of land uses. Conditional use permits are required for uses such as landfills, power generation facilities, or hazardous materials storage.

⁸ Jamie Katzeek, email message to Jim Scholl, DOT&PF Environmental Analyst, April 22, 2015, included in Appendix H.

The Revised Proposed Action is consistent with provisions of the General Use Planning/Zoning District, as the Haines Highway is an existing use.

Haines Borough 2025 Comprehensive Plan (Haines Borough, 2012) – The Haines Borough Future Growth Maps identify the area along Haines Highway as rural settlement, which allows for low-density rural development. The plan identifies the need to improve the Haines Highway and the Chilkat River Bridge to handle industrial loads to allow the community to capitalize on its port infrastructure and serve as a transportation hub for development in the Yukon Territory and Interior Alaska. The plan also calls for improvements to the pullouts along the highway to improve public access to the river. The plan specifically identifies the Haines Highway improvements proposed in this project, including replacement of the existing highway bridge, as transportation improvement priorities. For the reasons stated, the Revised Proposed Action is consistent with the *Haines Borough 2025 Comprehensive Plan*.

Northern Southeast Area Plan (DNR DMLW, 2002b) – This plan was developed concurrently with the *Chilkat Bald Eagle Preserve Land Management Plan* (see Section 4.2, Alaska Chilkat Bald Eagle Preserve) and the *Haines State Forest Management Plan* because the management areas share common boundaries. The *Northern Southeast Area Plan* provides guidance for multiple uses of state lands but does not provide guidance for transportation systems. The plan’s management intent is to maintain recreational opportunities and wildlife habitat for the area. DOT&PF lands are specifically excluded from the plan (DNR DMLW, 2002b, p. 11).

Haines State Forest Management Plan (DNR DMLW, 2002c) – The *Haines State Forest Management Plan* identifies preferred uses for forest lands and policies for managing these uses, emphasizing management flexibility. Transportation projects within the forest must comply with the State of Alaska Forest Resources and Practices Act and its regulations, including use of Best Management Practices (BMPs). The Revised Proposed Action would be constructed in accord with and would use approved BMPs under the State of Alaska Department of Environmental Conservation (DEC) Alaska Construction General Permit (DEC 2011). For this reason, the Revised Proposed Action is consistent with *Haines State Forest Management Plan*.

Let’s Get Moving 2030, Alaska Statewide Long-Range Transportation Policy Plan (DOT&PF, 2008) – *Let’s Get Moving 2030* is a policy plan that guides state transportation policies, programs, and investments in Alaska. The first policy identified in the plan calls for developing a

multimodal transportation system which provides safe, cost-effective, and energy-efficient accessibility and mobility for people and freight.

Other relevant policies address systems development to support economic development; provide access to local, national, and international markets; and increase the safety of the state transportation system. Although this policy plan does not list specific projects, the Revised Haines Highway MP 3.5 to MP 25.3 project is consistent with *Let's Get Moving 2030, Alaska Statewide Long-Range Transportation Policy Plan*.

Southeast Alaska Transportation Plan (DOT&PF, 2004) – The Haines Highway is considered an essential corridor for community connectivity within the State of Alaska. The *Southeast Alaska Transportation Plan (SATP)* recognizes the importance of the Haines Highway and calls for continued maintenance and improvements. The SATP recommends that future transportation projects incorporate improvements for visitors such as turnouts, restroom facilities, and pedestrian pathways. It notes that developed and improved transportation systems throughout Southeast Alaska are critical to promoting a strong and healthy economic climate in the future. The Revised Proposed Action is consistent with the goals and objectives of the SATP.⁹

Haines Highway Corridor Partnership Plan (Haines City and Borough, 2007) – This advisory partnership plan was developed for local byway planning purposes under FHWA's National Scenic Byways Program.¹⁰ The plan suggests that future highway projects incorporate improvements for visitors such as scenic lookouts, interpretive opportunities, bicycle and pedestrian amenities, trailheads, and improved signage. The plan's goals are to ensure that the highway's special qualities and access to special sites are maintained. The waysides, bicycle and pedestrian amenities, trailhead, and interpretative signage in the Revised Proposed Action were developed as shown in the HHCPP. An additional public access point is proposed near MP 20.5, a section of highway that would be abandoned after the road is realigned. This is in a prime eagle use area and would provide an added safe location for vehicles to park away from the travelled way and for the public to view eagles.

⁹ The draft 2014 SATP is available at <http://dot.alaska.gov/sereg/projects/satp/index.shtml>.

¹⁰ The Scenic Byways Program is an advisory program with DOT&PF as the State Scenic Byways Agency.

The most important natural intrinsic resources along Haines Highway listed in the HHCPP are the Chilkat River and the Preserve. Fill in the Chilkat River has been avoided to the extent practicable and completely avoided in the CHA within the Preserve. Riverbanks that would be filled and stabilized with riprap would be revegetated upon completion of the project.

There would be temporary changes in the visual characteristics of the river bank but once vegetation is reestablished, the riverbanks would look the same as they currently do.

The most important intrinsic cultural quality along Haines Highway listed in the HHCPP is the story of the Tlingit people. All practicable measures to protect cultural resources and historic properties have been incorporated in the Revised Proposed Action in compliance with the National Historic Preservation Act (NHPA).

The Revised Proposed Action provides improved access for bicyclists; improved parking for the Mt. Ripinski trail; and improvements to the surface transitions between the highway and turnouts and parking areas, which access fishing, rafting, camping, and wildlife viewing. All are important recreational intrinsic qualities of the Haines Highway corridor listed in the HHCPP. Widened shoulders, improved access to the river, and a new parking area for the Mt. Ripinski trail are aspects of the HHCPP that would be met if the Revised Proposed Action is built.

For the reasons listed above, the Revised Proposed Action is consistent with the HHCPP. Based on the HHCPP, FHWA has designated the Haines Highway within Alaska a Scenic Byway. The proposed project would not jeopardize the Haines Highway Scenic Byway designation.

Chilkat Bald Eagle Preserve Management Plan (DNR September 2002) – The Alaska State Legislature established the Preserve in 1982 (Alaska Statutes [AS] 41.21.610 - 630) and required the development of a Preserve Management Plan (AS 41.21.620). A cooperative effort by ADF&G, DNR DMLW Resource Assessment & Development Section, and DNR DPOR created that Preserve Management Plan, and it was approved and released to the public in September 2002. While the primary goals of the Preserve Management Plan are the preservation of bald eagles and salmon habitat, the statute establishing the Preserve also recognizes the importance of transportation and utilities. The statute specifically states that “...existing transportation and utility corridors located partially or completely within the Alaska Chilkat Bald Eagle Preserve are excluded from the Alaska Chilkat Bald Eagle Preserve” (AS 41.21.612(a)).

The Haines Highway transportation and utility corridor is an adjacent property to the Preserve for almost the entire length of the proposed project, and near MP 17 the transportation and utility corridor is bordered on both sides by the Preserve.

The realignment of the Haines Highway would require the acquisition of ROW from the border of the Preserve, and would result in the relinquishment of ROW into the Preserve. The statute authorizes the director of DNR DPOR to exchange ROW necessary for the project “subject to reasonable regulation and stipulations” (AS 41.21.619).

The Revised Proposed Action is consistent with the goals and objectives of the Preserve Management Plan. This plan is discussed further in the FREA Section 4.2, Alaska Chilkat Bald Eagle Preserve and Section 5.0, Section 4(f) Evaluation.

The Revised Proposed Action is also consistent with objectives of the Preserve Management Plan:

- all fill in the Chilkat River within the Preserve and CHA has been avoided, and
- 0.92 acre of Preserve land previously proposed to be permanently acquired has been avoided.

4.1.2 Environmental Consequences

Revised Proposed Action - The Revised Proposed Action is consistent with existing state and local land use plans summarized in this section. Highway and bridge improvements would meet specific local and regional transportation plans.

A discussion of the environmental consequences to the Preserve is included in Section 4.2.

Land use in the majority of the project area would remain unchanged because most of the proposed improvements would take place within DOT&PF’s existing ROW. Additional ROW would be required (see Section 4.3, Right-of-Way).

Property acquisition from most landowners consists of either narrow strips along the highway frontage or wider swaths of land needed for highway realignments. The substantive acquisitions would occur in four locations:

- At Milepost 17, the Revised Proposed Action would acquire 3 acres from the Preserve. Approximately 6.2 acres of ROW immediately adjacent to the acquisition acreage would be relinquished to the Preserve. The old highway pavement would be removed and the area revegetated. (see Section 4.2).
- At Milepost 17.5, an estimated 3.8 acres of privately owned land is needed for a new aligned ROW. The existing highway ROW would be retained to accommodate and support existing utilities. Culverts will be removed from the utility ROW (the old highway/utility ROW) to help return the adjacent stream to a more natural flow. Land between the old and new ROW would be acquired and placed in a conservation easement to protect the stream and wetlands in this location. A portion of the existing highway pavement would be removed to re-establish wetland connections, but sections of the existing highway pavement will need to remain intact to provide access to adjacent properties.
- At Milepost 20.5, approximately 3.8 acres would be acquired from the CIV. The abandoned highway is proposed to be turned into a new public turnout and Preserve access at a location known to be a prime eagle perching and foraging Chilkat River site.
- Between Milepost 23 and the Chilkat River Bridge, an estimated 7.2 acres are proposed to be acquired for the proposed realigned approach to the new Chilkat River Bridge. DOT&PF is proposing to relinquish the existing ROW to the owners of the underlying land, remove the existing highway pavement and returning that land to natural vegetation.

Potential effects from ROW acquisition and resolution of ROW encroachments are discussed in Sections 4.3, ROW and 4.4, Encroachments.

Indirect impacts related to land use and development are expected to be negligible because the proposed project would not change travel routes or open access to any formerly inaccessible areas.

No-Action Alternative – The No-Action Alternative would have no effect on landownership or use patterns in the study area. This alternative would not be consistent with the local comprehensive plan, the HHCPP, and the SATP which call for improvements to the highway, bicycle and pedestrian amenities, and replacement of the bridge.

4.1.3 Avoidance, Minimization, and Mitigation Measures

The Revised Proposed Action would avoid and minimize changes in land use to the extent practicable.

Avoidance measures are:

- no fill in the Chilkat River within the Preserve and CHA,
- selection of realignment areas that avoid property acquisitions to the extent practicable,
- adjustment of realignment areas to avoid acquisition of 0.9 acre of Preserve land previously proposed to be permanently acquired,
- maintenance or improvement of existing public access to the Chilkat River, the Preserve, and the Haines State Forest, and
- maintenance of public access avoids impacts to tourism by providing a clean, well maintained, and consequently inviting parking areas and pedestrian paths. Tourism is an increasing economic sector (State of Alaska Department of Labor and Workforce Development [DLWD], 2010), and as such may have associated land development. Tourism associated land use is encouraged by the Borough comprehensive plan and the HHCPP.

Minimization measures are:

- development of a project that is consistent with the applicable land use plans, and
- design of realignment areas to minimize land use acquisitions to the extent practicable.

Land use impact mitigation would be the relinquishment of DOT&PF ROW to the Preserve to offset impacts from proposed acquisitions of Preserve land (see Figure 5.1-2 and Section 4.2, Alaska Chilkat Bald Eagle Preserve).

4.2 Alaska Chilkat Bald Eagle Preserve

4.2.1 Affected Environment

In 1973, the Alaska Legislature established a 4,800-acre CHA and gave ADF&G the authority to manage the habitat associated with the large concentration of bald eagles in this area (AS 41.21.610 – 41.21.630) (see Appendix C, Section 4(f)). In 1980, a three-year research study provided the basis for establishing the now nearly 50,000-acre Preserve (Figure 4.2-1) including the CHA. The Haines Highway, including the Revised Proposed Action corridor, provides primary access to the Preserve and its features. These features include turnouts and waysides for the viewing of bald eagles in perching, roosting and nesting trees. The fall and winter seasons see one of the largest concentrations of bald eagles in the world as they gather to feed on late-spawning salmon in the Chilkat River. To better understand the purpose of the Preserve, a discussion of bald eagles is provided in this section.

The Preserve, which is owned by the State of Alaska and co-managed by the DNR DPOR and ADF&G, was established to protect and perpetuate Chilkat bald eagles and their essential habitat within the Preserve (AS 41.21.620; DNR DMLW and DNR DPOR, 2002a). As specified in the statute (AS 41.21.610 (b)), the Preserve is also established to:

- (1) protect and sustain the natural salmon spawning and rearing areas of the Chilkat River and Chilkoot River systems within the preserve in perpetuity;*
- (2) provide continued opportunities for research, study, and enjoyment of bald eagles and other wildlife;*
- (3) ensure, to the maximum extent practicable, water quality and necessary water quantity under applicable laws;*
- (4) provide for other public uses consistent with the primary purpose for which the Alaska Chilkat Bald Eagle Preserve is established; and*
- (5) provide an opportunity for the continued traditional and natural resource based lifestyle of the people living in the general areas described in AS 41.21.611 (b), consistent with the other purposes of this subsection and (a) of this section.*

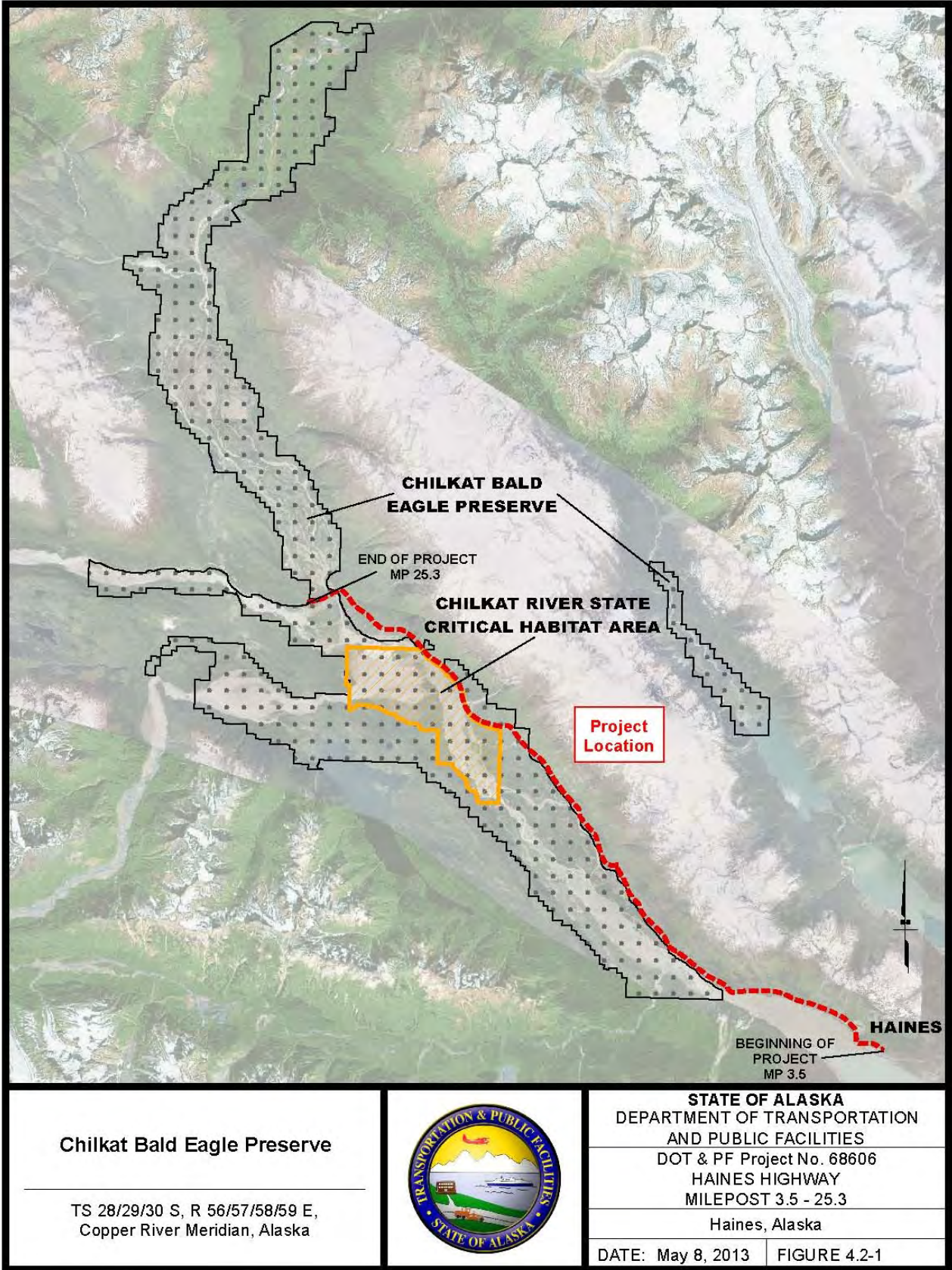


Figure 4.2-1: Alaska Chilkat Bald Eagle Preserve

The Preserve Management Plan (DNR DMLW and DNR DPOR, 2002a) defines management intent and develops rules or guidelines to ensure that the many uses allowed by the enabling legislation can occur with minimal loss or conflict with the primary habitat values.

ADF&G has jurisdiction over the fish and wildlife habitat of the Preserve including a specified 4,800-acre CHA within the Preserve (a section of Chilkat River from the mouth of the Tsirku River south to a line approximately across from MP 17) (Figure 4.2-1). This CHA was established in 1973 and was the first official recognition of the concentration of fall and winter bald eagles and the special conditions that supported the salmon runs that draw the eagles to this location.

Unlike most state lands that are managed for multiple uses, the Preserve is managed by DNR and ADF&G for those specific purposes listed in the Preserve's governing statute. Management is focused on the protection of bald eagles and their associated habitat, as well as the spawning and rearing areas of the anadromous streams that provide food for the bald eagle population. The Preserve Management Plan identifies five management units, two of which are crossed by the project corridor: the Bald Eagle Council Grounds Management Unit (Council Grounds) and the Haines Highway and Adjacent Lands Management Unit. The area along Chilkat River, southeast of the community of Klukwan, is referred to as the Council Grounds.

While the goals of the Preserve Management Plan are the preservation of bald eagles and salmon habitat, the statute establishing the Preserve also recognizes the importance of transportation and utilities. The statute specifically states that “...existing transportation and utility corridors located partially or completely within the Alaska Chilkat Bald Eagle Preserve are excluded from the Alaska Chilkat Bald Eagle Preserve” (AS 41.21.612(a)). The Preserve Management Plan states that the existing transportation corridor includes the Haines Highway and other roads recognized and maintained by DOT&PF. Other existing roads, such as logging roads and trails, are not excluded from the Preserve.

The boundary of the Preserve abuts the riverside of the Haines Highway ROW between MP 8.3 and MP 16.8 and between MP 20.2 and MP 21.5. The ROW divides the Preserve property between MP 16.8 and MP 20.2 and MP 23.6 to MP 24 (Figure 4.2-1).

DNR DPOR and DOT&PF signed a Cooperative Agreement in 1987 to cooperatively develop and manage the road system adjacent to and within the Preserve (DOT&PF and DNR, 1987). The agreement calls for collaboration between the agencies on highway alignment, pull-offs, signage, and other road design and construction matters. DNR DPOR and DOT&PF have coordinated on the Haines Highway MP 3.5 to MP 25.3 project under the requirements of the 1987 Cooperative Agreement for over 10 years (see Appendix A, Coordination with DNR on Turnout Improvements).

The Preserve is a publicly owned wildlife refuge and is a designated Section 4(f) property. It is protected under 23 USC 138 and 49 USC 303. Section 5.0 of this FREA contains the final Section 4(f) evaluation and supporting documentation.

Environmental Characteristics of the Preserve - Natural features within the Preserve include bald eagle perching, roosting and nesting habitat, the Chilkat River, clear tributary streams, forests, and spectacular views of mountains. The CIV is adjacent to the Preserve between MP 21.5 and the Chilkat River Bridge and is named Klukwan. “The name Klukwan is taken from the Tlingit phrase "Tlakw Aan" which literally means "Eternal Village," or "The Village That Has Always Been” (<http://chilkatindianvillage.org/>). Tlingit peoples have lived in the Chilkat and Chilkoot River Valleys for centuries. Cultural and traditional uses include continuing subsistence and traditional activities (sharing traditional knowledge, fishing, gathering, and hunting) by Native peoples.

The Takshanuk Mountains form the eastern boundary of the Chilkat River Valley and are the source of the continuing deposition of material forming large alluvial fans along the eastern boundary of the Preserve such as found at MP 19 (also known as 19 Mile.) For thousands of years, the debris has flowed down the mountains and much enters into the Chilkat River; this continues to this day in several locations. The active debris flow at 19 Mile continues to contribute sands and gravels into the CHA of the Preserve. Some of that material settles out on Haines Highway and must be removed to keep the highway open. According to M. Boron, DOT&PF Maintenance and Operations (M&O) Chief in Haines, one-half to two-thirds of the

slide material enters the CHA of the river at 19 Mile with the remaining material covering the highway.¹¹

Activity-related features include highway turnouts for access to the river and other areas of the Preserve, boat launches, and picnic and hiking areas. Many of these features have been established by frequent public use rather than any DOT&PF or DNR construction projects; the Preserve has little development. Common public activities within the Preserve include boating, sightseeing, wildlife viewing, camping, hiking, picnicking, fishing, and hunting. The turnouts along Haines Highway used for access to the Preserve, wildlife viewing, and other Chilkat River access are all within the DOT&PF ROW. A more detailed discussion of these turnouts is contained in the Recreation subsection of Section 4.6, Social Conditions and Environmental Justice. A more detailed description of fish habitat is in Section 4.15 and additional information about wildlife other than bald eagles is in Section 4.16.

Bald Eagles - Approximately 200 to 400 bald eagles are year-round residents within the Preserve, and populations can swell to over 2,000 bald eagles during fall congregations. Bald eagles are attracted to the area because of the availability of salmon and open waters in late fall and winter. The public is attracted to the area during the eagle congregation to view and photograph eagles. The Chilkat River flats along Haines Highway between MP 18 and MP 21 are the main viewing area for eagle watchers (DNR DMLW and DNR DPOR, 2002a). This area corresponds with the Chilkat River CHA, also known as the Bald Eagle Council Grounds or just Council Grounds.

Eagle habitat and spawning salmon are the primary reason the Preserve exists. Habitat used by eagles in the Preserve include tall nesting, perching, and roosting trees along the river banks, as well as log debris and sand bars for perching within the river proper. This habitat can be found throughout the 50,000-acre Preserve but, in the fall and winter, eagles concentrate in the Council Grounds area.

USFWS and DOT&PF staff surveyed bald eagle nest locations along the project corridor by helicopter in 2006, 2009, and 2014 as part of the research needed to assess the impacts possible

¹¹ M. Boron, DOT&PF M&O Chief in Haines, conversation with J. Gendron, DOT&PF SCR Environmental Manager on April 8, 2015.

with the Haines Highway MP 3.5 to MP 25.3 project. The latest survey, conducted in late March 2014, documented 45 bald eagle nests in the project area (within a 0.5-mile radius of the centerline of the Haines Highway). Figure Set C (Bald Eagle Perching Sites and Nest Locations) shows the location of nests and the 330-foot, 660-foot, and 0.5-mile radius for each one.

In the fall of 2013 and 2014, in response to public and agency comments and to better understand impacts to foraging eagles during the seasonal eagle congregation, the consulting firm ABR, Inc.-Environmental Research & Services (ABR) was contracted to conduct studies on bald eagles' use of the Haines Highway project area and the potential for impacts related to the Revised Proposed Action between MP 3.5 and MP 25.3. Observations of perching and roosting eagles directly adjacent to the Haines Highway began in mid-October and continued through December 5, 2013 (ABR, 2014). A second eagle perching survey was conducted from October 14 to December 18, 2014 (ABR, 2015). The scope of the 2013 study included a literature search of historic information about bald eagles along the highway (particularly in the Council Grounds from about MP 18 to MP 21). ABR also assessed the potential for impacts to eagles during construction and after construction of the upgraded highway. The February 2014 report is summarized below and can be found in Appendix G, Bald Eagle Research, Consultation and Coordination, of this FREA. The additional fall 2014 survey data is also reported below and contained in Appendix G.

The peak of bald eagle abundance reported during the fall and early winter of 2013 was consistent with historic and other current information for the Chilkat River Valley eagle use. ABR reported that, while seasonal and yearly numbers are variable, bald eagles “*were most abundant and concentrated in the Council Grounds between October and late December when late-spawning chum salmon were most available in this reach of the river*” (ABR, 2014). Figure 4.2-2, taken from the ABR report, is a composite depiction of the commonly used perch sites surveyed by ABR within the Council Grounds. Figure Set C also shows common perch sites observed by ABR and bald eagle nests within the Council Grounds.

According to ABR, the abundance of bald eagles using the area in 2014 appeared to be fewer than reported during the 2013 perching survey (ABR, 2015). The distribution of eagles was similar between the two studies; about 90 percent of the perching eagles found were in the vicinity of the Council Grounds.

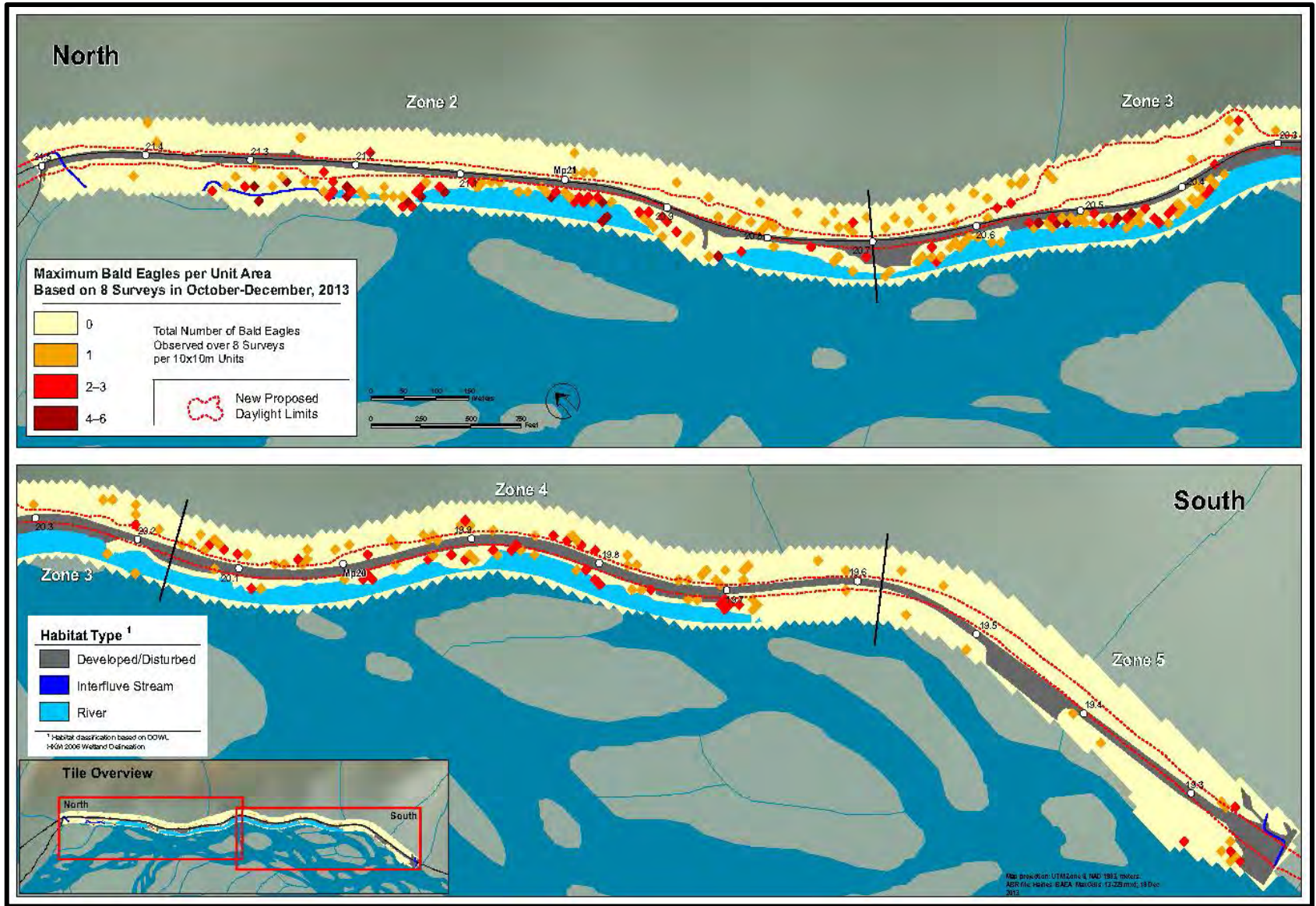


Figure 4.2-2: Perch Sites within Council Grounds (MP 18-MP 21)

Communal roosting trees are large trees, typically conifers, where eagles congregate during the night or during severe weather for protection. Work done by Hansen, et al. (1984) found communal roosting areas on the west side of the Chilkat River, southwest of Klukwan (as reported by ABR, 2014, Figure 3, included in Appendix G). The ABR scope of work did not include identifying communal roosting trees during their study. Available literature and ongoing satellite-tracking survey data were reviewed. Team observation of nocturnal roosting was limited, but they did observe some eagles remaining in the trees in or adjacent to the ROW at night.

4.2.2 Environmental Consequences

Revised Proposed Action - Approximately 17 miles of the Revised Proposed Action are adjacent to the Preserve. This section discusses the potential direct and indirect impacts to the Preserve from implementation of the Revised Proposed Action elements to and within proximity to the Preserve.

The Revised Proposed Action elements that may directly affect the Preserve are: 1) the permanent acquisition of approximately 3 acres of the Preserve at MP 17, and 2) the cutting of large trees within that same land acquired from the Preserve, which could currently be used by perching eagles (see Figure 4.2-3). Clearing trees and vegetation to realign and improve an existing highway, and removing old pavement and revegetating the former highway alignment, are common highway construction activities. The proposed clearing of trees and vegetation at MP 17 is currently within a wildlife preserve, which presents an uncommon context for common highway construction activities. However, the specific location of the clearing activities at MP 17 will occur over 500 feet away from the Chilkat River. Eagles were observed perching in the area and perching trees in the area proposed to be acquired from the Preserve would be cut. However, there is an abundance of suitable perching trees in the area that would be unaffected by the clearing and the former highway alignment would be revegetated to provide additional eagle perching opportunities in the future.

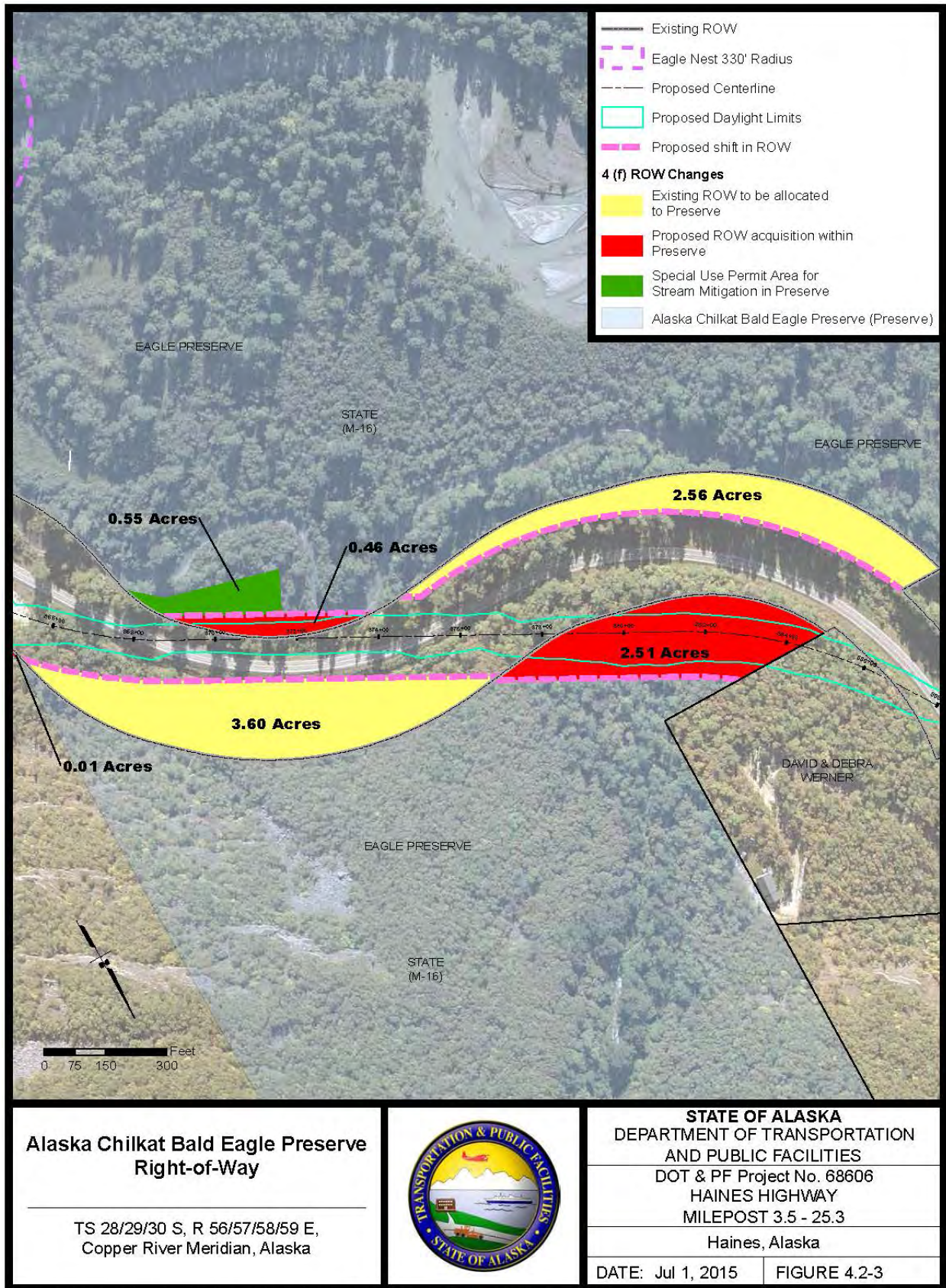


Figure 4.2-3: Alaska Chilkat Bald Eagle Preserve Right-of-Way

The Revised Proposed Action consists of elements that may indirectly affect the purposes associated with the establishment of the Preserve as described in Section 4.2.1. These elements include:

- Rock cuts, tree cutting, other vegetation clearing, and grubbing within the highway ROW to provide for realignments and line of sight. Approximately 85 acres of land in the highway ROW adjacent to the Preserve would be cleared.
- Straightening the roadway in selected locations along the 17 miles adjacent to the Preserve and widening the roadway with the addition of 6-foot-wide shoulders to both sides of the highway.
- Realigning streams directly adjacent to the highway to be farther away from the highway. Additional enhancements would be made to improve fish habitat in these stretches of relocated streams, as detailed in Section 4.15, Fish.
- Improving drainage and upgrading or adding culverts. Twelve culverts would be upgraded across the highway adjacent to the Preserve.
- Upgrading the road's surface transition between the highway and turnouts used to access recreational opportunities in the Preserve. Closing three unsanctioned turnouts (HNS 10, 11, and 18 shown in Appendix A and listed in Table 4.6-1) would discourage garbage dumping and other negative activities. Adding one new public access area at MP 20.5, where the highway realignment would allow for use of the abandoned roadway as an access and parking area. A detailed listing of access points and the Revised Proposed Action is in Table 4.6-1.
- Placing riprap along the banks of the Chilkat River (3,067 linear feet) for road stabilization.
- Elevating the highway above the existing roadway to protect the highway from debris flows at MP 19 and MP 23.
- Constructing a new Chilkat River Bridge.

Additionally, the project would construct stream enhancements within the Preserve as partial mitigation for project impacts. DOT&PF would obtain a special use permit from DNR for temporary access to the Preserve for these stream enhancement activities (see Figure Set B). The

Revised Proposed Action potential direct and indirect impacts to resources within the Preserve are described below.

Direct Impacts –

Land acquisition from the Preserve

Straightening the “S” curve at MP 17 as proposed in the Revised Proposed Action would require the acquisition of approximately 3 acres of the Preserve (see Figure 4.2-3 and Figure Set A, Sheets 21 and 22). DOT&PF would acquire forested and wetland habitat on either side of the highway in order to straighten and widen the highway.

Within these acquired lands, sufficient terrestrial vegetation would be cleared and grubbed to accommodate the realigned highway, the areas would be filled, and the road and/or embankment constructed. These lands are outside the CHA and Council Grounds, do not have eagle nest trees, and have no established public access or parking. Several eagles were observed to be perching in trees in this area during the fall 2013 survey. Those perching trees could be cut.

Also, 1.9 acres of Preserve would be temporarily used to construct proposed stream mitigation activities (Figure Set B). This is discussed below under Section 4.2.3, Avoidance, Minimization, and Mitigation Measures. Also discussed below in Section 4.2.3 is the proposed relinquishment of ROW adjacent to the Preserve land proposed for acquisition. ADF&G assessed the comparative value of the two areas and found: “*The fish and wildlife habitat values in the ROW relinquishment and CBEP¹² acquisition parcels are similar. The exchange provides additional CBEP acreage and would allow highway realignment to minimize fill in Stream No. 115-32-10250-2060-3012 and 18 Mile Slough.*” (K. Kanouse, ADFG, memorandum to J. Gendron, DOT&PF, dated February 18, 2015. See Appendix C).

Indirect Impacts –

Bald eagles and their habitats are addressed in this section following a discussion of indirect impacts related to other goals of the Preserve.

Other Alaska Statute-defined Preserve Goals. As discussed in Section 4.2.1, the Preserve's primary purpose is to protect and perpetuate the world's largest concentration of bald eagles and

¹² CBEP is another acronym for the Chilkat Bald Eagle Preserve.

their essential habitats within the Preserve (AS 41.21.610 (a)). There are five additional reasons the Preserve was established including protecting salmon habitat, providing for continued research and enjoyment of bald eagles, providing public uses, ensuring water quality and quantity, and protecting a lifestyle based on traditional uses of natural resources (see Section 4.2.1). This section discusses within Table 4.2-1 the potential for the Revised Proposed Action to indirectly affect the five additional purposes associated with the establishment of the Preserve.

Table 4.2-1: Potential Revised Proposed Action Compliance with Other Preserve Goals

Goals [AS 41.21.610 (b)]	Revised Proposed Action Indirect Effects
<p>1. Protect and sustain the natural salmon spawning and rearing areas of the Chilkat River and Chilkoot River systems within the Preserve in perpetuity.</p>	<p>Most of the effects to the Chilkat River and its tributaries would be in areas outside of the Preserve and thus result in indirect effects to the Preserve and its goals. As described below under Avoidance, Minimization, and Mitigation Measures, there are four areas within the Preserve where DOT&PF proposes to enhance salmon spawning and rearing habitat. Natural features would be enhanced by adding tributary sinuosity, shifting tributaries away from the road so they can regain natural functions and stabilizing banks where erosion is affecting stream water quality. Some Chilkat River banks in the ROW adjacent to the Preserve would be hardened by vegetated riprap. Most of these banks are already vegetated riprap (See Appendix A – <i>EFH Impacts</i> in Appendix F, <i>EFH Assessment</i>). While bank hardening would not affect salmon spawning or rearing areas in the Preserve, it could have an indirect impact on a resource (salmon) that is important to both the bald eagle population within the Preserve and people living in the general area with subsistence and natural resource based lifestyles.</p> <p>Additional salmon habitat would be established at locations selected through consultation with ADF&G, USFWS, and NMFS. See Section 4.15, Fish, for more details.</p> <p>Twelve (12) anadromous fish culverts across the highway adjacent to the Preserve would be upgraded to improve fish passage. One culvert would be removed and the stream returned to more natural conditions. Riparian habitat would return to that stream’s banks. These elements of the Revised Proposed Action would have an indirect beneficial impact on a resource (salmon) important to bald eagles population and people with subsistence and natural resource based lifestyles.</p>

Table 4.2-1: Potential Revised Proposed Action Compliance with Other Preserve Goals

Goals [AS 41.21.610 (b)]	Revised Proposed Action Indirect Effects
<p>2. Provide continued opportunities for research, study, and enjoyment of bald eagles and other wildlife.</p>	<p>Since the Preserve is largely accessed via the DOT&PF ROW, elements of the Revised Proposed Action adjacent to the Preserve (such as vegetation clearing, filling, and modifying the vertical or horizontal alignment of the highway) have the potential to change access to the Preserve and indirectly affect opportunities for research, study, and enjoyment of bald eagles and other wildlife. Some of the eagle perching trees would be cut within the ROW adjacent to the Preserve as well as in the ROW acquired from the Preserve; no eagle perching trees would be cut within the Preserve. Removing perching trees from the ROW may cause bald eagles to move farther from locations now accessible to people who want to enjoy bald eagles.</p> <p>All sanctioned access points to land within the Preserve would be maintained and one additional turnout is proposed within the Council Grounds (MP 20.5) that would add a safe location for the enjoyment of eagle observations and photography. DOT&PF and USFWS are working on opportunities to mitigate for the loss of those trees cut within the ROW. There would be no change in opportunities for research and study.</p> <p>Some of the eagle perching trees would be cut within the ROW adjacent to the Preserve as well as in the ROW acquired from the Preserve; no eagle perching trees would be cut within the Preserve</p> <p>The fish wheel sites used by ADF&G for monitoring the strength of salmon returns would be improved and additional fish wheel locations would be added at ADF&G’s request.</p>
<p>3. Ensure to the maximum extent practicable water quality and necessary water quantity under applicable laws.</p>	<p>The project would not affect water quality. Since segments of the Revised Proposed Action would occur directly adjacent to the Preserve, ground disturbing construction elements such as clearing and grubbing, excavation, and filling create the potential for storm water to discharge to nearby waterbodies and could indirectly impact water quality in the Preserve. In accordance with the Alaska Construction General Permit, water quality BMPs would be employed during construction to avoid and minimize water quality impacts. Disturbed ground would be stabilized as soon as practicable to provide both short-term and long-term water quality protection.</p> <p>The project is being designed to provide stable banks along the Chilkat River and its tributaries to ensure water quality.</p> <p>However, the Revised Proposed Action at the debris slide area at MP 19 would elevate the roadway in order to keep the highway open during and after debris slide events. Large box culverts would be installed to allow slide debris and associated water to flow more naturally into the Chilkat River. These slides contain large amounts of silt, sand, and gravel, as well as larger rocks. Water quality during a slide event is expected to have high suspended solids as slide debris enters the river. Water quality would not be degraded by high organic or artificial</p>

Table 4.2-1: Potential Revised Proposed Action Compliance with Other Preserve Goals

Goals [AS 41.21.610 (b)]	Revised Proposed Action Indirect Effects
	<p>pollutants during these events. The Chilkat River is a glacial fed river with seasonally high turbidity. The increase in turbidity would depend on the size of the debris slide and the natural condition of the river water suspended solids. Under current conditions, slide events do result in releases of turbid water into the river; only larger sands, gravels and rocks settle out on the highway.</p> <p>In accordance with the Alaska Construction General Permit, water quality BMPs would be employed during construction to avoid and minimize water quality impacts. Disturbed ground would be stabilized as soon as practicable to provide both short-term and long-term water quality protection.</p> <p>DOT&PF M&O has applied for and received permits needed to move future slide material directly into the Chilkat River at MP 19 as an independent action to keep the highway open and avoid cutting trees in the ROW. Currently M&O stores slide debris in the ROW which requires cutting of large cottonwoods that are used by eagles. This plan for managing slide material is independent from the Proposed Action.</p>
<p>4. Provide for other public uses consistent with the primary purpose for which the Alaska Chilkat Bald Eagle Preserve is established.</p>	<p>Since the Preserve is largely accessed via the ROW, elements of the Revised Proposed Action adjacent to the Preserve (such as vegetation clearing, filling, and modifying the vertical or horizontal alignment of the highway) have the potential to change access to the Preserve and indirectly affect other public uses. The other public uses in the Preserve include personal and commercial boating, fishing, and wildlife viewing. DOT&PF is working with ADF&G to retain and improve sanctioned boat launches, as needed. Public turnouts would have improved operational access. The existing amount of parking would be maintained. Public views of the Preserve at MP 19 and, to a lesser extent, at the Chilkat River Bridge would change because of the proposed highway elevation change. Views at the public turnouts and parking areas would not be dramatically altered. Trees on the riverside of these parking areas and turnouts would not be cut.</p>
<p>5. Provide an opportunity for the continued traditional and natural resource based lifestyle of the people living in the general areas described in AS 41.21.611 (b), consistent with the other purposes of this subsection and (a) of this section.</p>	<p>DOT&PF, in consultation with local Tribes, has designed the improvements to avoid known subsistence areas. The avoidance, minimization, and mitigation measures that have been developed to avoid impacts to salmon and eulachon have been reviewed by the Tribes. CIV's requests for the use of bioengineered structures to stabilize the Chilkat River embankments adjacent to the road have been considered. DOT&PF revised Chilkat River mitigation based on consultation with CIV and ADF&G to introduce woody debris along the river to enhance juvenile fish habitat. Introduction of woody debris would not occur in areas used for subsistence (drift nets or set nets).</p>

Preserve's primary purpose: protect and perpetuate the world's largest concentration of bald eagles and their essential habitats within the Preserve (AS 41.21.610 (a)).

Bald Eagle Habitat. Trees would be cut in selected locations in the ROW along the Haines Highway adjacent to the Preserve. This has the potential to change the number of forage and perch trees located along the river. Eagles that depend on these forage and perching trees do not distinguish between habitat within the Preserve versus in the ROW. For this reason, trees cut in the ROW may have an indirect effect on the Preserve's purpose of protecting and perpetuating bald eagles.

The number of trees that would be cut is not known but there is an estimated 85 acres of land that would be cleared along the highway adjacent to the Preserve. Some of these trees in the ROW are eagle habitat; ABR reported multiple perched or roosting eagles within the Revised Proposed Action footprint.

Based on the fall 2013, 2014, and 2015 eagle surveys, an estimated 85 trees where eagles were observed perching are within the proposed project clearing limit, primarily adjacent to the CHA. Locations adjacent to the Preserve where multiple trees would be cut that correspond to where perching eagles were commonly observed during the ABR survey are (see Figure Set C and Appendix G):

- multiple locations from MPs 20 to 21 (Council Grounds) (clearing primarily on the up gradient—east side—of the highway), and
- near MP 21.5 (clearing on the river side of the highway near the Klukwan access road).

Most of the tree clearing would be on the up gradient side of the highway. None of the perching trees directly adjacent to the Chilkat River would be cut. None of the trees on the river side of the public turnouts would be cut. There are a few locations along the highway where perched eagles have a direct line of sight to the river from the up gradient or east side of the road such as near MP 20.3 (Station 1038 to 1045) and at MP 20.8 (Station 1066 to 1068). At these locations, there are no trees on the river side so some direct river view perching trees would be removed. There are multiple other trees in these locations that would not be cut.

The prime eagle perching trees are cottonwoods, a very fast growing species. Since the Chilkat River Valley is a dynamic system with unstable soil in the Council Grounds area, mature

cottonwood trees can fall onto the highway as well as fall over the river where the tree is continued to be used by perching eagles. One mitigation measure would be to mimic naturally fallen trees across the river by using cut trees to add eagle river perches. DOT&PF would work with the USFWS to best accommodate eagle habitat and provide the public with a safer highway. Until the final design is completed and the clearing limits are flagged, tree impacts cannot be precisely quantified.

According to ABR, the Revised Proposed Action would not have a population effect on bald eagles in the Chilkat region, but there may be changes in patterns of distribution and eagle use. Removal of cottonwoods may result in some bald eagles moving farther from their currently-used perching or roosting locations (ABR, 2014). Some of these perches correspond to public viewing and photographic opportunities.

Bald Eagle Population.

Some of the Revised Proposed Action alignment shifts would change the distance between an eagle nest and the road centerline, and widening shoulders would result in the edge of pavement being closer to the eagle nest trees. Table 4.2-2 summarizes the proposed changes in the proximity of the Haines Highway centerline to bald eagle nests identified within the project corridor in 2014. The alignment shifts the centerline slightly closer to some nests and further away from other nests. While the nests reported and discussed are inclusive of nests outside the Preserve, this impact discussion is presented in this section of the FREA because of the importance of nesting eagles to the Preserve as well as the Chilkat region.

Table 4.2-2: Changes to Distance Between Haines Highway and Bald Eagle Nests

Nest Number	Current Distance from Centerline (Feet)	Revised Proposed Action Distance from Centerline (Feet)	Change in Separation Distance (Feet)
FWS#10922.089	377	380	3
FWS#10922.090	261	260	-1
FWS#10922.082	469	467	-2
FWS#10922.083	398	394	-4
FWS#10922.058	2,170	2,166	-4
FWS#10922.087	2,446	2,416	-30
FWS#10922.061	1,098	1,099	1
FWS#10922.092	499	513	14
FWS#10922.010	1,756	1,770	15
FWS#10922.091	1,128	1,139	12
FWS#10922.093	2,115	2,123	7
FWS#10922.046	1,078	1,081	3
FWS#10922.065	2,406	2,408	2
FWS#10922.094	758	783	25
FWS#10923.151	224	233	10
FWS#10923.171	2,534	2,537	4
FWS#10923.172	414	472	58
FWS#10923.173	1,175	1,194	19
FWS#10923.180	626	608	-19
FWS#10923.177	2,148	2,335	188
FWS#10923.181	1,486	1,487	1
FWS#10923.176	514	515	1
FWS#10923.156	2,328	2,329	1
FWS#10923.157	2,356	2,348	-9
FWS#10923.174	751	769	17
FWS#10923.182	385	385	0
FWS#10923.183	252	238	-14
FWS#10923.149	99	110	11
FWS#10923.150	188	203	15
FWS#10923.204	2,557	2,545	-12
FWS#10923.203	2,525	2,512	-13
FWS#10923.184	81	79	-2
FWS#10923.159	324	181	-142
FWS#10923.185	134	115	-18
FWS#10923.186	468	467	-1
FWS#10923.193	1,567	1,567	0
FWS#10923.148	204	210	6
FWS#10923.188	1,993	1,960	-33
FWS#10923.189	1,973	1,846	-128
FWS#10923.196	304	304	0
FWS#10923.190	2,231	2,002	-230
FWS#10923.195	1,991	1,993	1
FWS#10923.132	736	908	172
FWS#10923.197	591	591	0
FWS#10923.200	2,470	2,470	0

Note: Table above includes all nests located within ½ mile of the Revised Proposed Action based on 2014 survey; the maximum distance necessary to evaluate for a Bald Eagle Disturbance Permit application (USFWS, 2007b). Numbers in bold indicate that the revised alignment would be closer to a nest.

There would also be rock cuts within 660 feet of an eagle tree.¹³ There are several locations between MP 20 and MP 20.5 where rock cuts approach a nest tree by less than 100 feet. Based on the 2014 eagle nest survey, one nest tree (FWS ID# 10923.159)¹⁴ near MP 20.5 may be at risk from the road realignment and rock cut (see Figure 4.2-4). During final design in this section, DOT&PF would reassess the clearing limits and determine if the nest would be safe from the project or if a permit to take the nest tree would be required. The nests next to FWS #10923.159 would also be relatively close to the new clearing limits. Nest FWS #10923.184 would be 30 feet from the new clearing limit and Nest FWS #10923.1149 would be 54 feet from the clearing limit.

While the Revised Proposed Action would shift the highway closer to some nests, long-term eagle productivity impacts are expected to be minimal because the bald eagles along Haines Highway are habituated to highway noise (ABR, 2014 and USFWS letter dated July 13, 2010, Appendix G, Bald Eagle Research, Consultation and Coordination).

Under the Bald and Golden Eagle Protection Act (16 USC 668-668c), the USFWS has authority to control the taking¹⁵ (including disturbance), possession, and transportation within the U.S. of bald eagles and their parts, nests, and eggs. In Alaska, the ADF&G has regulatory jurisdiction over fish and wildlife including management and permitting authority over eagles. However, the ADF&G Division of Wildlife Conservation (DWC) recognizes that DOT&PF and USFWS work in concert on transportation projects that could affect bald eagles. Because DOT&PF projects undergo review by USFWS and the public, ADF&G DWC has determined that additional state review is unnecessary. Annually, ADF&G DWC authorizes take or disturbance of bald eagles associated with DOT&PF projects provided USFWS permits have been acquired.

¹³ The USFWS has determined that construction activities that produce noise and/or vibration can disturb nesting eagles if these activities are conducted within certain distances of an active nest during the nesting season. The USFWS has set the following protective distances:

- 330 feet between the nest and road construction activities is known as the primary zone;
- 660 feet between the nest and road construction activities is called the secondary zone; and
- for blasting, pile driving, or asphalt plant operations, the distance is 0.5 mile.

¹⁴ USFWS nest designations (FWS ID#) and locations are shown in Figure Set C.

¹⁵ The Act defines “take” as “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.” (http://www.fws.gov/alaska/eaglepermit/bg_eagle_protection_act.htm) researched February 23, 2014.

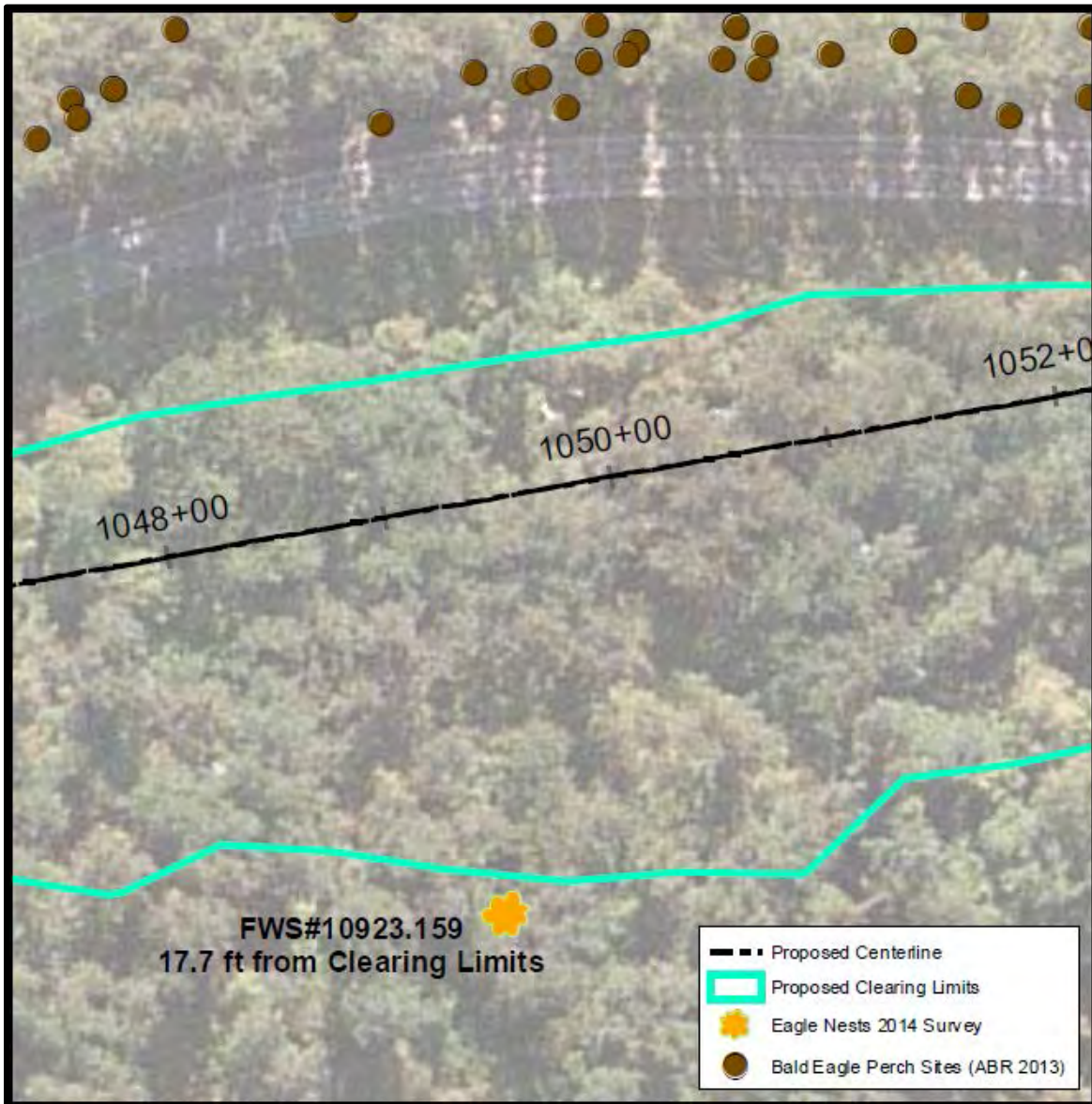


Figure 4.2-4: Distance of Eagle Nest from Highway Construction near MP 20.5

The 2015 ADF&G DWC authorization is contained in Appendix G, Bald Eagle Research, Consultation and Conservation Measures.¹⁶

¹⁶ B. Dale, Acting Director, ADF&G DWC memorandum to M. Luiken, Commissioner, DOT&PF, January 27, 2015, included in Appendix G.

Table 4.2-2 shows the identified nests along the entire project corridor including those in the Council Grounds within 0.5 mile of the Revised Proposed Action and the designated protection radii distances. Ten (10) of the 45 identified nests in the project area were within 330 feet of the proposed construction areas; ten (10) nests were between 330 and 660 feet from the centerline. There were 25 nests located between 660 feet and 0.5 mile. As discussed in Section 4.20, Construction Impacts, DOT&PF would apply for Bald Eagle Disturbance Permits from USFWS. Construction would be done under conditions of the USFWS Bald Eagle Disturbance Permit obtained.

Comments received on the July 2013 EA indicated concern over possible increases in eagle/vehicle collisions from the upgraded highway. ABR investigated this issue during their study. The lack of local data verifying current eagle/vehicle collisions led them to research the literature and a number of unpublished databases from throughout the range of bald eagles in North America. This research indicates that eagle/vehicle collisions in the interior lands are often associated with road carrion (road kills), especially during the winter when fish are scarce. The available evidence of eagles currently being struck by vehicles along Haines Highway does not suggest more than occasional occurrences.

According to ABR's report, "*Mortalities might increase in areas of the Haines Highway corridor if improved highway conditions allow speeds greater than 55 mph, which may give birds scavenging on the road less time to react.*¹⁷ In addition, if removing cottonwoods opens the area for lower flights between perches and foraging areas, eagles may increase their time in an area of greater risk. In concert, these factors may increase the risk for Bald Eagles crossing the road from their perching areas" (ABR, 2014; see Appendix G). Increasing the clear zone and resulting improved sight distance could minimize collisions with eagles because drivers would have more time to react. Fewer vehicle collisions with other wildlife could result in less carrion.

Based on the analysis of data collected by ABR and the results of their literature review, they recommended that the Revised Proposed Action would not adversely affect the bald eagle population using the Preserve. There are adequate trees that would remain that would continue to provide nesting, perching and roosting in this area after project construction (ABR, 2014). The

¹⁷ The posted speed limit of 55 mph would not change as a result of this project. The wider shoulders and improved sight distance have potential to minimize vehicle and eagle collisions.

Revised Proposed Action would not result in an indirect adverse effect on the Chilkat bald eagles and would be in compliance with the primary purpose of the Preserve, e.g. to protect and perpetuate the Chilkat bald eagles.

Additional discussions of the potential environmental consequences and avoidance, minimization, and mitigation actions associated with the Revised Proposed Action can be found as follows:

- Section 4.3 – Right-of-Way (the need for an exchange of Preserve land),
- Section 4.6 – Social and Environmental Justice (including additional information about the recreational opportunities and proposed work at access points and turnouts),
- Section 4.7 – Economy and Subsistence (effects on wildlife photography opportunities as well as to subsistence species and activities),
- Section 4.8 – Visual,
- Section 4.15 – Fish,
- Section 4.16 – Wildlife Resources, and
- Section 4.21 – Cumulative Impacts.

No Action Alternative - The No-Action Alternative would not result in any direct or indirect impacts except for the possible implementation of the DOT&PF M&O plan for managing slide debris at MP 19. As noted in Table 4.2-1, M&O has applied for and received permits needed to move future slide material directly into the Chilkat River at MP 19 as an independent action to keep the highway open and avoid cutting trees in the ROW. There would be no acquisitions of Preserve land, nor would there be changes in access to the Preserve or closure of unsanctioned access points that result in negative impacts to Preserve land.

There would be no direct or indirect impacts to bald eagles or their habitat nor would conditions change regarding achieving consistency with the other statutory goals of the Preserve. The proposed stream enhancements in the Preserve would not be constructed.

4.2.3 Avoidance, Minimization, and Mitigation Measures

Compared to the July 2013 EA, the Revised Proposed Action was developed to further avoid and minimize impacts to the Chilkat River system and the Preserve fish and eagle habitat by:

- avoiding fill in the Chilkat River at MP 8.5, thereby avoiding the take of 0.51 acres of Preserve land for ROW,
- replacing the two affected ADF&G fish wheel locations (the Revised Proposed Action would construct fish wheels at six locations selected by ADF&G; two are adjacent to the Preserve),
- reducing the fill in the Chilkat River by 4.1 acres (2,888 linear feet),
- reducing/minimizing fill in wetland by 1.4 acres and by modifying the alignment to minimize impacts to higher functioning wetland, and
- retaining the existing alignment as practicable to minimize clearing of eagle perching trees and other wildlife habitat.

Additionally, early in the project development, highway design efforts were aimed at avoiding and minimizing changes to the ROW throughout the corridor including adjacent to the Preserve. For example:

- Use of guardrails has allowed steeper embankments at some locations along the Chilkat River to avoid or minimize fill.
- At MP 21, at a very high use bald eagle foraging/perching area, the highway would be built on walls reducing the roadway footprint. This measure would avoid cutting of important perching trees.

An early Chilkat River Bridge alternative location that would have minimized cost was rejected partially because it would have required additional ROW acquisition within the Preserve. Some of the straightening of curves proposed in the July 2013 EA has been removed to further avoid and minimize impacts to the Chilkat River and adjacent eagle habitat (see Table A-1 in Appendix F, EFH Assessment). The straightened curves of the July 2013 EA Proposed Action were intended to provide additional vehicle passing zones without constructing passing lanes that would have required additional ROW acquisition from the Preserve. Returning to a design with less straightening would result in fewer passing opportunities.

To mitigate for the direct impact of acquiring 3 acres of Preserve at MP 17, DOT&PF commits to relinquish 6.2 acres of road ROW to the Preserve (a mitigation ratio of 2.1:1) (See Figure Set B). The parcels of land at MP 17 that would be relinquished to the Preserve are forested and wetland habitat on either side of the highway. The land proposed to be relinquished to the Preserve is similar in location, habitat type, and quality to the areas being acquired for ROW. As part of the Section 4(f) analysis (see Section 5.0, Section 4(f) Evaluation), ADF&G biologists assessed the comparative value of the land proposed for mitigation and found it of equal value to the land needed for the project (Appendix C).

DOT&PF would obtain permits for eagle disturbance associated with construction of the project including the removal of perching and roosting trees. USFWS is expected to require mitigation for these activities. As suggested in the ABR report, there may be a way to add perching trees as mitigation for the removal of such trees. For instance, ABR suggested adding perching trees on the riverside of those areas in the Council Grounds where there would be a loss of perching trees on the upgradient side of the highway. DOT&PF has committed to replanting cottonwood trees to mitigate for possible loss of eagle forage and roosting habitat, as noted in the meeting notes of July 28, 2014 (see Appendix G). Also under consideration is placing construction-removed trees across sections of the Chilkat River to mimic eagle perches similar to naturally fallen cottonwood and spruce trees. It is expected that additional eagle surveys, before, during and after construction, would be required as a permit condition. DOT&PF would continue to consult with USFWS to determine monitoring details.

Based on discussions with USFWS staff in the field, DOT&PF would evaluate the following areas for planting trees:

- From Station 1038+00 to Station 1045+00. Some 3 to 10-foot cottonwoods may be affected in this area during construction. Cottonwood trees could be planted in open areas on the water side of the highway beyond the clear zone.
- From Station 1007+00 to Station 1010+00. USFWS identified this as a prime location. Some 5-foot cottonwood trees may be affected by construction. Again, trees could be planted on the water side of the highway beyond the clear zone.

- From Station 1014+00 to Station 1019+00 there are several areas, on the water side of the highway where cottonwood saplings are growing. There are some small areas for additional cottonwood tree planting in this area. DOT&PF would attempt to protect the existing cottonwood saplings from disturbance.
- As partial mitigation for loss of fish habitat in other areas of the project, DOT&PF proposes to enhance some stream areas within and adjacent to the Preserve (see Section 4.15, Fish) during construction of each of the adjacent segments of the Revised Proposed Action. A special use permit would be obtained from DNR in order to construct new stream habitat (Figure Set B).

Environmental effects of habitat enhancement within the Preserve include:

- Marsh habitat near MP 10 would be converted to fish stream, riparian, and wetland habitat (Figure Set B, Sheet 1),
- Scrub-shrub wetland habitat near MP 13 would be used to access new stream channel construction (Figure Set B, Sheet 2), and
- Forested wetland and scrub-shrub wetland habitat near MP 17, adjacent to one of the parcels of the Preserve that would be acquired for ROW, would be used for a new stream channel (Figure Set B, Sheet 3).

Many of the public access and activity-related developed features of the Preserve are located within the highway ROW and access to the Preserve and its features is primarily by the highway.

DOT&PF has consulted with DNR under the 1987 Cooperative Management Agreement between DNR and DOT&PF for the Haines Highway (see Appendix A, Coordination with DNR on Turnout Improvements). Both agencies participated in a site visit, followed by several meetings. As a result of these consultations, DNR's recommendations for turnout improvements have been addressed and incorporated into the preliminary design plan.

To avoid and minimize indirect impacts to the Preserve from users of the Preserve, DOT&PF has worked with DNR to identify improvements to Preserve access within the existing and/or proposed ROW that would benefit the Preserve (see Appendix A). Parking would be provided at at MP 11.5 and MP 14.5 (Table 4.6-1). Existing turnouts would be resurfaced or regraded at MP

13 and MP 14.5. Two existing turnouts at MP 11 that attract nuisance uses would be closed (see Table 4.6-1).

A new turnout is proposed at MP 20.5, the part of the Haines Highway that would be abandoned following the Revised Proposed Action realignment. This section of pavement would be blocked off at the downstream side and striped for parking and recreational opportunities. This new cul-de-sac shaped turnout would accommodate people and vehicles particularly during peak tourist seasons. This location in the Council Grounds was found to be one of the more important perching areas for bald eagles during the fall/winter 2013 survey, thus it is a very popular location for eagle viewing and taking photographs (See Figure 4.2-5).

Based on the proposed mitigation and concurrence from DNR DPOR, FHWA has made a *de minimis* impact finding for the Revised Proposed Action impacts to this Section 4(f) property (see Section 5.0, Section 4(f) Evaluation).

(This Page Left Intentionally Blank)

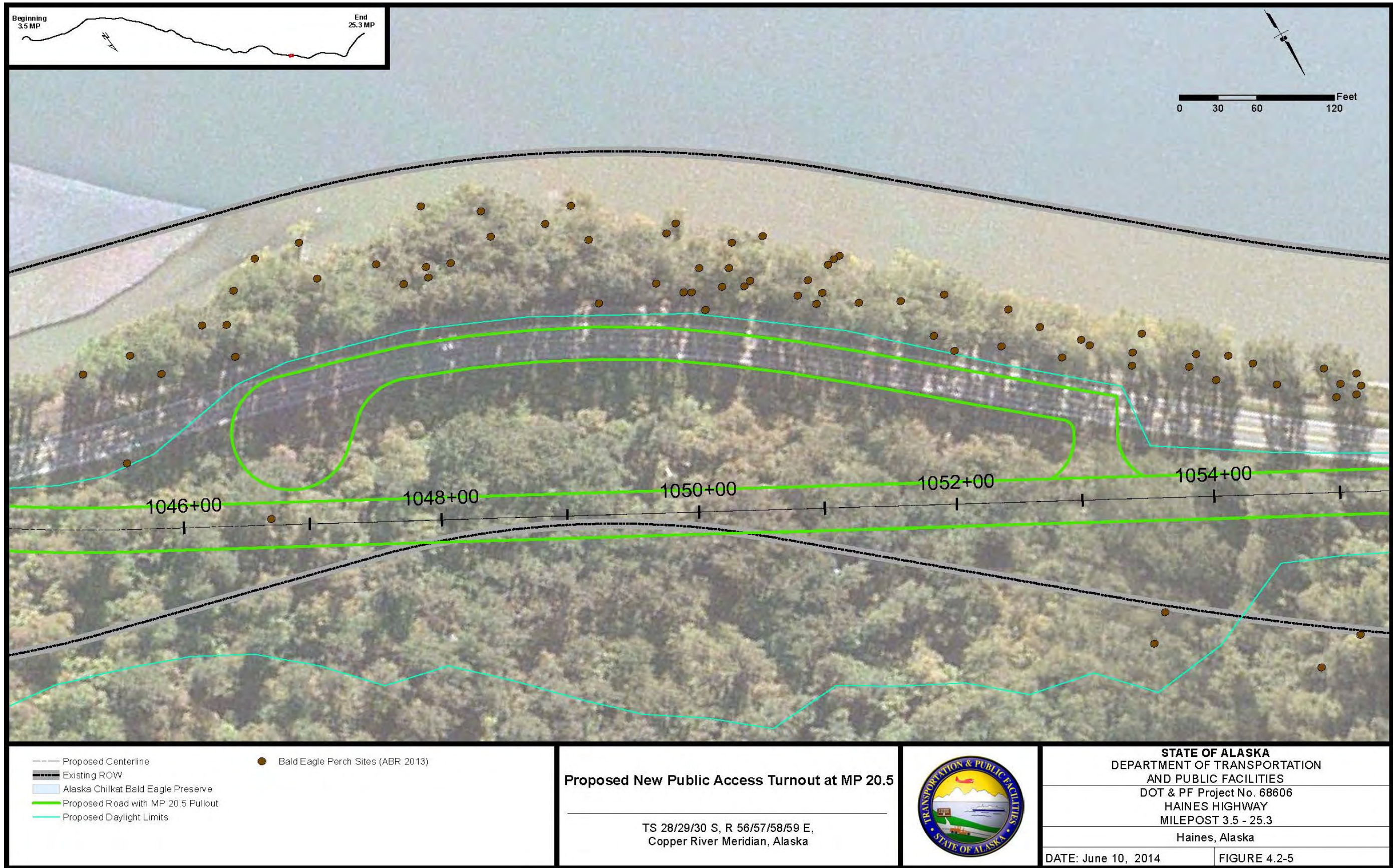


Figure 4.2-5: Proposed New Public Access Turnout at MP 20.5

(This Page Left Intentionally Blank)

4.3 Right-of-Way

4.3.1 Affected Environment

The Haines Highway MP 3.5 to MP 25.3 project remains primarily within the DOT&PF ROW. Adjacent landowners include private individuals, the DNR Preserve, the DNR Haines State Forest, the CIV of Klukwan, other Native allotments, and the Alaska Mental Health Trust. The existing ROW from MP 3.5 to MP 25.3 varies in width from 120 to 300 feet and is situated between the Chilkat River and the Takshanuk Mountain Range. The Haines Highway ROW is owned and maintained by the State of Alaska.

The statute establishing the Preserve recognizes existing transportation and utility corridors and excludes these corridors from the Preserve (AS 41.21.612(a)). The director of DNR DPOR is specifically authorized to adjust ROWs “subject to reasonable regulation and stipulations” (AS 41.21.619). Thus, the Preserve law provides sufficient flexibility to allow the director of DNR DPOR to make reasonable modifications to ROW boundaries to accommodate the safety improvements proposed by DOT&PF.

4.3.2 Environmental Consequences

Revised Proposed Action – This summary is based on the specific footprint of the revised proposed road and realignment areas. Additional acreage could be identified during final design and the ROW phase¹⁸ of the project, as the detailed evaluation of property acquisitions is conducted.

Direct Impacts –

Based on the preliminary design, construction of the Revised Proposed Action would require partial acquisition of lands from an estimated 10 private properties. No individual property would be fully acquired, and no property owners would be displaced or relocated as a result of the ROW acquisition. Acquisitions would involve six private parties, property owned by the CIV,

¹⁸ ROW acquisition typically follows the completion of the environmental process. For a FHWA-funded project, the first two phases are planning and preliminary design and environmental activities, until the FHWA makes a decision to construct a project. After that decision is made, final design can go forward, and the exact amount of property needed for any modification to the ROW can then be identified. ROW needed for the first phase of construction is currently being analyzed and purchased with State funds consistent with 23 USC 108(c). This State’s acquisition of ROW is not a Federal action requiring NEPA review. The State does recognize that there is a risk involved because FHWA may not select the Proposed Action, which would result in the State owning additional ROW for its existing highway facility.

five Native allotments, and Alaska State lands, including the Preserve, Haines State Forest, and Mental Health Trust lands.

Estimated acreage is summarized in Table 4.3-1, and acquisition areas are shown on Figure Set A. As shown in Table 4.3-1, 42.2 percent of the land acquisitions would be from Native allotments or the CIV, 32.1 percent from other State-owned land, and 25.7 percent from other private-property owners.

These estimates of property required for the Revised Proposed Action reflect the level of information DOT&PF has at this stage of project design. ROW boundaries and acquisition requirements may need to be adjusted for variances encountered during final design or construction. Construction easements would also be needed for proposed stream mitigation actions that would occur outside of the DOT&PF ROW.

Table 4.3-1: Proposed Permanent ROW Acquisitions

Property Owner	Estimated Acres	Percentage of Project Acquisitions
Alaska Chilkat Bald Eagle Preserve	2.98	11.5
State (non-Preserve)	2.54	9.8
Native Allotments	7.18	27.7
Private Property	6.65	25.7
Chilkat Indian Village	3.76	14.5
Stream Mitigation (State land; non-Preserve)	2.81	10.8
TOTAL	25.92	100.0

Note: Land to be acquired is only a partial amount of any one parcel. Although other sections of this document rounds to only tenths, this table and Table 4.3-2 show more precise estimates to better reflect ROW acquisition effects.

Property acquisitions would result in direct impacts to affected property owners. Five of the acquisitions would be narrow strips of undeveloped land along the highway to be used for widening. The land use on the remainder of these properties is not expected to be affected, because of the relatively small size and locations of these acquisitions (Table 4.3-2).

Table 4.3-2: Proposed ROW Acquisition Impacts Excluding Tribal & Public Lands

Property Owner (Figure Sheet)¹	Land Use in Areas to be Acquired	Total Size (acres)	Estimated Size of Take (acres)	Percent of parcel (%)	Impact
Hard Rock, Inc. (3 of 34)	Undeveloped forest	34.29	0.40	1.2	Loss of forested land (narrow strip next to highway)
Boyce/ Debenedetti (4 of 34)	Undeveloped forest	7.75	0.71	9.2	Loss of forested land (narrow strip next to highway)
Floreske (10 of 34)	Undeveloped pond	32.80	0.58	1.8	Loss of wetland (narrow strip next to highway)
Werner (22 of 34)	Undeveloped forest	9.05	1.16	12.8	Loss of forested land (narrow strip next to highway)
Filipek Trust (22 of 34)	Developed-airstrip and driveway; forest between road and residence	52.91	3.80	7.2	Loss of wetland (new road alignment); limitation on airstrip use, driveway shortened, loss of forest buffer between road and residence
J. Duncan (31 of 34)	Undeveloped forest	20.57	0.15	0.7	Loss of forested land (narrow strip next to highway)
Jacquot (31 of 34)	Undeveloped forest	21.93	0.66	3.0	Loss of forested land (new road alignment)
Wright (31 of 34)	Undeveloped forest	22.76	0.98	4.3	Loss of forested land (new road alignment)
A. Duncan (31 of 34)	Undeveloped forest	23.25	0.98	4.2	Loss of forested land (new road alignment)
Whittaker (31 & 32 of 34)	Undeveloped forest and cleared area between highway and residences	147.87	8.11	5.5	Loss of forested land (new road alignment); highway and bridge would be closer to residences

¹ See Figure Set A for referenced figure sheet.

Five larger partial parcel acquisitions (property owners Filipek Trust, J. Duncan, Jacquot, Wright, A. Duncan, and Whittaker) would be used for separated new highway alignments. The existing highway roadbeds within all those parcels, with the exception of the Filipek Trust parcel, may be removed and revegetated, as discussed below in Section 4.3.3.

A portion of the existing highway roadbed adjacent to the Filipek Trust parcel (MP 17.5) would remain to continue to provide access and utility connections to properties adjoining the existing highway alignment.

The realignment shown on Sheet 22 of Figure Set A (property owner Filipek Trust) would adversely affect the land use of that parcel; a developed landing strip and adjacent driveway would be shortened. The type of aircraft that can use that landing strip would be affected. A strip of vegetated/forested buffer between the highway and the residence would also be removed to accommodate the realigned highway. At this location, the forested property between the clearing limits of the existing highway and the clearing limits of the realigned property would be placed under conservation easement to protect existing streams and wetland functions.

The other four larger partial parcel acquisitions where the highway would be realigned are primarily undeveloped forest lands (Jacquot, Wright, A. Duncan, and Whittaker). These four parcels are Native allotments.

Most residents of Klukwan and Native allottees are members of a minority population under Executive Order (E.O.) 12898 (Federal Action to Address Environmental Justice in Minority Populations and Low-Income Populations). ROW acquisitions affect approximately 11 acres of minority-owned land, 47.0 percent of the total ROW acquisition needed for this project (see discussion in Section 4.6.2). See Section 4.6 for a discussion of Environmental Justice.

Indirect Impacts –

Current land uses would remain the same. No future impacts are anticipated as result of ROW acquisitions.

Property acquisition would be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (Uniform Act).¹⁹

No-Action Alternative - No ROW acquisition would be required for this alternative.

4.3.3 Avoidance, Minimization, and Mitigation Measures

The Revised Proposed Action has been designed to avoid and minimize ROW takes to the extent practicable.

The DOT&PF proposes relinquishment of approximately 6.2 acres of ROW to the Preserve to minimize and mitigate impacts to the Preserve from the acquisition of land necessary to construct the Revised Proposed Action. ROW relinquishment to the Preserve are summarized in Table 4.3-3 and shown on Figure Set B.

Table 4.3-3: Summary of ROW Relinquishment to the Preserve

Figure Number (Figure Set B)	Acres	Beginning Station	Ending Station
R-25A	3.6	865+00	877+00
R-25B	0.4	874+00	879+00
R-25C	2.2	879+00	886+00
Total Acreage	6.2		

Mitigation for loss of private and Native allotment lands to ROW can occur as part of the ROW acquisition process. For instance, DOT&PF is discussing options with the property owners where old ROW could be abandoned and the land could be returned to their property. The discussions with property owners include possible roadway pavement removal after construction and land revegetation to match adjacent undeveloped lands. See Section 4.6 for a discussion of Environmental Justice.

¹⁹ Government agencies often need to acquire private property for public projects. The Uniform Act provides for fair and equitable treatment of persons whose property will be acquired or who will be displaced because of programs or projects financed with federal funds. Uniform Act Rules for acquisition and appraisal assure property owners that their interests will be protected.

4.4 Encroachments

4.4.1 Affected Environment

Over the years, unpermitted structures or other features have been constructed within the DOT&PF ROW of the Haines Highway. Some structures pre-date the Haines Highway and became “encroachments” upon the establishment of highway ROW. The DOT&PF is required to address these encroachments. The following table identifies encroachments within the existing ROW and proposed resolutions to the encroachments (see Figure Set A for locations). All owners of the identified encroachments have been given a 30-day notice to remove the encroachments, apply for an encroachment permit, or purchase the ROW. It should be noted that the resolution status listed in Table 4.4-1 is based on current information and may change.

Table 4.4-1: Encroachments with the Proposed Action Right-of-Way

Property Description & Approximate Station	Encroachment Description	Resolution Status
Lot 2, Fraction of Lot 3 S19, T30S, R59E, CRM Sta. 230	Fence, Concrete wall	Currently permitted
Lot 1, Fraction of Lot 3 S19, T30S, R59E, CRM Sta. 233	Rock Wall	Currently permitted
Lot 2A, USS 3394 Sta. 370	Deck of house	Owner contacted
Lot 2B, USS 3394 Sta. 372	House with deck, New shed	Currently permitted
Lot 3, USS 3394 Sta. 378	Cabin, Shed, Smokehouse	Currently permitted
Lot 1, USS 5685 Sta. 425	6’x6’ building, Stairs, House with Deck	Owner contacted
Lot 2B, USS 5685 Sta. 430	Deck of House, Containers	Relinquishment in process
Lot 2A, USS 5685 Sta. 433	Shed, House, Stairs with overhang, Shed	Currently permitted
Lot 3, USS 5685 Sta. 466	Parking pad, Stairs	Currently permitted

4.4.2 Environmental Consequences

The DOT&PF would resolve all encroachments before the project is advertised for construction through the actions of permitting, removing, or vacating the DOT&PF ROW.

The DOT&PF would review and analyze each individual encroachment for the following:

- safety hazards,
- utilities,
- traffic concerns, and
- effects upon the community.

Depending upon the results of the analysis, the DOT&PF will either permit, require structures to be removed, or remove the structures. Should an encroachment need to be removed, that removal would be done by the owner or the DOT&PF. No compensation is given to owners of unpermitted encroachments if they must be removed.

Revised Proposed Action - ROW encroachments will be resolved by permitting or removing encroachments.

Direct Impacts –

At this time, some property owners have applied for ROW relinquishment. Some property owners have applied for and been granted ROW encroachment permits. Other permit applications are currently undergoing review. If an encroachment permit is denied, State procedures allow for an appeal process; however, the applicant could ultimately be required to remove the encroachment. Some of the encroachments initially identified have already been removed. The Attorney General's office has given notice for the removal of one house.

Should an encroachment need to be removed, that removal would be done by the owner or the DOT&PF. No compensation is given to owners of unpermitted encroachments if they must be removed.

Indirect Impacts –

No indirect impacts are anticipated as a result of addressing the encroachments in the Haines Highway ROW.

No-Action Alternative - ROW encroachments will be resolved by permitting or removing encroachments.

4.4.3 Avoidance, Minimization, and Mitigation Measures

Avoidance and minimization of impacts to residents in encroachments would be achieved through the review process described above. Mitigation is not appropriate for encroachments.

4.5 Utilities

4.5.1 Affected Environment

The Haines Highway MP 3.5 to MP 25.3 ROW also serves as a corridor for underground and aboveground utilities that provide power and telecommunications to Haines and the Chilkat Valley. Electricity (located overhead and underground) is provided by Alaska Power and Telephone (AP&T) and Inside Passage Electric Cooperative, Inc. (IPEC). Telephone service via buried and overhead fiber-optic cable is provided by AP&T. AP&T uses some underground sections of the decommissioned Haines-Fairbanks Pipeline as their utilities conduit. Cable television service is provided by Haines Cable TV, which uses an overhead coaxial cable between MP 3 and MP 5. The majority of the utilities within the project area parallel Haines Highway and are located within the DOT&PF ROW on the north side of the highway.

Water and sanitary sewer service within the project area is provided through private wells and septic systems, which are generally outside of the ROW except where residential structures encroach into the ROW. The City of Haines water and sewer service boundary extends only to MP 3, and so is outside the project area. Natural gas is not provided within the project area.

The CIV provides water and sanitary sewer service to the village at Klukwan. According to the Alaska Department of Commerce, Community, and Economic Development (DCCED) Division of Community and Regional Affairs (DCRA), 90 percent of the residences in the village are connected to piped water and sewer service (DCRA, 2012).

4.5.2 Environmental Consequences

Revised Proposed Action - Direct impacts to utilities may occur where the roadway realignment would require relocation or replacement of electric and fiber-optic utility lines, and removal of sections of the Haines-Fairbanks Pipeline.

Direct Impacts – The following is a list of the primary utilities and their major segments that may be impacted within the project area.

- AP&T MPs 3-5 overhead telephone and fiber-optic telephone
- AP&T MPs 3-10 overhead power
- AP&T MPs 5-25 buried fiber-optic cable
- IPEC MPs 10-25 buried electric cable
- Haines Cable MPs 3-5 overhead coaxial cable television

Indirect Impacts –

No indirect impacts to utilities are anticipated as part of the Revised Proposed Action.

No-Action Alternative - No changes to existing utilities would occur under the No-Action Alternative.

4.5.3 Avoidance, Minimization, and Mitigation Measures

The proposed alignment has minimized the footprint of the roadway and the need to relocate utilities to the degree practicable. Where there are ROW shifts, access to utilities would be maintained if those utilities are not relocated.

AP&T and IPEC have been notified of the proposed EA project and have been working with DOT&PF regarding the possible relocation of existing utilities. The relocation of AP&T's fiber-optic cable would be avoided to the extent practicable. Access to aboveground and belowground utilities would be maintained where the proposed Haines Highway alignment shifts away from its existing location but driveway and utility access to properties abutting the former ROW alignment must be maintained.

Potential utility relocations are summarized in the PER (DOWL HKM, 2010c). Detailed utility relocation plans would be completed during the final design phases of the project.

4.6 Social Conditions and Environmental Justice

4.6.1 Social Conditions

4.6.1.1 *Affected Environment*

The social environment within the proposed project area (Haines Highway MP 3.5 to MP 25.3) is primarily a rural setting with high accessibility to public lands for subsistence, recreation, hunting, and fishing.

The project area is located within the Haines Borough and Klukwan. The Borough is a consolidated municipal government, having merged with the City of Haines in 2002. Although there are no incorporated cities within the Haines Borough, there are five unincorporated communities: Covenant Life, Haines (formerly a first-class city), Lutak, Mud Bay, and Mosquito Lake. Klukwan, the CIV, is not within the Haines Borough and is discussed below. The project area begins north of the community of Haines and terminates just south of the road to the community of Covenant Life (see Figure 1.1-1).

Klukwan is an ancient Tlingit settlement where the tribal members practice traditional Tlingit cultural protocols, clan system and moiety structure, subsistence activities, language, and teaching. The CIV of Klukwan is a Federally-recognized Indian tribe, one of the earliest Chilkat Tlingit villages. Klukwan is an area of Native land surrounded by, but not included in, the Haines Borough (see Figure 1.1-1). It is located 22 miles north of Haines along Haines Highway.

Population/Income - The population of the Haines Borough was estimated at 2,546 for the 2009 to 2013 census period (U.S. Census Bureau, 2015b). Klukwan's population in the 2009 through 2013 census period was 110. Individuals of Native heritage made up 16 percent of the population in the Haines Borough and 81 percent of the population of Klukwan.²⁰

Per capita income in the Haines Borough averaged \$31,096 from 2009 through 2013 (U.S. Census Bureau, 2015b). Median household income for the Borough was \$52,866. The percentage of Borough residents below the poverty level was 7.8 percent.

²⁰ This includes individuals claiming Native heritage in combination with another race.

Based on the same reference as above, Klukwan's average per capita income over this period was \$22,752; median household income was \$51,250. The percentage of Klukwan residents below the poverty level was 3.6 percent.

Housing/Community Facilities/Public Services – A majority of the Haines Borough residents (68 percent) live in Haines. Most public facilities and services are located in Haines, including public water and wastewater facilities, public safety services (fire, medical care, emergency service, and police), and recreation facilities (a public pool and soccer field). The Haines Borough School District operates three schools; the Haines Elementary School, the Haines High School, and the Haines Home School. The Alaska State Troopers provide public safety services to Klukwan, and Klukwan has its own volunteer fire department and infrastructure.

Housing along the project area is primarily single-family structures. The residences' water supply is from wells, and sanitation is provided by septic systems. Most of the housing in Klukwan is single-family houses or mobile homes. Borough and Klukwan residents use Haines Highway to access facilities and services in the Haines town site, as few are available outside Haines.

Transportation - As discussed in Section 1.0, Revised Proposed Action, Haines Highway is one of two road links between Southeast Alaska and Canada. The segment of highway between Haines and MP 3.5 (the airport) is designed and signed as a 55 mph highway. The segment of highway from MP 25.3 to the Canadian border is similarly designed. The Revised Proposed Action segment is signed as a 55 mph road with reduced speeds (45 mph) at curves.

DOT&PF traffic classification of the vehicle types of the Haines Highway show about 85 percent are passenger cars and trucks, only about 0.5 percent are busses, about 11 percent are single unit trucks, about 3 percent are single trailer truck and about 0.2 percent are multi trailer trucks.²¹

A Safety Analysis (DOWL HKM, 2010c) based on accident data between 1998 and 2007 indicates the following:

- Most intersections had low crash rates. However, driveways near the Chilkat River Bridge have elevated crash rates for a road with ADT of 600. These driveways are located at the end of a horizontal curve that does not meet standards for a 55 mph road.

²¹ Ryan Siverly, Regional Traffic Data Manager, DOT&PF, email to Jim Scholl, Environmental Analyst, DOT&PF, April 15, 2015. Included in Appendix H.

- Accidents that are not associated with an intersection or driveway are considered segment accidents. Segment accidents within the project area resulted in a relatively low crash rate. Almost half of the segment accidents were associated with poor weather conditions.
- There were 11 moose/vehicle collisions during this time period. DOT&PF Southcoast Region (SCR) has no animal collision signage policy. However, moose collision signage may be added in areas with reoccurring animal collisions.

The safety analysis was reviewed again using 2000 through 2009 crash data and came up with similar conclusions. Although the accident rate is low, bringing Haines Highway up to design standards in the project area would improve the safety of the highway.

Discussions with the Haines Volunteer Fire Department identified several crashes that were not included in the official crash records used for the safety analysis. Three of those crashes were rollovers, one crash resulted in a vehicle in the ditch, and the other seven are listed as minor vehicle accidents.

Recreation - Haines Highway is the primary access area to outdoor recreation opportunities within the Preserve and other public lands in this area. Important recreational activities include wildlife viewing, camping, hiking, bicycling, boating, hunting, and fishing.

In June, the corridor is host to the Kluane-Chilkat International Bike Relay from Haines Junction, Yukon Territory to Haines. Up to 1,300 riders from Alaska, the Yukon Territory, and the Lower 48 participate each year. In November of each year, the American Bald Eagle Foundation in Haines hosts the Alaska Bald Eagle Festival.

People from around the world are drawn to see and photograph the largest concentration of bald eagles in the world at the Preserve. Public comments on the Proposed Action evaluated in the July 2013 EA asked whether the proposed project would affect their ability to view and photograph bald eagles. A bald eagle survey was conducted in the autumn of 2013 to assess the bald eagle perching activities during the high-use time and to evaluate the possible effects of the Haines Highway MP 3.5 to MP 25.3 project (ABR, 2014). A second eagle survey was conducted in autumn 2014. These reports can be found in Appendix G, Bald Eagle Research, Consultation and Conservation Measures.

Approximately 27 developed and/or undeveloped turnouts along Haines Highway are used to access recreational and fishing areas. Turnout locations are shown on maps in Appendix A. Access into these turnouts and into the land where vehicles park is all within the DOT&PF ROW. Twenty-one of these turnouts directly access lands within the Preserve. Early in the design process, the DOT&PF project team met with DNR staff to conduct an inventory of existing turnouts along the project corridor. Table 4.6-1 also provides information about the DNR's recommended actions at these turnouts that could be done if the Haines Highway MP 3.5 to MP 25.3 project were implemented. The DNR provided input on all turnouts, not just those in the Preserve.

4.6.1.2 Environmental Consequences

Revised Proposed Action –

Direct Impacts

In the long term, the Revised Proposed Action would not result in any changes to the human population, community cohesion, or neighborhoods or adversely impact community facilities or services. Some ROW acquisition would occur. As discussed in Section 4.3, proposed ROW acquisitions are partial acquisitions. There would be no relocation of residences or businesses, except as noted for structures encroaching within the existing ROW (Section 4.4, Encroachments).

The project is not expected to change long-term travel patterns or volumes but is expected to improve traffic safety on this key community transportation route. By reducing some curves (such as between MP 17 and MP 18 and between MP 23 and MP 24) and widening road shoulders, the Revised Proposed Action would improve sight distance and driving conditions for vehicles (including school buses), walking conditions for pedestrians, and riding conditions for bicyclists.

It would also improve local residents' access to social and recreation facilities and improve response time by State Troopers, police, and emergency medical services.

**Table 4.6-1: Turnouts / Recreational Facilities along the Haines Highway
(Mileposts 3.5 to 25.3) Project Corridor (Refer to Appendix A)**

Turnout ID¹	Approximate Milepost/ Figure Set A Sheet Number	Description	Revised Proposed Action
HNS1	4.3/1	Camping and fishing	Accepted DNR's recommendation; Maintain access and provide wider approaches (24 feet wide); Pave to curve return.
HNS2	4.4/1	Fishing	Accepted DNR's recommendation; Provide area for parking.
HNS3	5.7/4	Informal parking/camping area, fishing	Implement a modification of DNR's recommendation; Provide access with one 24-foot-wide driveway; Pave to curve return; Eliminate second driveway.
HNS4	7.3/5	Camping and fishing access	Accepted DNR's recommendation; Provide access with one 24-foot-wide driveway.
HNS4A	7.2/5	Mount Ripinski Trailhead (currently no parking area for this trailhead)	Develop new turnout with parking spaces for seven vehicles to access the Mount Ripinski trailhead near MP 7.
HNS5	7.8/6	River flats, boat launch at high water	Accepted DNR's recommendation; Provide area for parking.
HNS6	8.1/7	Fishing	Accepted DNR's recommendation; Provide area for parking.
HNS7	8.5/8	Access road to boat launch, parking for trailers	Accepted DNR's recommendation; Provide driveway on river side for fishing access.
HNS8	9.9/10	Boat launch and trailer parking	Modified DNR's recommendation; Provide access with one 24-foot-wide approach.

**Table 4.6-1: Turnouts / Recreational Facilities along the Haines Highway
(Mileposts 3.5 to 25.3) Project Corridor (Refer to Appendix A)**

Turnout ID¹	Approximate Milepost/ Figure Set A Sheet Number	Description	Revised Proposed Action
HNS9	10.9/12	Parking area and unauthorized trash dump	Accepted DNR's recommendation; Develop new parking area for adjacent pond that is sometimes used for ice-skating (see HNS10 and 11).
HNS10	11/12	Approach to an old loop road that encircled a small pond used sometimes for ice-skating (road is no longer drivable)	Accepted DNR's recommendation to remove access; HNS9 would be improved with additional parking for pond area.
HNS11	11.1/12	Approach to an old loop road that encircled a small pond used sometimes for ice-skating (road is no longer drivable)	Accepted DNR's recommendation to remove access; HNS9 would be improved with additional parking for pond area.
HNS12	11.5/13	Canoe launch	Accepted DNR's recommendation to provide access; Provide area for parking.
HNS 13	12.9/15	Steep approach to a small road leading to the river; sometimes used by sport fishermen. Recent river alignment shifts have made boat launching difficult here.	Implement a modification of DNR's recommendation; Provide fill to reduce slope and resurface HNS13 instead of creating new access at HNS14.
HNS14	13/15	No existing use; DNR proposed new boat launch site at HNS14 to replace HNS13	Implement a modification of DNR's recommendation; It was decided to improve HNS13 instead of creating new access at HNS14.
HNS15	13.8/16	River access, fishing	Implement a modification of DNR's recommendation; Provide two 24-foot approaches and gravel surface to provide parking for up to 10 vehicles; Pave to curve return; DNR Parks would maintain this turnout.

**Table 4.6-1: Turnouts / Recreational Facilities along the Haines Highway
(Mileposts 3.5 to 25.3) Project Corridor (Refer to Appendix A)**

Turnout ID¹	Approximate Milepost/ Figure Set A Sheet Number	Description	Revised Proposed Action
HNS16	13.9/16	Boat launch site	No proposed improvements at this time.
HNS17	14.3/17	Commercial raft operation retrieval site	Provide area for parking and re-grade from edge of pavement to existing driveway to improve slope for bus traffic; Obliterate and vegetate abandoned road footprint.
HNS18	16/20	Currently used as unauthorized trash dump and for parties	As recommended by DNR, access would be removed. Ditch would be dug across access driveway.
HNS19	19.2/24	Eagle viewing turnout (high use)	Implement a modification of DNR's recommendation; The highway would be raised approximately 15 feet through this area, and parking would be provided at HNS21. No other access proposed.
HNS20	19.4/25	Commercial raft launch and retrieval site	Accepted DNR's recommendation; Provide a plow-friendly approach and pave.
HNS21	19.5/25	Eagle viewing	Implement a modification of DNR's recommendation; Provide access with two 24-foot-wide plow-friendly approaches; Pave to curve return; Remove and revegetate abandoned road footprint.
HNS22	19.8/25	Eagle viewing (photograph opportunities)	Accepted DNR's recommendation to maintain parking and access to existing turnout; No additional parking would be provided.
HNS23	20.2/26	Eagle viewing	Accepted DNR's recommendation to maintain parking and access to existing turnout; No additional parking would be provided.
HNS new	20.5	New area for viewing and photographing bald eagles, other wildlife, and scenery	New eagle viewing turnout would be constructed on existing pavement after highway has been re-aligned away from the river.

**Table 4.6-1: Turnouts / Recreational Facilities along the Haines Highway
(Mileposts 3.5 to 25.3) Project Corridor (Refer to Appendix A)**

Turnout ID¹	Approximate Milepost/ Figure Set A Sheet Number	Description	Revised Proposed Action
HNS24	20.6/27	Boat launch site	Provide access to scenic view point with two 24-foot approaches. Improve exit/entrance return radii to ease snow plow maintenance.
HNS25	20.6/27	Eagle viewing	Implement a modification of DNR's recommendation; Provide access with two 24-foot approaches; Improve exit/entrance return radii to ease snow plow maintenance.
HNS26	20.8/27	Fishing, bird watching	Implement a modification of DNR's recommendation; Grade approach to match proposed highway grade.
HNS27	23.9/32	Informal boat launch site along Chilkat River banks; DNR recommended construction of a new boat launch	Did not incorporate DNR's recommendation; No access proposed.

¹ Turnout locations are shown on maps in Appendix A.

Impacts to recreation are primarily beneficial. Approved Preserve access points would not be lost. The Revised Proposed Action would implement DNR recommendations or modifications to those recommendations at 24 of the 27 turnouts (refer to Table 4.6-1 and Appendix A for further details). New and/or improved turnouts and wider shoulders would enhance public access to recreation sites and allow for safer pedestrian, bicycle, and other recreational uses along Haines Highway, resulting in long-term benefits to recreation.

In accord with a DNR request, access points designated as HNS 10 and 11 would be removed as part of this project. Access to the ice-skating pond near these turnouts would be provided through improvements to a nearby turnout (HNS 9).

Access to turnout HNS 18, an illegal garbage dump, would be prohibited by construction of a ditch. A new turnout recommended by the DNR at HNS 14 would not be constructed; rather, needed improvements would be made at HNS 13. The DNR's recommended construction of a river access point next to the Chilkat River Bridge (HNS 27) would not be included in this project.

During the development of the Revised Proposed Action, an opportunity to add another public access turnout was identified. At MP 20.5, the Revised Proposed Action realigns the highway up-gradient, away from the river approximately 70 feet (from the centerline of the existing highway to the centerline of the proposed centerline). Approximately 22,400 square feet (0.5 acre) of roadway pavement would no longer be needed. By developing this un-needed pavement into a turnout, a new public access point would be provided within the bald eagle Council Grounds. This is a prime location to view and photograph bald eagles, other wildlife, and scenery.

Indirect Impacts –

Improvements to the highway would also be expected to improve vehicle safety. Reducing the curvature of the road as it approaches the Chilkat River Bridge addresses an area that has had a high number of accidents. The realignment of the Chilkat Avenue intersection with the highway is also expected to result in improved safety at that location. Increased sight distance along the road also has the potential to reduce moose-vehicle conditions.

Short-term adverse impacts are expected during construction, due to temporary disruptions in traffic and accessibility to existing recreation sites. Construction impacts are discussed further in Section 4.20.

No-Action Alternative - The No-Action Alternative would not resolve the highway deficiencies in the project corridor. It would not improve safety for vehicles, pedestrians, or bicyclists. It would not improve access to recreation facilities or response time by police, emergency medical, and fire services.

A new public access at MP 20.5 would not be provided. The Chilkat Avenue intersection, the driveway intersections at the Chilkat River Bridge, and other segments and intersections would not be improved.

4.6.1.3 Avoidance, Minimization, and Mitigation Measures

Not all recommendations by the DNR to increase the number of parking areas or access points were carried forward. An increased size of the turnouts or an increase in sanctioned parking areas could affect the Preserve by requiring additional Preserve property to be included in the project. Representatives of the CIV and the Chilkoot Indian Association (CIA) have informed DOT&PF that subsistence and traditional use of the river could be adversely affected by an increase in competition that could come from added parking and pullout areas. The proposed new access point at MP 20.5 is in an area where there are multiple paved parking areas used primarily during the autumn and winter for viewing bald eagles, rather than for access to fishing or gathering areas.

The DNR's recommended formalization of a river access point next to the Chilkat River Bridge (HNS 27) would not be provided as part of the proposed project. This proposed access would have been used for launching boats and, to be constructed with adequate space for the safe movement and temporary storage of trucks and boat trailers, would have required the acquisition of a large parcel within the Preserve.

Short-term impacts to traffic circulation and recreation access from construction activities would be minimized through coordination of road closures with local residents and organizations.

4.6.2 Environmental Justice

E.O. 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations, signed by the President on February 11, 1994, directs Federal agencies to take appropriate and necessary steps to identify and address disproportionately high and adverse effects of Federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law.

This section evaluates the project's compliance with E.O. 12898 on Environmental Justice.

4.6.2.1 Minority or Low-Income Populations

For the purposes of E.O. 12898, a minority population is any readily identifiable group of minority persons who live in geographic proximity, or geographically dispersed minority persons who would be similarly affected by the project. A low-income population is a readily identifiable group of low-income persons who live in geographic proximity, or geographically dispersed low-income persons who would be similarly affected by the project.

General demographic information on the study area is provided in Section 4.6.1.1. The Haines Highway project is located primarily in an unincorporated area of the Haines Borough and crosses through the Klukwan census designated place (CDP). Due to the low population of the Haines Borough, the entire borough is considered one census tract. Therefore, the relevant geographic areas used to evaluate the potential for Environmental Justice effects were the Haines Borough and Klukwan CDP. The most recent relevant data available for these areas are from the U.S. Census Bureau American Community Survey for 2009-2013 (U.S. Census Bureau, 2015b) and have been used for this analysis.

Minority Population - Klukwan is a predominantly Alaska Native community located along the study corridor. Population estimates for Klukwan indicate that 81 percent of the community is American Indian or Alaska Native (either as one race or in combination). Based on 81 percent of Klukwan being classified as Native American, the community of Klukwan meets the definition of a minority population as defined in E.O. 12898 (Table 4.6-2). There are also Native allotments (properties owned by Alaska Natives) located north and south of Klukwan. The Alaska Natives who own these allotments are also considered part of the minority population for this

Environmental Justice analysis. The minority population within the project corridor is located primarily in the area from MP 12 to MP 24.

Table 4.6-2: Haines Borough and Klukwan Racial Composition, 2009-2013

Race	Klukwan CDP	% of Total	Haines Borough	% of Total
Total Population	110	100	2,546	100
White	21	19	2,057	81
Black or African American	0	0	10	<1
American Indian or Native Alaskan, alone	51	46	209	8
Asian	0	0	20	1
Native Hawaiian or Other Pacific Islander	0	0	0	0
Some other race alone	0	0	7	<1
Two or more races	38	35	243	n/a

Source: U.S. Census Bureau, 2015b

The Haines Borough also has members of a minority population. Of the 2,546 total population, 209 individuals, 8 percent of the population, are classified as American Indian or Alaska Native alone. Within Haines Borough and Klukwan, there are 578 minority individuals.²² This represents 21.8 percent of the total population.

Low-income Population - Low-income populations are defined using the U.S. Department of Health and Human Services (USDHHS) poverty guidelines. A low-income population is a person whose household income (or in the case of a community or group, whose median household income) is at or below the USDHHS poverty guidelines. The guidelines for 2014 are listed in Table 4.6-3.

²² Assumes persons with two or more races are minority individuals (J. Barden, DOT&PF Title VI Specialist).

Table 4.6-3: Poverty Guidelines for Alaska, 2014

Number of People in Family/Household¹	Poverty Guideline (Annual Income)
One (1)	\$14,580
Two (2)	\$19,660
Three (3)	\$24,740
Four (4)	\$29,820
Five (5)	\$34,900
Six (6)	\$39,980
Seven (7)	\$45,060
Eight (8)	\$50,140

¹ For families/households with more than 8 people, add \$5,080 for each additional person.

Source: USDHHS, 2014

The average household sizes in Klukwan and the Haines Borough and the appropriate poverty guidelines for these household sizes are shown in Table 4.6-4. Median household incomes for Klukwan and the Haines Borough are also listed in the table. There does not appear to be a readily identifiable group of low-income people living in geographic proximity that would constitute a low-income population.

Table 4.6-4: Household Incomes and Poverty Guidelines

Household Type	2009 – 2013 Average Household Size	2014 Poverty Guideline Annual Income	2009 – 2013 Median Household Annual Income
Klukwan CDP	2.50	\$24,740	\$51,250
Haines Borough	2.01	\$24,740	\$52,866

Source: U.S. Census Bureau, 2015b; USDHHS, 2014

4.6.2.2 Determination of Disproportionate High and Adverse Effects

E.O. 12898 requires an evaluation as to whether a project will have disproportionately high and adverse effects on a minority or low-income population. An effect is considered to be disproportionately high, if the effect is predominately borne by a minority or low-income population or is appreciably greater in magnitude than on the population as a whole. As noted above, no low-income population has been identified. However, 81 percent of Klukwan residents, including the Native Alaskans that own Native allotments in the vicinity of Klukwan,

qualify as a minority population under E.O. 12898. Minority individuals make up 19.2 percent of the Haines Borough population.

Impacts from the project are discussed in each of the resource sections of this Revised EA. From comments regarding the July 2013 EA submitted by Native Alaskans, traditional use/subsistence resources (e.g., fish, wildlife, berries) have been identified as resources of special concern. Also important are effects upon the Native Alaskan land base from temporary construction effects and acquisition of ROW. Project impacts overall and, in particular, on the minority population are summarized in Table 4.6-5. The proposed project primarily widens the footprint of an existing highway, so effects are distributed somewhat evenly along the entire project corridor.

Some effects of the project, such as ROW acquisition and subsistence access impacts, occur in more specific areas or have the potential to have a greater effect on the minority population or on individual members of the minority population. These effects have been evaluated further to determine whether they would constitute disproportionately high and adverse effects.

Consultation with the CIV, as well as with the CIA of Haines, began in late 2005, as required by Section 106 of the NHPA. While discussions often focused on cultural resources and properties of interest or concern, the overall potential for the Revised Proposed Action to affect traditional uses and practices, as well as resources integral to those activities, was also discussed.

Additionally, the need for land from the Native allotments has been discussed throughout the project. Klukwan is the agent for the U.S. Bureau of Indian Affairs (BIA) and has the responsibility to represent the Native allottees in these situations. Klukwan representatives have contacted the allottees and have discussed this proposed project with them. These consultations are continuing.

ROW Acquisition - Section 4.3 contains a detailed description of ROW acquisition for the project. As shown in Table 4.6-5, the number of owners affected and the amount of acreage to be acquired from the minority property owners is higher than that which would be acquired from the non-minority property owners.

**Table 4.6-5: Summary of Revised Proposed Action Impacts on Populations
Minority & Non-minority**

Impact Category	Impact Summary (and some mitigation elements included in the Revised Proposed Action)	Impact on Minority Individuals or Population	Impact on Non-Minority Individuals or Population
ROW Acquisition, including remnant lands (see Section 4.3)	34.75 acres of ROW acquired, of which 8.33 acres are State-owned.	11 acres of ROW acquisition with six owners affected, including the CIV; 47 percent of land would be acquired from 17 percent of the population within the project area ¹ .	10.21 acres of ROW acquisition w/5 owners affected; 30 percent of land would be acquired from 83 percent of the population within the project area.
Utilities (see Section 4.5)	No adverse effects.	Same as noted under summary.	Same as noted under summary.
Recreation (see Section 4.6)	Temporary changes and delays in access during construction, as discussed in Section 4.6.1; improvements to turnouts.	Same as noted under summary.	Same as noted under summary.
Social (see Section 4.6)	Temporary traffic delays during construction; Delays to those traveling to and from Haines Borough from points north of MP 3.5; Delays in access to airport and ferry facilities, schools, shopping, and social facilities, including health and safety facilities, as discussed in Section 4.6.1; Long-term improvement in safety and traffic flow.	Increased temporary impacts on access compared to non-minority population, due to increased level of construction associated with realignment of access road into Klukwan and Klukwan residents would affected by all three phases of construction; Greater safety improvement for minority population that uses main access road into Klukwan.	Same as noted under summary.

**Table 4.6-5: Summary of Revised Proposed Action Impacts on Populations
Minority & Non-minority**

Impact Category	Impact Summary (and some mitigation elements included in the Revised Proposed Action)	Impact on Minority Individuals or Population	Impact on Non-Minority Individuals or Population
<p>Economy/ Subsistence (see Section 4.7)</p>	<p>Minor beneficial impact on local businesses from improved access and decreased travel time long-term; Minor beneficial impact on tourism from improved access to waysides along highway; Short-term benefit with job opportunities and income from construction activities; Short-term adverse effects on tourism economy, if access to key recreation areas is limited during construction.</p> <p>Short-term effects on subsistence from possible access limitations during construction; Short-term adverse effects on river/creek habitats and small fish during construction; Potential minor effects associated with clearing and grubbing impacts to areas used for gathering plant resources and small mammals; Long-term benefit from increased safety and access to subsistence-use areas; Long-term improvements to fishing from upgrading fish pass culverts; Proposed addition of large woody debris outboard of stabilized banks of Chilkat River would mitigate for riprap.</p>	<p>Economic benefits as described under summary.</p> <p>Impacts on subsistence described in summary may affect minority population more than non-minority population, due to higher dependence on subsistence resources.</p>	<p>Economic and subsistence benefits as described under summary.</p>
<p>Visual Resources (see Section 4.8)</p>	<p>Minor adverse effect to visual character, mostly in short term, due to wider roadway footprint, vegetation clearing, and view of abandoned roadway sections.</p>	<p>Same as noted under summary.</p>	<p>Same as noted under summary.</p>

**Table 4.6-5: Summary of Revised Proposed Action Impacts on Populations
Minority & Non-minority**

Impact Category	Impact Summary (and some mitigation elements included in the Revised Proposed Action)	Impact on Minority Individuals or Population	Impact on Non-Minority Individuals or Population
Noise (see Section 4.9)	Short-term adverse effects from increased noise levels during construction; No substantial changes that would result in long-term noise-level increases.	As noted under summary; Impacts in Klukwan area may be slightly higher, due to amount of construction to occur in Klukwan area during reconstruction of access road; Impacts may also be greater near Chilkat River Bridge site.	Same as noted under summary.
Cultural Resources (see Section 4.10)	Direct adverse effect on Chilkat River Bridge, an historic property.	Historic resource effect as noted under summary is not more severe on minority population; No known adverse effect to archaeological or cultural resources but there is potential for discovery of resources during construction. Archaeological monitoring with tribal observers is proposed.	Historic resource effect as noted under summary.
Water Body Involvement, Hydrology and Water Quality (see Section 4.11)	No adverse effects on hydraulics or hydrology; Wetland fill impacts as noted below; Improvements to water quality from relocation of roadside tributaries away from the roadway. As a separate action, DOT&PF M&O is acquiring permits to move debris slide materials from MP 19 into the Chilkat River. This is anticipated to occur with or without the project.	Same as noted under summary.	Same as noted under summary.
Navigation (see Section 4.12)	Potential short-term adverse effects from river traffic delays during bridge replacement; Long-term improvement to navigation because of the increase in bridge height and reduction of in-water piers.	Same as noted under summary.	Same as noted under summary.

**Table 4.6-5: Summary of Revised Proposed Action Impacts on Populations
Minority & Non-minority**

Impact Category	Impact Summary (and some mitigation elements included in the Revised Proposed Action)	Impact on Minority Individuals or Population	Impact on Non-Minority Individuals or Population
Floodplains (see Section 4.13)	No adverse effects.	Same as noted under summary.	Same as noted under summary.
Wetlands and Other Waters of the U.S. (see Section 4.14)	Direct adverse effect on 23.7 acres of wetlands and 7.4 acres of open water; Impacts to 12,662 linear feet of Chilkat River and 4,350 linear feet of tributaries; See detailed impacts in Section 4.14.	As noted in summary; Most wetland impact areas are in areas outside the location of the minority population.	As noted in summary; Most wetland impact areas are in areas owned by the state or non-minority population.
Fish (see Section 4.15)	Short-term adverse effects on fish habitat and small fish during construction activities; Long-term improvements to fish habitat from new fish passage culverts and stream relocations as described in Section 4.15 and Table 4.15-1. Proposed addition of large woody debris outboard of stabilized banks of Chilkat River would mitigate for riprap.	Same as noted under summary; See impacts to subsistence above.	Same as noted under summary.
Wildlife (see Section 4.16)	Minor loss of habitat and habitat fragmentation that might adversely affect small mammals.	Same as noted under summary; See impacts to subsistence above.	Same as noted under summary.
Invasive Plant Species (see Section 4.17)	Potential to introduce or spread invasive plant species along corridor.	Same as noted under summary.	Same as noted under summary.
Air Quality (see Section 4.18)	Localized short-term impacts to air quality during construction.	Same as noted under summary; Impacts in Klukwan area may be slightly higher due to amount of construction to occur in Klukwan area during reconstruction of access road.	Same as noted under summary.

**Table 4.6-5: Summary of Revised Proposed Action Impacts on Populations
Minority & Non-minority**

Impact Category	Impact Summary (and some mitigation elements included in the Revised Proposed Action)	Impact on Minority Individuals or Population	Impact on Non-Minority Individuals or Population
Hazardous Waste (see Section 4.19)	No adverse effects on known hazardous material sites.	Same as noted under summary.	Same as noted under summary.
Construction Impacts (see Section 4.20)	As discussed in categories above.	As discussed in categories above.	As discussed in categories above.

¹ The population within the project area is considered to be all persons living in the Haines Borough and Klukwan.

As illustrated in Table 4.3-2, most of the ROW to be acquired from the non-minority population consists of narrow strips of land adjacent to the existing highway alignment. Only one of the non-minority-population parcels is adversely affected by a new road alignment through the property; this acquisition would reduce the buffer between the residence and the road, impact the residence's driveway, and impact an airstrip on the non-minority-owned property. On this property, the distance between the residence and the highway is reduced by up to 400 feet at its maximum, or by a reduction of 42 percent.

The ROW to be acquired from the five Native allotments is needed for the realignment of the highway. Four of the five Native allotments do not have residences on them but would have a new area of disturbance outside the current highway corridor. One Native allotment does have a residence on it. The new highway alignment results in shifting the highway approximately 50 feet closer to the residence. The distance between the residence and the highway is reduced by 11 percent. The new Chilkat River Bridge would be approximately 50 feet closer to the residence.

Current land use in the Native allotment acquisitions is primarily undeveloped forest land that provides habitat to many species, including those animal species which are hunted and plant species which are gathered for subsistence. The proximity to the highway limits the amount of hunting allowed by law. Berry picking and gathering are other typical uses of these types of lands. The DOT&PF and the FHWA, in consultation with the allottees and the BIA, would direct the removal of the pavement from the former highway alignment and would ensure the reclamation and replanting of the relinquished highway parcels.

To summarize, the most substantive ROW acquisition effects fall on two parcels, one owned by a member of the minority population and one owned by a non-minority member of the population. In both cases, the road realignment will cut through the parcel, dividing the parcel, rather than taking just a sliver of property along the existing road. In both cases, the distance between the residence on the parcel and the highway would be reduced. The reduction in distance between the residence and the highway is greater regarding the parcel with a non-minority owner. In addition, the parcel owned by the non-minority individual has an airstrip on it that would be shortened due to the ROW acquisition.

While the number of individuals affected by ROW acquisition is similar between the minority and non-minority populations, members of the minority population would bear a greater magnitude of the effect in terms of acreage acquired. This is considered a disproportionate effect on a minority population.

Subsistence Effects - Klukwan is a rural Native Alaskan community with acknowledged traditional subsistence uses of fish and wildlife resources in this area.

Construction activities would have short-term adverse effects on subsistence resources through temporary loss of habitat, construction activity impacts on fish habitats in streams and the river, and potential limitations on access to fishing and hunting during certain construction activities. Both the minority and non-minority populations in this area use subsistence resources and may be impacted temporarily during construction. However, given the minority population's cultural ties to and higher reliance upon subsistence resources, these short-term adverse effects on subsistence may be considered to be more severe than the effects on non-minority individuals.

Long-term adverse effects on subsistence resources are not anticipated to be adverse and, depending on the success of mitigation and enhancement efforts for impacts to fish habitat, may be beneficial.²³ Mitigation and enhancement measures for impacts to fish habitat are detailed in Section 4.15.3.

Other Construction Effects - Changes to the access road from the Highway into Klukwan were considered, and it was found that Klukwan residents would not have a greater magnitude of construction impact than other residents along Haines Highway. Blasting would not occur directly in Klukwan but would occur in close proximity to non-minority individuals residing closer to Haines. People living in Klukwan and beyond would be impacted by delays and construction activities for a longer time, because they would be affected by all three construction phases.

Ultimately, all travelers and residents along the Highway would have long-term benefits in terms of traffic circulation and safety.

²³ U.S. Department of Transportation (USDOT) Order 5610.2 permits mitigation and enhancement measures and offsetting benefits to the affected populations when making determinations of disproportionately high and adverse effects.

Unavoidable effects would be short-term and would be mitigated as documented in Table 6.1-1.

Analysis of Adverse Effect

Individual and cumulative effects to the minority population from the Revised Proposed Action have been evaluated to determine whether there would be both a disproportionate and an adverse effect. As defined by U.S. Department of Transportation (USDOT) Order 5610.2(a) - Environmental Justice, an adverse effect “*means the totality of significant individual or cumulative human health or environmental effects....*”

The potential effects considered include: direct human harm, air or water pollution, destruction or disruption of resources, destruction of aesthetic values, destruction or disruption of community cohesion or economic vitality, and other similar effects. Table 4.6-5 summarizes effects upon both minorities and non-minorities. Effects are primarily temporal delays and impacts during construction activities. No businesses or individuals would be displaced. Subsistence activities might have short-term impacts but, as discussed below, efforts would be made to avoid and minimize those effects. Cumulatively, these effects would not result in an adverse effect as defined under USDOT Order 5610.2(a). ROW acquisitions would disproportionately affect minorities (47% of the ROW needed for the project comes from minority-owned lands vs. 30% from non-minority-owned parcels). However, the magnitude of effect on the use of the non-minority-owned airstrip at MP 18 would be greater than the impact on the use of the affected minority parcels. Therefore, there would not be a disproportionate adverse effect to minority populations or individuals.

Measures to Avoid, Minimize, and Mitigate Disproportionately High and Adverse Effects

As documented above, a higher percentage of the privately owned property that would be affected by this proposed ROW acquisition is owned by members of the minority population versus the non-minority population. The ROW effects of this project are related to the existing location and alignment of the highway and the geometric changes required to reduce the safety issues identified near Klukwan and in the area between Klukwan and the Chilkat River Bridge. Since these portions of the existing highway alignment cross Native-owned lands, and these lands are broad swaths of land, the DOT&PF could not avoid these effects upon the minority property owners impacted by ROW acquisitions. DOT&PF representatives have consulted with Alaska Native groups on ways to avoid, minimize, and mitigate these effects as documented in

Section 7.3, Early and Continuing Coordination Efforts. Additionally the DOT&PF has provided offsetting benefits and opportunities to enhance the community by realigning and improving the access road into Klukwan.

There are no clear avoidance alternatives that would alter this proportional ROW acquisition difference because of the geometrics of the roadway at this location, the size of the parcels that would be affected (re-aligning the road around Native allotment lands is not practicable), and the need to retain the current highway corridor to avoid other protected resources, including the Preserve and other Section 4(f) properties.

Adverse effects associated with ROW acquisition may be minimized or mitigated by relinquishing the abandoned highway ROW on those Native allotments where the highway required a new alignment. The dimensions of potentially excess ROW that may be available for relinquishment would be determined prior to construction, during the ROW acquisition phase.

To reduce the potential for temporary adverse effects on subsistence, the DOT&PF would coordinate with Native Alaskan entities to identify exact locations at which and times during which to avoid certain construction activities to reduce potential impacts on subsistence access. Impacts to subsistence resources would be reduced as discussed in Table 6.1-1 for fish and wildlife. Table 4.6-5 above provides mitigation elements that have been incorporated into the Revised Proposed Action which are pertinent to traditional uses and subsistence resources important to Native Alaskans.

Mitigation of other construction effects, including noise, air quality, and impacts to fish and wildlife, would be avoided, minimized, and mitigated as documented in Table 6.1-1.

In addition to the mitigation measures documented in Table 6.1-1, the DOT&PF has incorporated improvements to the access road into Klukwan as an offsetting benefit to the affected population. These improvements will improve safety for Klukwan residents coming into and out of the community onto Haines Highway.

Compliance with Executive Order 12898

This project has been designed to comply with E.O. 12898 by 1) identifying minority or low-income populations affected by the project, 2) evaluating the project's effects to determine whether effects would be disproportionately high and adverse regarding these populations, 3) proposing measures to avoid, minimize, and mitigate these effects and to provide offsetting benefits and opportunities to enhance these populations, and 4) providing public involvement opportunities and considering those results during project development.

Based on the analysis presented above, the DOT&PF and the FHWA find that the Haines Highway MP 3.5 to MP 25.3 project complies with E.O. 12898.

4.7 Economy and Subsistence

4.7.1 Affected Environment

The economy of Southeast Alaska has faced challenges over the last decade with job losses in six of ten years between 2000 and 2009 (DLWD, 2010). These losses have been associated with stresses facing the timber and fishing industries and, in some years, tourism.

Much of the project area is used by Tlingit people of Klukwan and Haines for subsistence, defined in the Alaska National Interest Lands Conservation Act of 1980 as the “*customary and traditional use by rural Alaska residents of wild renewable resources for direct personal or family consumption as food, shelter, clothing, tools, or transportation.*” Subsistence activities that occur in the project vicinity include fishing for salmon, eulachon (hooligan), and other species, as well as hunting and gathering. CIV offers traditional knowledge camps to educators and youth groups to enhance the understanding of and participation in their subsistence traditions.

Haines Borough

The economy of the Haines Borough is primarily based on government, tourism, and support services for a large retirement community (Table 4.7-1 and Figure 4.7-1). The Haines Borough School District, State of Alaska, Haines Borough, and Southeast Alaska Regional Health Consortium are the largest employers in the Borough. Table 4.7-1 has been revised with current data for 2012 and presented as Table 4.7-2. Both tables are shown, primarily to show the increase in 2012 tourism employment.

Table 4.7-1: Haines Borough Employment

	2000	2011 ¹	%Change
Haines Borough Employment	992	1,016	2.4
Goods Producing	216	149	-31.0
Construction	131	91	-30.5
Manufacturing	28	23	-17.9
Agriculture, Forestry, Fishing, Mining	57	35	-38.6
Services	776	550	-29.1
Trade, Transportation, Utilities	195	208	6.7
Professional Services	363	208	-42.7
Leisure/Hospitality Services (Tourism)	145	134	-7.6
Public Administration	73	288	294.5

¹ Total includes 29 workers employed in “other” industry group not shown elsewhere in the table.

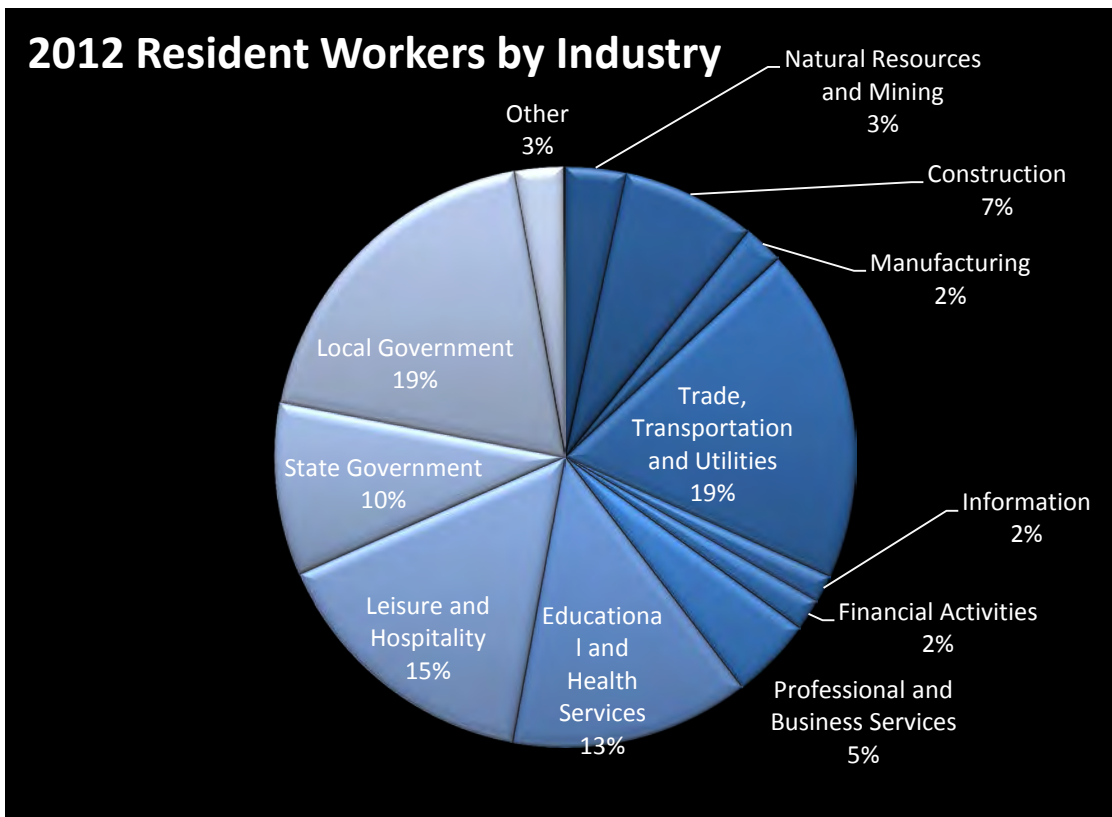
Source: U.S. Census Bureau, 2015a; DLWD, 2013

Table 4.7-2: Revised Haines Borough Employment

	2000	2012 ¹	% Change
Haines Borough Employment	992	1,035	4.3
Goods Producing	216	135	-37.5
Construction	131	77	-41.2
Manufacturing	28	23	-17.9
Agriculture, Forestry, Fishing, Mining	57	35	-38.6
Services	776	574	-26.0
Trade, Transportation, Utilities	195	193	-1.0
Professional Services	363	220	-39.4
Leisure/Hospitality Services (Tourism)	145	161	11.0
Public Administration	73	297	306.8

¹ Total includes 29 workers employed in “other” and “unknown” industry groups not shown elsewhere in the table.

Source: U.S. Census Bureau, 2015a; DLWD, 2014a



Source: DLWD, 2014b

Figure 4.7-1: 2012 Workers by Industry in the Haines Borough

Following is a brief highlight of some of the major economic sectors within the Haines Borough.

Government – Local government has been a major component of the Haines Borough economy since 2000. In 2012, local and state government alone employed 29 percent of the Borough’s employed residents (DLWD, 2014b).

The Haines Borough government provides a variety of services within the Borough including public safety (police and fire), public works (street maintenance, water, sanitary sewer, and solid waste service), economic development, animal control, and others.

Tourism - In 2011, about 35,783 state ferry passengers disembarked at Haines (Haines Convention and Visitors Bureau, 2012). Data also reported 30,533 people crossed the International Border from Canada into the U.S. on the Haines Highway. More than 27,000 visitors arrived by cruise ship, down from a peak of 187,000 in 2000. Nearly 9,000 passengers flew on commercial air carriers into and out of Haines airport in 2010.

Special events that draw visitors to the Haines area include the Southeast Alaska State Fair in August, the Alaska Bald Eagle Festival in November, the Kluane to Chilkat International Bike Relay in June, the Great Alaska Craftbeer and Homebrew Festival in May, and the Alcan 200 International Snowmachine Race in January.

Over 100 businesses are licensed in the community provide visitor services to some extent. The town supports about 22 different hotels, inns, and bed and breakfasts, and six wilderness cabin facilities. Four state campgrounds are located in the general Haines area.

The *Haines Borough 2025 Comprehensive Plan* (2012) indicates that area residents support increased tourism, and implementation objectives call for increasing cruise ship and ferry activities as well as expanding outdoor and winter recreation services.

Other Industries and Development Projects –

The recent *Haines Borough 2025 Comprehensive Plan* (2012) indicates approximately 17 percent of the Haines Borough population rely on retirement income.

Services for seniors include the:

- Haines Senior Village, Inc providing 15 independent living apartments and a senior center. The Haines Senior village has three employees.
- The Haines Assisted Living Center provides 10 beds for seniors requiring services to help with daily living, including services for seniors with mild or moderate dementia. The Haines Assisted Living Center employs 14 employees, three to four full time and the rest part time.
- St. Lucy's Senior Living provides eight independent living rooms and five apartments for seniors. St. Lucy's employs three persons.
- The Deishu program provides independent living units primarily for Native seniors and is administered by the Central Council Tlingit Haida Indian Tribes of Alaska. Information on the number of units or employment is not available.
- The local pool and library offer special services for seniors but have no staff dedicated entirely to senior services.

- The Southeast Alaska Regional Health Consortium clinic provides medical care for all persons including seniors. The clinic has no staff dedicated entirely to senior services.

Haines supported a larger timber processing industry in the past; the last large sawmill closed in the early 1990s. Haines currently supports a small sawmill that is mainly used to cut cedar for locally produced hot tubs.

Haines remains an attractive port because of the availability of waterfront for transshipment facilities. Possible future uses of the port at Haines could be transshipment of goods and equipment needed to construct an Alaskan natural gas pipeline or to support mining exploration and development in the future. The Alaska natural gas pipeline project remains on hold and future mining projects are speculative.²⁴

Fiscal Conditions - The Haines Borough levies a property tax, a 5.5 percent sales tax, and a 4 percent hotel bed tax. In 2011, the property tax generated \$2.5 million on \$259.2 million of assessed value (DCCED, 2012). The Haines Borough sales tax generated \$2.7 million, and a hotel bed tax generated \$71,928. Total Haines Borough 2011 tax revenues were \$5.3 million or \$2,116 per capita.

Klukwan

The U.S. Census Bureau estimates of employment in Klukwan from 2009 – 2013 were 52 persons, or 62.5 percent higher than the 2000 census estimate of 32 (U.S. Census Bureau, 2014). Klukwan has seen a substantial increase in professional services and government employment (public administration) since 2000 (Table 4.7-3). The Alaska State Troopers provide public safety services and Klukwan has its own volunteer fire department and infrastructure.

²⁴ D. Sosa, Haines Borough email to Jim Scholl, DOT&PF, on January 12, 2015. Email included in Appendix H.

Table 4.7-3: Klukwan Employment

	2000	2011 ¹
Klukwan Employment	32	52
Goods Producing	7	6
Construction	7	6
Manufacturing	0	0
Agriculture, Forestry, Fishing, Mining	0	0
Services	25	60
Trade, Transportation, Utilities	2	6
Professional Services (includes education & information)	17	39
Leisure/Hospitality Services (Tourism)	0	6
Public Administration	6	9

¹ Employment estimate is 5 year average 2009-2013.
Source: U.S. Census Bureau, 2015a, 2015b

In addition to the cash economy, subsistence hunting, fishing and gathering and sharing of traditional knowledge remain major components of life in this area and the Chilkat River is important to the community's subsistence activities. Klukwan is designated a rural place with customary and traditional use of various resources by the Alaska Joint Board of Fisheries and Game and the Federal Subsistence Board. From 1985 to 1999, annual sockeye subsistence harvests by Klukwan households ranged from 4,483 to 9,075 fish annually (DCCED, 2006). ADF&G surveys in 1983 and 1987 found that 100 percent of Klukwan households used subsistence resources and 95 percent of households participated in the harvest of those resources (ADF&G, 1994).

Southeast Alaska's largest run of hooligan occurs up the Chilkat River, usually in early spring. Hooligan are highly prized for their oil, which is a customary trade item for Tlingit people of Southeast Alaska. The Tlingit people of Haines and Klukwan continue to harvest, process, and trade hooligan oil to many communities of the region (ADF&G, 1994; DCCED, 2006). Salmon are also important. About half of the subsistence harvest in the mid-1980s was salmon, with Klukwan taking mostly sockeye and chum by set net.

4.7.2 Environmental Consequences

Revised Proposed Action - In the long term, the Revised Proposed Action would provide decreased travel time and improved safety and access for those using the Haines Highway; this would have some benefit to the economy of Haines.

Direct Impacts -

Decreased travel times are expected to increase the time travelers can spend in local businesses. Decreased travel times to the Haines Borough would allow travelers to spend more time in the Haines Borough while waiting for the ferry or waiting for customs at the Canadian border to open. The benefit to local businesses from decreased travel times is expected to be minimal.

Improved access would benefit, primarily, local residents. Resident decisions to use local business more frequently may benefit by improved access. In other words, the decision to shop locally for a few items, now, rather than wait for better driving conditions is expected to be influenced by safer access, e.g. improved site distance in all weather conditions, safer driveway characteristics, etc. Again, the benefit to local businesses from improved access would be minimal.

The National Scenic Byway designation is well publicized and shows long distance bicyclists how attractive the Haines Highway would be to travel. Wider, safer shoulders would make a long distance bicycle ride more pleasant and aid the decision to repeat a bicycle trip. Bicyclists shop and stay in Haines. Local businesses could enjoy more spending from repeat bicycle riders. The benefit to local businesses from repeat bicycle riders is expected to be minimal.

However, because this highway is a major transportation resource for the region, the benefit would be felt on a regional scale.

The new proposed wayside near MP 20.5 and access improvements to waysides along the highway could have a minor beneficial impact on tourism operations in the area. Improvements could decrease wayside maintenance efforts, especially snow plow activity.

Better snow plow service would allow tourist operators to use waysides later in the year, especially, during the bald eagle congregation. Similarly, the Revised Proposed Action could have beneficial long-term impacts to future economic opportunities in the Haines Borough

because the Revised Proposed Action would decrease travel times to the Haines port and related facilities.

Construction of the Haines Highway improvements is expected to cost approximately \$104.8 million over 6 to 8 years (DOWL HKM, 2013). The construction would occur in multiple phases as described in Section 1.0, Revised Proposed Action. Construction would result in short-term beneficial effects on local employment and wages during the construction period. A study of the potential economic impact of project construction was completed in 2009-2010 and revised in 2014, based on the \$104.8 million cost estimate. For purposes of the study it was assumed construction would take place in three construction phases (see Appendix B, Socioeconomic Analysis). This study estimated that construction expenditures (direct business revenues) of \$104.8 million could support a yearly average of 290 jobs for each of the three construction phases. Actual construction cost and phasing may differ from these early estimates, but would be expected to have comparable economic benefits.

Although impacts of the construction spending are expected to be beneficial in the short term, some short-term adverse effects could occur to tourism businesses if access to key recreational areas is limited or the areas are avoided due to construction. This includes the potential for short-term adverse effects on Chilkat River boat traffic during replacement of the bridge.

Revised Proposed Action impacts on subsistence:

- fishing impacts²⁵ would be avoided by placing woody debris in the Chilkat River areas outside the areas identified as set net or drift net sites.
- Figure Set D shows fill proposed in the Chilkat River and Section 4.15.2 provides more detailed information about the environmental consequences of the Revised Proposed Action. Section 4.15.3 contains the details for the proposed avoidance, minimization, and mitigation measures.

²⁵ As described in Section 4.15-2 Fish, the project will at least offset the unavoidable impacts to the natural availability of salmon. All impacts to fish-bearing tributaries would require tributary relocation, in-kind or better. Twenty-five culverts would be upgraded to fish passage standards, improving spawning and rearing fish access to upstream fish habitat. Chilkat River impacts would be offset by simulating productive Chilkat River fish habitat as detailed in Section 4.15 Fish. To mitigate for potential impacts to fish habitat, an additional approximately 7,308 linear feet of fish bearing tributaries would be created or improved. As a note, the limiting factor to salmon spawning and rearing is overwintering habitat. The proposed mitigation plan (see Appendix D – *Stream Habitat Mitigation Plan* in Appendix F, EFH Assessment) may provide improved overwintering habitat near MP 14, in the Chilkat River, and near MP 17 on Horse Farm Creek.

- Berry, fern, Devil’s Club, and mushroom harvesting within major realignment areas would be impacted. ROW relinquishment may mitigate some of these impacts.
- Wildlife gathering would be minimally affected. Except for small fur bearing species, subsistence hunters identified harvest areas well beyond the project area.

The project was designed in consultation with the people of the CIV and the CIA to avoid impacts to identified subsistence use areas. The primary concern raised by Klukwan residents during project scoping was potential impacts to one of their subsistence use areas from relocation of the Chilkat River Bridge downstream. As discussed in Section 3.1, Chilkat River Bridge Options, this bridge alternative was dismissed from further consideration due to several factors including the concerns over impacts to this important subsistence fishing area.

Short-term effects on subsistence during construction would include river traffic interruptions and other potential construction access disturbance. Construction impacts on subsistence are discussed further in Section 4.20.

Indirect Impacts

The Revised Proposed Action would result in a long-term effect on the general safety and access to subsistence areas through improvements to the highway design, widened shoulders, and parking areas.²⁶ These improvements would improve safety but could also increase non-subsistence recreational use of the area resulting in indirect adverse impacts to subsistence fishing.

No-Action - The No-Action Alternative would have a moderate long-term adverse impact on the economic environment.

This important transportation route would continue to have deficiencies that in the long term could potentially have adverse effects on local businesses and/or visitors to the area through decreased transportation efficiency and access. There would be no effect on subsistence from the No-Action Alternative.

²⁶ Through consultation with traditional resource users, measures were developed to avoid and minimize impacts to key subsistence sites during project development. Long-term access would be maintained to all identified subsistence-use areas.

4.7.3 Avoidance, Minimization, and Mitigation Measures

To avoid and minimize adverse impacts on the economy and subsistence activities in the project area, construction activities would be coordinated with event organizers to reduce impacts as noted below:

- construction would be halted for one day a year for the Kluane-Chilkat International Bike relay in July,
- temporary highway closures for blasting activities would be coordinated with Southeast State Fair organizers to avoid or minimize access disruptions, and
- temporary highway closures for blasting activities would be coordinated with the Great Alaska Craft Beer Festival organizers to avoid or minimize access disruptions.

Adverse impacts on the economy and subsistence activities in the project area would be further avoided and minimized by the following means.

- No blasting activities would be allowed in the Council Grounds area from November 1 to January 31 to minimize impacts to perching eagles during the bald eagle congregation.
- No construction activities would occur in the Council Grounds area during the Alaska Bald Eagle Festival.
- Access to waysides would be maintained at all times during the Alaska Bald Eagle Festival.

At least one lane of traffic would be kept open at all times other than temporary closures for blasting activities to minimize impacts to subsistence users. See further subsistence mitigation measures in Section 4.7.2.

4.8 Visual

4.8.1 Affected Environment

The Haines Highway project corridor parallels the Chilkat River and provides views of the Chilkat River Valley. It is flanked by steep mountainsides, glaciers, and the forested river banks that are used by one of the world's largest congregation of bald eagles (the Preserve). Major eagle roosting trees exist along many sections of the project corridor, dozens of eagle nests can easily be seen from the highway, and both local and out-of-state visitors have the opportunity to

view the estimated 3,500 to 4,000 bald eagles that reside in the Preserve each year between October and February.

In 1998, the Alaska portion of the Haines Highway received state recognition as an Alaska State Scenic Byway.

Scenic byways are special routes offering travelers access to beautiful scenery and cultural and natural riches. In 2009, Haines Highway was also designated as a National Scenic Byway (FHWA, 2013) (see Section 1.1, Introduction/Affected Environment, and the discussion about the HHCPP in Section 4.1, Land Use and Land Management Plans).

4.8.2 Environmental Consequences

Revised Proposed Action - Preserving the scenic value of Haines Highway was identified as a special consideration for this project early in its development. The visual changes associated with the Revised Proposed Action would be located on Haines Highway itself or in the area immediately adjacent to it. DOT&PF consulted with Preserve staff to determine appropriate improvements to the existing turnouts along the project corridor to maintain or improve access to the viewshed. The proposed turnout improvements are described in detail in the Recreation subsection of Section 4.6, Social Conditions and Environmental Justice, as well as in Appendix A.

As discussed in Section 4.1.1, the HHCPP was reviewed and followed throughout project development. The Revised Proposed Action is consistent with the HHCCP.

Direct Impacts

The Revised Proposed Action would expand some of the views for motorists traveling on Haines Highway. Sections with elevated highway grades and the higher Chilkat River Bridge would extend motorists' views of the Chilkat River and the Preserve.

However, the open guardrail on the existing bridge would be replaced by a solid, crash-tested railing. Typical passenger vehicles are not high enough for passengers to see over the railing. Guardrail would be installed in highway sections along the side of the Chilkat River. Depending on the height of the vehicle, the guardrail could partially obscure the viewshed.

Widening of Haines Highway and turnout improvements would result in additional vegetative clearing. An estimated 140 acres of vegetation would be cleared during construction. Cleared areas not paved would be revegetated; however, there may be some loss of mature, dense vegetation that currently provides screening.

Cutting mature trees adjacent to the river at and near the view point within the Council Grounds has been avoided. These trees are the typical eagle perches photographed. Some eagle perching and roosting trees up gradient of the highway would be cut, though DOT&PF expects perching and roosting trees of similar quality will be exposed on the new uphill vegetated perimeter of the Haines Highway. DOT&PF is working with the USFWS to develop ways to provide additional perching and photographic opportunities next to the river to replace cut trees.

During construction, there will be disturbances to the viewing opportunities along this Scenic Byway. The project would be constructed in phases so the areas disturbed at any one time would be minimized. No construction would occur in the Council Grounds during the Alaska Bald Eagle Festival to avoid disturbances to eagles and the public who come to view those eagles at that time. Additional construction-related impacts can be found in Section 4.20.

Following construction of the Revised Proposed Action, motorists who drive this corridor may perceive the highway improvements to be a minor adverse impact to the visual character of the highway, since for a period of time they will be able to see fresh vegetation clearing, a slightly wider roadway footprint, and the abandoned and freshly vegetated roadway sections where the road is realigned.

Over time, this visual impact will be reduced as new vegetation fills in the cleared and abandoned areas.

Indirect Impacts –

There are no indirect visual impacts anticipated as a result of the Revised Proposed Action.

No-Action Alternative - Changes to the scenic value of Haines Highway would not occur under the No-Action Alternative.

4.8.3 Avoidance, Minimization, and Mitigation Measures

Mature vegetation clearing has been avoided and minimized to the extent feasible. Vegetation would be added in select locations. No construction would occur in the Council Grounds during the Alaska Bald Eagle Festival to avoid disturbances to eagles and the public who come to view those eagles at that time. DOT&PF would make every effort to place required signs in such a manner that minimizes blocking of scenic views.

Areas of large eagle roosting trees between the road and the river were specifically avoided where practicable. See Section 4.2, Alaska Chilkat Bald Eagle Preserve, for a discussion of the clearing related to eagle nesting, perching, and roosting trees. The new turnout at MP 20.5 would provide improved photo opportunities (see Figure 4.2-5 and discussion in Section 4.2.3). Ballasted log clusters placed in the Chilkat River near MP 20 may provide additional perching and photo opportunities close to the Haines Highway (see Table 4.15-3).²⁷

The revegetation surface of the relinquished highway sections will be determined in coordination with property owners during ROW negotiations. A portion of the abandoned highway sections and utilities would remain within the current DOT&PF ROW at MP 17.5 to accommodate the private properties adjacent to the current highway alignment.

4.9 Noise

4.9.1 Affected Environment

Highway noise levels have not been measured within the project area. Noise is affected by the volume of traffic, the speed of traffic, and the number of trucks in the traffic. Highway noise along Haines Highway is not pervasive, because traffic is relatively sparse and intermittent, with a 2013 ADT volume of only 580 vehicles (fewer than 40 vehicles per hour) (DOT&PF, 2015). The speed along the highway is posted at 55 mph with reduced speed at curves.

Noise-sensitive receptors, as defined in the DOT&PF Noise Policy (DOT&PF, 2011a), do exist along the project corridor. Receptors include residences (a Noise Category B activity) and recreation areas (Noise Category C activities). The Preserve, a wildlife refuge and recreation

²⁷ In highway sections close to the Chilkat River there would be a guardrail for safety. The guardrail might partially obstruct viewing opportunities of perching eagles close to the stream bank (See Figure 1.2-3).

area, is a resource that could be affected by excessive noise. The Preserve Management Plan (DNR DMLW, 2002a) recognized the existence of the Haines Highway and does not identify traffic noise as being inconsistent with the plan. The management plan does not identify the Preserve as a Noise Category A activity: lands on which serenity and quiet are of extraordinary significance.

4.9.2 Environmental Consequences

FHWA regulations and DOT&PF policies require noise analysis and evaluation of noise-abatement measures for certain types of projects (Type I projects). Type I projects are specifically defined (Code of Federal Regulations [CFR] 23 CFR Part 772 and DOT&PF Noise Policy, April 2011) and include a highway on a new location, the addition of new lanes, and horizontal and vertical realignments. These realignments must be considered substantial (halving the distance between the traffic noise source and the closest noise-sensitive receptor) in order to be a Type I project.

Revised Proposed Action - There are multiple proposed horizontal and vertical alignment changes for this project. Proposed realignments near residents were analyzed and none halved the distance between the traffic noise source and the nearby residences. None resulted in the removal of shielding and exposing the line-of-sight between the noise source and the nearby residences.

DNR-identified turnouts/recreational areas along the corridor were also evaluated, and none of the realignments resulted in a halving of the distance between the highway and the defined sites.

Realignments through the Preserve do include two substantial shifts; however, there is no noise sensitive receptor in proximity of the Preserve realignment. The Revised Proposed Action is not a Type I project.

Direct Impacts

The Revised Proposed Action would not increase the design speed or volume of traffic, rather the project would match the roadway curvature and safety features to existing traffic speed and volume. While there are no data to characterize the existing noise levels, the low traffic volumes

along the project corridor are not expected to exceed the regulated sound-level decibels (dBA) threshold for residences and recreational areas (67 dBA). There are no direct noise impacts.

Construction noise impacts are discussed in Section 4.20 of this FREA.

Indirect Impacts –

No indirect noise impacts are anticipated as a result of the Revised Proposed Action.

No-Action Alternative - There would be no change in the noise level along the project corridor from the No-Action Alternative, except as projected from normal growth.

4.9.3 Avoidance, Minimization, and Mitigation Measures

The Revised Proposed Action would not result in an increase in traffic noise impacts. During project development, the need for additional vehicle passing opportunities was identified. The design allowed for safe passing zones that avoided the need for passing lanes. Passing lanes could have shifted traffic closer to residences and could have resulted in noise impacts.

4.10 Cultural Resources

Section 106 of the NHPA of 1966 (54 USC 306108)²⁸ requires projects that have federal funding to consider effects on any properties listed, or eligible for listing, on the NRHP. Federal regulations for implementing Section 106 are contained in 36 CFR 800, Protection of Historic Properties.

The Section 106 process allows for consultation between federal agencies and consulting parties to identify historic properties within the area of potential effects, to assess potential adverse effects upon those properties, and to strive to reach agreement on measures to avoid, minimize, and mitigate those effects.

As required by regulation, the project corridor Area of Potential Effect (APE) has been reviewed to determine whether any eligible sites would be affected by the project. To assist the FHWA and the DOT&PF in identifying possible eligible sites and in the evaluation of potential effects to those sites, Section 106 consulting parties were identified. Those consulting parties are: the State

²⁸ The USC has been recodified such that Section 106 is now contained in 54 USC § 306108. The implementing regulations at 36 CFR 800 are not affected by the recodification.

Historic Preservation Officer (SHPO), CIV, the CIA, the Central Council of Tlingit and Haida Indian Tribes of Alaska, Sealaska Corporation, Klukwan, Inc., the BIA, and the Sealaska Heritage Institute (SHI). Appendix E, Section 106 Consultation, contains a table listing all of the consultation activities that have occurred regarding the project, as well as the correspondence between the Section 106 consulting parties. Section 106 consultation activities on the Haines Highway MP 3.5 to MP 25.3 project began with a tribal consultation meeting in Haines in December 2005. Multiple consultations have occurred (see Appendix E, p. 55, Table E-1) and will continue to occur following the decision document for this project.

The APE for the project was defined as the footprint of Haines Highway from MP 3.5 to MP 25.3 and the proposed highway realignments, plus a 25-foot buffer beyond it on both sides and a 50-foot buffer in realigned highway sections. The buffer in the realigned highway sections also includes the area between the proposed realignment and the abandoned highway section. All bridge realignment options were also included in the APE.

Cultural Resource Consultants LLC (CRC) was on-site monitoring geotechnical soil surveys in potentially sensitive areas in April 2005. CRC conducted archaeological and historic resource surveys of the APE for the proposed project in May 2006 and October of 2009.

As the project developed, several changes in the proposed alignment were made, and the APE was expanded to include alternative alignments and to capture rock-cut areas. These changes to the APE were made known to the consulting parties in the spring of 2013, and they were asked to provide any additional information they might have about the expanded APE. Consulting parties did not provide any additional information about the expanded APE. An additional survey of several new APE sections was conducted in April 2013.

During the summer of 2013, CIA, Sealaska Corporation, and SHI representatives voiced concerns about the proposed project in the vicinity of MP 4, and an additional survey was conducted by CRC.

An expansion of the APE was needed to incorporate the two sites at MP 4 (Yendistucky-SKG-054 and Smokehouse Village-SKG-044) previously determined to be eligible. That expanded APE was documented in the supplemental finding letter sent to the Section 106 consulting parties in the spring of 2014. Additional avoidance and minimization alignments for the road in

this vicinity were identified. The Revised Proposed Action reflects these additional avoidance and minimization efforts.

The results of the cultural resources surveys are discussed below in the Affected Environment Section, 4.10.1, and the possible effects to identified resources follow in Section 4.10.2.

4.10.1 Affected Environment

The project corridor lies within the traditional territory of the Chilkat Tlingit Nation. Stretching north from Berners Bay on Lynn Canal, the territory encompasses the Chilkat Inlet, the Chilkat and Klehini Rivers, Chilkoot and Taiya Inlets, and up to the Canadian border (CRC, 2011).

The CIV of Klukwan and the CIA of Haines participated in the 2006 survey conducted by CRC. The 2006 and 2009 surveys focused on select areas of known and potential cultural sensitivity (CRC, 2011).

Additional research focused on historic resources, including the U.S. Department of Defense's Haines-Fairbanks Pipeline that transported fuel from Haines to the Interior of Alaska during the cold war (1953-1973). This pipeline runs adjacent to Haines Highway, along the entire proposed project corridor.

Twenty-five cultural and historical resource sites were evaluated for potential eligibility within the APE following the 2006 survey. The FHWA determined that 11 of those sites met one or more of the significance criteria and retained enough integrity to convey their historical significance. These 11 sites were determined to be eligible for the NRHP. FHWA provided their determination to SHPO in a letter dated November 28, 2011. The SHPO concurred with the FHWA's determination on February 24, 2012. A supplemental Section 106 Determination of Eligibility (DoE) and Finding letter was sent to the consulting parties on June 24, 2013 summarizing an additional survey done along the highway where rock cuts were then proposed. No additional resources were found during the April 2013 survey and SHPO concurred on September 3, 2013. A summary of the correspondence with the SHPO and the consulting parties is included in Appendix E, Section 106 Consultation.

Of the 11 eligible sites, seven are related to the cultural setting of the Chilkat Valley and the Chilkat Tlingit, and four are associated with the early history of the development of the State of

Alaska and Haines. To protect the cultural resources and comply with the confidentiality requirements of the NHPA and the Alaska Historic Preservation Act (AHPA) (AS 41.35), NRHP-eligible sites identified as part of the cultural/archaeological investigation for this project are listed below by their Alaska Historic Resources Survey (AHRS) number, discussed in general terms, and are not shown on any maps within this document. Table 4.10-1 summarizes these sites and provides the criteria that make these sites eligible for the NRHP.

Table 4.10-1: Findings of Effect

Historic Property		Eligibility Criteria ¹	Findings of Effect		
AHRS No.	Name		No Effect	No Adverse Effect	Adverse Effect
SKG-054	Yendistucky Village	A, D		X	
SKG-057	Commemorative property	B	X		
SKG-044	Smokehouse Village	A, D		X	
SKG-050	Important Tlingit property	A, B, D		X	
SKG-545	Archaeological Site	D		X	
SKG-544	Archaeological Site	D		X	
SKG-543	Archaeological Site	D	X		
SKG-537	Gil Smith House	B		X	
SKG-085	Donnelly Cabin Site	A	X		
SKG-247	Chilkat River Bridge	A			X
SKG-206	Haines-Fairbanks Pipeline, Gate Valve 4	A, C		X	

¹ Brief Eligibility Criterion Definitions:

A = associated with important historic events

B = associated with important historic people

C = having distinctive characteristics of a historical period (structures)

D = having potential to yield important archaeological information

- SKG-054 is an important permanent village of the Chilkat Tlingit, also important to the Chilkoot Tlingit.
- SKG-057 is a commemorative property with symbolic significance.
- SKG-044 is a main traditional eulachon oil rendering area.
- SKG-050 is a site that played an important role in traditional Tlingit subsistence and settlement patterns and has an association with a prominent Chilkat Tlingit.
- SKG-543, SKG-544, and SKG-545 are archaeological sites.

- SKG-537 is the Gil Smith House. Gil Smith was a well-known landscape artist who focused on Alaskan and Chilkat Valley scenes. He lived in the Haines area from the 1940s to the 1980s. The Gil Smith House sits on the northern side of Haines Highway, facing the Chilkat Valley, a setting that inspired Gil Smith's art.
- SKG-085 is the Alaska Road Commission (ARC) Buildings/Donnelly Cabin Site. The Donnelly Cabin Site, also known as the ARC Buildings, consists of two intact buildings: a log cabin and a log barn with a loft. The latter, probably built in the 1920s, was reportedly used as a bunkhouse for ARC workers in the 1930s and 1940s.
- SKG-247 is the Chilkat River Bridge. The Chilkat River Bridge was determined to be eligible for its distinctive characteristics. The ARC built the Chilkat River Bridge, the fourth bridge to span the Chilkat River at Wells, in 1958. The bridge remains one of the longest steel stringer bridges with a reinforced concrete deck in the State.
- SKG-206 is both the Haines-Fairbanks Pipeline District and Gate Valve 4. In 2007, the USACE Alaska District identified the Haines-Fairbanks Pipeline District as a discontinuous historic district with multiple property types. The above-ground portion of the Haines-Fairbanks Pipeline District retains the integrity to convey its significance and is eligible for the NRHP. The buried pipeline portion does not retain sufficient integrity to convey its historic character and significance and is determined to not be eligible for the NRHP. The types of above-ground pipeline features include tank farms, buildings, structures, and other features represented at pump stations along the length of the pipeline. One of these features is a gate valve adjacent to Haines Highway near the Chilkat River Bridge (known as Gate Valve 4). Generally, gate valves are used in fuel pipelines to start or stop the flow of fuel. They are especially important during spills or pipeline leaks.

According to a report by M. A. Grover (*Haines-Fairbanks Pipeline Formerly Used Defense Site (FUDS): Cultural Resources Monitoring and Survey Report*), USACE engineers believe that gate valves in the Haines-Fairbanks Pipeline were also used to bleed air or fuel from the line after the pipeline was cleaned in preparation to transmit different types of fuel (Grover, 2007). Along buried sections of the pipeline, the valves were not easily visible. The contractors constructed tall metal posts immediately adjacent to the buried gate valves, to be able to quickly locate these mechanical devices.

The USACE identified Gate Valve 4 as a contributing element to the eligible portion of the Haines-Fairbanks Pipeline District (Photograph 4.10-1). It was constructed within a concrete vault through which the pipeline passes. A hinged steel lid is on top of the vault to allow access. This valve is approximately 12 feet from the shoulder of Haines Highway. Photograph 4.10-1 shows the gate valve structure within its vault.



Photograph 4.10-1: Haines-Fairbanks Pipeline Gate Valve 4

Section 4(f) of the Department of Transportation Act of 1966 (49 USC 303) requires protection of public parks and recreation lands, wildlife and waterfowl refuges, and most historic sites.

Section 4(f) specifies that the Secretary of Transportation may only approve a transportation project requiring the use of a historic site if there is no prudent and feasible alternative to using that land or site and if the project includes all possible planning to minimize harm to the historic site. The FHWA has determined that all of the sites listed above, except for the three archaeological sites (SKG-543, SKG-544, and SKG-545), are historic sites protected under Section 4(f). See Section 5.0 for the analysis of resources protected under Section 4(f).

4.10.2 Environmental Consequences

Revised Proposed Action - Impacts to historical resources are categorized by criteria established by Section 106 (36 CFR 800.5). Impact categories are: no effect, no adverse effect, or adverse effect.

Direct Impacts

In a letter to the Section 106 consulting parties dated January 15, 2013, the FHWA provided the effect findings for the 11 eligible properties (Table 4.10-1). FHWA found that one historic property, the Chilkat River Bridge (SKG-247), would be adversely affected. FHWA's January 15, 2013 letter also describes the basis for their findings of no effect and no adverse effect to the other 10 eligible properties (see Appendix E). The SHPO concurred with this finding (January 15, 2013) (Appendix E).

The Chilkat River Bridge would be replaced by a new bridge, and the existing bridge would be removed. According to CFR 800.5(2)(i), "*Adverse effects on historic properties include...physical destruction of or damage to all or part of the property.*" The Chilkat River Bridge would be demolished, resulting in an adverse effect to that historic property. As required by Section 4(f), the FHWA evaluated alternatives that would avoid any impact to the Chilkat River Bridge, as well as to all other Section 4(f) properties in the vicinity. FHWA found that no feasible and prudent alternatives existed that would avoid all Section 4(f) properties and meet the purpose and need of the project.

These bridge impact avoidance alternatives are briefly presented below under Avoidance, Minimization, and Mitigation Measures and detailed in Section 5.0, Section 4(f) Evaluation.

The Proposed Action evaluated in the July 2013 EA shows an alignment that would have cut into the bluff above the highway within the Yendistucky Village. That alignment avoided effects to Smokehouse Village located across the highway from the bluff, adjacent to the Chilkat River. Following consultations with the Chilkoot and Chilkat Tribes in the autumn of 2013, the importance of both sites were further understood.

As discussed above, the boundary of the Yendistucky Village and the eligibility criteria for Smokehouse Village have been corrected.

The Proposed Action evaluated in the July 2013 EA would have resulted in an adverse effect to Yendistucky Village and was of serious concern to the federally recognized tribes. In order to avoid cutting into the Yendistucky bluff, the highway was realigned as shown in the Revised Proposed Action. There would be approximately 0.1 acre of fill within Smokehouse Village along the existing road embankment. The project archaeologist recommended that this proposed fill would not adversely affect the cultural resources found at this site. The realignment at MP 4 would result in additional fill in the Chilkat River and some adjacent wetlands. The impacts to Chilkat River and wetlands were assessed, discussed with resource agencies, and have been determined to be mitigable. Please see Chapter 4.14 for specific mitigation measures for impacted wetlands. Realigning the road to avoid the Yendistucky bluff has been incorporated into the Revised Proposed Action.

In addition to the correction of the boundary of the Yendistucky Village, the DOT&PF and the FHWA recognize that Haines Highway is within that site's boundary. The Revised Proposed Action was evaluated to determine whether the proposed widening of the road within the Yendistucky Village would adversely affect this eligible site (SKG-054). FHWA found that the project would not adversely affect the features and attributes of either the Yendistucky (SKG-054) or Smokehouse (SKG-044) villages. FHWA conveyed these findings to the consulting parties in a letter dated August 6, 2014. SHPO concurred with these findings on August 28, 2014 (see Appendix E, Section 106 Consultation).

The Revised Proposed Action would realign Haines Highway in the vicinity of Gate Valve 4, near the Chilkat River Bridge. East of Gate Valve 4, there is a proposed highway realignment, and Gate Valve 4 would be within the proposed roadway fill slope but outside the proposed pavement (see Figure 5.2-1). Gate Valve 4's location marker post would be located outside the clear zone²⁹ needed for a 55 mph highway.

The DOT&PF proposes to construct an enclosure vault completely encasing the existing Gate Valve concrete vault. A manhole or other protective cover would be placed over this new vault. The Gate Valve marker post would remain in place and not be affected. The existing vault's steel hinged cover would remain in place and continue to provide access to Gate Valve 4. Based on

²⁹ The term "clear zone" describes a roadside border area, starting at the edge of the traveled way, available for safe use by errant vehicles (DOT&PF, 2005a).

this Revised Proposed Action, the FHWA determined there would be no adverse effect to the eligible portion of the Haines-Fairbanks Pipeline (SKG-206) District's Gate Valve 4. SHPO concurred on September 19, 2013 (see Appendix E, Section 106 Consultation).

This action was also evaluated for Section 4(f) applicability and the FHWA determined that there would be no Section 4(f) use as proposed.

The Gil Smith House (SKG-537) would be affected by the Revised Proposed Action, but not adversely. The Gil Smith House is outside the project limits, but the Revised Proposed Action would shift Haines Highway slightly closer to it. Only the driveway would incur minor changes from project construction. The highway has always been a part of the visual setting associated with the Gil Smith House. Therefore, the FHWA found that the Revised Proposed Action's changes to the highway would not adversely affect character-defining features of SKG-537, and it would retain eligibility for the NRHP. There would be no Section 4(f) use of the Gil Smith site.

Three eligible archaeological resources (SKG-050, -545, and -544) are also in close proximity to the proposed project; however, the FHWA has found that the Revised Proposed Action would not adversely affect these properties; they would retain eligibility for the NRHP.

Indirect Impacts –

The visual setting of historic properties would be slightly altered by the Revised Proposed Action alignment but it would not adversely affect character-defining features of the properties because a highway already exists.

No-Action Alternative - No new construction activities would occur; therefore, the No-Action Alternative would not have an effect on historical and cultural properties.

4.10.3 Avoidance, Minimization, and Mitigation Measures

Realignments and design changes have occurred in order to avoid adverse effects to historic properties.

- The original Proposed Action (2006) would have adversely affected SKG-050. This alternative was dismissed.

- A design modification was incorporated at Gate Valve 4 to allow that resource to remain in place and still provide an embankment that meets design standards.
- The original highway alignment at MP 4 was changed to avoid affecting the bluff at the Yendistucky Village.
- Multiple realignment options were also evaluated in the vicinity of MP 4 in order to avoid and minimize placing fill in historic properties at the Yendistucky and Smokehouse villages.

An alternative to repair and widen the existing bridge was dismissed, because it would destroy the bridge's historic integrity (Appendix E, Section 106 Consultation).

An alternative to construct a new single-lane bridge for one-way traffic and retain the historic bridge for traffic going the other way was eliminated, because the existing bridge does not meet current design or seismic standards, shows signs of deterioration, and presents a safety hazard.

Leaving the existing bridge in place and constructing a new bridge either upstream or downstream was also considered and dismissed because the existing bridge would continue to be seismically substandard and could collapse, damaging the new bridge. Additionally, the existing bridge is low, and its multiple in-river pilings create navigation constraints. Leaving it in place would not provide the benefits that would occur with the new bridge.

A Memorandum of Agreement (MOA) with SHPO has been developed to mitigate for the adverse effect to the Chilkat River Bridge. CIV declined to participate as a party to the MOA (see email dated 5-23-2016 in Appendix E). Following are the mitigation measures to which both signatories have agreed:

- Prepare and submit architectural documentation of the Chilkat River Bridge to the SHPO and the Sheldon Museum.
- Design and construct an interpretive wayside near the Chilkat River crossing. The wayside shall include an interpretive display panel with a theme on the history of transportation and major utilities within the Chilkat Valley including the Tlingit trade route, the Dalton Trail, the Haines-Fairbanks Pipeline, and the Haines Highway. A history of the Chilkat River crossings shall also be included.

Consultations with CIV and CIA indicate that the Chilkat River Valley has a long history of Tlingit presence, and the Tribes request archaeological monitoring when construction will involve previously undisturbed ground. The Tribes have also expressed interest in having Tribal representatives present during construction in these areas. DOT&PF commits to provide archaeological monitoring as well as Tribal representation during excavation into previously undisturbed ground.

The FHWA and the DOT&PF have consulted with the Chilkat and Chilkoot Tribes to identify areas of particular interest and concern to them where monitoring would be conducted. Should the monitor identify possible artifacts or other resources, construction would stop at that location until the issue is resolved.

4.11 Water Body Involvement, Hydrology, and Water Quality

4.11.1 Affected Environment

Haines Highway is located along the shores of the Chilkat and Klehini Rivers and crosses many tributaries. The highway crosses the Chilkat River at Wells, northwest of Klukwan. The Chilkat River is a glacially fed river with relatively turbid waters compared with its small tributary streams. The river is tidally influenced within its first three miles upstream from the Chilkat Inlet. This river carries a significant amount of sediment or bedload. The floodplain is characteristically very broad, providing significant capacity to accommodate flood flows. Sediments are continually redistributed across the floodplain by ever-changing river channel configurations.³⁰

Major tributaries include the Klehini and Tsirku Rivers (see Photograph 4.11-1). Combined, the two tributaries create a rare riverine environment. Below, they are described by DNR DPOR (<http://dnr.alaska.gov/parks/units/eagleprv.htm>):

The natural phenomena responsible for five miles of open water on the Chilkat River during freezing months is called an "alluvial fan reservoir." The Tsirku fan, which is a fan-shaped accumulation of gravel, rock, sand, and glacial debris, at the confluence of the Tsirku, Klehini, and Chilkat Rivers acts as a large water reservoir. During the

³⁰ R. Trousil, P.E., DOT&PF memorandum to Jim Scholl, DOT&PF Environmental Analyst, May 2015 included in Appendix H.

warmer spring, summer and early fall seasons, water from snow and melted glacial ice flows into the alluvial fan. The fan receives water faster than it can flow out, creating a huge reservoir of water. When winter arrives, cold weather sets in and surrounding waters freeze. However, water in this large reservoir remains from 10 to 20 degrees (F) above surrounding water temperatures. This warmer water "percolates" into the Chilkat River and keeps it from freezing. Five species of salmon spawn in these and other nearby streams and tributaries. The salmon runs begin in the summer and continue on through late fall or early winter. The salmon die shortly after spawning and it is their carcasses which provide large quantities of food for the eagles. This combination of open water and large amounts of food bring large concentrations of eagles into the Chilkat Valley beginning by early October and lasting through February.

Along the Haines Highway, there is a complex network of Chilkat River side channels on the northeast bank of the river between MP 10 and MP 19. In a number of locations, side channels point directly into the highway embankment before turning downstream at sharp angles (Inter-Fluve, 2009). Road embankment scour does occur at some locations.

Smaller tributaries are relatively clear of glacial silt and are not intertidal. Many of these smaller tributaries parallel Haines Highway and have banks that are regularly cleared of vegetation for sight distance resulting in erosion and increased turbidity (Inter-Fluve, 2009). Inter-Fluve located 106 culvert crossings between MP 3.5 and MP 25.3.

Most culverts are adequately sized to carry water flows as intended except when clogged with debris and sediment. The exceptions are at MP 19 and MP 23, as discussed below.

Haines Highway crosses large alluvial fans near MP 19 and MP 23. These fans were produced by creeks that normally flow in well-defined channels at low volumes and low velocities. However, periodic rain or rain-on-snow events can increase the flow dramatically. The steep topography and type of materials contribute to the soil's instability. The unstable soils become fluid when saturated, producing debris flows that periodically cross the highway. Even with continual maintenance, flows overtop the existing road every three to five years on average. These debris flows plug the stream culverts, deposit sand and gravel several feet deep on the road, and reroute the stream channels (DOWL HKM, 2010a). The photographs below show the conditions at these culverts during a recent debris flow event. As shown in these photographs,

while heavier sands, gravels, and boulders are deposited before reaching the Chilkat River, sediment laden water does naturally enter the river with each major slide event.



Photograph 4.11-1: Debris Flows

DOT&PF expects the Chilkat River to accommodate the debris flow from the revised proposed action. According to Robert Trousil, PE, Southcoast Region Hydraulics Engineer:

Based on criteria set forth in EO 11988 and 23CFR, Subpart A, Section 650, the Haines Highway Project does not constitute a significant encroachment upon the floodplain, pose a significant risk or impact or compromise any natural process or resource at the site. The hydraulic function of the area will essentially remain unchanged.³¹

As a separate action from this project, DOT&PF M&O has received a USACE permit to move future slide material directly into the Chilkat River at MP 19 to keep the highway open and avoid cutting trees in the ROW.

The nine bridge piers supporting the existing Chilkat River Bridge are affected by river hydrology. Water flowing past these piers causes riverbed scour and sedimentation patterns that are different than if no bridge piers were present. In between each individual pier, turbulence would cause either scour or deposition depending on river stage (river level). None of the

³¹ R. Trousil, P.E., DOT&PF memorandum to Jim Scholl, DOT&PF Environmental Analyst, May 2015 included in Appendix H.

waterways in the project area are listed as impaired on the State of Alaska's Section 303(d) Listed Water Quality-Limited Water Bodies (DEC, 2010b).

Most of the small tributary streams in the project area originate in undeveloped alpine areas and are clear and low in dissolved solids (Inter-Fluve, 2006).

According to Robert Trousil, PE, Southcoast Region Hydraulics Engineer:³²

The Chilkat River is a large, dynamic, glacially fed river with a complex network of side channels. These side channels characteristically impinge directly on highway embankments before being redirected abruptly downstream, while the main stem of the Chilkat River runs parallel to the highway. The river eventually discharges to the Lynn Canal. The floodplain is tidally influenced at a point near the downstream end of the Haines Airport, which is downstream of the beginning of the project.

River substrate consists of coarse materials dominated by cobbles and gravels, with finer materials consisting of sands and silts. The channel is described as braided, and is characterized by high bank erosion rates and excessive deposition occurring as both longitudinal and transverse bars, with annual shifts of the channel bed. The floodplain is broad, varying in width from 1,000-feet in the reaches of the river near Mile 24 to 1.1 miles near the Haines Airport.

Adverse conditions associated with flood flows of both short and long duration include high sediment loading and changing channel configurations. Normal flows of the river can rapidly change to over-bank flow conditions, causing inundation within the numerous side channels that exist within and adjacent to the floodplain. In addition, high bank erodibility, together with moderately steep river gradients, contributes to river instability.

³² R. Trousil, P.E., DOT&PF memorandum to Jim Scholl, DOT&PF Environmental Analyst, May 2015 included in Appendix H.

Further,

[R]efurbished and new [Highway] embankment stabilization structures will provide equal protection to critical infrastructure with no encroachment impacts that compromise any natural process or resource.

Homes and businesses along the project corridor obtain potable water from wells or surface water supplies. Klukwan obtains potable water from a spring near the village (CIV, 2007). The last three years of testing indicated the water source for the village met the U.S. Environmental Protection Agency (USEPA) safe drinking water standards. There are no readily available water quality data for private drinking wells in the project area.

4.11.2 Environmental Consequences

Revised Proposed Action -

***Direct Impact* -**

The Revised Proposed Action would result in multiple changes to hydrologic conditions and water quality as listed in following Table 4.11-1.

***Indirect Impacts* -**

Changes in hydraulics can affect sedimentation and river bottoms (see footnotes 19 and 20). This could change fish habitat and water quality (see Section 4.15.2 for further discussion of fish habitat changes). The proposed new bridge, improved fish stream culverts, and tributary stream realignments are expected to improve fish habitat and water quality.

According to DOT&PF's M&O staff, less sand would be needed for winter traction when substandard curves are straightened. Substandard curves require more sanding to provide traction in winter conditions.

Based on the realignments that were done on Haines Highway from MP 25 to the Canadian border, there was more than a 50 percent reduction in sand use. The reduction of sand dispersal on the highway surface results in less impacts to water quality in the adjacent wetlands, streams, and river tributaries.

Table 4.11-1: Hydraulic Changes Due to Revised Proposed Action

Revised Proposed Action	Environmental Consequence
Chilkat River Bridge-longer and wider structure with three in-water piers; each pier consisting of 3-foot or 4-foot diameter individual piles replacing nine piers with solid 1 foot, 8 inch-wide by 25 foot, 6 inch-long concrete walls	Localized hydraulic changes at the piers/pilings; scour and sedimentation patterns would change because there would be individual piles rather than solid piers. Outside of the influence of the piers/pilings, river bottom sediments would be shifting as a normal river channel. Biological systems would respond to these hydraulic changes and stabilize over time.
Install 26 fish passage culverts along alignment.	Localized hydraulic changes; fish passage maintained at some locations and improved at others.
Debris flow culverts at two locations (MP 19 and MP 23) replaced with larger structures	<p>The highway elevation would be raised 15 to 18 feet as a way to keep the highway open during and after slide events. Four to six box culverts would allow be installed to allow unobstructed flow of slide debris. At MP 19, DOT&PF expects debris to naturally slide under the highway and directly enter the Chilkat River; turbidity and sediment loads to the river would increase; reduced water quality during debris flow events because of an increase in turbidity at and below debris flow areas; the riverbank configurations at these slide locations could grow and change its shape as sediment accumulates. This could result in added land areas and shoreline vegetation.</p> <p>As discussed in Section 4.2, DOT&PF M&O has received a permit to move future debris slide material directly into the Chilkat River as an independent activity, regardless of whether the Revised Proposed Action is built. Even if the highway is elevated on box culverts, DOT&PF M&O will need to keep the culverts open and would need permits to move slide debris that settles in and above the culverts into the river.</p>
Road realignment and river embankment hardening (fill in Chilkat River) (fill in 3.5 acres)	Localized hydraulic changes; erosion reduced at some locations. ³³
Wetland fill (about 22 acres)	In relation to the large area of wetlands in the Chilkat Valley Watershed, ³⁴ wetlands water retention and recharge would be minimally reduced. Residential water supplies would not be affected given the size of the watershed and the relative small water withdrawal at these homes.
Tributary streams realigned away from the Highway	Stream hydraulic changes. Approximately 12 tributaries would be realigned as a result of the project.
Highway widening	Impervious area increased by an estimated 31 acres (30 percent); additional stormwater runoff.

³³ The Chilkat River is a dynamic river consisting of multiple channels within an extensive floodplain. Placing riprap along the riverbank may slow velocities within a few feet of the riverbank but would not have an effect on the river dynamics downstream.

³⁴ Discussions with NMFS and USFWS have led DOT&PF to view the affected wetlands within the context of the Chilkat River watershed previously affected by road corridors. The east side of the Chilkat River watershed is approximately 67,594 acres and, from the National Wetlands Inventory (NWI), that area contains approximately 18,437 wetland acres. The proposed project impacts 22.2 acres which is 0.12 percent of the total wetlands on the east side of the Chilkat River Watershed.

Elevating the highway by 15 to 18 feet at MP 19 and MP 23, and installing four to six large box culverts in those areas, would result in fewer closures of Haines Highway due to debris overtopping the highway. Letting naturally occurring material move without the highway obstruction would return the natural intermittent flows of rock, sand, and sediment into the Chilkat River; a more natural sediment cycle.³⁵ Given the Chilkat River's wide channel and heavy glacial-fed sediment load, this would have a negligible effect³⁶ except for immediately downstream of these two areas during debris flow events. Localized changes to the river banks and beds could occur at and downstream of the debris flow areas. Sediment accumulation could occur and stabilize over time resulting in expanded river banks and vegetated areas. Changes from the project to the overall water quality would be temporary during construction. Temporary water quality impacts and associated BMPs are further discussed in Section 4.20, Construction Impacts.

No-Action Alternative - No changes to the water quality are anticipated as a result of the No-Action Alternative other than those impacts related to the possible M&O permitted actions at MP 19 to move future slide materials into the Chilkat River. Insufficient or damaged culverts would continue to restrict natural water and debris flows. Temporary highway closures and higher than normal maintenance at MP 19 and MP 23 would continue and highway damage is expected to continue during certain storm events. Water quality in some tributaries would continue to be impacted by erosion of the highway embankment as well as contributions of sand used during winter maintenance and operations activities for road treatment.

³⁵ The highway in the MP 19 and MP 23 areas currently restricts the natural flow of super-saturated rock sand, and silt (debris) falling from the mountains into the Chilkat River. Currently, the highway creates an impediment to the natural debris flow, and some material settles out on the uphill side of the road and, at times, overtops the highway. According to Maintenance & Operations staff, some sediment laden water does naturally enter the Chilkat River during each slide event. Natural debris flows that discharge into the Chilkat River do not require a permit. However, DOT&PF has applied for and received a USACE Section 404 permit to discharge new debris material into the Chilkat River as a separate maintenance action.

³⁶ R. Trousil, P.E., DOT&PF email correspondence to Jim Scholl, DOT&PF Environmental Analyst, August 2015 included in Appendix H. *The project in and of itself does not introduce any additional source or process which will impact water quality long term. ... The evaluation of any long term water quality impact on the Chilkat River system requires the identification of potential sources or processes that may cause impacts. Since none are being introduced, long term impacts cannot be evaluated.* The baseline water quality of a particular reach of river, slough, pond, etc.[within the project area] will not be impacted long term as the project does not add any risk of doing so, with the exception of temporary turbidity during construction. These activities will be carefully and stringently monitored and controlled.

4.11.3 Avoidance, Minimization, and Mitigation Measures

Except for the debris flow areas at MP 19 and MP 23, unavoidable impacts to water quality are expected to be temporary. Mitigation for current erosional impacts to water quality by the Revised Proposed Action would include:

- replacing/upgrading existing culverts, and
- enhancing some tributaries in the project area by realigning them further from the roadway and reducing roadway runoff into these streams. These areas are detailed in Section 4.15, Fish.

Mitigation of hydrologic functions from wetlands filled as part of the project is discussed further in Section 4.14, Wetlands and Other Waters of the U.S.

In-water work is anticipated to cause short-term impacts to surface water quality during construction. Construction activities could also result in some short-term groundwater quality effects if shallow wells are located in close proximity to construction work areas. Property owners would be contacted prior to construction to determine if there are water wells in the vicinity of the Revised Proposed Action.

Currently, at the MP 19 and MP 23 debris flow areas, the Haines Highway is at a shallower grade than the surrounding topography. The debris flows from high in the mountains settle out sediment at the grade change and debris—quite often many feet deep—overtops and settles out on the highway.

The Revised Proposed Action would raise the elevation of the highway at MP 19 and MP 23 by 15 to 18 feet and construct larger diameter box culverts such that the floor of the culverts is set at the natural grade of the surrounding topography. This would allow sediment (debris flows) to continue to flow under the highway and enter the Chilkat River naturally, rather than settle out on top of the Haines Highway. If the debris flows naturally into the Chilkat River, more sediment would enter the river compared to existing conditions where the debris flow is obstructed by and accumulates at the Haines Highway.

Since debris flows are naturally occurring events, the Chilkat River, a very wide river with an enormous bed load, would naturally manage the increased yearly sediment loads.³⁷ Currently, DOT&PF stockpiles debris flow material that settles out and overtops the highway in the ROW. The accumulation of stockpiled material in the ROW would require an eventual disposal into the Chilkat River as a regulatory permitted activity. In the long term, there would be a minimal difference in the amount of debris flow material (sediment) that enters the Chilkat River, naturally in an unobstructed debris flow, or as a regulatory permitted event.

In accordance with Section 401 of the Clean Water Act (CWA) and applicable Alaska state law, a Section 401 Certificate of Reasonable Assurance from the DEC is required for project construction and would be issued concurrently with USACE's Section 404 Permit during the final design and permitting phase of this project. Minor short-term impacts to water quality and proposed mitigation associated with general construction activities are discussed further in Section 4.20.

4.12 Navigation

4.12.1 Affected Environment

The Chilkat River Bridge (DOT&PF Bridge No. 742) is the only bridge across the main stem of the Chilkat River. This bridge is approximately 504 feet long. It has nine in-water piers, providing seven 48-foot-wide and 9-foot-high openings above ordinary high water (OHW) at its center (Figure 4.12-1). Shoreline openings vary in width based on water flows.

Directly upstream from the bridge was the Haines-Fairbanks Pipeline river crossing. In the past, the combined piers in the river resulted in logjams as shown in Photograph 4.12-1. The pipeline river crossing was removed in the winter of 2013.

³⁷ R. Trousil, P.E., DOT&PF memorandum to Jim Scholl, DOT&PF Environmental Analyst, May 2015, included in Appendix H.

11/15/11 10:31:51 8-3-2012 10:20:08 11-11-11 11:01:01 01/05/12/11/11

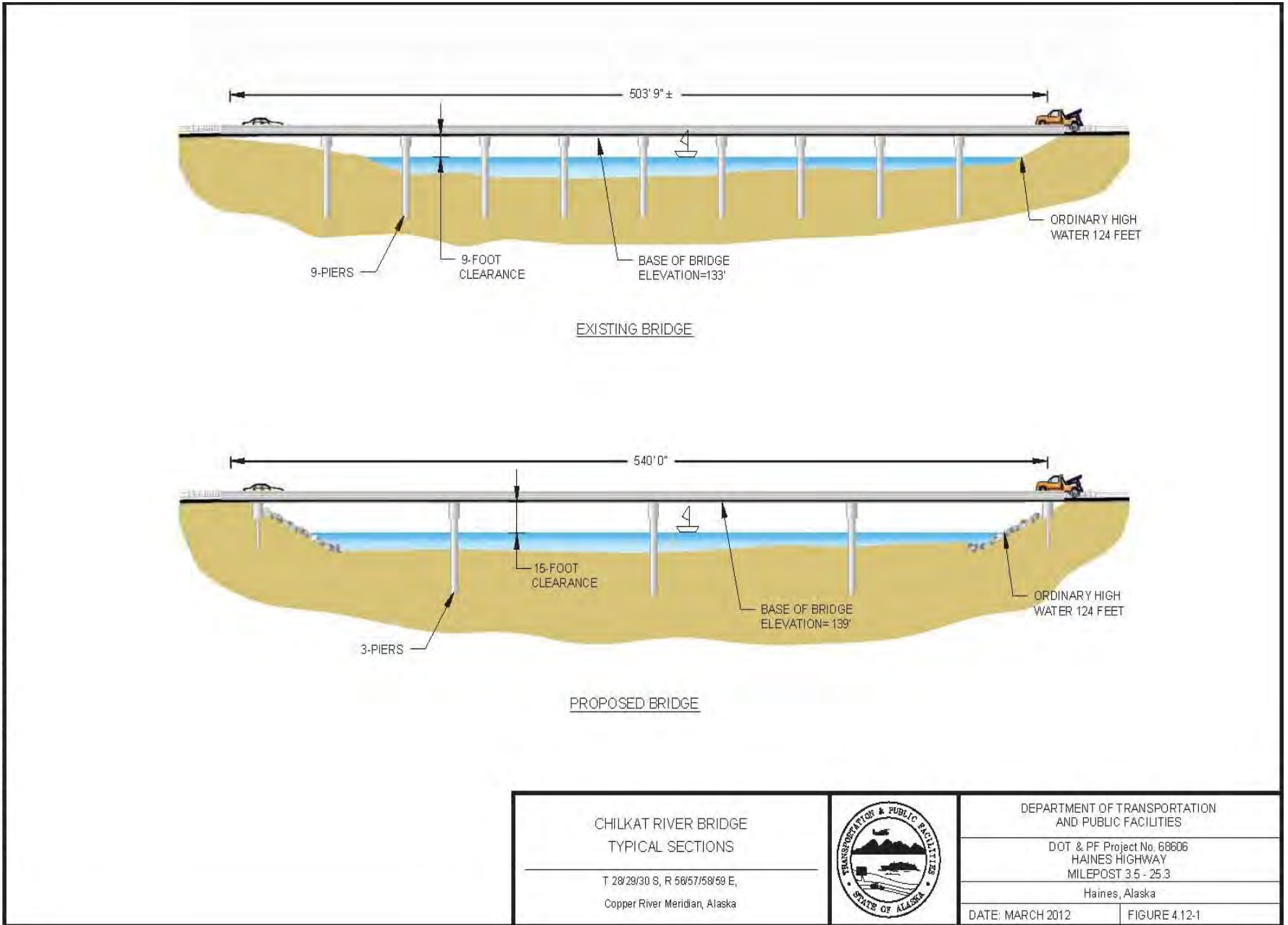


Figure 4.12-1: Chilkat River Bridge Typical Sections



Photograph 4.12-1: Logjam Underneath Bridge

The Chilkat River is a navigable river according to the USCG (USCG, 2012). Current navigational uses of the Chilkat River along the length of the project corridor include recreation, fishing, commercial tours, and ADF&G research. There are two commercial river boat operators permitted to operate within the Preserve by DNR. Commercial river sightseeing and fishing tours originate near the confluence of the Klehini and Chilkat Rivers. Commercial raft float trips are conducted near the confluence with the Tsirku River through the Preserve to about MP 15. Other than tourism and guided fishing, little commercial activity occurs on the Chilkat River.

A commercial riverboat operator has stated that, during high water events or when there are logjams built up against the piers (Photograph 4.12-1), it can be difficult or impossible for boats to pass underneath the bridge.³⁸

³⁸ D. Hess, boat operator, telephone conversation with J. Scholl, DOT&PF Environmental Analyst, July 12, 2010, notes included in Appendix H.

Plans and locations for construction or alteration of bridges and causeways across navigable Waters of the U.S. must be approved by the USCG prior to construction. DOT&PF will apply for two USCG Bridge Permits; one for the construction of the temporary bridge and the second for replacement of the Chilkat River Bridge and the permits must be approved prior to bridge construction.

Over the course of the project, FHWA, DOT&PF and the USCG have discussed the applicability of bridge permits versus permit exemptions. Based on recent discussions, all three agencies agree USCG bridge permits must be obtained prior to construction. Subsequently, FHWA invited the USCG to be a Cooperating Agency. On August 3, 2016, the USCG accepted the invitation (see Appendix H for the FHWA invitation and the USCG acceptance).

4.12.2 Environmental Consequences

Revised Proposed Action - The Chilkat River Bridge would be replaced with a new bridge immediately adjacent to and downstream of the existing bridge. The new bridge would be 6 feet higher and 36 feet wider than the existing bridge. There would be three piers in the water. There would be two main openings for navigation measuring 128 feet wide by 15 feet high at OHW. The two shoreline openings' width would vary with water flow.

Direct Impacts –

The new Chilkat River Bridge would have six fewer in-water piers and would be 6 feet higher than the existing bridge providing improved vessel clearance at high river stages and less obstructions to catch river debris at low river stages. No change in river use is expected from the higher and wider bridge openings.

Temporary river traffic delays may occur during construction of the temporary work bridge, construction of the new bridge, and the removal of the existing bridge. This is discussed further under Section 4.20, Construction Impacts.

Indirect Impacts –

No indirect impacts to navigation are anticipated as a result of the Revised Proposed Action.

No-Action Alternative - Under the No-Action Alternative, the existing bridge would not be replaced. Navigation would not be improved. The bridge would continue to provide insufficient clearance for boaters during high water events and navigation would continue to be restricted at low water.

4.12.3 Avoidance, Minimization, and Mitigation Measures

The Revised Proposed Action would be a net benefit to navigation. No avoidance, minimization, or mitigation measures are proposed other than the commitments to minimize disruptions to navigation during construction (see Section 4.20, Construction Impacts).

4.13 Floodplains

4.13.1 Affected Environment

The Chilkat River is a broad, dynamic, glacially-fed fluvial system consisting of multiple channels within an extensive floodplain. Sediments consist of coarse materials dominated by cobbles and gravels with finer sands and silts. The river is braided with sediment deposition occurring as continual shifting sand/silt bars or levees and as shifting of stream channels. Typically, the Chilkat River's highest water stage occurs in the summer, due to snowmelt.

The Chilkat River floodplain varies in width from 1,000 feet in the upper reaches of the river near the end of the project (MP 25) to 1.1 miles wide near the Haines Airport. Due to shifting sand/silt bars and changing stream channel configurations, normal flows of the river can rapidly change. Flooding occurs within the numerous tributaries that exist within and adjacent to the floodplain. Generally, Chilkat River tributaries and seasonally flooded wetlands adjacent to those tributaries are inundated during the summer months.

In the wider areas of the Chilkat River floodplain, flood flow depths remain shallow even when flood discharge rates increase dramatically. However, shifting sand/silt bars often result in the formation of levees. Riverbanks may become susceptible to erosion in localized areas, should flood flows become concentrated by these levees when formed on the fringes of the floodplain.

The Haines Borough has participated in the National Flood Insurance Program since 2004 and manages floodplain development in accordance with the City of Haines Floodplain and Flood

Hazards Map.³⁹ The Haines Highway MP 3.5 to MP 25.3 project lies outside of the Haines Borough's regulatory floodplain, and there are no Federal Emergency Management Agency (FEMA) maps covering the project area. Therefore, no regulatory floodway or floodplain exists within the project area, and a flood zone permit is not required from the Haines Borough.

The Haines Highway project is not located within a defined flood hazard area. Anecdotal information indicates the Haines Highway has not been overtopped by Chilkat River flows for the period of record: 1980 to present.

Although flooding of the highway has been reported, such events are associated with mountainside debris flow events where sediment-laden bed load plugs cross-drainage culverts, with flood waters subsequently overtopping the road. DOT&PF M&O staff work diligently to keep the road open and to clear it quickly when slide events happen.

Based on criteria set forth in E.O. 11988 and 23 CFR, Subpart A, Section 650, the Haines Highway Project does not constitute a significant encroachment upon the floodplain, pose a significant risk or impact or compromise any natural process or resource at the site.

The hydraulic function of the area will essentially remain unchanged.⁴⁰ Additional information about the Chilkat River and flooding issues, including those within MP 19 and MP 23 debris flow areas, is in Section 4.11, Water Body Involvement, Hydrology, and Water Quality.

4.13.2 Environmental Consequences

Revised Proposed Action - The Revised Proposed Action would occur within the Chilkat River floodplain. The Revised Proposed Action includes fill within the Chilkat River for roadway widening where realignment cannot avoid encroaching into the river and for construction of the new Chilkat River Bridge.

³⁹ The City of Haines Floodplain and Flood Hazards Map is included in Appendix H.

⁴⁰ R. Trousil, P.E., DOT&PF, memorandum to Jim Scholl, DOT&PF Environmental Analyst, May 2015, included in Appendix H.

Direct Impacts –

A Hydrology and Hydraulic study was conducted for this project, and a summary is included on page one (1) of the Study Report.⁴¹ The Revised Proposed Action would constitute an insignificant encroachment into the floodplain. The flooding risk remains essentially unchanged, compared to the current conditions.⁴² Culvert replacements would also be installed within the floodways and floodplains of numerous small tributaries to the Chilkat River where streams cross underneath the existing highway. The culverts would be designed to accommodate the estimated 50-year flood flows. The proposed new culverts would be larger than the existing culverts, which would improve stream processes and provide more natural floodplain connectivity.

The Haines Highway would be elevated at the two major slide areas at MP 19 and MP 23. Large culverts would be constructed under the elevated roadway that would carry flood waters and bed load past the road. Roadway flooding would be resolved at these two locations.

The new Chilkat River Bridge would have six fewer in-water piers and would be 6 feet higher than the existing bridge, reducing the potential for upstream flooding.

Indirect Impacts –

No indirect impacts to floodplains are anticipated as a result of the Revised Proposed Action.

No-Action Alternative - The No-Action Alternative would not affect the floodplain of the Chilkat River or its tributaries.

4.13.3 Avoidance, Minimization, and Mitigation Measures

As noted above, the measures to minimize floodplain impacts include designing and installing adequately sized culverts that would limit the increase in backwater and adequately pass the 50-year floods without significant damage to the floodplain, roadway embankment, or the Chilkat River Bridge. Although there are no FEMA-mapped floodplains in the area, this project should lessen the risk of losses due to erosion within the floodplain, consistent with FEMA

⁴¹ See Appendix C - *Hydrology and Hydraulics Report* in Appendix F, EFH Assessment.

⁴² R. Trousil, P.E., DOT&PF, memorandum to Jim Scholl, DOT&PF Environmental Analyst, May 2015, included in Appendix H.

regulations. Both the Haines Borough and the Takshanuk Watershed Council have verified that there are no existing watershed and floodplain management programs that would be affected by the Revised Proposed Action alignment.⁴³

As discussed in Section 4.11, Water Body Involvement, Hydrology, and Water Quality, the Revised Proposed Action would also reduce the potential for road flooding resulting from mountainside debris flows. New debris flow culverts would allow the flows to run under the road and follow their natural paths to the river.

4.13.4 Compliance with Executive Order 11988

Based on criteria set forth in E.O. 11988, as amended 1/30/2015, and 23 CFR 650, Subpart A, the Revised Proposed Haines Highway Project would not constitute a significant encroachment upon the floodplain, pose a significant risk or impact, or compromise any natural process or resource within the floodplain that could be influenced by the project. The hydraulic function of the area would essentially remain unchanged.

4.14 Wetlands and Other Waters of the United States

4.14.1 Affected Environment

Wetlands were delineated in 2005 over a study area of about 900 acres (DOWL HKM, 2006b). The study area was 150 feet on either side of the existing road centerline and was wider where the road was proposed to be realigned. This study area is shown in Figure Set D.

It is important to note the size of wetland study area was selected to show:

- the drainage patterns that might be affected by the project, and
- an area big enough to evaluate impacts as the design was refined.

What is more important to note is the size of the wetland study area was not chosen to represent the total wetland area within the approximately 1,602 square mile or 1,025,280 acre Chilkat River Watershed boundary.⁴⁴

⁴³ Xi (“Tracy”) Cui, Haines Borough Planning Commission, email to Jim Scholl, DOT&PF Environmental Analyst, March 27, 2014. Brad Ryan, Executive Director, Southeast Alaska Watershed Coalition, email to Jim Scholl, DOT&PF Environmental Analyst, March 27, 2014. Emails included in Appendix H.

⁴⁴ See Figure 1 in Appendix F – *Bank Stabilization Structures* included in Appendix F, EFH Assessment.

Wetlands and riverine habitat comprised approximately 248 acres (28 percent) of the study area. Wetlands were grouped into six habitat types as shown in Table 4.14-1 and on Figure Set D.

Table 4.14-1: Wetland Habitat Types

Wetland Habitat Type (Viereck)	National Wetlands Inventory (Cowardin) Designation	Acres	Percentage of Study Area
Riverine	Riverine-Chilkat River, Upper Perennial Open Water Scrub Shrub-Saturated (R30W)	99.2	11.0%
Shrub Swamp	Scrub Shrub-Seasonally Flooded Scrub Shrub Permanently Flooded (PSS1B, PSS1E, PSS1H)	72.5	8.1%
Herbaceous Swamp	Emergent-Permanently Flooded (PEM 1 H)	40.6	4.5%
Seasonally Flooded Black Cottonwood	Forested-Seasonally Flooded (PFO1C)	11.8	1.3%
Fresh Sedge Meadow	Emergent-Saturated (PEM1B)	8.9	1.0%
Bluejoint Meadow	Emergent-Saturated (PEM1B)	15.4	1.7%
All Wetlands and Waters of the U.S.	Not Applicable	248.4	27.7%

On February 9, 2010, the USACE issued a Preliminary Jurisdictional Determination based on wetland data submitted to them April 17, 2009. The USACE determined that these 248.4 acres are regulatory wetlands or Waters of the U.S.

In 2012, the functions and values of the wetland complexes were evaluated (DOWL HKM, 2012). Based on this assessment, the primary functions of the wetlands adjacent to Haines Highway are to provide salmonid habitat, nutrient cycling, and to retain water to minimize flooding. Salmon (in various stages of their life cycle) may be present in flooded wetlands within the project area throughout the year. Since most of the project wetlands are seasonally, or permanently flooded, they are also, by definition,⁴⁵ EFH. The following discussion about environmental consequences and corresponding avoidance, minimization, and mitigation in this section and Section 4.15, Fish, are similar since the primary function of the project wetlands is to provide the quality and quantity of water necessary for fish habitat.

⁴⁵ EFH, means those waters and substrate necessary to fish for spawning breeding, feeding or growth to maturity. Many fish species exist in Alaska waters. However, EFH is identified for only those species managed under a federal fishery management plan (FMP). In the project area, the FMP that applies is the "Alaska Stocks of Pacific Salmon" plan, available online at <http://alaskafisheries.noaa.gov/habitat/efh/faq.htm>.

4.14.2 Environmental Consequences

Revised Proposed Action – The Revised Proposed Action would require a USACE Section 404, Wetlands and Waters of the U.S. Permit. To receive a permit, the project must demonstrate that it has avoided and minimized the impacts to wetlands to the extent practicable and that compensation is provided for any impact(s) that cannot be avoided. This project was planned and would be designed in compliance with these requirements.

Compared to the 23.6 acres of impacts to wetlands and 8.3 acres of impacts to Waters of the U.S. in the July 2013 EA, the Revised Proposed Action impacts 22.2 acres of wetlands and 4.2 acres of other Waters of the U.S. Viewed within the context of the eastern side of the Chilkat River watershed (the portion of the watershed previously impacted by road corridors) the Revised Proposed Action's wetland impacts are 0.12% of the total wetlands (see footnote 30, pg. 139).

Direct Impacts –

The Revised Proposed Action would directly impact approximately 22.2 acres of wetlands, in addition to impacting 4.2 acres of other Waters of the U.S. Approximately 12,662 linear feet⁴⁶ of the Chilkat River and 4,350 linear feet of its tributaries would be affected. Table 4.14-2 and Figure Set D present the project impacts to wetlands and other Waters of the U.S.

The Revised Proposed Action would fill in approximately 4.2 acres of other Waters of the U.S. (riverine areas) that provide habitat for all life stages of salmon in the valley.

⁴⁶ The 12,662 lineal feet of total Chilkat River impact is the addition of 8,850 lineal feet of in-kind stream bank replacement (replacement of vegetated rip rap with vegetated rip rap embankment See photo 4.21-5) and 3,812 lineal feet of fill on existing natural streambank.

Table 4.14-2: Impacts to Wetlands and Waters of the United States

Habitat Type	Value	Impacts		
		Square Feet	Acres	Linear Feet
Wetlands				
Emergent - Permanently Flooded (PEM1H)	High	365,904	8.4	NA
Emergent- Saturated (PEM1B)	High	135,036	3.1	NA
Forested - Seasonally Flooded (PF01C)	Low	56,628	1.3	NA
Scrub Shrub - Saturated (PSS1B)	Medium	436	.01	NA
Scrub Shrub - Seasonally Flooded (PSS1E)	Medium	74,052	1.7	NA
Scrub Shrub - Permanently Flooded (PSS1H)	Medium	335,412	7.7	NA
Total Wetlands		967,468	22.2	NA
Other Waters of the United States				
Riverine- Chilkat River, Upper Perennial Open Water (R30W)	High	155,775	3.6	12,662
Riverine- Tributaries to Chilkat River (open water)	High	26,136	0.6	4,350
Total Other Waters of the United States		181,911	4.2	17,012

The Revised Proposed Action would also fill in approximately 11.5 acres of high-value palustrine emergent wetlands and about 9.4 acres of scrub shrub wetlands. These are saturated wetlands that provide flood control, sediment/toxicant retention, nutrient cycling, and fish and wildlife habitat. Permanently flooded emergent and scrub shrub wetlands provide fish rearing habitat while flooded and are EFH.

The Revised Proposed Action would place fill in 1.3 acres of forested wetlands. Forested wetlands provide lower value compared to the emergent and scrub/shrub wetlands, since they are, generally, not adjacent to fish-bearing tributaries. Forested wetlands provide groundwater retention and discharge, sediment retention, and surface hydrologic control, and other functions. The wetlands within the study area are representative of the wetlands complex within the lower Chilkat River Watershed.

As documented by the IDT, the primary functions of the impacted wetlands are to provide salmonid habitat, nutrient cycling, and to retain water to minimize flooding. The Revised Proposed Action would fill approximately 21 acres of high and medium-value wetlands (emergent and scrub shrub) that are important to fish and wildlife. These impacted wetlands represent only 0.12 percent of the 18,347 acres of wetlands on the east side of the Chilkat River Watershed. Considering the nature of the impact at the more targeted 90-acre study area, the

wetlands affected are less than 10 percent of the 252 acres of available wetlands in the study area and less than 3 percent of the entire study area.

Indirect Impacts –

Affected water conveyances would be replaced in-kind to maintain existing drainage patterns; no new wetlands drainage would occur. No indirect impacts to wetlands are anticipated as a result of the Revised Proposed Action.

No-Action Alternative – The No-Action Alternative would have no effect on wetlands in the project area.

4.14.3 Wetlands Avoidance, Minimization, and Compensatory Mitigation

A project interdisciplinary team (IDT) expressed that wetlands in the project area are of high value and support fish habitat. The Revised Proposed Action would avoid and minimize impacts to wetlands, to the extent practicable. Mitigation would, primarily, enhance the highest value of impacted wetlands, by creating and enhancing fish tributaries and enhancing fish habitat in the Chilkat River (see discussion in Section 4.15, Fish). The goal is to replace and maintain, at least, the highest values of the impacted wetlands. Since the affected wetlands comprise a small area in comparison to the total wetland area within the context of the eastern Chilkat River Watershed (see footnote 30, pg. 139), the effect to the other functions of the project wetlands would also be low.⁴⁷

Avoidance

E.O. 11990, Protection of Wetlands, requires that there be no practicable alternative to the Proposed Action that affects wetlands and that the project shall include all practicable measures to minimize harm to wetlands.

⁴⁷ Within the project area, the functions evaluated are: groundwater discharge (high or moderate value), sediment/toxicant retention (high to low value depending on location), nutrient export (high to low value depending on location related to streams), riparian support (high to low value depending on location), erosion sensitivity (low value), surface hydrologic control (high value), recreational use potential (high to low based on location), wildlife support (moderate low to low value), regional ecological diversity (moderate high to moderate value depending on location), ecological replacement cost (high to low depending on wetland type). See wetland and stream function and values report at http://dot.alaska.gov/sereg/projects/haines_hwy/assets/7.9.13/Wetland.Stream.Functions.Values.Assess.pdf. Also, the affected wetlands are within an area that has a low flooding risk as discussed in Section 4.11.

It is not practicable to completely avoid impacts to wetlands and riverine habitat if the highway is to be improved. The project design has focused on avoiding and minimizing wetland impacts through the measures described below.

Wetlands would be avoided by:

- following the existing highway alignment, to the extent feasible,
- widening and/or realigning into uplands, rather than wetlands, to the extent practicable,
- maintaining natural flow patterns through use of culverts and cross-drainage structures, and
- improving sight distance to remove the need for passing lanes.

Minimization

Wetland fills would be minimized by:

- adjusting the elevation of the highway,
- adding guardrails, and
- constructing a road embankment slope that is as steep as practicable (2:1).

Additional Avoidance and Minimization Achieved by the Revised Proposed Action Compared to the July 2013 EA Proposed Action

The Revised Proposed Action would avoid the following impacts compared with the July 2013 EA Proposed Action (Table 4.14-3 and 4.14-4):

- 1.4 acres of impacts to wetland areas,
- 4.1 acres of impacts to riverine areas,
- 1,480 linear feet of fill on Chilkat River original ground, and
- 1,408 linear feet of fill on previously ripped Chilkat River stream banks.

Table 4.14-3: Impacts for Entire Project to Wetlands & Waters of the U.S. (Acres)

Type	Value	Total 2013 EA Proposed	Total Current Proposed	Additional Avoidance Achieved (Difference)
Emergent-Permanently Flooded (PEM1H)	High	9.1	8.4	0.7
Emergent-Saturated (PEM1B)	High	3.4	3.1	0.3
Forested-Seasonally Flooded (PFO1C)	Low	1.4	1.3	0.1
Scrub Shrub-Saturated (PSS1B)	Medium	<.1	0.01	0.0
Scrub Shrub-Seasonally Flooded (PSS1E)	Medium	1.7	1.7	0.0
Scrub Shrub-Permanently Flooded (PSS1H)	Medium	8.0	7.7	0.3
Total		23.6	22.2	1.4

Table 4.14-4: Fill in the Chilkat River (in linear feet)

Type	Value	Total 2013 EA Proposed	Total Current Proposed	Additional Avoidance Achieved (Difference)
Riverine - Chilkat River, Upper Perennial Open Water (R30W) for Entire Project	High	7.7 acres	3.6 acres	4.1 acres
		15,550	12,662	2,888
Riverine - Chilkat River, Upper Perennial Open Water (R30W) Linear Feet of fill on top of Previously Riprapped Slopes (Total Current Proposed calculation is off slightly because MP 3.5 to 12 was surveyed and, for remainder of project, Interfluve data was used.)		10,258	8,850	1,408
Riverine - Chilkat River, Upper Perennial Open Water (R30W) Linear Feet of fill on top of Original Ground (Banks)		5,292	3,812	1,480

Construction measures would also be implemented to minimize impacts, as listed below:

- staking and/or flagging construction limits in wetland areas prior to construction, to limit impacts to permitted areas;
- limiting construction staging areas, material sites, and disposal sites to upland areas and/or to within permitted fill limits of the roadway; and
- implementing erosion and sediment controls to reduce impacts to wetlands from stormwater runoff, as specified in an approved Storm Water Pollution Prevention Plan (SWPPP) required by the Alaska Pollutant Discharge Elimination System (APDES) Alaska Construction General Permit. The SWPPP would be based on an Erosion and Sediment Control Plan (ESCP) that would be included in the construction contract.

Section 4.20 provides additional avoidance and minimization measures for construction-related impacts.

Compensatory Mitigation - Beyond the avoidance and minimization measures listed above, compensatory mitigation is required by the USACE and the USEPA for the unavoidable impacts to wetlands. The USACE would issue a Section 404, Wetlands and Waters of the U.S., Permit for unavoidable impacts, upon approval of the Revised Proposed Action as the Least Damaging Practicable Alternative.

During project scoping and preliminary design in 2006, the DOT&PF established a team comprised of persons representing resource agencies with jurisdiction (the NMFS, the USFWS, the USACE, the USEPA, the ADF&G, and the DNR) and the local watershed council. The purposes of this IDT were to discuss this project and to obtain agency input on the proposed mitigation plan. The IDT indicated that the most important wetland function in the project area was to provide fish habitat. The IDT identified mitigation options, including stream enhancement and creation, as well as a number of small wetland creation sites. In response, the DOT&PF has developed a mitigation plan (see Section 4.15, Fish).

Following development of the stream mitigation plan, the USACE's 2008 Mitigation Rule and the USACE Alaska District's Regulatory Guidance Letter on this new rule (RGL ID No. 09-01) were published. These guidelines establish a hierarchy for preferred types of compensatory

mitigation, with wetland mitigation banks being the most preferred, followed by in-lieu fee programs, and “permittee-responsible” (on-site, in-kind) mitigation being the least preferable.

Because there is no wetland mitigation bank in the Haines Borough, the proposed mitigation for this project would include proposed river and stream mitigation areas. It should be noted that when the mitigation plan was developed, the resource agencies’ preference was for on-site, in-kind mitigation with the focus on enhancing fish habitat. The IDT considered this to be the most important function provided by wetlands in the area. In addition, about one-quarter acre of wetlands and riparian habitat would be restored near MP 18 (see Figure Set D, Sheet 22).

Based on the functions and values assessment, the functions and values lost would be replaced with the proposed mitigation and restoration plan described in Section 4.15, Fish.

The Haines Highway project would re-construct, in-kind, all tributaries directly affected, and improve fish passage for fish-bearing tributaries that intersect the highway in the project area. A functional lift would occur to wetlands upstream of the proposed fish passage culverts that would correct deficiencies and increase access to fish habitat.

The following is a brief description of the proposed wetlands mitigation plan.

Stream Restoration/Enhancement Sites – The DOT&PF is proposing on-site mitigation to restore and enhance fish habitat in eight tributaries adjacent to the project corridor (Table 4.14-5).

Table 4.14-5: Linear Feet of Beneficial Impact in Chilkat River Tributaries

Type	Value	Total 2013 EA Proposed	Total Current Proposed	Additional Stream Length Added (Difference)
Tributaries to Chilkat River – In-kind replacement for Direct Fill Stream Impacts	High	2,435	3,155	+720
Tributaries to Chilkat River – Proposed New Stream (Stream Relocation and Mitigation)	High	5,260	7,308	+2,048

Each of the eight sites (see Figure Set D, Sheets 3,10,11,13,14,15,17,21, and 22) provides an opportunity to restore and/or enhance the existing stream channels through various methods such as the following options:

- relocation of fish-bearing streams away from the road, beyond where the DOT&PF needs to brush for maintaining visibility,
- construction of additional fish-bearing tributary features, such as vegetation and root wads, to improve stream complexity and nutrient supply, and
- removal and partial excavation of existing road embankment, to create a hydrologically connected flood terrace/wetland area adjacent to a fish stream (Appendix D - *Stream Habitat Mitigation Plan* in Appendix F, EFH Assessment).

Creation of the stream restoration/enhancement sites (sites) would also improve the aquatic ecosystem by improving the water quality of tributaries within each site. The carrying capacity of wildlife at each of the sites would be improved by providing surface water drinking sources at locations further removed from the highway than now exist. The sites would be constructed within herbaceous swamp and meadow (PEM1H and PEM1B) and shrub swamp (PSS1H, PSS1E) wetlands. Improved fish habitat would improve the value of each site's wetlands.

Seasonally flooded cottonwood forest wetlands (PFO1C) adjacent to the sites would also be improved. Fish habitat improvements in adjacent wetlands would provide an improved food source for eagles perching in the forested wetlands.

In the Chilkat River (R30W), with existing vegetated rock stream banks, proposed fill areas would be replaced in-kind or better with vegetated riprap. Proposed fill areas in the Chilkat River with existing natural banks would also receive a vegetated riprap treatment. To offset impacts to Chilkat River stream banks, three different mitigation measures would be constructed to mimic natural fish habitat environments in locations as close to the impact sites as practicable. (See Section 4.15.3, Fish).

Based upon the above considerations, it is determined that there is no practicable alternative to the proposed construction in wetlands. The Revised Proposed Action includes all practicable measures to minimize harm to wetlands which may result from such use and thus complies with E.O. 11990.

4.15 Fish

4.15.1 Affected Environment

The Chilkat River and its tributaries provide fish habitat in the project area. In addition to the, the ADF&G has identified, and is in the process of adding, several more tributaries in the project area to the anadromous fish catalog. Tributary channels were mapped during the wetlands delineation study (DOWL HKM, 2006b) and the stream and habitat inventory (S&HI) survey (Inter-Fluve, 2006) and are shown in Figure Set D.

All areas of the Chilkat River adjacent to the project area likely serve as migration and rearing habitat for all five species (chinook, coho, sockeye, chum, and pink) of Pacific salmon. Gravel side channels of the river provide spawning habitat for chum and coho salmon from September through December. The small-bodied anadromous eulachon (commonly called hooligan) spawn within the first eight miles of the river. Other fish species present in the Chilkat River include steelhead, cutthroat, Dolly Varden, whitefish, and Pacific lamprey.

The five salmon species and eulachon are highly valued resources and are the focus of the EFH Assessment (Appendix F) prepared for this project in accordance with the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA). The MSFCMA requires consultation with NMFS regarding federal actions that may adversely affect EFH.

The tributary channels primarily provide rearing habitat for salmon (Photographs 4.15-1 and 4.15-2); some also have gravels suitable for spawning. In contrast to the turbid Chilkat River, the tributary channels provide rearing fish with relatively clear water and more abundant sources of food and cover.



Photograph 4.15-1: Fry in Stream Proposed for Enhancement Near MP 13



Photograph 4.15-2: Fry in Chilkat River Rip Rap Stream Bank Near MP 7.5
(Photo courtesy of Neil Stichert, USFWS, May 2014)

EFH - The MSFCMA requires that EFH for certain fish species be identified and that measures be taken to conserve and enhance the habitat necessary for fish to carry out their life cycles. Further, federal agencies must consult with NMFS regarding any action that authorize, fund, or undertake that may adversely affect EFH. NMFS must provide conservation recommendations to federal and state agencies regarding actions that would adversely affect EFH.

The Chilkat River and its tributaries are EFH for all five salmon species and for the forage fish eucalon. The DOT&PF submitted an EFH assessment to the NMFS on behalf of the FHWA on

May 11, 2012. Subsequent to that submittal, a revised final EFH assessment was submitted to the NMFS, the agency with EFH jurisdiction under the MSFCMA, in August 2014.

The final EFH Assessment was based on:

- reduced impacts to EFH resulting from the Revised Proposed Action alignment,
- comments received during a field visit with the IDT on June 19, 2013,
- comments received from agencies and the public in response to the July 2013 EA, and
- consultation with the NMFS, the USFWS, and the ADF&G, as described at the end of Section 4.15.

NMFS completed their EFH consultation on September 18, 2014 (Appendix F, EFH Assessment). Mitigation measures were added after EFH consultation was completed as a result of continued work with CIV and ADF&G. Those added measures were presented to NMFS in May 2016, and that consultation remains complete (Appendix F).

4.15.2 Environmental Consequences

Revised Proposed Action - The NEPA encourages identification of impacts to both the natural and human environment. Under the highway design presented in the July 2013 EA, passing zones were maximized to provide improved passing opportunities (benefit to the human environment). Under the Revised Proposed Action in the Draft Revised EA (DREA) in October 2015, passing zones were reduced to minimize impacts to EFH (natural environment).⁴⁸ With the proposed avoidance, minimization, and mitigation measures, there is a balance that, at least, offsets unavoidable impacts to EFH. See Appendix F, EFH Assessment, for details concerning avoidance, minimization, or mitigation to mitigate for potential unavoidable impacts to EFH. Note that DOT&PF has continued to revise the mitigation plan through coordination with the

⁴⁸ 50 CFR 600.920 states, in part, "Pursuant to section 305(b)(2) of the Magnuson-Stevens Fisheries Conservation and Management Act (MSFCMA), Federal agencies must consult with NMFS regarding any of their actions authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken that may adversely affect EFH." An adverse effect, as defined by the MSFCMA (16 USC 1801), means any action that reduces quality and/or quantity of EFH. Streams, wetlands, and steep slopes, in-water, have been avoided, to the extent practicable. Conservation recommendations made by the IDT, including biologists with NMFS, USFWS, and the ADF&G have been incorporated into the EFH assessment and revised proposed alignment. Based on the final conservation recommendations included with the revised EFH assessment, NMFS states, "The mitigation outlined in the August 2014 EFH Assessment is responsive to NMFS's EFH recommendations. Therefore, NMFS considers EFH consultation for the project to be complete."

IDT, CIV, and ADF&G since the EFH consultation was completed. The latest mitigation plan is discussed further in Section 4.15.3.

The components of the Revised Proposed Action that would affect fish species and their habitat and what those impacts would be are listed in Table 4.15-1 and further described in the EFH Assessment in Appendix F. The Proposed Action documented in the July 2013 EA would have resulted in 7.7 acres of fill placed in the Chilkat River. The Revised Proposed Action now would fill 3.6 acres; a reduction of 4.2 acres of fill in the Chilkat River. The Revised Proposed Action also has avoided 1.4 acres of fill in EFH associated with wetlands. See Tables 2 and 3 in Appendix F, EFH Assessment.

Direct Impacts -

In the absence of a USACE-approved method to evaluate the function and value of riverine areas within the project footprint, DOT&PF calculated linear impacts by habitat type (tributary channel or Chilkat River) with general assumptions that a tributary channel functions to provide clear, slow-moving water with cover valuable for juvenile fish, and the Chilkat River functions primarily as a migration corridor with cover and resting areas valuable to both juvenile and adult fish; spawning habitats are limited within the project footprint.

Direct impacts to fish can occur from a loss or degradation of habitat, improvement or degradation in water quality, sedimentation of spawning gravels, increases or decreases to their food supply, and changes in stream structure (used for resting, hiding, and overwintering spaces). These types of fish impacts would occur during and after construction, until conditions stabilize and new habitats are established. The Revised Proposed Action or work in areas to enhance habitat (proposed mitigation measures) could cause these direct impacts to fish present during construction.

Temporary impacts include sedimentation, disruption and loss of vegetation and prey, movement limitations during culvert installations, improvement or degradation in water quality, and noise and vibration during pile driving at the Chilkat River Bridge. These impacts are discussed in Section 4.20, Construction Impacts.

Table 4.15-1: Revised Proposed Action Impacts to Essential Fish Habitat¹

Revised Proposed Action	Impacts to Essential Fish Habitat	Impacts to Fish
<p>Place about 3.6 acres of fill in the Chilkat River and about 0.6 acres of fill in its tributaries.</p>	<ul style="list-style-type: none"> • Elimination of riparian areas, stream channels, waterways, and associated wetlands. • Loss of substrate type/habitat at fill locations. • Armor rock could affect sediment movement and chemical processes. • Changes to hydrology/water flow: development of scour holes at some locations and build up sediment at other locations • Opening of habitat for invasive species. 	<ul style="list-style-type: none"> • Loss of available food at fill sites. • Change in ability to move from one part of the stream to another for shelter from predators or to find favorable habitat. • Potential loss of spawning gravels. • Changes to fish passage patterns/routes.
<p>Realign tributaries in 20 areas along the highway corridor. Equivalent or improved habitat would be replaced at each relocated tributary.</p>	<ul style="list-style-type: none"> • Changes to flow and substrate types from addition of large woody debris and alignments into gravel bars, as well as stream depth changes and meanders. • Changes to aquatic life colonizing these new substrates. • Long-term increase in riparian vegetation along banks because vegetation would not be cut for sight distance on highway. • Possible improvement or degradation in water quality/characteristics. • Temporary unstable stream channels with bank erosion, channel incision, sediment deposition and possibly variable water regime until water reshapes the constructed channels into a more natural geometry. 	<ul style="list-style-type: none"> • Temporary reduction of available food. • Different aquatic life colonizing new substrates. • Changes to fish passage patterns/routes.

Table 4.15-1: Revised Proposed Action Impacts to Essential Fish Habitat¹

Revised Proposed Action	Impacts to Essential Fish Habitat	Impacts to Fish
<p>Replace and upgrade or add 26 culverts to fish passage standards at anadromous streams along the corridor. An estimated improvement of fish access to 7.2 miles of habitat in these streams.</p>	<ul style="list-style-type: none"> Stream geomorphology would be more stable. 	<ul style="list-style-type: none"> Improved ability to move upstream and downstream in response to changing water levels, velocities, and temperatures. Improved function of wetlands that provide water to tributaries upstream of the fish passage culverts. Fish passage is provided at all stream flows, as required by the DOT&PF/ADF&G MOU or as recommended by ADF&G.
<p>Construct larger culverts at debris flow areas at MP 19 and MP 23.</p>	<ul style="list-style-type: none"> Long-term increase in sediments moving directly to Chilkat River and subsequently downstream. Localized river bank instability. Habitat near MP 19 and MP 23 in the Chilkat River could change with each flood flow event. Additional sediment and nutrients to river system. 	<ul style="list-style-type: none"> Direct impacts during debris flow events.
<p>Construct new bridge downriver of existing bridge requiring almost 6,000 square feet of new disturbance for riprap protection of the embankments</p>	<ul style="list-style-type: none"> Sediment, logs and other floating material encounter fewer obstructions at the new bridge site resulting in materials moving downriver more naturally rather than being caught in pilings at the existing bridge. 	<ul style="list-style-type: none"> Removal of obstructions and the resulting accumulation of logs and other floating materials would be a beneficial impact to fish passage.

¹ Impacts listed are long-term. Short-term, temporary impacts are addressed in Section 4.20, Construction Impacts.

Indirect Impacts -

Indirect impacts occur later in time or are farther removed in geographical distance. Temporal indirect impacts to fish could occur depending on the success, over time, of the enhanced tributaries or mitigation sites constructed in the Chilkat River. DOT&PF has constructed several successful tributary enhancements as a part of previous Haines Highway projects (ADF&G, 2012a). Indirect impacts from tributary enhancements are not expected given the past success of similar mitigation creation.

No-Action Alternative – The No-Action Alternative would not alter the Chilkat River fish habitat or its tributaries. This alternative would not move the tributaries that are directly adjacent to the highway where vegetation removal is part of regular maintenance. Erosion of those stream banks would continue. No new changes to food supply, fish passage routes, spawning gravels, or differences in aquatic vegetation would occur. Stream habitat would not be restored or enhanced, and existing culverts would not be replaced to provide improved fish passage.

4.15.3 Avoidance, Minimization, and Mitigation for Fish and Essential Fish Habitat Impacts

Avoidance

- Passing zones rather than passing lanes are proposed to further avoid fill and impacts to the Chilkat River. Compared to the July 2013 EA an additional 2,888 linear feet of fill in the Chilkat River was avoided (see Table 4.1-4).
- The addition of three guardrails avoided the fill in the Chilkat River (See Table A-1 in Appendix F, Essential Fish Habitat). Impacts from fill in an estimated 187 square feet along 100 linear feet of riverbank would be avoided.
- DOT&PF would adhere to ADF&G permitted in-water work windows to avoid and minimize impacts to fish during key periods. Based on previous permits and understanding of sensitive seasons, proposed times when Chilkat River in-water work may be avoided at specific locations are in Table 4.15-2. Actual in-water work windows would be set during permitting.

Table 4.15-2: Proposed Timing of Chilkat River In-Water Work by Location

EFH of Concern	Location (Stream Habitat Inventory, Appendix B in Appendix F, EFH Assessment)	In-Water Work Avoidance
Areas associated with eulachon spawning, rearing and out migrating	In-water work locations downstream of Station 390+00:	Avoid fill in river during April & May
Areas associated with salmonid spawning, rearing, and out migrating	Station 733+00 to 736+80	Avoid fill in river from September to July.

Minimization

- Along the Chilkat River, the design minimized fill in the river by incorporating passing zones in lieu of expanding the roadway section for passing lanes.
- At the Chilkat River Bridge, the design would minimize the in-water construction period by selecting driven piles rather than placement of concrete bridge foundations.
- The Chilkat River fill footprint was minimized by making the slope of the road embankment as steep as feasible (2:1).
- Along the Chilkat River, DOT&PF has minimized impacts to EFH by adding guardrails, shifting the alignment, reducing curves, adding curves and lowering the profile of the road at several locations.
- At the Chilkat River Bridge, DOT&PF has minimized impacts to EFH by reducing the total number of in-water piers to three compared with the existing nine piers (see Figure 4.12-1).
- To minimize adverse impacts of fill in the Chilkat River, DOT&PF proposes to use rough angular rock to stabilize the fill and prevent erosion. The streambank erosion control concept is illustrated in Figure 4.15-1 for areas directly adjacent to the Chilkat River and is intended to increase bank revegetation, reduce sediment loads, and maintain water quality. Using the rough angular rock would provide interstitial voids for cover of juvenile fish and may increase macroinvertebrate biomass and density (USACE, 2003).

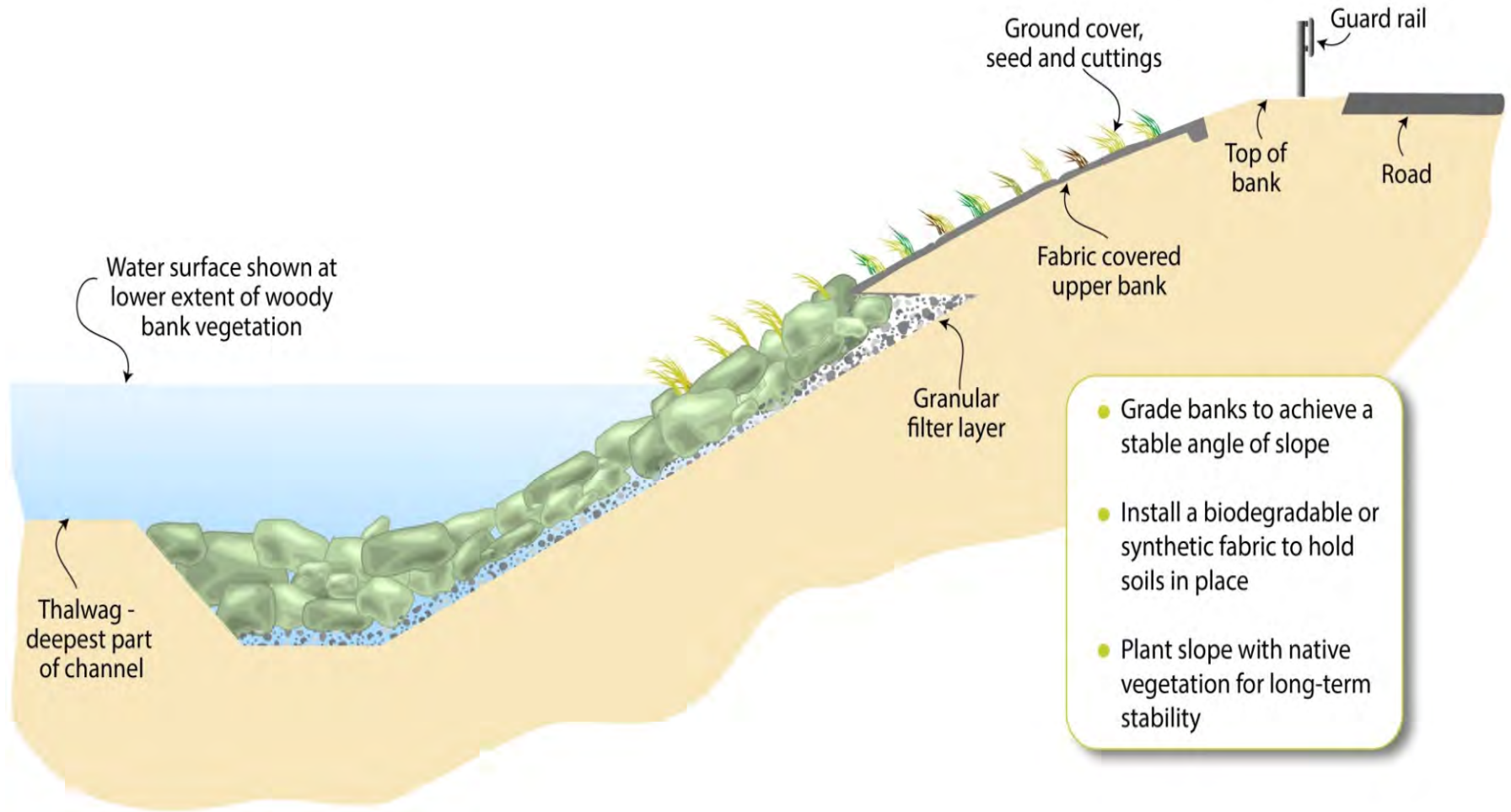


Figure 4.15-1: Conceptual View of Proposed Stream Bank Erosion Control

Mitigation

Within the context of the Chilkat River Watershed currently affected by road corridors there are 75 cataloged anadromous streams (ADF&G, 2009). The Haines Highway project would reconstruct, in-kind, all sections of tributaries directly affected, and improve fish passage for all 25 fish bearing tributaries that intersect the highway in the project area. To further offset impacts to wetlands, 7,308 linear feet of new fish bearing tributary would be created, including an off-site perched culvert at Mink Creek on Mud Bay Road that would be replaced to meet fish passage standards. DOT&PF has worked CIV and ADF&G to develop to refine the Chilkat River mitigation concepts and locations.

Impacts to fish habitat and the benefits to fish habitat from the proposed project and mitigation plan are included in Table 4.15-3.

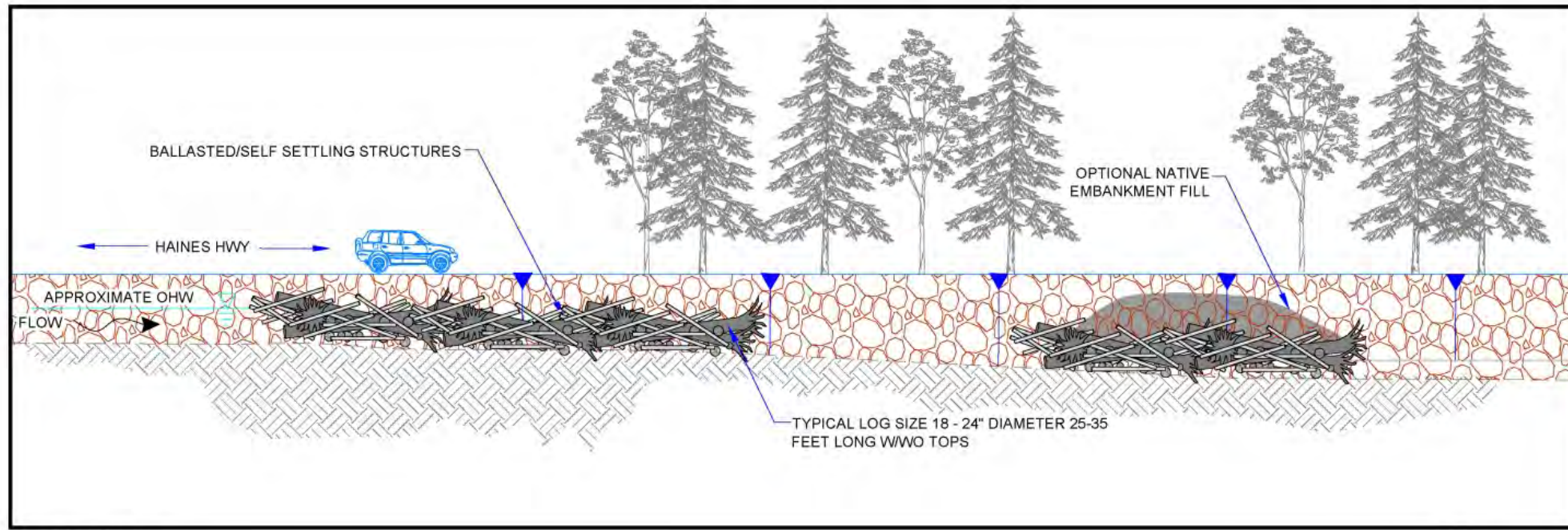
In consultation with ADF&G, NMFS, USFWS and the USACE, the proposed Chilkat River portion of the fish habitat mitigation is designed to mimic existing productive Chilkat River habitat features. In addition to tributary creation and enhancement, DOT&PF has revised proposed Chilkat River mitigation for unavoidable impacts to Wetlands and Other Waters of the U.S. Conceptual designs and locations for these features were developed with input from the CIV, ADF&G, and DOT&PF hydrologists to improve fish habitat while protecting the road embankment (Figures 4.15-2 and 4.15-3, and Table 4.15-3) and further described below.

DOT&PF would implement three different Chilkat River mitigation measures to mimic natural fish habitat environment in locations as close to the impact sites as practicable. These mitigation measures are anticipated to result in benefits to 6,545 linear feet of the river to mitigate for proposed project impacts to 3,812 linear feet of the river (Table 4.15-3). Use of similar concepts has been used successfully for fisheries enhancement in the Pacific Northwest. DOT&PF would work closely with the resource agencies during permitting to develop monitoring goals and objectives, and subsequent monitoring.

Overall, the project would beneficially impact fish bearing wetlands and tributaries. In the past, DOT&PF has been successful in creating fish habitat in the Chilkat River Watershed.⁴⁹

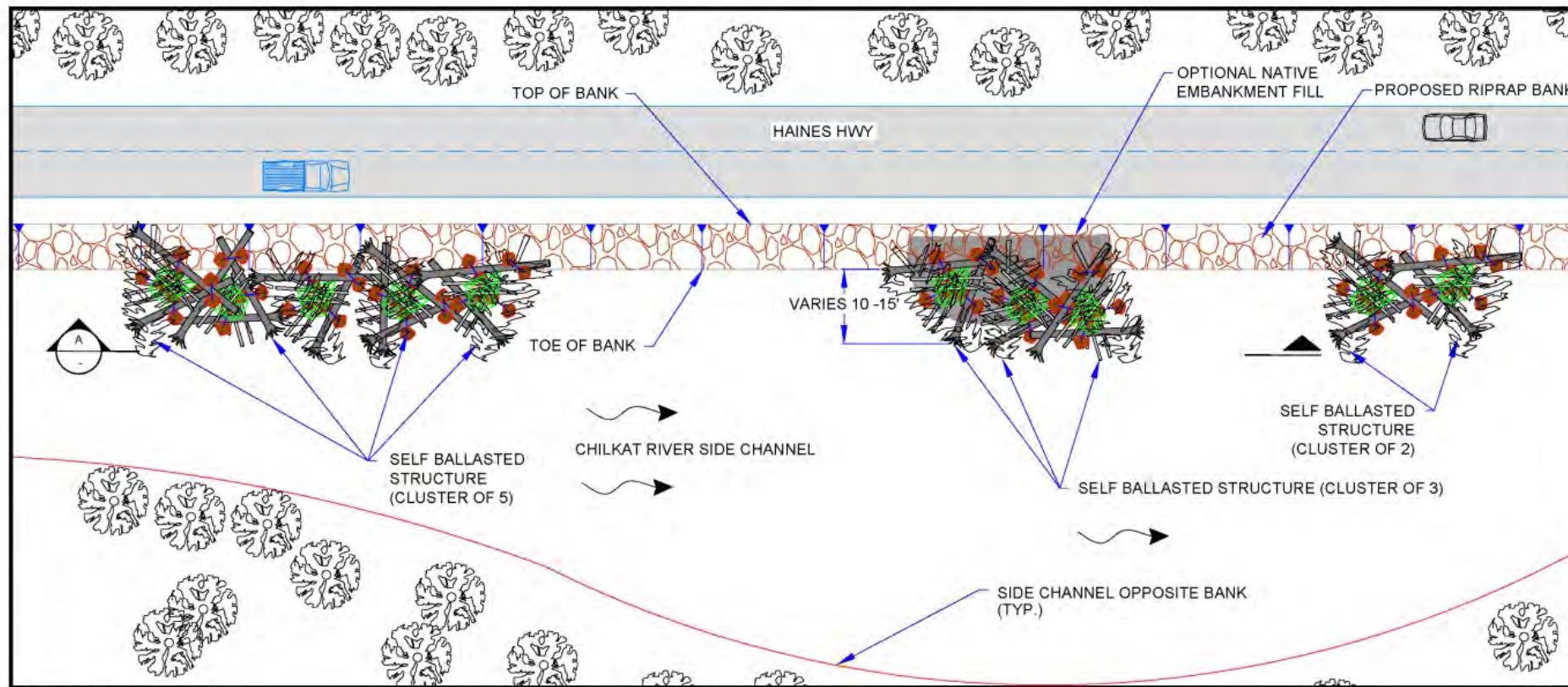
⁴⁹ See reports available at http://dot.alaska.gov/sereg/projects/haines_hwy/documents.shtml.

(This Page Left Intentionally Blank)



ELEVATION
SCALE: NTS

A



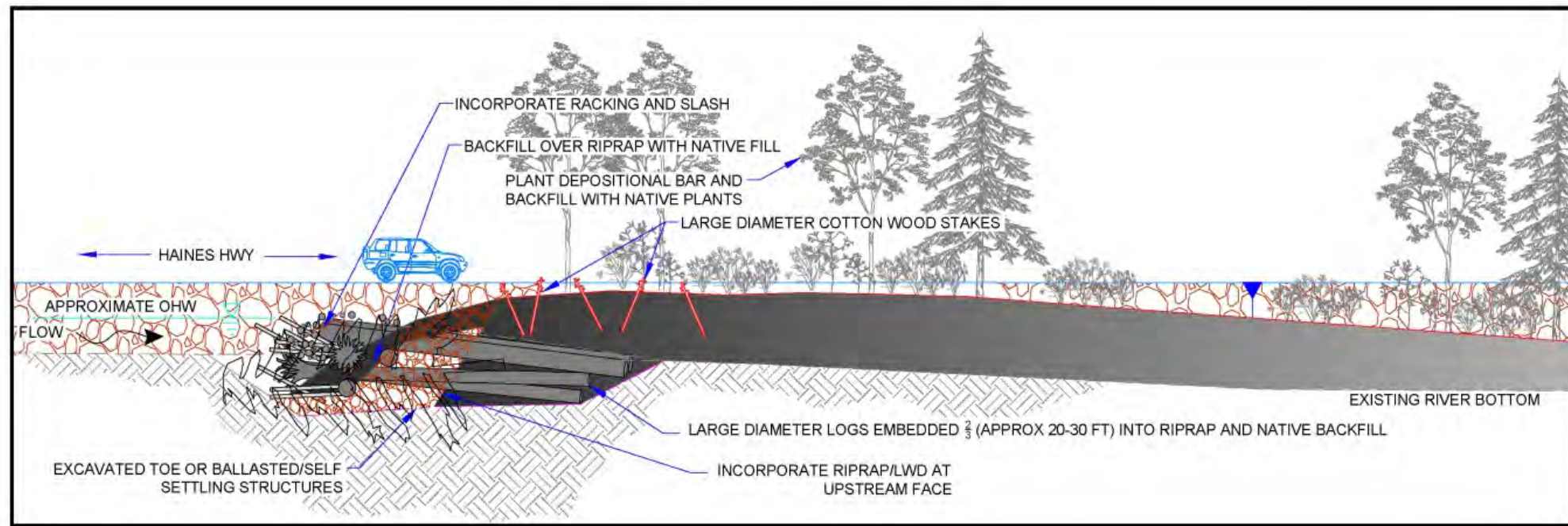
PLAN VIEW
SCALE: NTS

B

LEGEND:

	SLOPE LINE
	NATIVE BACKFILL
	EXISTING GROUND
	LOG MEMBER
	TOP
	EXISTING GRADE
	EXCAVATION EXTENTS
	RIPRAP

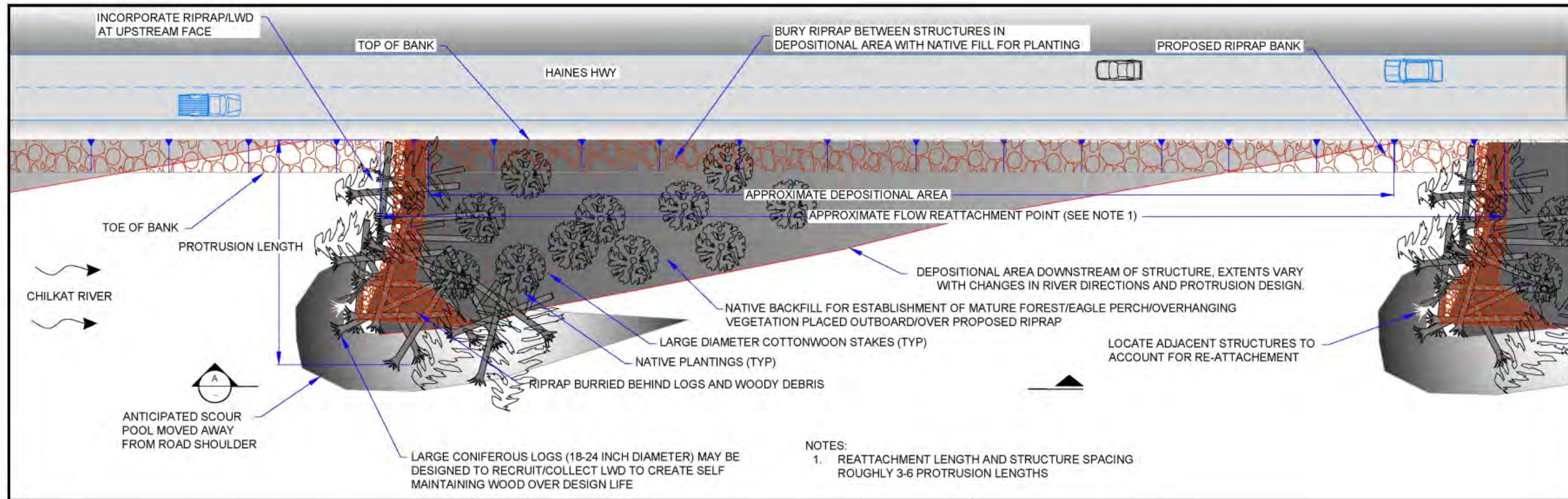
Figure 4.15-2: Conceptual Plan for Ballasted Log Clusters



LEGEND:

	SLOPE LINE
	NATIVE BACKFILL
	EXISTING GROUND
	LOG MEMBER
	TOP
	EXISTING GRADE
	EXCAVATION EXTENTS
	RIPRAP

ELEVATION
SCALE: NTS



NOTES:
1. REATTACHMENT LENGTH AND STRUCTURE SPACING
ROUGHLY 3-6 PROTRUSION LENGTHS

PLAN VIEW
SCALE: NTS



Figure 4.15-3: Conceptual Plan for River Protrusion

Table 4.15-3: Summary of Linear Impacts and Effects to Fish Habitat

Figure Set D Sheet #	MP (Approx)	DOT&PF Station Numbering	Fish Passage Culvert #	ACTIVITY	Linear Feet of Stream Impact	Linear Feet of Stream Benefit	Net Effect	Habitat Function Impacted/Benefited*
1	4.1	191+00 – 194+00		Relocate 300 feet of stream			Neutral	Replace in kind
1	4.2	195+50 – 197+50		302 feet of shoreline fill (vegetated riprap) on existing vegetated riprap			Neutral	Replace in kind
2	4.7	223+50	FP-1	Replace existing culvert with fish passage culvert		90	Positive	Passage, Functional lift to upstream wetlands
2	4.7	221+00 – 223+00		Relocate/replace 100 feet of stream			Neutral	Replace in kind
2	4.7	223+00 – 224+00		Relocate/replace 100 feet of stream			Neutral	Replace in kind
2	4.8	229+50		Relocate/replace 25 feet of stream			Neutral	Replace in kind
2	4.8	230+20	FP-2	Replace existing culvert with fish passage culvert		79	Positive	Passage, Functional lift to upstream wetlands
2	4.9	233+00	FP-33	Replace existing culvert with fish passage culvert		54	Positive	Passage, Functional lift to upstream wetlands
2	4.9	238+50 – 241+40		Improve/Relocate 195 feet of stream to abandoned channel away from road		195	Positive	Improve fish habitat
2	5.0	241+37	FP-3	Replace existing culvert with fish passage culvert		62	Positive	Passage, Functional lift to upstream wetlands
2	5.1	245+25	FP-34	Replace existing culvert with fish passage culvert (driveway)		27	Positive	Passage
2	5.1	246+25	FP-4	Replace existing culvert with fish passage culvert		73	Positive	Passage
2	5.1	249+43	FP-5	Replace existing culvert with fish passage culvert		66	Positive	Passage
2	5.2	249+50 – 256+00		Relocate/replace 650 feet of stream			Neutral	Replace in kind
3	5.3	258+50 – 260+50		Relocate/replace 250 feet of stream			Neutral	Replace in kind
3	5.5	263+00 – 264+75		169 feet of shoreline fill (vegetated riprap) on existing vegetated riprap			Neutral	Replace in kind

Table 4.15-3: Summary of Linear Impacts and Effects to Fish Habitat

Figure Set D Sheet #	MP (Approx)	DOT&PF Station Numbering	Fish Passage Culvert #	ACTIVITY	Linear Feet of Stream Impact	Linear Feet of Stream Benefit	Net Effect	Habitat Function Impacted/Benefited*
3	5.6	264+00 – 265+00		Ballasted log clusters		100	Positive	OW Cor, Passage
3	5.7	275+50 – 275+60		11 feet of shoreline fill (vegetated riprap) on existing vegetated riprap			Neutral	Replace in kind
3	5.8	275+10 – 276+10		Ballasted log clusters		100	Positive	OW Cor, Passage
4	5.9	284+50 – 289+00		404 feet of shoreline fill (vegetated riprap) on existing vegetated riprap			Neutral	Replace in kind
4	6.0	293+90		Partial fill of pond	15		Negative	Impact to spawning habitat
4	6.1	298+25 – 300+25		River Protrusion		200	Positive	OW Cor, Passage
4	6.1	297+00 – 302+00		452 feet of shoreline fill (vegetated riprap) on existing vegetated riprap			Neutral	Replace in kind
4	6.4	312+00 – 313+40		Ballasted log clusters		140	Positive	OW Cor, Passage
4	6.4	311+00 – 314+00		165 feet of shoreline fill with vegetated riprap	165		Negative	Impact
4	6.5	316+00	FP-7	Replace existing culvert with fish passage culvert		60	Positive	Passage, Functional lift to upstream wetlands
5	6.7	318+50 – 320+00		Relocate/replace 150 feet of stream			Neutral	Replace in kind
5	6.7	320+00	FP-8	Replace existing culvert with fish passage culvert		69	Positive	Passage, Functional lift to upstream wetlands
5	6.7	320+00 – 323+00		Relocate/replace 300 feet of stream			Neutral	Replace in kind
5	6.7	325+80	FP-9	Replace existing culvert with fish passage culvert		81	Positive	Passage, Functional lift to upstream wetlands
5	7.0	336+70 – 338+25		120 feet of shoreline fill (vegetated riprap) on existing vegetated riprap			Neutral	Replace in kind
5	7.1	336+70 – 338+25		Ballasted log clusters		150	Positive	Cor, Passage

Table 4.15-3: Summary of Linear Impacts and Effects to Fish Habitat

Figure Set D Sheet #	MP (Approx)	DOT&PF Station Numbering	Fish Passage Culvert #	ACTIVITY	Linear Feet of Stream Impact	Linear Feet of Stream Benefit	Net Effect	Habitat Function Impacted/Benefited*
6	7.3	350+00 – 358+00		771 feet of shoreline fill (vegetated riprap) on existing vegetated riprap			Neutral	Replace in kind
6	7.3	351+00		Relocate/replace 200 feet of stream			Neutral	Replace in kind
6	7.3	351+00	FP-10	Replace existing culvert with fish passage culvert		66	Positive	Passage, Functional lift to upstream wetlands
6	7.5	351+20 – 352+30		Ballasted log clusters		110	Positive	OW Cor, Passage
6	7.5	354+80 – 356+40		River Protrusion		160	Positive	OW Cor, Passage
6	7.5	362+00 – 363+00		River Protrusion		100	Positive	Cor
6	7.6	365+25 – 366+25		57 feet of shoreline fill (vegetated riprap) on existing vegetated riprap			Neutral	Replace in kind
6	7.6	367+50	FP-11	Replace existing culvert with fish passage culvert		65	Positive	Passage, Functional lift to upstream wetlands
6	7.8	371+50 – 376+00		485 feet of shoreline fill (vegetated riprap) on existing vegetated riprap			Neutral	Replace in kind
6	7.8	374+00 – 374+50		Ballasted log clusters		50	Positive	OW Cor, Passage
6	7.9	380+25 – 385+50		524 feet of shoreline fill (vegetated riprap) on existing vegetated riprap			Neutral	Replace in kind
7	7.9	383+25	FP-12	Replace existing culvert with fish passage culvert		72	Positive	Passage, Functional lift to upstream wetlands
7	8.9	385+00 – 385+50		Fish Wheel, Ballasted log clusters, River protrusion		50	Positive	Cor
7	8.9	389+00 – 390+00		Ballasted log clusters		100	Positive	OW Cor, Passage

Table 4.15-3: Summary of Linear Impacts and Effects to Fish Habitat

Figure Set D Sheet #	MP (Approx)	DOT&PF Station Numbering	Fish Passage Culvert #	ACTIVITY	Linear Feet of Stream Impact	Linear Feet of Stream Benefit	Net Effect	Habitat Function Impacted/Benefited*
7	8.0	388+25 – 391+75		332 feet of shoreline fill (vegetated riprap) on existing vegetated riprap			Neutral	Replace in kind
7	8.2	405+75 – 406+25		28 feet of shoreline fill (vegetated riprap) on existing vegetated riprap			Neutral	Replace in kind
7	8.2	407+25 – 409+50		217 feet of shoreline fill with vegetated riprap	217		Negative	Impact
7	8.4	412+00 – 417+50		547 feet of shoreline fill (vegetated riprap) on existing vegetated riprap			Neutral	Replace in kind
7	8.4	413+00 – 413+50		Fish Wheel		50	Positive	Passage
7	8.5	415+80 – 417+20		River Protrusion		140	Positive	OW Cor, Passage
8	8.6	423+75 – 425+50		154 feet of shoreline fill with vegetated riprap	154		Negative	Impact
8	8.7	429+00 – 436+25		872 feet of shoreline fill with vegetated riprap	872		Negative	Impact
8	8.5	431+00 – 431+50		Fish Wheel		50	Positive	Passage
8	8.7	435+80 – 437+75		River Protrusion		195	Positive	OW Cor, Passage
8	8.8	439+00 – 448+00		904 feet of shoreline fill (vegetated riprap) on existing vegetated riprap			Neutral	Replace in kind
8	8.8	441+00 – 443+10		River protrusion		210	Positive	OW Cor, Passage
8	8.8	446+00 – 446+50		Fish Wheel		50	Positive	Passage
9	8.9	448+00 – 452+50		467 feet of shoreline fill with vegetated riprap	467		Negative	Impact
9	8.9	449+20 – 451+20		Ballasted log clusters		200	Positive	OW Cor, Passage

Table 4.15-3: Summary of Linear Impacts and Effects to Fish Habitat

Figure Set D Sheet #	MP (Approx)	DOT&PF Station Numbering	Fish Passage Culvert #	ACTIVITY	Linear Feet of Stream Impact	Linear Feet of Stream Benefit	Net Effect	Habitat Function Impacted/Benefited*
9	8.9	454+00 – 458+00		398 feet of shoreline fill (vegetated riprap) on existing vegetated riprap			Neutral	Replace in kind
9	8.9	455+30 – 456+70		Ballasted log clusters		140	Positive	OW Cor, Passage
9	9.0	459+75 – 470+00		1,020 feet of shoreline fill (vegetated riprap) on existing vegetated riprap			Neutral	Replace in kind
9	9.2	463+50 – 465+00		Ballasted log clusters		150	Positive	OW Cor, Passage
9	9.2	468+00 – 468+50		Fish Wheel		50	Positive	Passage
10	9.5	484+75	FP-14	Replace existing culvert with fish passage culvert		77	Positive	Passage
10	9.5	484+75		Relocate/replace 30 feet of stream			Neutral	Replace in kind
10	9.7	493+00 – 498+00		447 feet of shoreline fill (vegetated riprap) on existing vegetated riprap			Neutral	Replace in kind
10	9.7	494+00 – 494+50		Fish Wheel		50	Positive	Passage
10	9.7	497+80 – 500+00		River Protrusion		220	Positive	OW Cor, Passage
10	10.0	513+90	FP-15	Replace existing culvert with fish passage culvert		72	Positive	Passage, Functional lift to upstream wetlands
11	10.3	520+00 – 524+00		Improve/Relocate 400 feet of stream to historical channel		400	Positive	Passage, Functional lift to upstream wetlands
11	10.3	519+00 – 523+00		Fill 400 feet of slough shoreline	400		Negative	Impact
11	10.5	532+00	FP-16	Replace existing culvert with fish passage culvert		76	Positive	Passage
11	10.5	530+00 – 532+00		Improve/Relocate 126 feet of stream		126	Positive	Passage, Functional lift to upstream wetlands
12	11.2	570+00 – 570+50		Relocate/replace 50 feet of stream			Neutral	Replace in kind

Table 4.15-3: Summary of Linear Impacts and Effects to Fish Habitat

Figure Set D Sheet #	MP (Approx)	DOT&PF Station Numbering	Fish Passage Culvert #	ACTIVITY	Linear Feet of Stream Impact	Linear Feet of Stream Benefit	Net Effect	Habitat Function Impacted/Benefited*
13	11.6	585+50 – 587+50		193 feet of shoreline fill (vegetated riprap) on existing vegetated riprap			Neutral	Replace in kind
13	11.6	585+30 – 588+10		Ballasted log clusters		280	Positive	OW Cor, Passage
13	11.7	590+75	FP-17	Replace existing culverts (2) with fish passage culvert		63	Positive	Passage, Functional lift to upstream wetlands
13	11.7-12	594+25 – 608+00		Create 980 feet of new stream		980	Positive	New fish habitat, functional lift to adjacent wetlands
13	12.0	608+50		Replace culvert			Neutral	Replace in kind
13	12.1	611+50 – 613+25		270 feet of shoreline fill (vegetated riprap) on existing vegetated riprap			Neutral	Replace in kind
13	12.1	612+50 – 613+50		Ballasted log clusters		100	Positive	OW Cor, Passage
14	12.2	620+00 – 622+50		221 feet of shoreline fill with vegetated riprap	221		Negative	Impact
14	12.3	621+20 – 622+00		Ballasted log clusters		80	Positive	OW Cor, Passage
14	12.3	623+00 – 623+50		Ballasted log clusters		50	Positive	OW Cor, Passage
14	12.3	624+75 – 625+30		Ballasted log clusters		55	Positive	OW Cor, Passage
14	12.6	641+00 – 642+25		68 feet of shoreline fill (vegetated riprap) on existing vegetated riprap			Neutral	Replace in kind
14	12.6	641+00 – 642+80		Ballasted log clusters		180	Positive	OW Cor, Passage
14	12.7	643+00 – 647+00		Improve/Relocate 300 feet of stream		300	Positive	New fish habitat, functional lift to adjacent wetlands
15	12.8	648+90	FP-18	Replace existing culvert with fish passage culvert		69	Positive	Passage, Functional lift to upstream wetlands
15	12.8	649+00 – 651+00		Improve/Relocate 300 feet of stream		300	Positive	New fish habitat, functional lift to adjacent wetlands

Table 4.15-3: Summary of Linear Impacts and Effects to Fish Habitat

Figure Set D Sheet #	MP (Approx)	DOT&PF Station Numbering	Fish Passage Culvert #	ACTIVITY	Linear Feet of Stream Impact	Linear Feet of Stream Benefit	Net Effect	Habitat Function Impacted/Benefited*
15	12.8	649+00 – 654+50		Create 500 feet of new stream		500	Positive	New fish habitat, functional lift to adjacent wetlands
15	12.9	654+25	FP-19 (New)	New fish passage culvert; direct flow from along road to under road to feed new stream		58	Positive	Passage, Functional lift to upstream wetlands
15	12.9	656+80	FP-20	Replace existing culverts with fish passage culvert		67	Positive	Passage, Functional lift to upstream wetlands
15	13.1	666+50 – 673+00		626 feet of shoreline fill with vegetated riprap	626		Negative	Impact
15	13.1	666+50 – 668+20		Ballasted log clusters		170	Positive	OW Cor, Passage
15	13.2	668+90 – 670+50		River Protrusion		160	Positive	Passage
15	13.2	671+80 – 673+50		River Protrusion		170	Positive	Passage
15	13.4	688+50 – 693+50		513 feet of shoreline fill with vegetated riprap	513		Negative	Impact
16	13.4	692+00 – 693+50		River Protrusion		150	Positive	Passage
16	13.5	694+25 – 1,145+25		97 feet of shoreline fill (vegetated riprap) on existing vegetated riprap			Neutral	Replace in kind
16	13.7	696+25 – 699+25		304 feet of shoreline fill (vegetated riprap) on existing vegetated riprap			Neutral	Replace in kind
16	13.7	696+30 – 698+00		River Protrusion		170	Positive	Passage
16	13.7	699+75 – 703+50		383 feet of shoreline fill (vegetated riprap) on existing vegetated riprap			Neutral	Replace in kind
16	13.7	699+80 – 700+70		River Protrusion		90	Positive	Passage
16	13.8	702+60 – 703+60		Ballasted log clusters		100	Positive	OW Cor, Passage

Table 4.15-3: Summary of Linear Impacts and Effects to Fish Habitat

Figure Set D Sheet #	MP (Approx)	DOT&PF Station Numbering	Fish Passage Culvert #	ACTIVITY	Linear Feet of Stream Impact	Linear Feet of Stream Benefit	Net Effect	Habitat Function Impacted/Benefited*
16	13.9	712+00	FP-21	Replace culverts (2) with fish passage culvert		119	Positive	Passage, Functional lift to upstream wetlands
16	13.9	711+75		Fill a portion off 14 Mile pond, fill 30 feet of stream	130		Negative	Impact
16	13.9	711+75		Expand/lengthen the pond		50	Positive	New fish habitat, functional lift to adjacent wetlands
17	14.3	735+90 – 738+00		Ballasted log clusters		210	Positive	OW Cor, Passage
17	14.3	735+50 – 737+75		214 feet of shoreline fill (vegetated riprap) on existing vegetated riprap			Neutral	Replace in kind
17	14.3	736+00 – 738+00		Improve fish habitat on slough		200	Positive	Cor, Kr
17	14.3	738+00 – 740+00		Improve fish habitat on protrusion		200	Positive	Cor, Kr
17	14.3	738+25	FP-22	Replace existing culvert with fish passage culvert		56	Positive	Passage
17	14.3	738+00 – 742+00		Fill 400 feet of stream along road toe; direct water under road to new pond	400		Negative	Impact
18	14.8	760+75 – 762+00		235 feet of shoreline fill with vegetated riprap	235		Negative	Impact
18	14.8	761+75 – 762+20		Ballasted log clusters		45	Positive	OW Cor, Passage
18	14.9	767+50 – 769+50		192 feet of shoreline fill (vegetated riprap)	192		Negative	Impact
18	14.9	767+80 – 768+30		Ballasted log clusters		50	Positive	OW Cor, Passage
18	14.9	768+75	FP-23	Replace existing culvert with fish passage culvert		56	Positive	Passage, Functional lift to upstream wetlands
18	14.9	768+75		Relocate/replace 100 feet of stream			Neutral	Replace in kind
18	15.0	768+90 – 770+20		Ballasted log clusters		130	Positive	OW Cor, Passage

Table 4.15-3: Summary of Linear Impacts and Effects to Fish Habitat

Figure Set D Sheet #	MP (Approx)	DOT&PF Station Numbering	Fish Passage Culvert #	ACTIVITY	Linear Feet of Stream Impact	Linear Feet of Stream Benefit	Net Effect	Habitat Function Impacted/Benefited*
18	15.0	772+00	FP-24	Replace existing culvert with fish passage culvert		66	Positive	Passage, Functional lift to upstream wetlands
18	15.0	772+00 – 778+00		Relocate/replace 600 feet of stream			Neutral	Replace in kind
19	15.1	788+50 – 789+00		Ballasted log clusters		50	Positive	OW Cor, Passage
19	15.1	790+50 – 791+00		Ballasted log clusters		50	Positive	OW Cor, Passage
19	15.1	791+20 – 792+30		Ballasted log clusters		110	Positive	OW Cor, Passage
20	16.0	816+00 – 819+50		350 feet of shoreline fill (vegetated riprap) on existing vegetated riprap			Neutral	Replace in kind
20	16.0	817+00 – 819+30		Ballasted log clusters		230	Positive	OW Cor, Passage
21	16.9	867+50 – 871+50		Remove culvert and create 500 feet of new stream to new culvert		500	Positive	Passage, Functional lift to upstream fish habitat
21	16.9	871+10	FP-25	Install new fish passage culvert		85	Positive	Passage, Functional lift to upstream wetlands
21	16.9	867+50 – 871+50		Fill 150 feet of stream	150		Negative	Impact
21	16.9	867+50 – 871+50		Improve/Relocate 400 feet of stream		400	Positive	Increase habitat
21	17.0	873+00		Fill 100 feet of stream with vegetated riprap	100		Negative	Impact
21	17.0	873+00 – 873+50		Ballasted log clusters		50	Positive	OW Cor, Passage
21	17.0	875+00 – 878+00		Extend stream 300 feet using new landslide water source		300	Positive	Increase habitat
22	17.3	889+50	FP-26	New fish passage culvert		129	Positive	Passage
22	17.3	889+50		Relocate/replace 100 feet of stream			Neutral	Replace in kind
22	17.3	889+50 – 891+00		Relocate/replace 200 feet of stream			Neutral	Replace in kind

Table 4.15-3: Summary of Linear Impacts and Effects to Fish Habitat

Figure Set D Sheet #	MP (Approx)	DOT&PF Station Numbering	Fish Passage Culvert #	ACTIVITY	Linear Feet of Stream Impact	Linear Feet of Stream Benefit	Net Effect	Habitat Function Impacted/Benefited*		
22	17.3	890+00 – 898+00		Remove culverts and road embankment, restore riparian habitat		800	Positive	Improve fish habitat		
22	17.3	897+00		Remove culvert and install open stream crossing		100	Positive	Improve fish habitat		
25	19.8	1016+00 – 1017+00		Ballasted log clusters		100	Positive	Kr		
26	20.3	1038+00 – 1047+00		Ballasted log clusters		900	Positive	Kr		
28	21.5	1103+00		Create pond to provide rearing habitat at culvert outlet		50	Positive	Increase habitat		
32	23.8	1126+00 – 1231+00		Replace bridge, shoreline fill and shoreline rehabilitation	150**	100	Neutral	Replace in kind		
N/A	N/A	N/A		Replace culvert at Mink Creek on Mud Bay Road with fish passage culvert		50	Positive	Passage		
					Impact	Benefit	Net Benefit			
					Chilkat River Totals (linear feet [LF])	3,812	6,545	2,733		
					Tributary Totals (LF)	1,195	7,308	6,113		
					Chilkat River and Tributary Totals (LF)	5,007	13,853	8,846		

Notes: * OW Over winter fish habitat, COr is Coho Rearing, Passage is fish passage, Kr is King Salmon rearing
 ** Shoreline in this area is entirely above Ordinary High Water
 FP culverts 6 and 13 are not included as these have been eliminated through design changes and comments from ADF&G.
 PID 36 is not on sheet. It was impacted by original design but not impacted by current design.

Actions included as part of the mitigation plan include:

- Replace existing culverts for fish-bearing streams with culverts designed to meet ADF&G fish passage standards (DOT&PF and ADF&G, 2001). Fish passage culverts would provide improved fish habitat upstream of the culverts (see Appendix A – *EFH Impacts* in Appendix F, EFH Assessment). This would provide a functional lift (increase in value) to the adjacent wetlands. It should be noted that the required culvert replacements are not mitigation.
- Incorporate woody debris to improve habitat by creating additional cover for juvenile fish (Inter-Fluve, 2012).
- To mitigate unavoidable impacts from placing riprap along Chilkat River stream banks, DOT&PF will implement three different mitigation measures to mimic natural fish habitat environment in locations as close to the impact sites as practicable.
 - The first mitigation measure (Figure 4.15-2) involves installation, at 30 locations, of ballasted log clusters placed in the Chilkat River to improve fish passage and provide rearing habitat.
 - The second mitigation measure (Figure 4.15-3) involves the installation of 12 vegetated river protrusions. The river protrusions would provide trees overhanging stream banks to mimic productive natural stream banks and add stream bank complexity to improve fish passage and provide rearing habitat.
 - The third mitigation measure builds on the second mitigation measure. The downstream side of the vegetated river protrusion would be hardened with vegetated rip rap to provide hydrologic characteristics necessary for fish wheel installation at 6 sites. These fish wheel protrusions also improve fish habitat by adding streambank complexity (see Figure Set D).
- As mitigation for the loss of fish bearing wetlands,
 - replace in-kind or better, 3,155 linear feet of tributary directly affected and create/enhance approximately 7,308 linear feet of tributary.
 - ◆ One culvert would be upgraded to fish-passage standards at Mink Creek on the Mud Bay Road in Haines. The Mink Creek culvert currently prevents all upstream fish passage and replacement will benefit fish habitat.

- replace in-kind or better, tributaries directly affected and create enhanced or new fish stream habitat at locations identified in Table 4.15-3. Stream enhancements include:
 - ◆ relocation of fish-bearing streams away from the road, beyond where DOT&PF needs to brush for maintaining visibility;
 - ◆ additional tributary features requested by the IDT to improve stream complexity and nutrient supply; and
 - ◆ additional removal and partial excavation of the existing road embankment near MP 18 to create a hydrologically connected flood terrace/wetland area adjacent to a stream (Appendix D – *Stream Habitat Mitigation Plan* in Appendix F, EFH Assessment).

Required Measures to assure fish passage

Fish stream culverts would be replaced in accordance with the MOA between the ADF&G and the DOT&PF (DOT&PF and ADF&G, 2001) regarding culvert replacements (see the table summary in Figure Set D). The fish passage culvert upgrades would improve fish access to the enhanced aquatic habitat, providing a functional benefit to these fish streams.

- Substandard culverts conveying anadromous fish through the project area (Table 4.15-3) would be replaced with culverts designed to meet ADF&G fish passage standards as outlined in the MOA between the DOT&PF and the ADF&G (DOT&PF and ADF&G, 2001).
- New fish passage culverts would be added along the highway alignment where new streams have been identified or are being relocated or created.
- Fill in fish-bearing streams would require stream creation/replacement in-kind equal to or better than the impacted stream.

As mitigation for the loss of 4.2 acres of Chilkat River riverine habitat and 22.2 acres of wetlands (Table 4.14-2), DOT&PF proposes to create and/or enhance approximately 6,545 linear feet of Chilkat River habitat and 7,308 linear feet of tributary fish habitat as summarized in Table 4.15-3. Stream enhancements would improve existing fish habitat and return degraded habitats to their natural condition. Impacts to tributary channels from road widening and/or realignment would be replaced in kind or better. The design of these tributary realignments will be completed as part of the permitting process. Overall, the mitigation is designed to provide benefits to fish habitat that are greater than the impacts from the proposed project.

Agency Consultation – DOT&PF provided NMFS, USFWS, ADF&G, and USACE with a draft EFH assessment for review on February 8, 2012. DOT&PF then met with representatives from NMFS, USFWS, and ADF&G February 16, 2012, to discuss the draft and solicit feedback.

The DOT&PF met with the IDT again on September 30, 2013 to review a proposed revised alignment. The DOT&PF met with the NMFS, the USFWS, and the USACE on February 13, 2014 and with the USFWS and the NMFS again on March 26, 2014 to discuss proposed mitigation. On April 4, 2014, the DOT&PF met with the ADF&G in Haines to discuss Chilkat River fish dispersion and appropriate mitigation details for fill in the Chilkat River. A field visit on May 13 and 14, 2014 with the NMFS, the USFWS, the ADF&G, and the DOT&PF was conducted to discuss mitigation sites. The DOT&PF met again with the NMFS and the USFWS on May 16, 2014 and May 19, 2014 to discuss mitigation site details.

DOT&PF addressed the comments received from NMFS and the other agencies to revise and finalize the EFH Assessment. NMFS notified DOT&PF, that their EFH consultation was complete by letter on September 18, 2014. In that letter NMFS said:

“NMFS has previously provided comments and EFH Recommendations for this project. NMFS acknowledges the Alaska Department of Transportation and Public Facilities has designed the project to minimize impacts to EFH, and taken measures to mitigate impacts to EFH while still meeting the project’s objectives. The mitigation outlined in the August 2014 EFH Assessment is responsive to NMFS’s recommendations. Therefore, NMFS considers EFH consultation for the project to be complete.”

On October 16, 2015, DOT&PF met again with the IDT to discuss their comments on the DREA (see Appendix H for meeting notes). The mitigation measures added after EFH consultation was completed (a result of continued work with CIV and ADF&G) were presented to NMFS in May 2016; NMFS confirmed that consultation remains complete (Appendix F).

Agency Determination – Based on the project design; avoidance, minimization, and mitigation measures; and proposed construction environmental commitments; DOT&PF recommends that

- impacts to EFH would not be adverse, and
- the project will at least offset unavoidable impacts to the natural availability of salmon.

4.16 Wildlife Resources

4.16.1 Affected Environment

Areas adjacent to the project corridor are relatively undeveloped lands within the Chilkat River Valley. Wildlife habitat types in the project footprint consist of the broad braided Chilkat River, small tributaries, small ponds, riparian fringes, wetlands, meadows, and forests. Black cottonwood, Sitka spruce, and birch dominate the different forest habitats. Forest understory and fringe vegetation include alders, willows, red osier dogwood, highbush cranberry, soapberry, Nootka rose, and meadow horsetail. Bluejoint grass, sedge, and fireweed meadows area also found. Wetlands, as described in Section 4.14, vary from forested wetlands to muskeg.

Of the many mammals, birds, and amphibians in the area, the species of interest related to this project consist of bald eagles, moose, mountain goats, trumpeter swans, black and brown bear, martens, mink, beaver, and river otters. During the winter, moose (*Alces alces*) are present along the major river valleys. Mountain goats (*Oreamnos americanus*) demonstrate variable overwintering strategies by moving to low or mid-elevation, or remaining at high elevation to take advantage of available forage on windblown slopes.

Important moose winter range habitats are the riparian willow communities and mixed deciduous-coniferous forests that are found along the Chilkat River. Seasonal concentrations of black bear (*Ursus americanus*) occur on beaches, high elevation ridges, and tidal areas during the spring and along salmon streams in the fall. Brown bear concentrate in beach and sedge flats in the spring and along salmon streams in the late summer and fall. However brown bear habitat use includes nearly all habitats in the Haines area, excluding steep rock faces and glacial ice.

The Lynn Canal and the Chilkat and Klehini valleys are a major waterfowl migration route to and from the interior of Alaska and Canada. The estuaries and wetlands along these migration routes are critical resting and feeding areas for many species including swans, shorebirds, geese, and ducks. Major nesting and molting areas are located in the Chilkat River basin.

The Chilkat River is the southernmost known Trumpeter swan (*Cygnus buccinator*) nesting area in Alaska, with the principal swan concentrations located in the Upper Chilkat River upstream of the Chilkat River Bridge (DNR DMLW, 2002a). Ptarmigan, grouse, ravens, magpies, jays, crossbills, chickadees, juncos, and numerous other songbirds either nest or migrate through the Haines area.

All of these species could use the habitat within the project corridor.

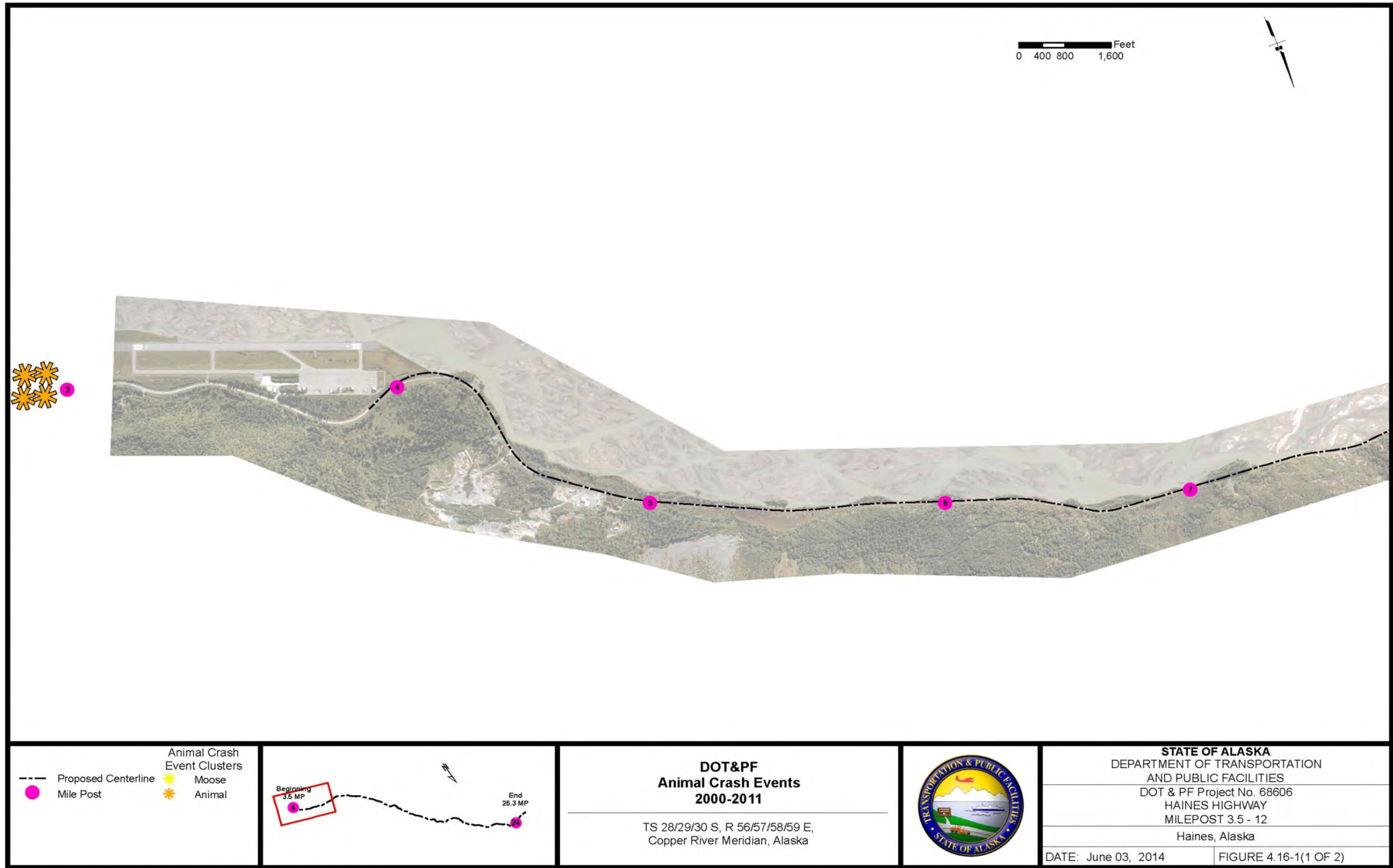
Bald eagles and their habitat are discussed in Section 4.2, Alaska Chilkat Bald Eagle Preserve. The primary food supply for bald eagles is salmon. As discussed in detail in Section 4.15, Fish, salmon populations would be minimally affected⁵⁰ by the Revised Proposed Action. Vehicular traffic does affect wildlife in the project area. There are wildlife-related (primarily moose) vehicle accidents along Haines Highway; however, it is not considered a high incident highway. Highway traffic data indicates that there are five sections where wildlife-related accidents are more common than others (DOT&PF, 2014).

The five areas are (See Figure 4.16-1):

- near the beginning of the project at MP 3.5,
- near MP 13,
- near MP 14,
- near MP 15, and
- near MP 16.

⁵⁰ The project will at least offset unavoidable impacts to the natural availability of salmon. All impacts to fish-bearing tributaries would require tributary relocation, in-kind or better. An estimated 25 culverts would be upgraded to fish passage standards, improving upstream fish habitat. Chilkat River impacts would be offset by simulating productive Chilkat River fish habitat as detailed in EA Section 4.15 Fish. To mitigate for potential impacts to fish habitat, an additional approximately 7,308 linear feet of fish-bearing tributaries would be restored or enhanced.

(This Page Left Intentionally Blank)



\\anc-hg-fs011\Autocad\Projects\159119\GIS\ENV\Crash Data\Crash Data.mxd Jun 03, 2014 8:35:41 AM User: cfelker

Figure 4.16-1: DOT&PF Animal Crash Events 2000-2011 (1 of 2)

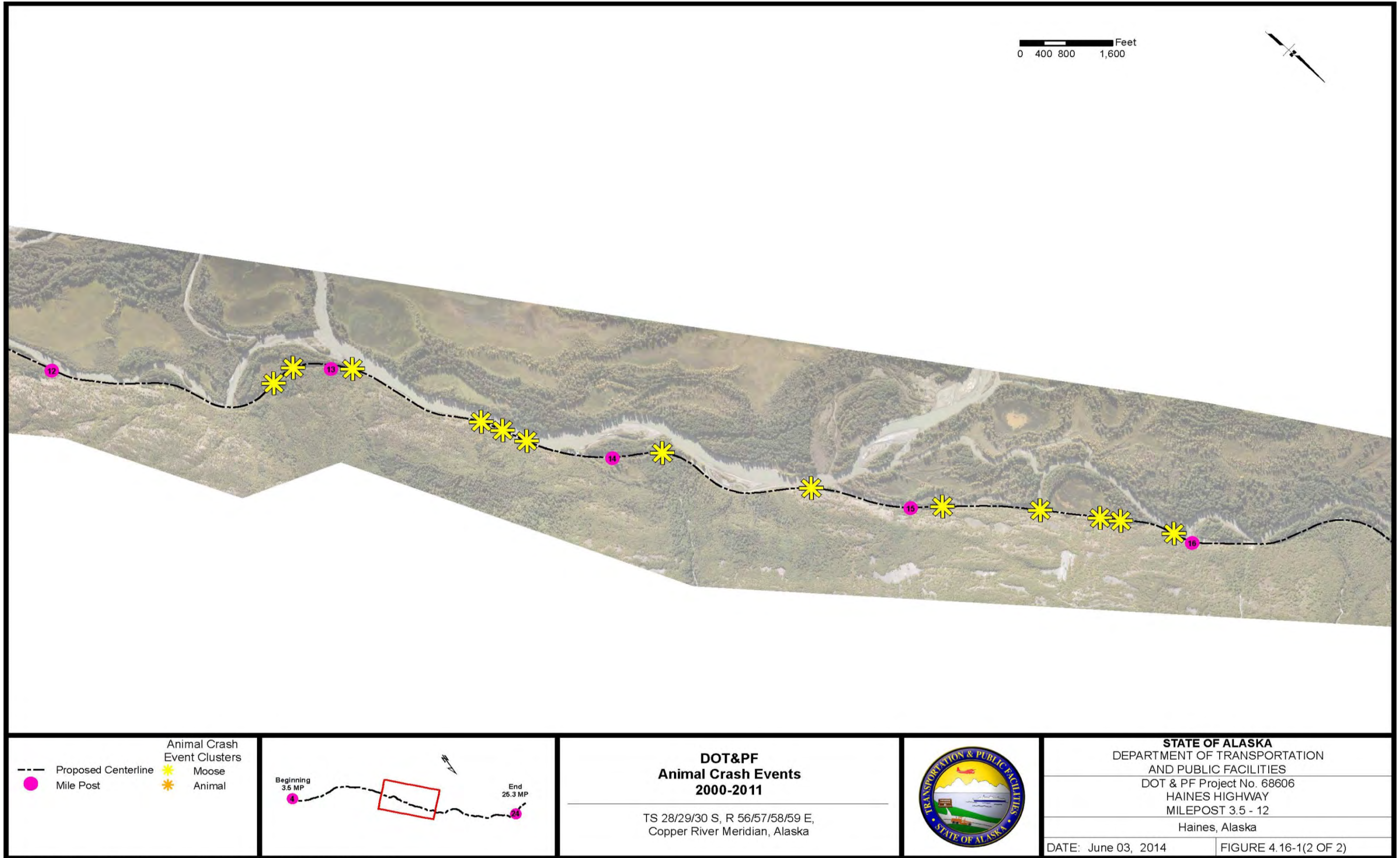


Figure 4.16-1: DOT&PF Animal Crash Events 2000-2011 (2 of 2)

4.16.2 Environmental Consequences

Revised Proposed Action-

Direct Impacts –

Approximately 130 acres of undeveloped land including approximately 22.2 acres of wetlands and 4.2 acres of riverine areas would be developed as a result of the Proposed Action.

This would result in direct impacts to wildlife. The loss of 4.2 acres of riverine habitats, which are assumed to be used at near-capacity levels, could result in an adverse effect on (loss of) individual animals using those areas. Habitat fragmentation can affect behavior, and sensitive life stage disturbance can affect survival. Although the loss of habitat and individual animals could be adverse in localized areas, the relative loss of habitat and individual animals is expected to be minimal in relation to the size of the surrounding undeveloped habitat and the wildlife populations using these habitats within the Chilkat and Klehini Valleys. Combined, these valleys provide over a million acres of habitat.

Approximately 19 miles (92 percent) of the alignment would stay within the cleared area of the existing ROW (travelled way, shoulders, and utility alignments). In several areas (in total about 2.9 miles), the alignment would shift into relatively undisturbed habitat (see Table 4.16-1 below).

Table 4.16-1: Shift of Alignment into Undisturbed Habitats

Approximate MP/Station Number	Approximate Length of Shift (feet)	Habitat(s)
5.7/279-283	400	Forest
6.2/303-312	900	Forest
10/502-511	900	Wetland, Forest
11.7/594-608	1,400	Forest
13.5/687-694	700	Forest
14.5/744-749	600	Forest
15.8/812-816	400	Forest
16.75/860-913 ¹	5,200	Forest, Wetlands, Streams
20.3/1042-1054	1,200	Forest
23.1/1188-1226	3,800	Forest

¹ The alignment shifts across the existing highway three times within this section.

Habitat fragmentation that would result from the shifts into undisturbed habitat could disrupt some species more than the slight modifications proposed along the remaining highway. Large mammals and birds populations would not be adversely affected by these habitat fragmentations but small mammals and amphibians would be, especially during the first few years after the realignments. Traveling across highways to get to water, food, and nests or burrows is relatively dangerous to smaller species. Impacted populations are expected to rebound after adjusting to the new alignment.

Short-term impacts that may occur during construction are addressed further in Section 4.20, Construction Impacts.

Indirect Impacts –

The wider shoulders and straightening of existing curve radii provided by the Revised Proposed Action would improve sight distance. Removal of willows along roadside ditches would reduce moose browse near the highway. Relocation of selected roadside stream channels would shift willow growth along those streams to areas that would not need to be cleared for roadway sight distance. These changes may reduce the potential for animal-related collisions, resulting in an indirect beneficial effect.

No-Action Alternative – The No-Action Alternative would have no effects on wildlife resources. However, this alternative would not improve sight distance or roadside browse availability and would not reduce the percentage of vehicle-animal collisions.

4.16.3 Avoidance, Minimization, and Mitigation Measures

Elimination of passing lanes and the use of guardrails have reduced the footprint of the Revised Proposed Action, avoiding wildlife habitat. Wildlife habitat impacts have been minimized because the Revised Proposed Action deviates as little as practicable from its current alignment.

Vegetation/habitat clearing would be avoided to the extent practicable during the nesting season in compliance with the Migratory Bird Treaty Act.

Blasting activities may impact goats. DOT&PF will work with ADF&G to identify sensitive time periods for mountain goats and specific areas and would avoid blasting activities that would

result in disturbance of mountain goats at those times in those areas. Work windows, based on additional information on mountain goat activities in the project vicinity, would be incorporated into the construction contracts.

Moose habitat may be fragmented in the MP 18 area. Willows will be planted in the newly created riparian area adjacent to Horse Farm Creek.

Disturbance to bald eagles in breeding season would be minimized by compliance with USFWS Bald Eagle Disturbance Permit conditions. These conditions typically require mufflers on all construction equipment and restricting blasting while eagles are in the immediate vicinity of each shot. As discussed in Section 4.2, Alaska Chilkat Bald Eagle Preserve, mitigation measures may be required as part of the Bald Eagle Disturbance Permit. Those measures would be identified during the permitting process.

4.17 Invasive Plant Species

4.17.1 Affected Environment

E.O. 13112 on Invasive Species requires federal agencies to control the introduction or spread of invasive species.⁵¹ Invasive species can crowd out native species, diminishing habitat values for native wildlife (U.S. Bureau of Reclamation, 2010). Southeast Alaska and the Haines area have experienced the introduction and spread of invasive plant species similar to other areas across the country.

Two sources were used to identify invasive species and propose control methods within the project area. They are:

- An invasive species plant list and control matrix, developed by the DOT&PF SR to better identify and define disposal and control options for various invasive species encountered during construction (DOT&PF SR, 2014), and

⁵¹ E.O. 13112 defines "Invasive species" [as] an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health.

- The Alaska Exotic Plants Information Clearinghouse⁵² (AKEPIC) data portal mapping of known occurrences of invasive and non-native species within the project area.

The species listed in Table 4.17-1 were identified on the DOT&PF SR invasive species plant list and shown to be within the project area on the AKEPIC data portal.

Table 4.17-1: Invasive Plant Species in Haines Highway Project Area

Scientific Name	Common Name
<i>Centaurea stoebe</i>	Spotted knapweed
<i>Cirsium arvense</i>	Canada thistle
<i>Cirsium vulgare</i>	Bull thistle
<i>Convolvulus arvensis</i>	Field bindweed
<i>Crepis tectorum</i>	Narrowleaf hawksbeard
<i>Elymus repens</i>	Quackgrass
<i>Galeopsis bifida</i>	Splitlip hempnettle
<i>Galeopsis tetrahit</i>	Brittlestem hempnettle
<i>Hordeum jubatum</i>	Foxtail barley
<i>Leucanthemum vulgare</i>	Oxeye daisy
<i>Linaria vulgaris.</i>	Yellow toadflax
<i>Melilotus alba</i>	White sweetclover
<i>Phalaris arundinacea</i>	Reed canary grass
<i>Tanacetum vulgare</i>	Common tansy

Source: AKEPIC, 2014; DOT&PF SR, 2014.

4.17.2 Environmental Consequences

Revised Proposed Action – Most invasive species spread in disturbed areas, including construction sites and along highways.

Direct Impacts –

The Revised Proposed Action has the potential to introduce and spread invasive plants along the corridor during construction activities. Invasive species would be controlled and/or disposed per

⁵² The Alaska Exotic Plants Information Clearinghouse (AKEPIC) is a database and mapping application that provides geospatial information regarding non-native plant species in Alaska and neighboring Canadian Territories. These products are the result of ongoing cooperation among the U.S. Forest Service, USNPS, Bureau of Land Management, USFWS, Department of Natural Resources Plant Material Center, and Alaska Natural Heritage Program in support of the Alaska Committee for Noxious and Invasive Plants Management and the Strategic Plan for Noxious and Invasive Plants Management in Alaska.

the appropriate methods identified in the Disposal and Control of Invasive Plant Species report (DOT&PF SR, 2014, Appendices A and B).

Indirect Impacts –

No indirect impacts to invasive plant species are anticipated as a result of the Revised Proposed Action.

No-Action Alternative – Existing invasive species would continue to spread under this alternative. No control or disposal of existing invasive species would occur.

4.17.3 Avoidance, Minimization, and/or Mitigation Measures

BMPs designed to reduce the potential for the spreading of invasive species and to control existing invasive species within the project footprint would be incorporated into the construction contract for the project.

In compliance with the E.O. on Invasive Species (E.O. 13112 of February 3, 1999), the following avoidance and minimization measures and BMPs are proposed.

- Surveys of invasive species would be conducted prior to construction. An invasive plant control plan will identify the appropriate methods, from the Disposal and Control of Invasive Plant Species report, to be used to control identified species during construction.
- Construction equipment would be pressure-washed to remove soil, seed, and plant material prior to moving onto or off of the project site.
- Clean fill material, native plants, and certified native seed would be used.
- Stabilization of disturbed areas would occur as soon as practicable. Stabilization can include paving, laying down a designed gravel layer, and/or seeding/vegetating. Certified native seed would be used when seeding is the selected stabilization method.

4.18 Air Quality

4.18.1 Affected Environment

The Clean Air Act, as amended (42 USC Section 7401-7671q), establishes restrictions on emissions from transportation sources. Transportation conformity ensures that Federal funding

goes to projects that are consistent with air quality goals. Air quality goals are established for areas that do not meet or have previously not met air quality standards.⁵³ These areas are known as non-attainment areas or maintenance areas, respectively.

Haines is not a non-attainment area or a maintenance area.

4.18.2 Environmental Consequences

Revised Proposed Action –

Direct Impacts –

Long-term impacts to air quality are not anticipated as a result of this project. Localized short-term impacts to air quality may result during construction (see Section 4.20, Construction Impacts).

Indirect Impacts –

No indirect impacts to air quality are anticipated as a result of the Revised Proposed Action.

No-Action Alternative – No changes to air quality are anticipated as a result of the No-Action Alternative.

4.18.3 Avoidance, Minimization, and Mitigation Measures

See Section 4.20, Construction Impacts.

4.19 Hazardous Waste

4.19.1 Affected Environment

A Phase I Environmental Site Assessment (ESA) was performed in support of this environmental document (DOWL HKM, 2006). Federal and state databases of known or potential hazardous sites were researched (DEC, 2013). Site inspections in 2006 investigated possible petroleum product contamination in locations within the project's impact area identified from database research and other information sources.

⁵³ http://www.fhwa.dot.gov/environment/air_quality/conformity/

The primary possible hazardous waste source is the U.S. Department of Defense's Haines-Fairbanks Pipeline that was constructed adjacent to the highway and was in service from 1954 to 1973 transporting fuels to military bases throughout interior Alaska. Remnants of this underground pipeline and associated features remain adjacent to the Haines Highway in the Revised Proposed Action corridor.

Previous Petroleum Product Releases from the Pipeline

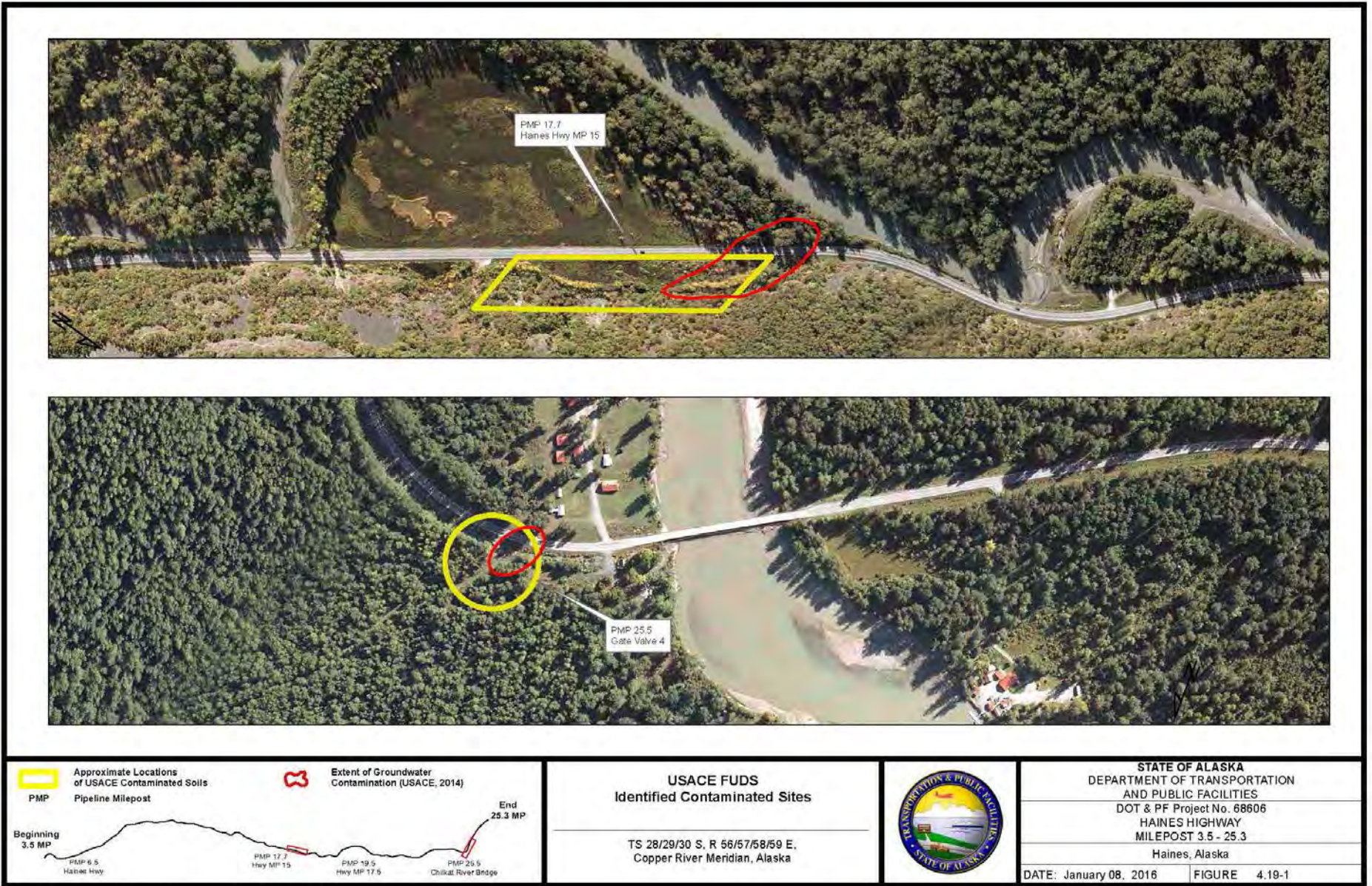
The ESA reported that known petroleum-contaminated soils exist at three sites in the project area (Figure 4.19-1). All are associated with the Haines-Fairbanks Pipeline. Since the pipeline is owned and was operated by the U.S. Army, the USACE retains responsibility for clean-up of contaminated materials from pipeline operations. The USACE Defense Environmental Restoration Program, responsible for Formerly Used Defense Sites (FUDS), has published its findings and determination of eligibility (FDE) to fund cleanup of the Haines-Fairbanks Pipeline (USACE signed 22 July 2002) and is included in Appendix HW (see HW page 58).

The contaminated sites that may be within the project area are named by pipeline milepost (PMP) and consist of the following:

- PMP 17.7 (Release, Haines Highway MP 15.5),
- PMP 19.5 (Release, Haines Highway MP 17.5), and
- PMP 25.5 (Gate Valve No.4, Chilkat River Bridge East).

A fourth site at PMP 6.5 (Release, Haines Highway MP 4.5) has been recommended by the USACE for no further action because there is no identified hazard.⁵⁴

⁵⁴ Beth Astley, FUDS Project Manager, USACE, letter to Robert Murphy, DOT&PF SE ROW Chief, dated April 28, 2014, included in Appendix HW.



D:\Projects\DOT&PF\Federal\EA\Haines Highway\Map\USACE FUDS Identified Contaminated Sites 2/16/16.mxd 2/16/16 12:27:57 PM User: channing

Figure 4.19-1: Identified Contaminated Sites

The USACE has conducted environmental investigations on these petroleum contaminated sites and the most recent information on the sites is summarized below (USACE, 2014; DEC, 2015)

PMP 17.7

- The soil contamination at this site is fairly well delineated.
- The vertical extent of soil contamination is as deep as 14 feet in some areas. The horizontal extent is approximately 69,000 square feet.
- The volume of contaminated soil exceeding ADEC cleanup levels is estimated at 20,000 cubic yards.
- The extent of groundwater contamination is fairly well delineated.
- The estimated extent of groundwater contamination covers approximately 89,000 square feet. It roughly mirrors the extent of soil contamination, but extends further to the west and north.
- Groundwater contamination extends to within 100 feet of the Chilkat River slough.

PMP 19.5

- No evidence of contamination at levels above soil cleanup levels was detected during the most recent site evaluations.
- No further investigation or remedial action is recommended for this site.

PMP 25.5

- The extent of soil contamination is estimated to be about 4,300 square feet with a volume of about 2,000 cubic yards exceeding cleanup levels.
- The majority of the contamination is beneath Gate Valve 4 adjacent to the roadway and the plume extends under the entire roadway at depths between 25 and 35 feet below ground (Station 1221+00).
- The estimated extent of groundwater contamination exceeding cleanup levels exceeds 7,000 square feet. The area roughly mirrors the extent of soil contamination north of the Haines Highway, but it extends farther downgradient (to the south and west).

The USACE is now working with DEC to determine the appropriate actions to remediate the sites at PMP 17.7 and 25.5.

Potential Contaminated Soils at the Ad Hoc Shooting Range on Bureau of Land Management Property Near MP 7

The Bureau of Land Management (BLM) intends to transfer title to the DNR for an approximate 10-acre parcel of land near MP 7. DOT&PF intends to construct trailhead parking for the Mount Ripinski trail within ROW on this parcel (see Figure 1.2-5). The uplands portion of this BLM parcel was formerly an ad hoc shooting range. Lead-contaminated soils must be removed prior to BLM's transferring title to the lot. A non-invasive soil test showed potential contamination within the DOT&PF ROW.⁵⁵

DOT&PF performed further deeper soil testing within DOT&PF ROW in June 2013 to determine if additional material within ROW is contaminated soils or contains hazardous waste. Three empty 55-gallon oil drums were removed and disposed of at the local site authorized to accept and dispose of hazardous waste. No other additional contaminated soils were identified by the deeper soil tests. If any further hazardous waste is discovered within ROW, the cleanup would be performed by DOT&PF, in coordination with BLM and DEC, prior to construction.

Cleanup/removal of lead contaminated soils on BLM land near MP 7 would be the responsibility of BLM. If this area has not been remediated by the time of construction, DOT&PF would coordinate with BLM and DEC to develop a contaminated site plan for handling and disposing of contaminated soils and provide it to DEC prior to any construction activities in this area.

4.19.2 Environmental Consequences

Revised Proposed Action –

Direct Impacts –

DOT&PF intends to construct the project in three distinct and separate segments. The first segment to be constructed would be from MP 3.5 to MP 12. There are no known petroleum product releases within the project area from the Haines-Fairbanks Pipeline in this segment.

⁵⁵ Lyndsay Ball, Geophysicist, USGS, letter to Larry Beck, Environmental Protection Specialist, BLM, not dated, included in Appendix HW.

DOT&PF will work with BLM and DEC to develop a contaminated site plan for handling and disposing of contaminated soils in the area near MP 7. The plan will be submitted to DEC for approval prior to construction activities in the area.

The second construction segment would be from MP 21 to MP 25.3 (the end of the project). There is a petroleum release near MP 23.5 (PMP 25.5) from Gate Valve 4 of the pipeline. The USACE is currently working with DEC to determine the appropriate remedial measures for this area. DOT&PF will work with USACE and DEC to develop a contaminated soil and groundwater management plan consistent with 18 AAC 75.325(i). DOT&PF will submit the plan for DEC review and approval prior to construction activities in this area.

The third construction segment would be from MP 12 to MP 21. There is a petroleum product release near MP 15.5 (PMP 17.7) from a corrosion leak in the pipeline. The USACE is currently working with DEC to determine the appropriate remedial measures for this area. DOT&PF will work with USACE and DEC to develop a contaminated soil and groundwater management plan consistent with 18 AAC 75.325(i). DOT&PF will submit the plan for DEC review and approval prior to construction activities in this area.

DEC has determined that the small volume of contaminated soil found at depth at the PMP 19.5 site is not contributing to contamination of groundwater nor posing a risk to human health or the environment and no further investigation or cleanup of the petroleum contamination associated with the Haines-Fairbanks Pipeline is required at this site (DEC 2015).

Construction along the highway corridor will occur in compliance with approved contaminated site plans for those areas with known contamination. The construction contractor for the project would be required to develop a Hazardous Materials Control Plan (HMCP) to address In the event that other contaminated soils or groundwater are encountered during construction, DOT&PF will coordinate with DEC on appropriate measures to minimize the potential for spreading contamination and on appropriate treatment of disposal actions.

As a result, the Revised Proposed Action would not increase impacts to the environment from hazardous materials or contaminated sites.

Indirect Impacts –

No indirect impacts to known hazardous material sites are anticipated as a result of the Revised Proposed Action.

No-Action Alternative – The No-Action Alternative would not impact any known hazardous material sites. The USACE and BLM would remain responsible for addressing contaminated sites related to their lands and activities.

4.19.3 Avoidance, Minimization, and Mitigation Measures

The contractor would be required to develop a Hazardous Materials Control Plan (HMCP) to address contamination, cleanup, and disposal of all construction related discharges of petroleum products (fuel, oils, etc.) and/or other hazardous substances. Wastes generated during construction demolition of the Chilkat River Bridge would be properly handled, contained, and disposed of at a permitted disposal facility, in accordance with State and Federal laws.

Should contamination be discovered within the ROW, DOT&PF would stop work at the discovery location, identify the nature of the contamination, and coordinate the appropriate response with the DEC and, if appropriate, with the USACE or BLM.

4.20 Construction Impacts

Construction would likely occur in phases over several years, as scheduled in the Statewide Transportation Improvement Plan (STIP). Construction impacts typically involve short-term impacts and are discussed below, along with proposed mitigation measures.

4.20.1 Affected Environment

Construction of the Revised Proposed Action would involve clearing, grubbing, excavation and fill, blasting for some road cuts, installing guardrails, new culverts and culvert replacements, pile driving for a new bridge, bridge construction and demolition, embankment and associated ditch construction, and paving. Associated impacts would be mitigated through design considerations and contractual requirements imposed on contractors. The following sections summarize potential short-term construction impacts on the human and natural environment and proposed avoidance, minimization, and mitigation measures associated with the Revised Proposed Action.

4.20.2 Environmental Consequences and Avoidance, Minimization, and Mitigation Measures

Revised Proposed Action –

Direct Impacts –

Alaska Chilkat Bald Eagle Preserve

Short-term impacts to the Preserve would include impacts that may disturb breeding, perching/foraging, and roosting bald eagles and public access disruption from traffic delays.

Construction activities may disturb nesting eagles within 660 feet of construction activities (USFWS, 2007b). Blasting could disturb nesting eagles up to a half-mile away. The DOT&PF would obtain a Bald Eagle Disturbance Permit from the USFWS (50 CFR 22). The DOT&PF would also consult with the DNR DPOR staff assigned to the Preserve to restrict construction in the CHA during the fall concentration period.

The DOT&PF and its construction contractor would adhere to all stipulations included in the Bald Eagle Disturbance Permit. Stipulations commonly associated with blasting activities are listed below. Under the expected stipulations of the permit, blasting activities would be minimized during the breeding season.

Travelers to the Preserve would experience temporary traffic delays. The longest delays would be during blasting. To minimize traffic delays in the Preserve, the contractor would need to develop a Traffic Control Plan (TCP). The TCP would be approved by the DOT&PF prior to construction.

Social

Short-term impacts of the Revised Proposed Action would include temporary traffic disruption and delays for vehicles, bicycles, and pedestrians. Although the Chilkat River Bridge would remain open, short-term minor delays would be anticipated. Traffic control during construction would be in accordance with the standards and guidelines in the current edition of the DOT&PF *Alaska Traffic Manual Supplement* (DOT&PF, 2013c). A TCP detailing measures to minimize impacts to motorists, bicyclists, pedestrians, and boaters, as well as special provisions for emergency situations, would be developed by the construction contractor and approved by the DOT&PF prior to ongoing construction. To minimize impacts to boating, and in accord with the

ADF&G Fish Habitat permit, in-water work would occur primarily in the winter. A navigation plan would be developed by DOT&PF in coordination with the commercial tour boat operators, the USCG Captain of the Port of Sector Juneau, and the USCG District Bridge office and implemented by the construction contractor.

Short-term impacts to recreation may include temporary traffic disruption and change of access to recreation sites. Temporary noise and other disruption may impact enjoyment of recreational activities in the area.

Economics and Subsistence

Short-term adverse impacts to subsistence fishers, as well as to permitted Chilkat River commercial tour boat operators could occur. Boating under the existing and proposed bridge, as well as the temporary construction bridge, would be either delayed or restricted at times during bridge construction. Removal of the existing bridge could also disrupt subsistence and commercial operations. To minimize impacts to boating, in-water work would occur primarily in the winter, and a navigation plan would be developed by the DOT&PF in coordination with the commercial tour boat operators, the USCG Captain of the Port of Sector Juneau, and the USCG District Bridge office and implemented by the construction contractor.

Short-term impacts may occur to other subsistence locations along the project corridor where widening and realigning of the roadway footprint requires fill in the Chilkat River. As a part of the USACE permitting process, the DOT&PF would coordinate with local tribal organizations to minimize construction impacts during important subsistence fishing periods.

A short-term economic stimulus would likely result from construction. Construction activities may increase local jobs as well as demand for food, lodging, and other services. A socioeconomic assessment of construction spending by Southeast Strategies (Appendix B, Socioeconomic Analysis) estimates that nearly \$78.5 million would be contributed to the economy over the course of construction and that an average of almost 145 jobs per phase could be supported.

Hazardous Waste

The contractor would be required to prepare and implement a HMCP to address equipment fueling and hazardous materials that would be used during project construction, as well as any

inadvertent discovery of hazardous wastes. Hazardous waste generated by the contractor during construction activities would be removed and properly disposed of in accordance with DEC regulations. In addition, equipment fueling and servicing operations would not occur within 100 feet of water bodies. Sorbent materials would be kept in approved on-site location(s) designated in the HMCP to contain or clean up any petroleum spill.

Air Quality

Short-term localized degradation to air quality may result from heavy machinery emissions and construction-related dust.

These impacts would be minor and would not be expected to exceed any regulatory thresholds, given the ambient air quality conditions in the area and frequent precipitation. The contractor would be required to use BMPs to control dust. In the event that work areas need watering for dust control, an approved water source would be used, and erosion and sediment control BMPs would be put into place prior to watering, to prevent water-quality impacts.

Noise

Construction activities would cause periodic, temporary noise impacts from the operation of heavy equipment and increases in traffic. These impacts would be localized and short-term in nature and would occur in an existing transportation corridor where noise is already generated. Measures to minimize construction noise impacts include:

- adhering to work-hour limits to blasting activities, and
- adhering to equipment muffler requirements.

Water Quality

Ground-disturbing activities could cause short-term direct and indirect water quality impacts and could increase sediment loads in nearby rivers and streams. Although the Chilkat River is glacial and carries heavy silt loads, there are also numerous clear streams that could be affected. To minimize impacts, BMPs would be used to protect wetlands and stream channels in compliance with the APDES General Construction Permit. To assist in development of the SWPPP required by the APDES, the DOT&PF would include an ESCP in the construction contract documents. The Construction Contractor would submit a SWPPP, in conformance with the ESCP, for

approval prior to construction. In-water construction would also be timed in accordance with ADF&G and USACE permit requirements.

The DOT&PF proposes the following avoidance and minimization measures to protect water quality:

- BMPs identified in the ESCP and further defined in the SWPPP would be used during construction to minimize the introduction of suspended sediment to the Chilkat River and its tributaries. Specific BMPs may include, but are not limited to, the use of silt fences, straw wattles, inlet and outlet protectors, check dams, and diversionary dams.
- The Construction Contractor would be required to develop and include in the SWPPP a HMCP to address hazardous material that would be used or stored during project construction and to detail measures to control discharges of such material into Waters of the U.S. and to respond to unanticipated discharges.

Fish and Wildlife

Temporary adverse effects to EFH could occur during the in-water work necessary for the culvert replacements, stream restoration work, and erosion control measures. Construction impacts on fish habitat would be minimized by using EFH and related fish mitigation measures, such as scheduling construction work in accordance with timing restrictions in the ADF&G Fish Habitat Permit. Construction in and adjacent to EFH would also conform to the SWPPP and HMCP requirements, including plans for erosion control, fuel handling, and other construction-related activities. Additionally:

- No unpermitted excess material would be disposed of in any waterway.
- Stream flow would not be impaired during timing windows stipulated in the ADF&G Fish Habitat Permit.
- Areas to be cleared would be limited to the minimum extent necessary. All disturbed areas would be permanently revegetated.

Construction activities would likely have a short-term impact on wildlife that uses the corridor, causing them to avoid adjacent areas during construction activity. When the construction disruption ends, wildlife are expected to resume use of the area.

Invasive Species

Construction activities have the potential to introduce and/or spread invasive species. BMPs for cleaning of construction equipment prior to and after use on a construction site have been developed to reduce the potential for introducing species.

Additionally, the DOT&PF would survey the construction areas for invasive plants prior to construction.

The contractor would be responsible to develop a management and control plan for invasive plants to be approved by the DOT&PF. DOT&PF construction specifications for revegetation would require use of certified native seed for stabilization of disturbed areas.

Material Sources and Disposal Sites

Likely material sites, disposal sites, and access roads were identified by the DOT&PF and are identified in the PER (DOWL HKM, 2010c). Material sources needed for the project would be contractor-supplied, although most of the necessary sand, gravel, and rock would come from areas along the project corridor that need to be excavated or blasted for the proposed new alignment. Disposed materials would be primarily comprised of material unsuitable for road construction. The contractor would be responsible for ensuring that all environmental permitting is completed for any material sites, disposal sites, or staging areas. Potential material sites and disposal sites identified in the PER occur on uplands.

Indirect Impacts –

No indirect construction impacts are anticipated as a result of the Revised Proposed Action.

No-Action Alternative – The No-Action Alternative would have no construction impacts.

4.20.3 Summary of Avoidance, Minimization, and Mitigation Measures

Table 6.1-1 summarizes the proposed avoidance, minimization, and mitigation measures that are offered for construction of the Revised Proposed Action.

4.21 Cumulative Impacts

Cumulative effects are defined as effects to the environment resulting from the incremental effect of a proposed “*action when added to other past, present, and reasonably foreseeable*

future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.” Cumulative effects “can result from individually minor but collectively significant actions taking place over a period of time.” (40 CFR 1508.7)

A cumulative effects analysis broadens the scope of analysis to include effects beyond those attributable solely to the implementation of the proposed project.

The purpose of the cumulative effects analysis, as stated by the Council on Environmental Quality, “*is to ensure that federal decisions consider the full range of consequences.*”

The process of analyzing cumulative effects, or impacts, requires consideration of cumulative effects issues in each of the resources that could be directly or indirectly affected by the Revised Proposed Action. The incorporation of cumulative effects analysis also aids in the development of appropriate mitigation measures.

The analysis of cumulative effects is centered on four key elements:

- resources likely to experience cumulative effects,
- geographic (spatial) boundaries of the affected area, based on the resource,
- temporal (time frame) of the analysis, and
- relevant past, present, and future actions that could affect the critical resources.

The resources identified for the cumulative impact analysis are:

- the Preserve and its features and attributes, including bald eagle and salmon habitat, subsistence and traditional uses, recreation, and research;
- social environments (Haines and Klukwan);
- local economic conditions, including traditional Native Alaskan lifestyles;
- water quality;
- wetlands;
- fish and wildlife;
- historic and archeological resources; and

- visual resources (impacts to the designation of Haines Highway as a National Scenic Byway).

The geographic boundaries for evaluating potential cumulative effects were identified for each resource based on the distribution of the resource relative to the area in which significantly cumulative effects could occur and beyond which the resource would not be significantly affected.

The Preserve geographic boundaries are defined within the Chilkat River valley by AS 41.21.611. For water quality, the geographic area comprises the Chilkat River Watershed from the Wells Bridge to the river delta near the Haines Airport.

For wetlands, wildlife, historic and archeological resources, and visual resources, the area evaluated includes the entire project area along Haines Highway, MP 3.5 to MP 25.3. For land use, the social environment, and economics, the area is broader and encompasses the Haines Borough and the CIV of Klukwan, as well as the Chilkat River Watershed. In some cases, changes in transportation systems outside of, but connecting to, the Borough could have cumulative effects upon the social and economic communities of Haines and Klukwan. These are also considered.

The temporal boundaries for determining cumulative impacts of the project were based on the rise in non-native settlement and development in the area during the past 150 years and a planning horizon extending out to 20 years. Prior to about the 1850s, the project corridor was, primarily, Chilkat Tlingit ancestral lands. Villages grew; subsistence was the way of life, including a long-established trading relationship with villages and communities to both the north and the south. The gold rush of the late 19th century and early 20th century spurred the rapid growth and development of Southeast Alaska, including Haines. The establishment of a military outpost in Haines, construction of the Haines-Fairbanks Pipeline, and growth in the fishing and timber industries in the area also contributed to development of Haines and the changes to the land use and ways of life in Klukwan. The future temporal boundary of 20 years beyond present is considered a reasonable horizon for community planning. Each resource potentially affected by the project was individually examined to identify all past, present, and future activities and factors affecting that resource.

Relevant past, present, and reasonably foreseeable future actions are presented below and used in the analysis of potential cumulative effects that could occur in concert with implementation of the Revised Proposed Action. Actions considered “reasonably foreseeable” are those that are funded or that have acquired permits and that would occur with or without the Haines Highway MP 3.5 to MP 25.3 project.

Past Actions: For purposes of this analysis, past actions (see Photographs 4.21-1 through 4.21-4) considered in this cumulative impact assessment are:

- Transportation and utility corridors constructed and maintained, including:
 - the original Tlingit trade route from the Chilkat Valley to Haines Junction, trade diminished over this trail with the establishment of the Dalton Trail, circa 1892 to 1902 (Gates, 2012);

**Photograph 4.21-1:
Four Mile Point &
Sentinel Rock,
Haines Porcupine Rd,
Circa 1900**

(photograph courtesy of
the Alaska State
Library)



- a railroad embankment for the Alaska Midland Railway – rails were never constructed, circa 1909;



**Photograph 4.21-2:
Looking Northwest from
the Alaska Midland
Railway Survey Station
310.**

(University of Washington
Libraries, Special
Collections, UW36291)

- the Haines Highway, partially built on the railroad embankment (ARC, 1949);



**Photograph 4.21-3:
Original Highway
Construction Flood
Scene MP 6.5,
November 1949**

(photograph courtesy
of the Alaska State
Library)

- the Haines-Fairbanks Pipeline completed in 1954;
 - the Haines Airport originally constructed in the late 1940's;
 - the Haines Ferry Terminal construction completed in 1962; and
 - the Lutak Dock and the Port of Haines circa 1953.
- military base installation, 1902, and de-commissioning in 1945;
 - mining and mining supply industry established circa 1898 and continuing today;⁵⁶
 - fishing and fish-processing industry, beginning circa 1885 and continuing today;
 - timber industry, beginning circa 1885 and continuing today; and
 - establishment of the Preserve in 1982 and designation of Haines Highway as a National Scenic Byway in 2009.

Present Actions: The following actions are in progress or expected to be constructed or in operation within the same time period as the Revised Proposed Action:

- replacement of the Klehini River Bridge in the vicinity of MP 27 of Haines Highway;
- construction of the new CIV Jilkaat Kwaan Cultural Heritage Center museum;
- ongoing upgrades to the utilities, roads, and sidewalks in downtown Haines;
- improvements to the Port Chilkoot dock;
- upgrading of the Alaska Marine Highway's Haines Terminal, including construction of infrastructure to accommodate the Alaska Class Ferry;
- construction and operation of new assisted-living facilities and medical center;
- improvements at Haines Airport, including drainage upgrades, pavement rehabilitation, and expansion of tie-down areas; and
- USACE implementation of DEC approved corrective actions at pipeline contamination sites.

⁵⁶ The Porcupine Mining District began producing gold circa 1898. Mineral exploration activity continues to the present day in the Porcupine Mining District, including the Constantine Mine prospect.

- Discharge of debris flow material into the Chilkat River near the MP 19 authorized under an existing USACE permit.

Future Actions: The future actions listed below have been identified by the Borough Planning Department, CIV, and the DOT&PF as actions that are likely to occur, independent of the Haines Highway MP 3.5 to MP 25.3 project.

Reasonably foreseeable future projects are:

- upgrading the infrastructure and visitor amenities at the port facilities in Haines
- construction and operation of the Lynn Canal Highway⁵⁷ (also known as Juneau Access) that would bring new shuttle ferries to the Haines Alaska Marine Highway System terminal; and
- rehabilitation of the Haines seaplane base.

The cumulative impact assessment considered the direct and indirect (secondary) impacts of the Revised Proposed Action, together with the impacts of past, present, and reasonably foreseeable future actions, upon the affected resources within the appropriate geographic and temporal boundaries.

It is important to note that the geology of Southeast Alaska and into Canada is known to have significant mineral deposits with economic value. The Chilkat Valley was, for a short time, a supply route for:

- mines in the Porcupine Mining District (now located within the Haines Borough), and
- cattle drives to Dawson to support the Klondike Gold Rush in the late 1890s.

There are still small operating mines in the Porcupine Mining District for which the current highway serves as a supply route.

⁵⁷ The Final Supplemental EIS is scheduled to be released to the public in the late 2016. The preferred alternative identified in the draft Supplemental EIS, Alternative 2B, would construct a highway from Juneau to a new ferry terminal to the north of the Katzehin River. Shuttle ferries would take travelers to Haines and Skagway. This cumulative impact assessment has used the alternative that would generate the highest increase in traffic to Haines; that is the preferred alternative.

There is ongoing speculation about the possibilities of Canadian mines and/or U.S.-based mines within the Chilkat River Watershed using Haines Highway to transport ore to the Haines port facilities. Exploration is ongoing at the Constantine Mine in the upper Chilkat River valley, as recently reported by Dengler (2014). However, there are no commitments or financial investments to produce ore at this time.⁵⁸

The two mining prospects currently in exploration closest to tidewater in Haines are the Constantine Mine, in the Haines Borough and the Wellgreen Platinum Mine in the Yukon near the Alaska Highway Beaver Creek border station (see Figure 4-21.1). Both mines have confirmed they are in exploration to determine if ore production is feasible. Neither has made a commitment to produce ore or is at a stage in development where they could make a decision to produce ore.⁵⁹ Neither mine is currently authorized to develop facilities for the extraction nor production of minerals, and additional review and approval processes would be required for those types of activities. The use of Haines Highway to haul ore is not a reasonably foreseeable future action.

⁵⁸ M. Earnest, Haines Borough email to J. Scholl, DOT&PF on March 7, 2013. Also, D. Sosa, Haines Borough email to Jim Scholl, DOT&PF on January 12, 2015. Emails included in Appendix H.

⁵⁹ Greg Johnson, President and CEO of Wellgreen Platinum, Ltd. Email to Jim Scholl, DOT&PF Environmental Analyst, May 7, 2015. Also, Darwin Green, Vice President, Exploration, Constantine Metal Resources email to Jim Scholl, DOT&PF Environmental Analyst, May 8, 2015. Emails included in Appendix H.

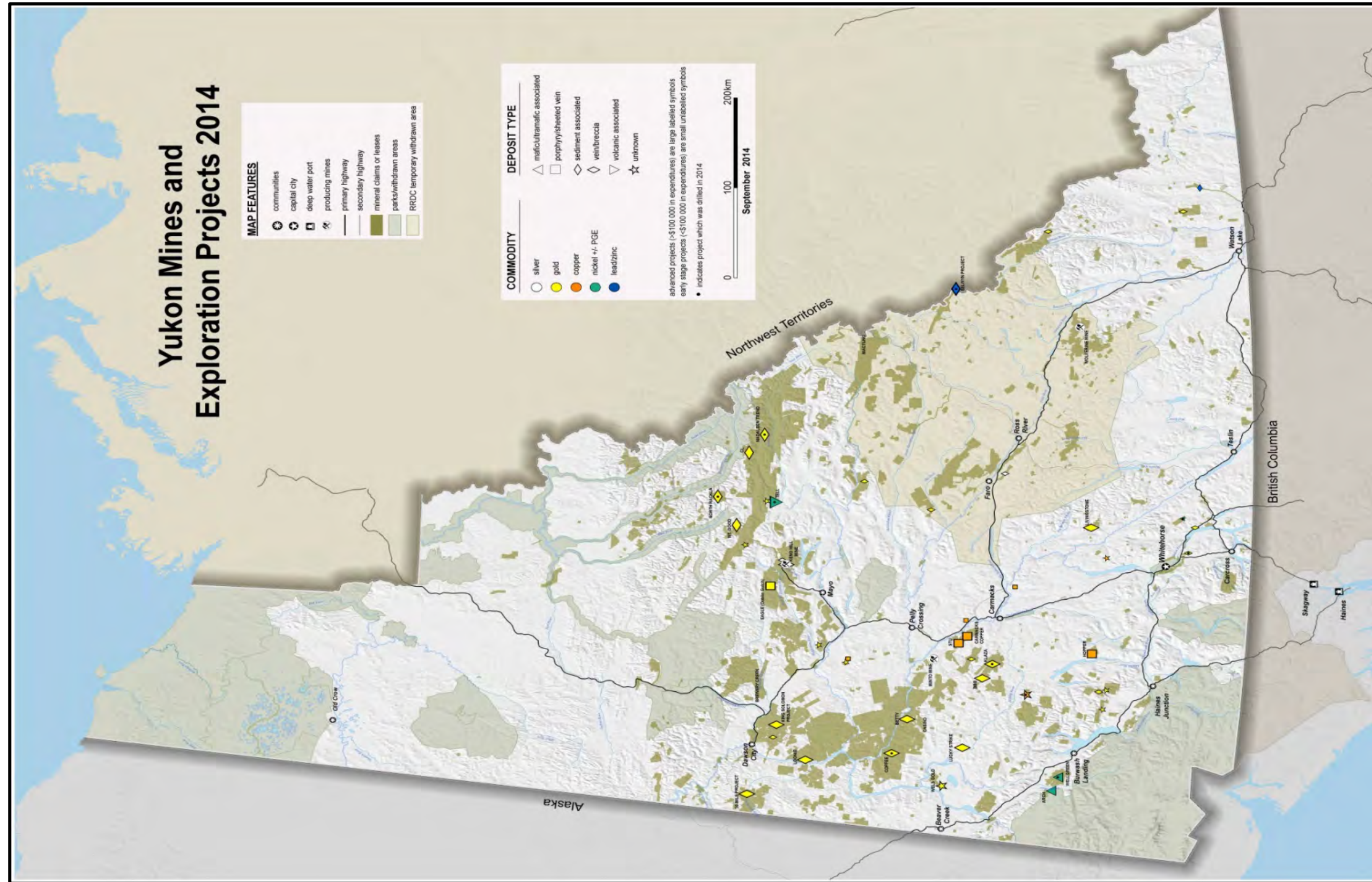


Figure 4.21-1: Current Yukon Exploration & Producing Mines.

Source, Government of Yukon, <http://www.emr.gov.yk.ca/mining/mapsdatapubs.html> site accessed May 9, 2015

(This Page Left Intentionally Blank)

4.21.1 The Preserve

Establishment of the Preserve occurred after the construction of Haines Highway, as well as after the height of the fish processing, timber, and mining industries. Construction of the Alaska Midland Railway embankment (see Photograph 4.21-2), Haines Highway (see Photograph 4.21-3), and the Haines-Fairbanks Pipeline likely removed eagle perching, roosting, and possibly nesting, trees. The banks of the Chilkat River were stabilized with shot rock when the railroad embankment and

subsequently, the highway, was built and likely affected the salmon habitat. No information exists about the number of trees removed or the possible changes that occurred to the salmon habitat or other characteristics of the area from activities before it became the Preserve.



**Photograph 4.21-4: Original Highway Construction
“Loading Crushed at 25 mi”, circa 1949**

(photograph courtesy of the Alaska State Library, Photo Archives)

The new CIV museum, in Klukwan adjacent to the Preserve, will

include a bald eagle observation area. The Chilkat River at this location is in the CHA where bald eagles congregate in large numbers. One of the intents of the CIV project is to bring visitors into Klukwan to experience their cultural Tlingit history and current traditional uses as well as to observe bald eagles. This could increase the number of visitors to the Preserve. The upgrades to the Haines Alaska Marine Highway System terminal and introduction of possible increased service from the proposed Lynn Canal Highway may bring additional vehicular traffic to the highway and travel through the Preserve. Access areas for recreational use of the Preserve would not increase as a result of the proposed project, the other present projects, or the reasonably foreseeable actions. The number of

access points would remain similar to the current number, and the parking areas in the turnouts would remain the same, except for a new turnout, in an abandoned highway realignment section, near MP 20.5 (See Section 4.6, Social Conditions and Environmental Justice).

As discussed in Section 4.2, Alaska Chilkat Bald Eagle Preserve, the Revised Proposed Action would not adversely affect the population of bald eagles in the Chilkat region. As discussed in Sections 4.7, Economy and Subsistence, and 4.15, Fish, the Revised Proposed Action is not expected to adversely affect subsistence; the avoidance, minimization, and mitigation measures have agency concurrence that fish habitat would not be adversely affected. Some improvements to the amount and quality of fish habitat are expected after considering the required fish passage culverts and proposed mitigation measures. Some loss of vegetation and wildlife habitat near the highway by the Chilkat River Bridge where the highway is proposed to be realigned would occur. To mitigate for this, DOT&PF plans to relinquish existing ROW and these areas would be revegetated and habitat returned.

None of the other present or reasonably foreseeable actions would contribute to a cumulative effect on the Preserve's features and attributes.

4.21.2 Social and Economic Effects (Haines and Klukwan)

The social environment has evolved within the Chilkat Valley over time, with the biggest change happening in the late 1880s with the settlement by Europeans and associated changes in the economic base of the area.

From a subsistence or traditional Tlingit-based economy, timber harvesting, mining, commercial fishing and processing, and, eventually, U.S. Department of Defense-related activities built the community of Haines and the infrastructure needed for a stable social environment. Infrastructures that have supported the social and economic conditions of Haines include: the Haines Highway, Haines-Fairbanks Pipeline, Haines Airport, and the marine harbors.

However, this type of economic base has been volatile, with the changes in demand and supply of fish, timber, and mining activities. Haines is now dependent on tourism and a growing retirement community for its economy. The present and reasonably foreseeable actions in this area are focused on maintaining or enhancing transportation infrastructure that could help broaden, stabilize, and support the Haines community and its economy.

The CIV of Klukwan is working to maintain its community and economy, based on traditional life ways, throughout the development of Haines and the surrounding and connected development of the State of Alaska. The construction of their Jilkáat Kwáan Cultural Heritage Center museum and ongoing camps that teach traditional subsistence practices (fishing, fish smoking, moose hunting, and meat processing) show the intent to expand and maintain this social and economic system.

The Revised Proposed Action would support Haines and Klukwan goals to maintain these communities and their economies; however, Haines Highway upgrades are mainly independent of the reasonable and foreseeable actions identified. Proposed upgrades would not preclude or encourage a broadened economy other than the improvements to the highway shoulders that would better support bicycle use and the added turnout at MP 20.5 that would support eagle viewing and photography.

If the Lynn Canal Highway project is approved and constructed, there would be an increase in visitor travel to and through Haines. The Supplemental Draft EIS predicts that if their Alternative 2B is approved (the Preferred Alternative), the Lynn Canal Highway would generate an increase of about 400 resident and visitor trips daily by 2020, compared with the Lynn Canal Highway's No-Action Alternative.

Not all of these trips would be new visitors or travelers along Haines Highway; about half of these trips would be Haines residents. Haines Highway upgrades would better support that portion of added traffic volume to the highway; however, this could also bring added users of subsistence resources in the Chilkat River Valley. The Supplemental Draft EIS predicts that Haines would have an additional 90 new residents and 60 new jobs compared to the No Action Alternative. A Final EIS and Record of Decision is tentatively scheduled for late 2016.

4.21.3 Visual Resources

Construction of the original roadway changed the visual resources within Chilkat Valley; however, with the road, the vistas and beauty of the valley became more available to the residents of Haines and to travelers through this area. The annual gathering of bald eagles has become an opportunity for many people to visit Haines and to use the highway and its turnouts to enjoy this view. Haines Highway has been designated a National Scenic Byway. As stated in Section 4.8, Visual, the Revised Proposed Action would result in some changes to the visual resources, but all changes would be in concert with the HHCPP. Present and reasonably foreseeable actions would not affect the visual resources along the highway. Construction of the Lynn Canal Highway would bring additional visitors to enjoy the

highway views. The Lynn Canal Highway Supplemental Draft EIS projects an increase in visitor traffic of 215 ADT in 2020.

4.21.4 Historic and Archeological Resources

As discussed in Section 4.10, Cultural Resources, the Chilkat Valley has been a Tlingit territory for centuries. Construction of the railroad embankment and, subsequently, Haines Highway and the Haines-Fairbanks Pipeline affected multiple historic and archaeological resources because they were constructed within the vicinity of or on top of trade routes used by the Native peoples. The Revised Proposed Action has avoided and minimized impacts to historic and archaeological resources and, other than the removal and replacement of the eligible historic Chilkat River Bridge, no other adverse impacts would occur. None of the other present or reasonably foreseeable actions would affect historic and archaeological resources. The new Klukwan cultural center is intended to provide opportunities to learn about Tlingit history.

4.21.5 Water Quality

There are several DOT&PF projects that could individually or cumulatively impact Chilkat Valley water quality: the Revised Proposed Action, the proposed on-going maintenance actions to discharge stockpiled debris material into the Chilkat River near MP 19, a drainage upgrade project at the Haines Airport, resurfacing the Airport access road, and the replacement of the Klehini River Bridge just off the Haines Highway near MP 27.

The Revised Proposed Action could have a cumulative impact upon the Chilkat Valley water quality. There would be an increase in the impervious surface and added stormwater runoff with the normal highway pollutants. Given the size of the river, amount of unaffected lands, and installation of permanent stormwater control measures, highway runoff is not expected to affect the Chilkat River water quality. The Revised Proposed Alignment would raise the elevation of the highway to minimize road closures during debris flow events. The plan to install large box culverts would better accommodate natural debris flows past the highway and directly enter the watershed. At MP 19, this natural material would directly enter the Chilkat River. At MP 23, slide material would eventually enter the river just upriver of Klukwan. The mountains of the Chilkat Valley have been contributing these types of material to the river for a long time. This is evidenced by the massive deltas that have formed along the east side of the valley (See Figure 4.11-1, Debris Flows).

As a separate project, the DOT&PF has applied for permits⁶⁰ to allow DOT&PF M&O staff to assist moving new slide material from the MP 19 area into the Chilkat River. The purposes include returning the system to a more natural sedimentation cycle and avoiding stockpiling of the material in the Haines Highway ROW thus avoiding the need to cut bald eagle perch trees in the ROW adjacent to the CHA and Preserve. An ADF&G Fish Habitat permit has been issued and permit applications have been submitted to the USACE and DNR DPOR.

Cumulative impacts to water quality would be minimized by managing discharges in a cooperative manner among agencies with jurisdiction on an on-going basis.

4.21.6 Wetlands

As with historic and archaeological resources, the construction of the original highway and pipeline affected multiple wetlands at the time of construction. The Revised Proposed Action is the only project that would have a cumulative impact to wetlands in the Chilkat Valley.

Construction of the 40-mile-long highway is estimated to have impacted about 50 acres of wetlands (based on the footprint of the original road and the estimated 28 percent of wetlands delineated in the study area of the Revised Proposed Action). Upgrades to Haines Highway from MP 25 to the border resulted in fill of 21.1 acres of wetlands. The Revised Proposed Action would fill 22.2 acres of wetland, plus 4.2 acres of other Waters of the U.S. Impacts to wetlands and other Waters of the U.S. have been offset by avoidance, minimization, and, if unavoidable, mitigation for both projects.

Mitigation proposed for the Revised Proposed Action (Haines Highway MP 3.5 to MP 25.3 project) is located in Appendix D – *Stream Habitat Mitigation Plan* in Appendix F, EFH Assessment. The Chilkat River Watershed has relatively abundant wetlands. The loss of 26.4 acres of representative wetlands and other Waters of the U.S. would not adversely affect the overall diversity or quantity of wetlands within the Chilkat River Watershed.

4.21.7 Fish and Wildlife

Fish and wildlife habitat have been historically affected by the highway and pipeline within the Chilkat River Watershed. The abundance of fish and wildlife is affected by many factors, many of which are

⁶⁰ The permits applied for are: ADEC Certificate of Reasonable Assurance that any discharge will comply with provisions of Section 401 of the CWA and Alaska Water Quality Standards, an ADF&G Fish Habitat Permit, a USACE Section 404 Permit for fill in Wetlands and Other Waters of the U.S., and an ADNR Special Use Permit.

outside of the Revised Proposed Action's area of influence. Potential influences on abundance outside the project area could be (but not limited to):

- Climate and weather changes that may affect bird migration patterns,
- Abundance of foraging opportunities in other watersheds may also affect bird migrations,
- Changes in marine prey species may affect the abundance of anadromous fish in the Chilkat River Watershed,
- Changes in sport and commercial fishing pressure,
- Introduction of non-native ornamental plants could affect the viability of native pollinators, and
- The spread of pathogens from areas north and south of the project area could affect fish, and wildlife in the project area.

However, there is no data to prove, disprove, or quantify these potential outside influences on the project area and a substantive cumulative impact analysis on these issues is not possible.

There are only two current projects that could individually or cumulatively impact affect fish and wildlife habitat in the project area are the Revised Proposed Action or the on-going maintenance actions to discharge stockpiled debris material into the Chilkat River near MP 19.

In the past, fish habitat has been affected by Haines Highway, particularly by the hardening of Chilkat and Klehini River banks. Some hardening of the riverbanks occurred during the clearing and preparing for a railroad. Haines Highway was built presumably using the railroad embankment. Over time, vegetation has been re-established to a certain degree, but since railroad embankment construction around 1909, approximately 7,490 linear feet of natural riverbanks have been replaced by riprap or shot rock banks on the east side of the Chilkat River (see Photo 4.21-5). In addition to the main riverbank stabilization, tributaries have been put in culverts, and many of those culverts were not adequate for fish passage as now required by the ADF&G. Some new fish habitats, especially coho-rearing habitat, were created by the highway when drainage systems were constructed and culverts then allowed fish to move into these drainages and associated wetlands.



Photograph 4.21-5: Vegetated Riprap along the Bank of the Chilkat River

The Revised Proposed Action would replace culverts in anadromous fish streams to re-establish fish access to these systems. Chilkat River banks that are currently hardened would be expanded and revegetated, in-kind, to replace that existing habitat. Approximately 3,812 linear feet of natural riverbank would also be hardened.

This would result in a cumulative hardened Chilkat River bank of approximately 12,662 linear feet.⁶¹ To compensate for previously authorized fill in the Chilkat River, the DOT&PF has worked with the ADF&G, the NMFS, and the USFWS to develop concepts to replace areas of natural riverbank. See Section 4.15, Fish, for additional details.

The DOT&PF has applied for and received permits (see footnote on page 137) to discharge stockpiled debris material from the MP 19 area into the Chilkat River as a separate on-going maintenance project. An ADF&G Fish Habitat permit has already been issued. DOT&PF is to work cooperatively with ADF&G to assure discharges are in a window of time after chum salmon have outmigrated and adults have returned to spawn and that discharges are in areas not suitable for chum salmon spawning.

⁶¹ It should be noted that placement of shot rock for construction of the 1909 railroad is so overgrown that the rock is far under vegetation.

Cumulative impacts to water quality would be minimized by managing discharges in a cooperative manner among agencies on an on-going basis.

The DOT&PF expects that the cumulative impact to fish habitat from past, present, and reasonably foreseeable actions would be mitigated, as required, for each stated action discussed.

Terrestrial wildlife habitat in the Chilkat River Watershed was segmented when Haines Highway was originally constructed. Bald eagle habitat was reduced as well, when perching, roosting, and nesting trees were cut for this highway, as well as for the pipeline. Given the limited volume of traffic, terrestrial wildlife can cross the road relatively safely to access habitat on either side. There is inadequate data to determine whether the highway traffic has affected either terrestrial or avian wildlife. However, animals are struck by vehicles and there can be major impacts to the vehicle and occupants when a moose is struck.

As stated above, under Section 4.21.1, the Chilkat region's bald eagle population would not be adversely affected by the Revised Proposed Action; thus, there would not be a known cumulative impact to bald eagles. Most of the highway would be widened in its current location, so the distance wildlife must cross would expand. Greater sight distances would be provided to help minimize vehicle/wildlife strikes.

At three locations, there are major realignments where habitat would be further segmented. The total length of these realignments is approximately 2.9 miles. The DOT&PF proposes to remove and revegetate old roadbed in these realignment areas as mitigation.

Given the size of the Chilkat River Watershed and the relatively undisturbed amount of wildlife habitat available, the cumulative impacts of the Revised Proposed Action and past actions are not likely to have a population-level effect on any wildlife species, including bald eagles.

4.21.8 Greenhouse Gases and Climate Change

Contributing to global climate change are numerous and varied greenhouse gas emissions sources (in terms of both absolute numbers and types), which increase atmospheric greenhouse gas concentrations. However, it is difficult to isolate and understand the impact of greenhouse gas emissions for a particular transportation project, especially a small, low-volume, rural road. There is no quantitative greenhouse gas emissions data for the project area because of the relatively good air quality in the region (the community is not classified by the EPA as a Non-attainment or Maintenance Area, nor

does it regularly exceed health-based National Ambient Air Quality Standards). For the Proposed Action, greenhouse gas emissions would result from two main sources: exhaust from project-related construction equipment and vehicles; and temporary and intermittent traffic delays to accommodate construction equipment entering and exiting the project area. These traffic delays would increase idling times and reduce travel speeds, which would result in decreased fuel efficiency and increased vehicle emissions during the construction period. These construction sources would result in a temporary increase in greenhouse gas emissions for the area. Once the road has been constructed it will remain a low-volume, arterial highway contributing a relatively insignificant change in the level of greenhouse gas emissions.

4.22 Permits and Authorizations

Table 4.22-1 describes the permits that may be required for the Revised Proposed Action. Preparation of final permit applications would occur during final design.

Table 4.22-1: Required Permits and Approvals Needed for the Revised Proposed Action

Regulated Activity (Required Permit/ Approval)	Regulatory Agency	Authority	Description	Status of Permit/Consultation
Federal Authority				
Discharge of dredged or fill material into wetlands and other Waters of the U.S. (USACE Permit/ USEPA Review)	USACE USEPA	Section 404, Federal Water Pollution Control Act of 1972, as amended in 1977 (CWA) (33 USC 1344)	The USACE must authorize the discharge of dredged or fill material in, U.S. waters, including wetlands. The USACE determines compliance with the Section 404(b)(1) guidelines. The USEPA reviews the USACE Section 404 Permit under its Section 404(b)(1) "Guidelines for Specifications of Disposal Sites for Dredged or Fill Material."	The USACE requested that the DOT&PF submit a Section 404 Permit for the entire project, instead of individual construction segments. The USACE also requested that the permit include activities associated with the large box culverts constructed to allow passage of debris flow material to the Chilkat River at MP 19 and MP 26. DOT&PF coordinated with the USACE and resource agencies regarding the imminent need for maintenance activities at MP 19 before this project is permitted. As a separate project, DOT&PF applied for and received a permit to discharge debris material at the MP 19 slide area as a maintenance operation. The USACE maintenance permit will be included as an appendix to the project Section 404 permit application.

Table 4.22-1: Required Permits and Approvals Needed for the Revised Proposed Action

Regulated Activity (Required Permit/ Approval)	Regulatory Agency	Authority	Description	Status of Permit/Consultation
Federal Authority				
Impacts to resources protected under Section 4(f) (Section 4(f) Evaluation)	FHWA	49 USC 1653(f) (Section 4(f) of the USDOT Act of 1966	The FHWA is required to evaluate potential impacts of highway projects on publicly owned parks, recreation areas, wildlife and waterfowl, refuges, and historic sites.	1) DNR DPOR and ADF&G, the officials with jurisdiction over the Preserve, concurred in writing with FHWA's finding that the project would cause a <i>de minimis</i> impact to the Preserve; 2) as part of the Bridge Programmatic Section 4(f), an MOA has been executed to resolve adverse effects to the Historic Chilkat River Bridge; 3) SHPO concurs there are No Adverse Effects to the historic properties in the MP 4 area. A programmatic Section 4(f) evaluation and two Section 4(f) <i>de minimis</i> impact findings are included in Section 5.0 of this FREA.
Construction of bridges over navigable waters (USCG Bridge Permit)	USCG	General Bridge Act of 1946	Plans and locations for construction or alteration of bridges and causeways across navigable Waters of the U.S. must be approved by the USCG prior to construction.	DOT&PF will apply for USCG Bridge permits for: 1. construction of a temporary bridge and 2. replacement of the Chilkat River Bridge. The permits must be obtained prior to bridge construction. The USCG District 17 Bridge Office will need to approve demolition plans for the bridge to be removed and the USCG Sector Juneau must approve any restrictions of the waterway and commerce prior to bridge demolition or construction.
Development possibly affecting historical or archaeological sites (Section 106 Consultation)	DNR Office of History and Archaeology /SHPO	The NHPA of 1966, as amended (16 USC 470)	All federal agencies are required to consult with the SHPO, federally recognized tribes, and other appropriate consulting parties regarding potential impacts upon historic sites, in accordance with Section 106 of the NHPA.	SHPO concurred with the FHWA findings of effect to historic properties (Appendix E). A MOA resolving adverse effects to the historic Chilkat River Bridge will be executed prior to the decision document being signed.
Construction Activities that may adversely affect EFH (EFH Consultation)	NMFS	MSFCMA of 1976	All federal agencies are required to consult with the Secretary of Commerce on any action that may adversely affect EFH.	NMFS has completed consultation (See Appendix F, EFH Assessment).
Bald Eagle disturbance (Bald Eagle Permit)	USFWS	Bald and Golden Eagle Protection Act (16 USC 668-668c), 50 CFR Part 22	A permit is required to take a bald eagle or golden eagle, its nest, or important foraging and roosting habitat.	A Bald Eagle Disturbance Permit application will be submitted for each construction segment during final design.

Table 4.22-1: Required Permits and Approvals Needed for the Revised Proposed Action

Regulated Activity (Required Permit/ Approval)	Regulatory Agency	Authority	Description	Status of Permit/Consultation
State of Alaska Authority				
Wastewater discharges to waterways (APDES Permit for Stormwater Discharges, Dewatering General Permit)	DEC	Section 402, Federal Water Pollution Control Act of 1972 (CWA) (33 USC 1251)	The DEC must authorize any activity or wastewater system that would discharge waste from one or more points into a waterway.	The USACE submits an application for a Section 401, CWA, Certificate of Reasonable Assurance, as a part of the Section 404 permit process. Construction contractors and DOT&PF will submit a Notice of Intent to operate under the state's APDES Alaska Construction General Permit as well as develop and implement required SWPPP.
Purchase of materials from the State of Alaska (Material Sale)	DNR DMLW	AS 38.05; 11 Alaska Administrative Code (AAC) 71.070 through AAC 71.075	The DNR must issue a Material Site Permit prior to the removal of borrow material from a state-operated quarry site.	At this time, the DOT&PF does not intend to remove material from a state-operated quarry. In the event that the Construction Contractor removes material from a state material site, a permit is required prior to removing material.
Temporary Water Use/ Water Rights/ Dewatering	DNR DMLW	AS 46.15; 11 AAC 93	The DNR must issue water rights prior to any appropriation of fresh water from a well, spring, or stream. Temporary use is typically during the construction phase of the project.	At this time, the DOT&PF does not intend to appropriate fresh water. In the event that the Construction Contractor appropriates fresh water, the contractor shall obtain water rights prior to construction.
Work in or across anadromous streams (Title 16 Fish Habitat Permit)	ADF&G Division of Fish Habitat	Fishway Act: AS 16.05.841 through .861, Fish Passage; Anadromous Fish Act: AS 16.05.871 through .901, Anadromous Fishes	The ADF&G must issue a Fish Habitat Permit for activities within or across a stream used by fish.	The DOT&PF will obtain a fish habitat permit prior to any work below OHW.

5.0 SECTION 4(F) EVALUATION

This section contains the Section 4(f) evaluations that have been done to document potential effects on properties protected by Section 4(f) of the Transportation Act of 1966⁶² within the Haines Highway project corridor. Section 4(f) states that land from a significant publicly owned park, recreation area, wildlife or waterfowl refuge, or land of a historic site can be used for a transportation project only if: 1) there is no feasible and prudent avoidance alternative and the action includes all possible planning to minimize harm to the resource, or 2) the use of the property including measures to minimize harm would have a *de minimis* impact. Table 5.0-1 lists Section 4(f) protected resources within the project study area with a potential for use by the Revised Proposed Action.

Table 5.0-1: Properties Protected by Section 4(f) with a Potential Use by the Revised Proposed Action

Property	Type of Site	Proposed Use	Proposed Section 4(f) Approval Type
Alaska Chilkat Bald Eagle Preserve	Wildlife Preserve	2.98 Acres ROW acquisition and potential to indirectly affect fish, bald eagle, and other wildlife habitat within the Preserve	<i>De minimis</i> Finding
Chilkat River Critical Habitat Area	State Critical Habitat Area	Potential indirect effects to fish, bald eagle, and other wildlife habitat within the Critical Habitat Area	<i>De minimis</i> Finding
Chilkat River Bridge (SKG-247)	Eligible Historic Bridge	Demolition/Replacement of Bridge	Nationwide Section 4(f) Evaluation and Approval for FHWA Projects that Necessitate the Use of Historic Bridges (1983 Programmatic)
Yendistucky (SKG-054)	Eligible Historic property	Use minimized by design alteration to avoid the bluff	<i>De minimis</i> Finding
Smokehouse Village (SKG-044)	Eligible Historic property	Use (fill) in areas without archaeological resources	<i>De minimis</i> Finding

⁶² Now codified at 23 USC § 138 and 49 USC § 303.

The proposed project has the potential to affect four resources that qualify for protection under Section 4(f):

- the Alaska Chilkat Bald Eagle Preserve (Preserve),
- the Chilkat River Bridge,
- Yendistucky (SKG-054), and
- Smokehouse Village (SKG-044).

Each of the Section 4(f) properties is described and evaluated below. Appendix C, Section 4(f), contains referenced information.

Briefly, the State of Alaska established the Preserve as part of the state park system in 1982. The Preserve is co-managed by Alaska Department of Natural Resources-Division of Parks and Outdoor Recreation (DNR DPOR) and Alaska Department of Fish and Game (ADF&G), with DNR DPOR managing overall public use of the Preserve and ADF&G managing fish and game resources in the Preserve. The statute creating the Preserve also established an Alaska Chilkat Bald Eagle Preserve Advisory Council (Preserve Advisory Council) that gives input to DNR DPOR when there are projects or other actions that could affect the Preserve. The Preserve Advisory Council has been informed about the Revised Proposed Action. The Revised Proposed Action would directly affect the Preserve by acquiring property for right-of-way (ROW) from the Preserve. See Section 4.2, Alaska Chilkat Bald Eagle Preserve, for additional information about the Preserve.

The Chilkat River Bridge was constructed in the 1950s and has been determined eligible for listing on the National Register of Historic Places (NRHP) (see Section 4.10, Cultural Resources). This historic bridge is proposed to be demolished and replaced with a new bridge over the Chilkat River built to current design standards.

Yendistucky Village and Smokehouse Village are centuries old Chilkat and Chilkoot Indian Tribes traditional use and occupation areas. Both are eligible for the NRHP under Criterion A because of roles they played in traditional village life and subsistence patterns. They are also eligible under Criterion D for their potential to yield important information.

5.1 Alaska Chilkat Bald Eagle Preserve



Section 4(f) *De Minimis* Impact Finding

for

Parks, Recreation Areas, and Wildlife and Waterfowl Refuges For Federal Highway Administration (FHWA) Projects

Project Name: Haines Highway Mileposts 3.5 to 25.3

Project Number (State and Federal): Z686060000/0956028

Property Name: Alaska Chilkat Bald Eagle Preserve (Site 1)

Property Name: Critical Habitat Area (Site 2)

Applicable only if the use of the Section 4(f) property including consideration of avoidance, minimization, mitigation or enhancement measures, does not adversely affect the activities, features, and attributes that qualify the property for protection under Section 4(f).

I. Project Description:

The DOT&PF, in partnership with the FHWA, is proposing to upgrade Haines Highway from MP 3.5 to MP 25.3 (see Section 1.0 of the FREA and Figure Set A). The section between MP 3.5 and MP 25.3 would be brought up to a 55 mph design standard (AASHTO, 2001), as practicable, consistent with the design standards for the remainder of the Haines Highway in Canada and the United States, under the Shakwak program agreement. The Project would also improve recreational access points adjacent to the Preserve, replace the Chilkat River Bridge, and provide for stability and safety of the roadway at locations where storm-related debris commonly overtop the roadway. One major debris flow area is at MP 19, adjacent to the Critical Habitat Area (CHA), a statutorily-protected section of the Chilkat River. The Revised Proposed Action includes:

Highway Improvements

1. Straighten most curves to meet design standards (with the exception of two curves);
 - a. Acquire approximately 26 acres of ROW; 3 acres within the Preserve.
 - b. Relocate utilities where required. Maintain access to utilities not relocated.
2. Add passing zones⁶³ to provide passing in about 50 percent of the project corridor.
3. Widen the roadway shoulders from the existing 2 feet up to 6 feet.
4. Construct drainage ditches and upgrade, replace, and/or add new culverts where appropriate.
5. Repave and restripe the roadway and add new signage.

⁶³ A passing zone is an area on the highway route where the roadway geometry and sight distance permits faster vehicles to overtake slower vehicles in the lane normally used by opposing traffic. Dashed yellow centerline markings indicate where passing is permitted on two-lane two-way roadways. Personal communication from Pat Carroll, P.E., DOT&PF, to Jane Gendron, DOT&PF Regional Environmental Impact Manager, May 20, 2013.

6. Rehabilitate or relocate driveways and road intersections to meet design standards.
7. Install guardrails and other safety appurtenances along the highway where needed.

Recreational Access Improvements

1. Widen roadway shoulders from 2 feet to 6 feet.
2. Construct a parking area for the Mount Ripinski Trailhead.
3. Improve the layout and grading of turnout driveways within ROW.
4. Maintain and/or improve functional, existing, sanctioned access to the Chilkat River recreational areas.
5. Add a new vehicle turn out at MP 20.5 to provide added viewing areas within the Bald Eagle Council Grounds.

Chilkat River Bridge Replacement

1. Construct a new bridge with the same lane and shoulder widths as the proposed road. The new bridge would be constructed to meet the following criteria:
 - a. a 55 mph design speed,
 - b. current seismic standards,
 - c. heavier loads for freight vehicles than required by minimum bridge design standards to provide for unanticipated needs beyond the highway design life of 25 years, and
 - d. consistency with bridges constructed on the Haines Highway MP 24 to border project.
2. Install a temporary bridge to be used as a construction staging platform.
3. Remove existing bridge deck and rail; cut and remove foundation structures including remnant pilings from previous bridge structures.

Highway Protection Improvements at Debris Flow Areas

1. Raise the elevation of the existing highway 15 to 18 feet above its current elevation and install four to six new larger diameter culverts each at debris flow areas near MP 19 and 23.

Table 5.1-1 lists those specific actions that would be within the Preserve or on DOT&PF ROW adjacent to the Preserve boundaries.

II. Section 4(f) Property Description(s):

Describe each impacted Section 4(f) property. Description should include size, location, type of property, ownership and identification of official with jurisdiction over the Section 4(f) property, and existing and/or documented planned activities, features and attributes of the property. Include a map depicting the boundaries and major features of the Section 4(f) property.

The over 49,000-acre Preserve primarily consists of the river bottom land of the Chilkat, Klehini and Tsirku Rivers (Figure 5.1-1). The Preserve is a wildlife preserve owned by the State of Alaska. Preserve management responsibilities are divided between DNR DPOR and the ADF&G. DNR DPOR is responsible for the overall management of the Preserve and ADF&G is responsible for fish and wildlife resources management in the Preserve.

The statute creating the Preserve also established the Preserve Advisory Council that gives input to DNR DPOR when there are projects or other actions that could affect the Preserve.

Preserve Advisory Council members include 1) a resident of the Haines Borough representing a conservation organization; 2) a representative of the USFWS; 3) a member of the Upper Lynn Canal Fish and Game Advisory Committee; 4) the Haines Borough Mayor; 5) the President of Klukwan, Inc.; 6) the Chair of the Council of the CIV; 7) the Chair of the CIA; 8) a member of the Haines Borough Assembly; 9) the ADF&G Commissioner; 10) the DNR DPOR Director; and 11) the DNR Division of Forestry Director.

Prior to establishment of the Preserve in 1973, the State Legislature established a 4,800-acre CHA in recognition of the unique fall and winter concentration of bald eagles. The boundaries of the CHA and the Preserve are shown on Figure 5.1-1.

The Preserve's purpose is to protect and perpetuate the world's largest concentration of bald eagles and their essential habitats. Virtually every portion of the Preserve is used by eagles at some time during the year. Other goals of the Preserve are to:

- Protect and sustain natural salmon spawning and rearing areas of the Chilkat, Klehini, and Tsirku Rivers.
- Provide continued opportunities for research, study, and enjoyment of bald eagles and other wildlife.
- Maintain water quality and quantity to support fish and eagle populations.
- Provide for the continued traditional and natural resource based lifestyle of the people inhabiting the area.
- Provide for other public uses consistent with the primary purpose of the Preserve.

The Preserve also provides for a wide variety of low-impact recreation uses, including many types of water sports (fishing, rafting, boating), hunting, wildlife viewing, eagle watching, hiking and camping. Other uses of the area are associated with subsistence harvests along the Chilkat River. Facilities located adjacent to or within the Preserve include vehicle pullouts to allow for wildlife viewing, parking areas, picnic facilities, a boardwalk/viewing platform, latrines, a riverside trail, and boat launches. Several commercial businesses provide for guided recreational uses including river rafting, wildlife viewing and photography, hunting, and fishing.

While the primary goals stated in the Preserve Management Plan are the preservation of bald eagles and salmon habitat, the statute establishing the Preserve also recognizes the importance of transportation and utilities. The statute specifically states that “...existing transportation and utility corridors located partially or completely within the Alaska Chilkat Bald Eagle Preserve are excluded from the Alaska Chilkat Bald Eagle Preserve” (AS 41.21.612(a)). The Plan states that the existing transportation corridor includes the Haines Highway and other roads, such as Porcupine Road, recognized and maintained by DOT&PF.

The boundary of the Preserve abuts the riverside of the Haines Highway ROW between MP 8.3 and MP 16.8 and between MP 20.2 and MP 21.5. The ROW divides the Preserve property between MP 16.8 and MP 20.2 and MP 23.6 to MP 24 (Figure 5.1-1). The Haines Highway provides the primary access to the Preserve and its features.

III. Project Use of the Section 4(f) Property(s):

Identify the impacts the project will have on the activities, features, and attributes of the Section 4(f) property that qualify the property for protection under Section 4(f).

The project would use the Preserve directly by acquiring land for ROW. Approximately 3 acres of the Preserve would be permanently acquired to accommodate the Revised Proposed Action (see attached Table 5.1-2 and Sheet 3 of 3 in Figure 5.1-2). Near MP 17, DOT&PF would acquire 3 acres of forested and wetland habitat on either side of the highway in order to straighten and widen the highway. The area between the cut and fill limits for highway construction would be cleared and grubbed, the areas would be filled, and the road and/or embankment constructed on top. None of the areas proposed for ROW acquisition have any developed features within them but they do contain habitats for a variety of wildlife. None of the areas to be acquired are within CHA. No known eagle nesting trees exist in the ROW acquisition areas. During the fall and winter 2013 bald eagle survey, some perching eagles were observed adjacent to these forested areas. It is possible that some of the trees in the acquisition area are eagle perching trees and could be cut by the Revised Proposed Action.

The annual congregation of bald eagles in the fall to feed on a late run of chum salmon in the Chilkat River is the primary feature of the Preserve. The cottonwood trees adjacent to the Chilkat River where eagles perch to view the chum salmon could be affected by the Revised Proposed Action. DOT&PF has had two surveys conducted thus far of perching eagles during this fall congregation. While the final design has not been completed, these surveys reported 85 trees within the DOT&PF ROW are within the estimated footprint of the Revised Proposed Action.

The eagle researchers, ABR, assessed the potential for the project to impact the bald eagles and they recommended that the Revised Proposed Action would not have a population effect on bald eagles in the Chilkat region. Removal of cottonwoods in the project footprint (in DOT&PF's ROW) may result in some bald eagles moving farther from their currently used perching or roosting locations (ABR, 2014; see Appendix G). Some of these perches correspond to public viewing and photographic opportunities.

Many vehicle turnouts along Haines Highway including adjacent to the Preserve do not meet sight distance or intersection criteria. (All of these turnouts are in the DOT&PF ROW.) DOT&PF worked with DNR DPOR and ADF&G regarding public access turnouts to identify which ones were priorities for these agencies. At the request of the DNR DPOR, three turnouts (HNS 10, 11, and 18)⁶⁴ with access to the Preserve would be closed and nearby access enhanced in order to limit unsanctioned activities such as garbage dumping, use of all-terrain vehicles, and parties in those three areas. All sanctioned public access points would have improved surfacing

⁶⁴ Refers to identified access points; Haines Access Numbers (HNS #) are identified in Table 4.6-1 and shown in more detail in Appendix A of the FREA.

and grading within the DOT&PF ROW. See Table 5.1-1 and FREA Appendix A for additional details.

The Revised Proposed Action includes elevating Haines Highway in the area of the MP 19 debris slide area, adjacent to the CHA and Preserve. Elevating the highway and constructing large box culverts under that section of highway would allow the naturally occurring slide debris to flow under the highway and enter the Chilkat River as occurred prior to construction of the highway. This flow would enter into the CHA. ADF&G field surveys indicate this location of the Chilkat River is used by spawning chum salmon as well as rearing coho and Chinook salmon (see *King and Coho Smolt Distribution in the Chilkat River* in Appendix F – EFH Assessment).

Both direct and indirect impacts that could occur if the Revised Proposed Action is constructed have been evaluated and are listed in Table 5.1-3.

IV. Impact Avoidance, Minimization, and Mitigation or Enhancement Measures to the Section 4(f) Property(s):

Identify any avoidance (such as avoidance of a feature), minimization, and mitigation or enhancement measures that are included in the project to address the Section 4(f) use.

During design efforts for the proposed Haines Highway MP 3.5 to MP 25.3 project, engineers included measures to avoid and minimize effects within the highway and utility corridor adjacent to the Preserve. For example, the addition of guardrails at certain locations has allowed the use of steeper embankments along the Chilkat River to avoid or minimize fill in the Preserve. Straightening curves avoided constructing passing lanes that would have required ROW acquisition from the Preserve. An early Chilkat River Bridge alternative that would have minimized cost was rejected because it would have required additional ROW acquisition within the Preserve.

Following release of the July 2013 EA, comments were received asking DOT&PF to consider an alternative with less straightening. DOT&PF did so and the Revised EA reflects that less impacting alternative. The existing section of Haines Highway has about 41 percent passing zones. While passing lanes are still not proposed, the number of passing zones in the Revised Proposed Action has been reduced to about 50 percent compared to about 60 percent passing zones in the July 2013 Proposed Action.

The Proposed Action presented in the July 2013 EA proposed acquisition of 0.51 acres of riverine habitat in the Preserve near MP 8.5. This acquisition of Preserve property has been avoided in the Revised Proposed Action. The alignment at MP 17 was also adjusted to further avoid acquiring 0.61 acres.

To mitigate for direct impacts, DOT&PF would relinquish approximately 6.2 acres of ROW to the Preserve (see Sheet 3 of 3 in Figure 5.1-2). At MP 17, two parcels of forested and wetland habitat within the ROW on either side of the highway totaling 6.2 acres would be relinquished to the Preserve. The land proposed to be relinquished to the Preserve is directly adjacent to land proposed to be acquired.

ADF&G staff evaluated the habitat in the land to be acquired from the Preserve and compared it with the land from DOT&PF ROW proposed to be relinquished (K. Kanouse, ADFG

memorandum to J. Gendron, DOT&PF, dated February 18, 2015. See Appendix C.). Land to be acquired includes both upland terrestrial habitat and riparian habitat with a predominance of upland habitat. The land to be relinquished consists of a large strip of riparian habitat as well as a large area of upland habitat. According to ADF&G: “*The fish and wildlife habitat values in the ROW relinquishment and CBEP⁶⁵ acquisition parcels are similar. The exchange provides additional CBEP acreage and would allow highway realignment to minimize fill in Stream No. 115-32-10250-2060-3012 and 18 Mile Slough.*” DOT&PF intends to remove the old highway footprint once construction is complete and revegetate it with similar vegetation as found in adjacent undisturbed habitat.

Proposed habitat enhancement measures within the Preserve are shown in Sheets 1 and 2 of Figure 5.1-2. These enhancement measures, including temporary access to 2 acres of the Preserve for construction of enhanced salmon habitat, have been developed in coordination with ADF&G; ADF&G is a co-manager of the Preserve and CHA with responsibilities over fish and wildlife habitat. ADF&G considers these to be habitat enhancements and within the intent of the Preserve’s established goals.

In other locations beyond the boundaries of the Preserve, DOT&PF would make improvements that also enhance access to recreation within and adjacent to the Preserve. Near MP 7, DOT&PF would develop a new parking lot at the Mount Ripinski Trailhead (EA Figure 1.2-5).

Between MP 3.5 and MP 8, DOT&PF would improve the configuration of existing public access turnouts in order to maintain access to camping and fishing. A new scenic pullout with parking would be added at MP 20.5 (Table 5.1-2).

V. Coordination with the Public:

The information supporting FHWA’s intent to make a de minimis impact finding will be included in the National Environmental Policy Act (NEPA) document and the public will be afforded the opportunity to comment during the NEPA review process.

For those actions that may not require public review and comment, a public notice for opportunity to review and comment will be needed. Public involvement efforts must state FHWA’s intent to make a de minimis impact finding and provide information necessary to solicit comments.

Public Notice Date:

Notice of the availability of the July 2013 EA and proposed *de minimis* finding was published in the Juneau Empire on July 17, 2013 and in the Chilkat Valley News on July 18 and 25, 2013.

Notice of the availability of the October 2015 DREA and proposed *de minimis* finding was published in the Juneau Empire on September 24, 2015 and in the Chilkat Valley News and the Sitka Sentinel on September 24, 2015.

Name of Newspaper: Chilkat Valley News; Juneau Empire; Sitka Sentinel

⁶⁵ CBEP is another acronym for the Chilkat Bald Eagle Preserve.

A public notice of the proposed use of the Preserve including the avoidance, minimization, and mitigation or enhancement measures was published online on the Office of the Lieutenant Governor's website (<http://aws.state.ak.us/OnlinePublicNotices/>) and in the Chilkat Valley News, the Juneau Empire, and the Sitka Sentinel concurrent with public availability of the October 2015 DREA for review.

Summarize Issues Raised and Responses to comments (attach all comments received and a copy of the Public Notice):

The FREA contains a summary of the comments received and responses on the July 2013 EA and the October 2015 DREA and final Section 4(f) analyses (Section 7.0, Comments and Coordination, and Appendix G, Bald Eagle Research, Consultation and Conservation Measures).

Issues raised and responses to comments received on the July 2013 and October 2015 re-drafted Section 4(f) analyses are summarized below and were used by the Officials with Jurisdiction (OWJ) in their determination of impacts to the Preserve by the Revised Proposed Action.

Comments received specific to Section 4(f) question whether the project complies with the strict requirements of Section 4(f) and whether a de minimis impact finding is either adequate or allowed; there are also comments regarding analysis or a finding of a constructive use of the Preserve.

Section 4(f) requires that the FHWA may not approve the use of Section 4(f) property unless a determination is made that: 1) there is no prudent and feasible avoidance alternative to the use; and 2) the action includes all possible planning to minimize harm to the property from such use; or 3) the use, including any measures to minimize harm (such as any avoidance, minimization, mitigation, or enhancement measures) will have a de minimis impact on the property.

DNR DPOR and ADF&G (the Officials with Jurisdiction over the Preserve, including the Critical Habitat Area) have concurred with the FHWA's determination that the project will not adversely affect the activities, features, or attributes of the Preserve. Based on this concurrence, the FHWA approves a de minimis impact finding for the Alaska Chilkat Bald Eagle Preserve.

Consistent with Section 4(f) regulations (23 CFR 774.15), Constructive Use may only occur when a project does not incorporate land from a Section 4(f) resource. The proposed project would incorporate land from the Preserve. Thus, a Constructive Use of the Preserve cannot result in this scenario, and a Constructive Use analysis is not necessary and would be inappropriate. However, indirect impacts of the proposal were fully evaluated and considered as a part of this Section 4(f) approval.

The comments received specific to the Preserve include concerns about the level of information available in the DREA about the number of eagle roosting trees that would be cut in the Preserve and the effect of that cutting; a suggestion to reduce the speed limit to protect bald eagles; a request that the road be designed to avoid impacts through the CHA; and statements that the project does not comply with Preserve statutes.

DOT&PF's consultant (ABR) conducted and will continue to conduct eagle perch-tree surveys, the duration of which is to be determined through the eagle permitting process. No roosting or perching trees would be cut within the Preserve, though there may be roosting or perching trees

in the DOT&PF ROW adjacent to the Preserve that would be cut. Based on the results of the surveys, ABR concluded that the proposed project would not have a population effect on bald eagles but may result in changes in the patterns of distribution and use of habitat by eagles (e.g. eagles may use locations further from where photographers and bird watchers are now able to view them).

Regarding a reduced speed limit, the posted speed limit would not change from 55 mph. Current speed studies show vehicles drive at an average estimated speed of 62 mph now. Lowering the speed limit on a 55 mph road would result in a group of slower vehicles and those driving to the conditions. This situation would be less safe than what exists today. Wider shoulders and corresponding improved sight distances have the potential to minimize vehicle-eagle collisions. DOT&PF does support appropriate signage and public-awareness displays.

The project has been designed to avoid impacts in Council Grounds: placement of fill in the Chilkat River was avoided in the Preserve and CHA and results of the eagle surveys described above would be used to avoid and minimize impacts to perch trees in the ROW adjacent to the Council Grounds. In response to agency comments received on the 2013 EA, pavement that was proposed to be abandoned as part of highway realignment at MP 20.5 would be converted for use as an additional public wayside and eagle-viewing location.

The Haines Highway corridor is excluded from the Preserve by statute (AS 41.21.612). Additionally, DOT&PF coordinated with DNR and ADF&G to avoid and minimize impacts to the Preserve and DNR (the agency with jurisdiction over the Preserve) determined that the project does comply with Preserve statutes (Table 3 in DNR concurrence letter, Attachment 5.1-1).

- **Coordination with Official(s) with Jurisdiction over the Section 4(f) Property:**

Describe the coordination that was done prior to and after the coordination with the public. A request for written concurrence from the official with jurisdiction must be initiated after the public has been afforded the opportunity to comment.

As described in detail in Section 4.2, the Alaska Chilkat Bald Eagle Preserve officials with jurisdiction are DNR DPOR and ADF&G. DOT&PF consulted with DNR under the 1987 Cooperative Management Agreement between DNR and DOT&PF for Haines Highway (Appendix C, Section 4(f)) in regards to the project and the pull outs along the highway within the project area. Both agencies participated in a site visit, followed by several meetings. Coordination continued in 2010 and 2011 to determine if DNR DPOR continued to agree that the Proposed Action would not adversely affect the activities, features, or attributes of the Preserve (see Appendix C). DOT&PF has coordinated directly with ADF&G regarding fish habitat in the CHA as well as the entire project footprint from 2005 to present. ADF&G has also provided input to DNR regarding resources in the Preserve and the CHA under ADF&G's authority.

Following release of the July 2013 EA, public and agency comments led to a re-assessment of the Proposed Action and multiple re-alignments have been removed or redesigned in the Revised Proposed Action to lessen the impacts of the project on fish and eagle habitat, in particular in the Preserve. In a letter to DNR dated April 28, 2014, DOT&PF requested DNR DPOR's concurrence that the Revised Proposed Action would not adversely affect the activities, features, or attributes of the Preserve. That letter was updated on May 30, 2014 to correct the assessment

of impacts on water quality that would result from the improvements proposed at the slide areas at MP 19 and MP 23 (see Appendix C).

DOT&PF also requested input from ADF&G regarding the Revised Proposed Action's potential to affect resources under their jurisdiction. After reviewing DOT&PF's letters to DNR DPOR, J. Timothy, ADF&G, sent a memorandum to M. Eberhardt, DNR DPOR, on June 27, 2014 stating that ADF&G concurs with DOT&PF's conclusion that the project would not adversely affect the activities, features, or attributes of the Preserve and specifically that: "*The project proposal meets the purpose and need and does not adversely impact the resources and habitats for which ADF&G is responsible.*" (See Appendix C).

Subsequent to FHWA's decision to release the DREA to the public for review and comment, DNR DPOR notified the Chilkat Bald Eagle Advisory Council, FHWA and DOT&PF that they would await public comments on the DREA before finalizing the coordination process (Eberhardt email July 31, 2014; see Appendix C).

DOT&PF and FHWA provided the comments received and responses on the July 2013 and October 2015 DREA and final Section 4(f) analyses to DNR DPOR and ADF&G in January 2016 and requested input on the Section 4(f) analysis. Following DNR DPOR and ADF&G review and comment, DOT&PF and FHWA requested concurrence from both agencies regarding the effect of the Revised Proposed Action of the 4(f) properties under their jurisdiction. ADF&G and DNR DPOR concurred that the proposed action will not adversely affect the activities, features, or attributes of the Chilkat Bald Eagle Preserve on February 5, 2016 and February 8, 2016, respectively (Attachment 5.1-1 and Appendix C).

DOT&PF also provided DNR DPOR with a description of on-site mitigation proposed to restore and enhance fish habitat (stream work) along the project corridor, some of which would occur on Preserve land. On May 18, 2016, DNR DPOR concurred that the temporary occupancy of the Preserve required for the stream work is so minimal as to not constitute a use of the Preserve within the *meaning of Section 4(f)* (Attachment 5.1-1 and Appendix C).

VI. Signatures:

- A. I recommend that the FHWA find the impacts on the Section 4(f) property to be *de minimis* based on the fact that this project will not adversely affect the activities, features, and attributes that qualify the property for protection under Section 4(f).



DOT&PF Regional Environmental Manager

Date: 8/15/16

- B. I have determined that:

1. The transportation use of the Section 4(f) property, together with any impact avoidance, minimization, and mitigation or enhancement measures incorporated into the project, does not adversely affect the activities, features, and attributes that qualify the property for protection under Section 4(f);
2. The public has been informed of FHWA's intent to make a *de minimis* finding and been afforded an opportunity to review and comment on the effects of the project on the protected activities, features, and attributes of the Section 4(f) property;

3. The official(s) with jurisdiction over the property were informed of FHWA's intent to make the *de minimis* impact finding based on written concurrence that the project will not adversely affect the activities, features, and attributes that qualify the resource for protection under Section 4(f); and
4. The project will have a *de minimis* impact on the Preserve (Property 1).
5. The project will have a *de minimis* impact on the CHA (Property 2 if applicable).



FHWA Environmental Program Manager

Date: 8.15.16

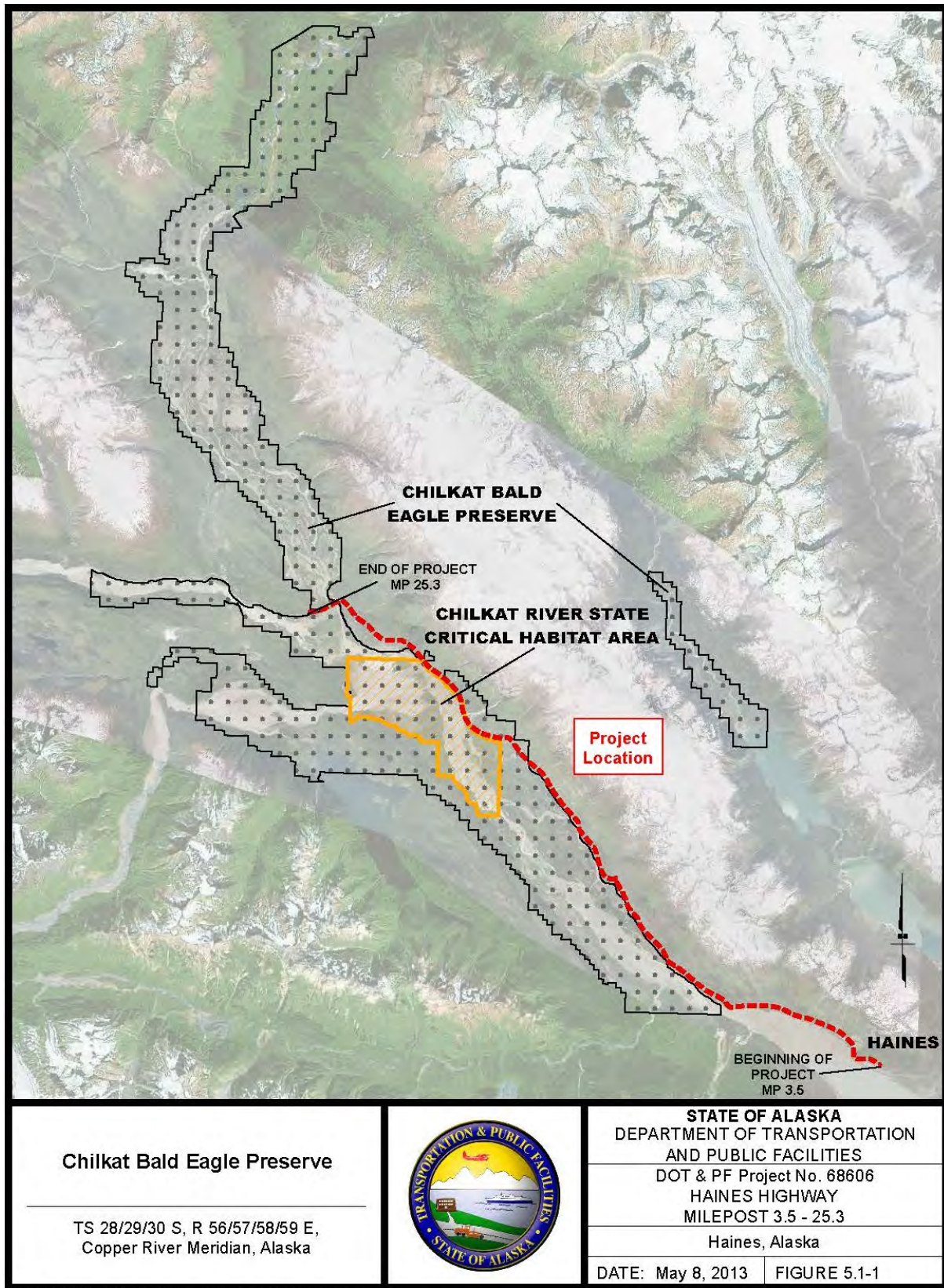


Figure 5.1-1: Alaska Chilkat Bald Eagle Preserve

Table 5.1-1: Revised Proposed Activities Within or Adjacent to Preserve

Approximate Location Closest Milepost (MP) Highway Station Number (Station) Reference Graphic	Revised Proposed Action (Actions occur within the Preserve, or within the DOT&PF ROW adjacent to the Preserve)
MP 8.5 Station 344+50 Figure Set A Sheet 8	At Haines Highway Public Access Point ID #7 (HNS 7 ¹), in DOT&PF ROW, provide driveway on river side for fishing access.
MP 10 Station 504+75 Figure Set A Sheet 10	At HNS 8, in DOT&PF ROW, provide access to boat launch with one 24-foot-wide approach.
MP 10 Station 513+75 to Station 524+00 Figure Set A Sheets 10-11	Enhance stream habitat in Preserve by converting marsh habitat on south side of highway to fish stream, riparian, and wetland habitat (see Section 4.15, Fish).
MP 11 Station 552+00 to Station 554+00 Figure Set A Sheet 12	In DOT&PF ROW, develop new parking area at HNS 9 for adjacent pond that is sometimes used for ice-skating; at DNR's request, project would remove access at HNS 10 and 11.
MP 11.5 Station 585+25 to Station 584+25 Figure Set A Sheet 13	At HNS 12, in DOT&PF ROW, provide parking for sport fishing and hunting access.
MP 13 Station 651+00 to Station 653+50 Figure Set A Sheet 15	Enhance stream habitat by using scrub- shrub wetland habitat in the Preserve on south side of highway to access an area in the ROW proposed for a new stream channel (see Section 4.15, Fish).
MP 13 Station 662+00 Figure Set A Sheet 15	At HNS 13, in DOT&PF ROW, reduce slope and resurface pullout for improved river access and boat launch.
MP 14 Station 707+50 to Station 710+00 Figure Set A Sheet 16	At HNS 15, in DOT&PF ROW, provide two 24-foot approaches and gravel surface to provide parking for up to 10 vehicles and maintain access.
MP 14.5 Station 727+00 to Station 732+00 Figure Set A Sheet 17	At HNS 17, in DOT&PF ROW, provide parking and re-grade from edge of pavement to existing driveway to improve slope for bus traffic. Remove and revegetate abandoned road footprint.
MP 16 Station 820+50 Figure Set A Sheet 20	In DOT&PF ROW, ditch across access driveway to remove access to area used for parties and dumping garbage (HNS 18). Access removed at DNR's request.
MP 17 Station 861+00 to Station 889+00 Figure Set A Sheets 21-22	Acquire 3 acres of forested and wetland habitat on either side of the highway and fill to widen road embankment. Use forested and scrub-shrub wetland habitat on south side of highway to access and construct a new fish stream channel (see Section 4.15, Fish).
MP 19 Station 960+00 to Station 980+00 Figure Set A Sheet 24	In DOT&PF ROW, the highway would be raised approximately 15 feet through this area. Public Access Point HNS 19 would be removed. The public would be able to access through HNS 21.

Table 5.1-1: Revised Proposed Activities Within or Adjacent to Preserve

Approximate Location Closest Milepost (MP) Highway Station Number (Station) Reference Graphic	Revised Proposed Action (Actions occur within the Preserve, or within the DOT&PF ROW adjacent to the Preserve)
MP 19.5 Station 986+00 Figure Set A Sheet 25	At HNS 20, in DOT&PF ROW, provide a plow-friendly approach and pave.
MP 19.5 Station 988+00 to Station 992+00 Figure Set A Sheet 25	At HNS 21, in DOT&PF ROW, provide access to scenic view point with two 24-foot-wide plow-friendly approaches and pave. Remove and revegetate abandoned road footprint.
MP 20 Station 1007+00 to Station 1010+00 Figure Set A Sheet 25	At HNS 22, in DOT&PF ROW, improve driveway and intersection in order to maintain access to scenic view point.
MP 20 Station 1032+00 to Station 1035+25 Figure Set A Sheet 26	At HNS 23, in DOT&PF ROW, improve driveway and intersection in order to maintain access to scenic view point.
MP 20.5 Station 1046+00 to Station 1055+00 Figures Set A Sheets 26 and 27	A new scenic viewpoint would be constructed on existing pavement after the highway has been re-aligned uphill from the river.
MP 20.5 Station 1059+00 to Station 1062+50 Figure Set A Sheet 27	At HNS 24, in DOT&PF ROW, provide access to scenic view point with two 24-foot approaches. Improve exit/entrance return radii to ease snow plow maintenance.
MP 21 Station 1070+00 Figure Set A Sheet 27	At HNS 26, in DOT&PF ROW, grade approach to match proposed highway grade.

¹ Refers to identified access point. (HNS #); Haines Access Point Numbers are identified in Table 4.6-1 and shown in more detail in Appendix A.

Table 5.1-2: Summary of Proposed ROW Acquisition in Preserve

DOT&PF Parcel #	Acreage	Approximate Station (beginning-end)	Habitat Type
E-7A	0.46	869 to 874	Forested Upland
E-7B	2.51	877 to 884+50	Forested Upland
E-7C	0.01	865	Forested Upland
Total acres = 2.98			

Table 5.1-3: Revised Proposed Action Compliance with other Preserve Goals

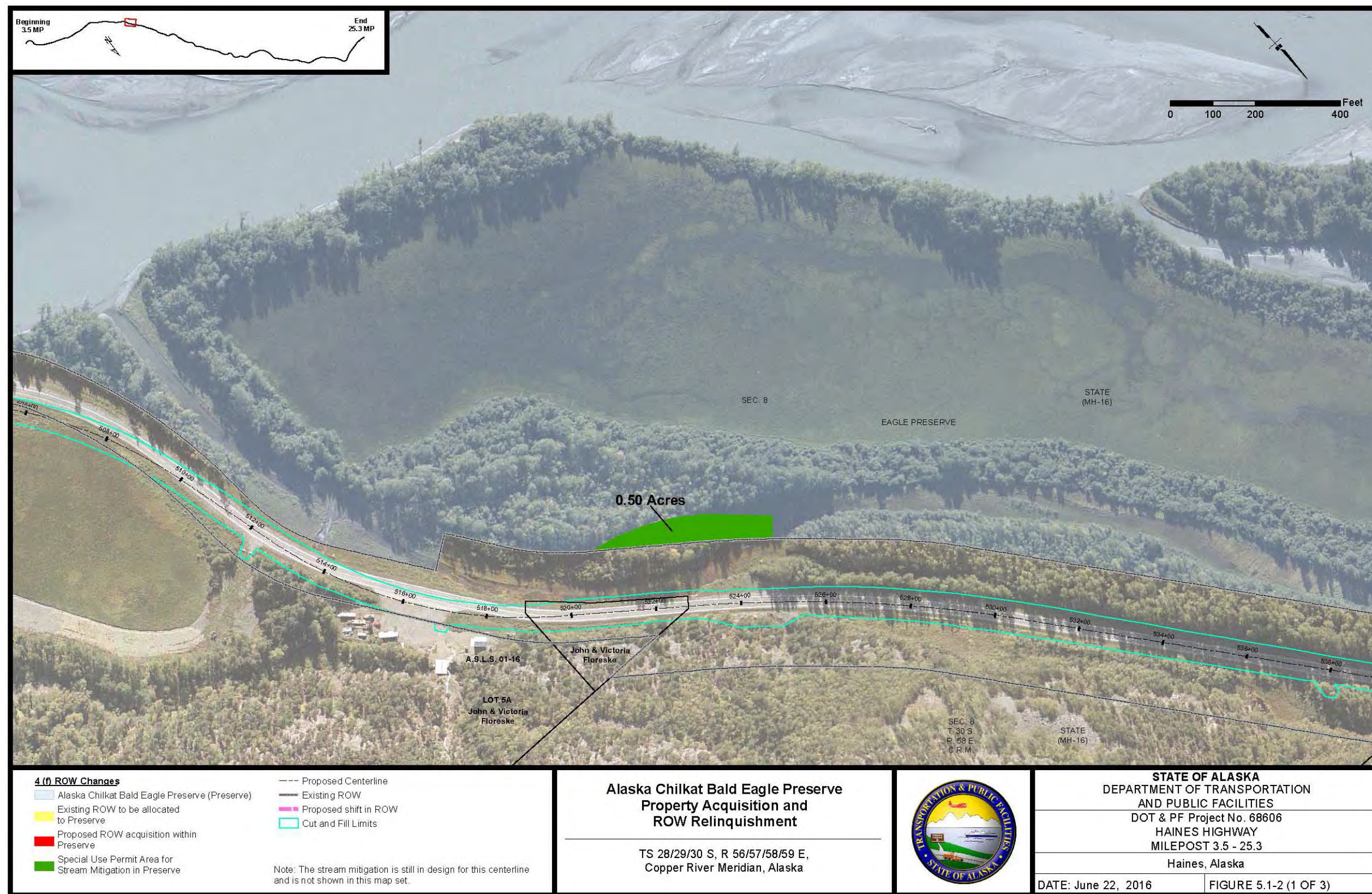
Goals [AS 41.21.610 (b)]	Revised Proposed Action Effects and Mitigation
<p>The Preserve’s primary purpose is to protect and perpetuate the world's largest concentration of bald eagles and their essential habitats.</p>	<p>Acquisition of 3 acres of Preserve land could result in cutting of several eagle perching trees in that acquisition area. No nesting trees are within those lands. Mitigation includes relinquishment of 6 acres of ROW that contain multiple cottonwood trees that would continue to be available for perching and replanting of abandoned highway with appropriate vegetation including cottonwoods that would eventually be available for eagle perching. Three years of eagle perch data were collected (2013 – 2015) to establish baseline conditions in the Preserve. A fidelity survey would be completed post-construction to help determine if changes in eagle use occur as a result of building the Revised Proposed Action. Should changes in eagle use be identified and attributable to the Revised Proposed Action, additional mitigation may be required as determined through consultation with USFWS. The project would not have a population effect on the Bald Eagles (see Appendix G Bald Eagle Research, Consultation, and Conservation).</p>
<p>Protect and sustain the natural salmon spawning and rearing areas of the Chilkat River and Chilkoot River systems within the Preserve in perpetuity.</p>	<p>Most of the effects to the Chilkat River and its tributaries would be in areas outside of the Preserve. There are four areas within the Preserve where DOT&PF proposes to enhance salmon spawning and rearing habitat. Natural features would be enhanced by adding tributary sinuosity, shifting tributaries away from the road so they can regain natural functions and stabilizing banks where erosion is affecting stream water quality. Some Chilkat River banks in the ROW adjacent to the Preserve would be hardened by vegetated riprap. Most of these banks are already vegetated riprap (See Appendix A – <i>EFH Impacts</i> in Appendix F, <i>EFH Assessment</i>).</p> <p>Additional habitat would be established at locations selected through consultation with ADF&G, USFWS, and NMFS. See Section 4.15, Fish, for more details.</p> <p>Twelve culverts across the highway adjacent to the Preserve would be upgraded to improve fish passage. A culvert would be removed to return a stream to more natural conditions. Riparian habitat would return to that stream’s banks.</p>

Table 5.1-3: Potential Revised Proposed Action Compliance with other Preserve Goals (continued)

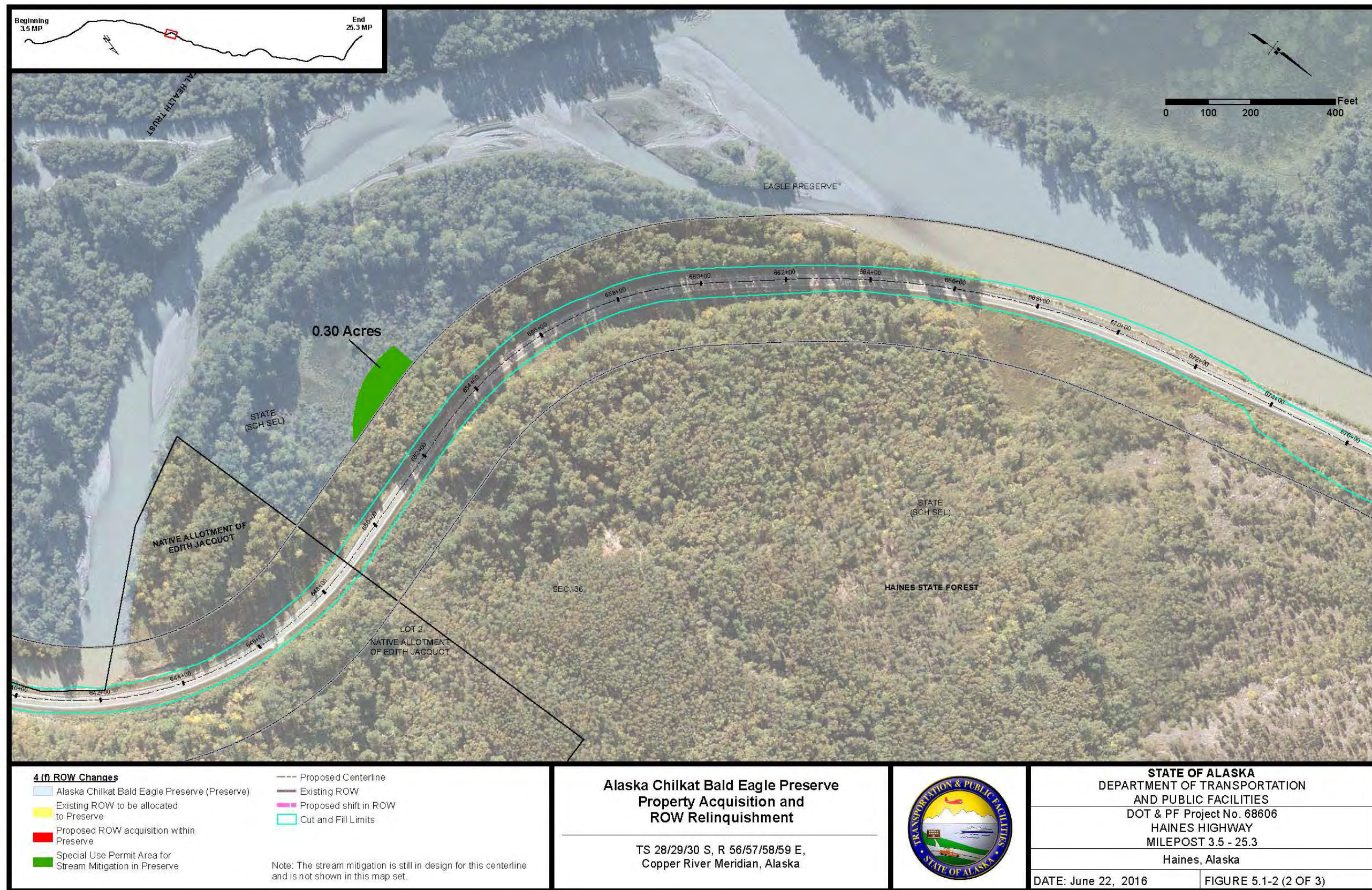
Goals [AS 41.21.610 (b)]	Revised Proposed Action Effects and Mitigation
<p>Provide continued opportunities for research, study, and enjoyment of bald eagles and other wildlife.</p>	<p>All sanctioned access points to land within the Preserve would be maintained and one additional turnout is proposed within the Council Grounds (MP 20.5) that would add a safe location for the enjoyment of eagle observations and photography.</p> <p>Some of the eagle perching trees would be cut within the ROW acquired from the Preserve. Other than the land acquired from the Preserve at MP 17, no trees would be cut within the Preserve. DOT&PF and USFWS are working on opportunities to mitigate for the loss of those trees cut within existing and acquired ROW. DOT&PF commits to plant juvenile cottonwood trees in the ROW near the river around MP 20 (see FREA Section 4.2.3) and would continue looking for other mitigation opportunities, in consultation with USFWS, as a part of the permitting process. The Revised Proposed Action would continue to provide opportunities for research, study, and enjoyment of bald eagles and other wildlife.</p> <p>ADF&G would still have access to fish wheels in the Chilkat River used for monitoring the strength of salmon returns. DOT&PF would also add vegetated protrusions and ballasted log structures to the river at 29 mitigation sites adjacent to the Preserve as identified in Table 4.15-3 of the FREA. At ADF&G's request, six of the vegetated protrusions would provide new locations for ADF&G to install fish wheels in the river.</p>

Table 5.1-3: Potential Revised Proposed Action Compliance with other Preserve Goals (continued)

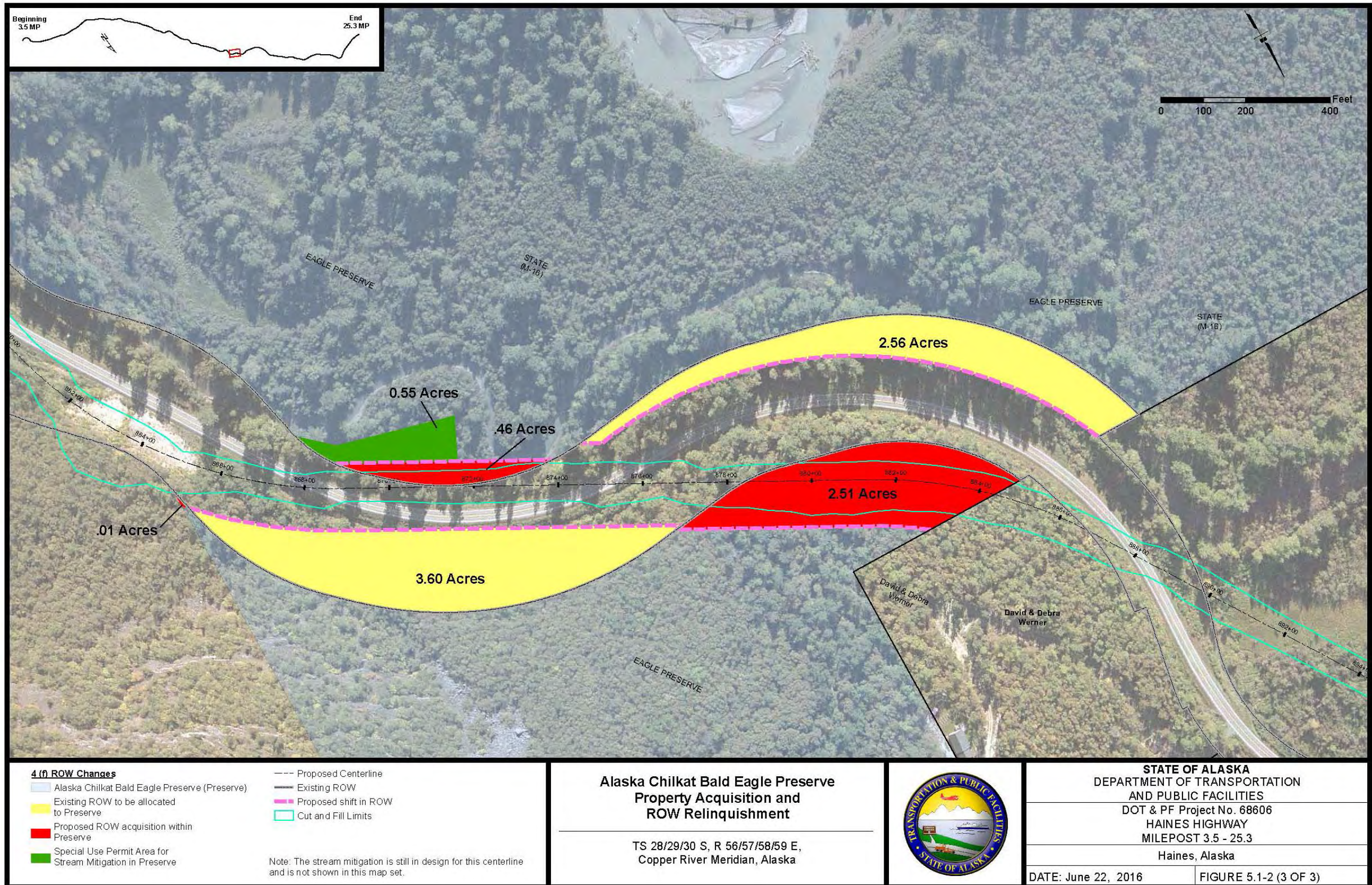
Goals [AS 41.21.610 (b)]	Revised Proposed Action Effects and Mitigation
<p>Ensure to the maximum extent practicable water quality and necessary water quantity under applicable laws.</p>	<p>The project would not affect water quantity. The project is being designed to provide stable banks along the Chilkat River and its tributaries to ensure water quality.</p> <p>However, the Revised Proposed Action at the debris slide area at MP 19 would elevate the roadway and install large box culverts intended to allow slide debris and associated water to flow more naturally into the Chilkat River. These slides contain large amounts of silt, sand, and gravel, as well as larger rocks. DOT&PF M&O estimates that, during current slides, one-half to two-thirds of the slide material now enters the Chilkat River. The material that is deposited on the road is what has been stockpiled in the ROW. Water quality during a slide event is expected to have high suspended solids as slide debris enters the river. Water quality would not be degraded by high organic or artificial pollutants during these events.</p> <p>The Chilkat River is a glacial fed river with seasonally high turbidity. The increase in turbidity would depend on the size of the debris slide and the natural condition of the river water’s suspended solids.</p> <p>In accordance with the APDES Construction General Permit, water quality BMPs would be employed during construction to avoid and minimize water quality impacts. Disturbed ground would be stabilized as soon as practicable to provide both short-term and long-term water quality protection.</p>
<p>Provide for other public uses consistent with the primary purpose for which the Alaska Chilkat Bald Eagle Preserve is established.</p>	<p>The other public uses in the Preserve include personal and commercial boating, fishing, and wildlife viewing. DOT&PF is working with ADF&G to retain and improve sanctioned boat launches, as needed. Public turnouts would have improved operational access. The existing amount of parking would be maintained.</p>
<p>Provide an opportunity for the continued traditional and natural resource based lifestyle of the people living in the general areas described in AS 41.21.611 (b), consistent with the other purposes of this subsection and (a) of this section.</p>	<p>DOT&PF, in consultation with local Tribes, has designed the improvements to avoid known subsistence areas. The avoidance, minimization, and mitigation measures that have been developed to avoid impacts to salmon and eulachon have been reviewed by the Tribes. The Tribes’ requests for the use of bioengineered structures to stabilize the Chilkat River embankments adjacent to the road have been considered, but DOT&PF Chief Engineer directives do not allow the installation of bio-engineered bank stabilization techniques to protect critical transportation infrastructure. DOT&PF has evaluated and proposed alternative ways to introduce logs and tree tops along the river to enhance juvenile fish habitat. Introduction of woody debris would not occur in areas used for subsistence (drift nets or set nets). See FREA Section 4.15, Fish, for more details.</p>



**Figure 5.1-2: Alaska Chilkat Bald Eagle Preserve Property 1 of 3
 Acquisition & ROW Relinquishment**



**Figure 5.1-2: Alaska Chilkat Bald Eagle Preserve Property 2 of 3
Acquisition & ROW Relinquishment**



**Figure 5.1-2: Alaska Chilkat Bald Eagle Preserve Property 3 of 3
Property Acquisition & ROW Relinquishment**

(This Page Left Intentionally Blank)

**Attachment 5.1-1: CORRESPONDENCE WITH OFFICIALS WITH
JURISDICTION REGARDING THE REVISED PROPOSED ACTION'S
POTENTIAL AFFECTS TO THE PRESERVE AND CHA**

**(SEE REVISED EA APPENDIX A FOR PRIOR PROJECT
COORDINATION WITH DNR DPOR AND APPENDIX C FOR
ADDITIONAL DOCUMENTATION REGARDING SECTION 4(F))**



THE STATE
of **ALASKA**
GOVERNOR BILL WALKER

Department of Transportation and Public Facilities

SOUTHCOST REGION
DESIGN & ENGINEERING SERVICES
Preconstruction

6860 Glacier Highway
PO Box 112506
Juneau, Alaska 99811-2506
Main: 907.465.4444
Toll free: 800.575-4540
Fax: 907.465.4414

Haines Highway MP 3.5 – 25.3
State/Federal Project No. 68606/SHAK-095-6(28)
Request for concurrence: No Adverse Effect
Alaska Chilkat Bald Eagle Preserve

January 26, 2016

Mr. Ben Ellis
Director, Division of Parks and Outdoor Recreation
Alaska Department of Natural Resources
550 W. 7th Avenue, Suite 1380
Anchorage, AK 99501-3561

Dear Mr. Ellis:

In 2010, the Alaska District of Federal Highway Administration (FHWA) began a formal consultation process with the Alaska Department of Natural Resources—Division of Parks and Outdoor Recreation (DNR DPOR) regarding the Alaska Department of Transportation and Public Facilities' (DOT&PF) proposal to upgrade the Haines Highway between Mile Post (MP) 3.5 and 25.3. Proposed upgrades include road widening and right-of-way (ROW) acquisitions within the Alaska Chilkat Bald Eagle Preserve (Preserve), a property protected by Section 4(f)¹ originally enacted in the Department of Transportation Act of 1966.

DOT&PF reengaged with DNR DPOR in 2014 in order to update FHWA's previous consultation. An April 28, 2014 letter and a May 30, 2014 updated table provided an overview of the Revised Proposed Action, described the re-assessed potential impacts to the Preserve, and presented DOT&PF's proposed measures to mitigate impacts and enhance Preserve resources.

As we prepare the Final Revised Environmental Assessment, this letter is intended to provide you with updates to potential impacts and proposed mitigation and enhancement measures. DOT&PF asks for your written concurrence that the Revised Proposed Action would not adversely affect the features, attributes, or activities of the Preserve, a property protected under Section 4(f).

Section 4(f) regulations (23 CFR Part 774) prohibit the use of publicly owned land of a wildlife and waterfowl refuge of National, State, or local significance unless:

¹ Protection now authorized under 23 U.S.C. 103(c), 109(h), 138, 325, 326, 327 and 204(h)(2); 49 U.S.C. 303; Section 6009 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act; and 49 CFR 1.48 and 1.51.

"Keep Alaska Moving through service and infrastructure."

- 1) there is no feasible and prudent avoidance alternative and the action includes all possible planning to minimize harm to the property from such use,
- 2) the use of the property, including measures to minimize harm, would have a *de minimis* impact, or
- 3) if the use is greater than *de minimis*, only the alternative that causes the least overall harm may be approved.

As presented in this letter, the analyses indicate that the Revised Proposed Action would not have an adverse effect to the Preserve and FHWA intends to make a *de minimis* impact finding. FHWA will use your written concurrence regarding impacts in making a final Section 4(f) finding.

Revised Proposed Action

The DOT&PF, in partnership with the FHWA, is proposing to address deficiencies on the Haines Highway from MP 3.5 to 25.3 (Figure 1). On either side of the project corridor, the Haines Highway is constructed to meet a 55 miles per hour (mph) design standard². The Revised Proposed Action would reconstruct the remaining substandard section of Haines Highway to meet the 55 mph design standard, as practicable, with travel lanes and shoulder widths, curves, sight distances, and intersections or driveways to provide safe traffic conditions at a posted speed of 55 mph.

The Proposed Action would

- **Improve the Haines Highway**
and specifically would
 - Realign sections of the highway and straighten most curves to meet design standards with the exception of two curves. Two curves in the vicinity of MP 13 would not be straightened to avoid sensitive resources.
 - Add passing zones³.
 - Widen the roadway shoulders to a continuous 6-foot width and provide minimum sight distance to meet design standards (Figure 2).
 - Construct drainage ditches and upgrade, replace, and/or add new culverts where appropriate.
 - Repave and restripe the roadway and add new signage.
 - Rehabilitate or relocate driveways, turnout access points, and road intersections (including Chilkat Avenue, Klukwan) to meet design standards.
 - Install or upgrade guardrails and other safety features along the highway where needed (Figure 2).
 - Modify the Haines-Fairbanks Pipeline Gate Valve 4's surrounding concrete vault to protect the gate valve and provide a safe road embankment.
 - Relocate utilities where required. Maintain access to utilities not relocated.
- **Replace the Chilkat River Bridge**
and specifically would
 - Install a temporary bridge downstream to be used as a construction staging platform.

² DOT&PF, 2005; AASHTO, 2001; AASHTO, 2013

³ A passing zone is an area on the highway route where the roadway geometry and sight distance permits faster vehicles to overtake slower vehicles in the lane normally used by opposing traffic. Dashed yellow centerline markings indicate where passing is permitted on two-lane, two-way roadways. Personal communication Pat Carroll, P.E., DOT&PF to Jane Gendron, DOT&PF Environmental Impact Manager, May 20, 2013.

- Construct a new bridge directly adjacent to and downstream of the existing bridge with the same lane and shoulder widths as the revised proposed road (Figure 3). The new bridge would be constructed to meet the following criteria:
 - a 55 mph design speed
 - current seismic standards
 - accommodate freight vehicles carrying heavier loads than currently accommodated by the bridge.
- Remove existing bridge deck and rail; cut and remove foundation structures including remnant pilings from previous bridge structures.
- **Improve Highway Protection at Debris and Water Flood Flow Areas** and specifically would
 - Raise the elevation of the highway between 15 to 18 feet at MP 19 and 23.
 - Install four to six larger diameter culverts at each debris flow area (MP 19 and 23).
- **Improve Recreational Access** and specifically would
 - Widen roadway shoulders from 2 feet to 6 feet to improve safety for non-motorized users
 - Construct a parking area for access to the Mount Ripinski Trailhead
 - Improve surfacing and grading of public access points and turnouts within ROW.
 - Improve access to the Chilkat River recreational areas.
 - Add one additional public use and viewing area at MP 20.5

In order to straighten curves and provide for wider roadway shoulders, an additional 25.9 acres of new right-of-way would be required. Most of that acreage (17.6 acres) would be obtained from private owners. An estimated 8.33 acres would be needed from public lands; 2.98 of those acres would be acquired from DNR's Alaska Chilkat Bald Eagle Preserve. Potential impacts of this acquisition are discussed further in the following section on proposed impacts and mitigation.

Section 4(f) Property Description

The Preserve is owned by the State of Alaska and co-managed by DNR DPOR and Alaska Department of Fish and Game (ADF&G). In 1973, the Alaska legislature established a 4,800-acre critical habitat area to manage this bald eagle concentration; in 1980, a three-year research study provided the basis for establishing the now nearly 50,000-acre Chilkat Bald Eagle Preserve, established in 1982.

The Preserve's primary mission is to protect and perpetuate the world's largest concentration of bald eagles and their essential habitats.

As specified in the statute (AS 41.21.610 (b)), the Preserve is also established to

- (1) *protect and sustain the natural salmon spawning and rearing areas of the Chilkat River and Chilkoot River systems within the preserve in perpetuity;*
- (2) *provide continued opportunities for research, study and enjoyment of bald eagles and other wildlife;*

- (3) ensure to the maximum extent practicable water quality and necessary water quantity under applicable laws;
- (4) provide for other public uses consistent with the primary purpose for which the Alaska Chilkat Bald Eagle Preserve is established; and
- (5) provide an opportunity for the continued traditional and natural resource based lifestyle of the people living in the general areas described in AS 41.21.611 (b), consistent with the other purposes of this subsection and (a) of this section.

The extent of the Preserve is depicted on Figure 4.

Proposed Impacts to the Alaska Chilkat Bald Eagle Preserve

Land acquisition

An estimated 2.98 acres of the Preserve would be permanently acquired as DOT&PF ROW to accommodate the Revised Proposed Action. Also, 1.6 acres of Preserve would be temporarily used to construct proposed stream mitigation activities. This is discussed below under Mitigation.

The Proposed ROW acquisition in the Preserve is summarized below in Table 1 and shown in Figure 5.

Table 1: Summary of Proposed ROW Acquisition in Preserve

DOT&PF Parcel #	Acreage	Approximate Station (beginning-end)	Habitat Type
E-7A	0.46	869 to 874	Forested Upland
E-7B	2.51	877 to 884+50	Forested Upland
E-7C	0.01	865	Forested Upland
Total acres = 2.98			

Public Access

In compliance with the 1987 Cooperative Management Agreement (MOA) between DNR and DOT&PF for this roadway corridor, DOT&PF consulted with your office regarding the proposed project over the past 10 years. After multiple site visits and reviews of public access points along the entire project extent, DOT&PF met with DNR DPOR and discussed recommendations for the existing public access and turnouts along the project corridor (refer to enclosed Coordination between DOT&PF and DNR DPOR).

Most of your recommendations for access point modifications have been incorporated into the Revised Proposed Action (see enclosed Table 2). The enclosed 2009 coordination documentation between DNR and DOT&PF shows the recommended treatment for each identified public access point and DOT&PF's plan for those sites. These are the proposed concept designs and would be finalized prior to construction.

As agreed upon, only the transition between these turnouts and the highway would be improved. Access points and turnouts would not be enlarged or paved unless they are already paved. The intent of the work is to make vehicle transitions safer, not to provide larger access footprints at those locations.

After multiple consultations with DNR and the Chilkat Indian Village, DOT&PF has decided not to make any improvements to the area adjacent to the Chilkat River at the bridge crossing location (HNS-27).

We are proposing one additional public viewing location as a new turnout adjacent to the Council Grounds. Figure 6 shows the location at approximately MP 20.5 where the proposed highway alignment

shifts uphill 150 feet. The abandoned highway pavement adjacent to the Chilkat River would be modified into a vehicle turnout and parking area. This is in an area where eagles congregate, as shown by the perching trees recorded during eagle surveys conducted in the fall of 2013 and 2014. A turnout at this location would provide an additional opportunity for eagle viewing and photography.

Analysis of Affects to Preserve Features and Attributes

As stated above, the Preserve's primary mission is to protect and perpetuate the world's largest concentration of bald eagles and their essential habitats (AS 41.21.610(a)). The land in the DOT&PF ROW is excluded from the Preserve yet DOT&PF and FHWA are working with DNR, ADF&G, and the U.S. Fish and Wildlife Service (USFWS) to avoid and minimize the impacts to eagle habitat within the ROW, to the extent practicable. As a result of public and agency comments, bald eagle surveys were done in the fall of 2013 and 2014. That report is enclosed with this letter (ABR, 2015).

Subsequent to the 2013 and 2014 surveys, analyses were conducted to evaluate the potential for the Revised Proposed Action to affect the bald eagle population that uses the Preserve. The project would cut some perching trees within the DOT&PF ROW, including the ROW that would be acquired from the Preserve at MP 17. Most of the tree clearing would be on the up gradient side of the highway. None of the perching trees directly adjacent to the Chilkat River would be cut. None of the trees on the river side of the public turnouts would be cut.

. No perching or roosting trees would be cut within the Preserve. No bald eagle nests would be removed.

Based on the analysis, the consultant, ABR, recommended that the Revised Proposed Action would not adversely affect the bald eagle population using the Preserve. There are adequate trees that would remain that would continue to provide perching and roosting in this area after project construction (ABR, February 2014). DOT&PF is working with USFWS to develop a mitigation strategy to replace some of the removed perching trees in the ROW. Some concepts include adding trees or perching structures to the river side of the highway where possible.

Based on the analysis of the Revised Proposed Action and its potential to affect bald eagles, FHWS finds that the project would not adversely affect the Preserve's primary mission to protect bald eagles and their essential habitat.

The following table contains the summary of the analysis done to determine if the Revised Proposed Action would be in compliance with the other goals of the Preserve.

Table 3. Compliance with other Alaska Statute Purposes for the Preserve

Goals (AS 41.21.610 (b))	Revised Proposed Action Effects
1. Protect and sustain the natural salmon spawning and rearing areas of the Chilkat River and Chilkoot River systems within the preserve in perpetuity;	Most of the effects to the Chilkat River and its tributaries would be in areas outside of the Preserve. As described below under Mitigation, there are four areas within the Preserve where DOT&PF proposes to enhance salmon spawning and rearing habitat. Natural features would be enhanced by adding tributary sinuosity, shifting tributaries away from the road so they can regain natural functions and stabilizing banks where erosion is affecting

Goals (AS 41.21.610 (b))	Revised Proposed Action Effects
	<p>stream water quality. Some Chilkat River banks in the ROW adjacent to the Preserve would be hardened by vegetated riprap. Most of these banks are already vegetated riprap. Additional habitat would be established at locations selected through consultation with ADF&G, USFWS, and NMFS.</p> <p>Twelve (12) anadromous fish culverts would be upgraded to improve fish passage. A culvert would be removed to return a stream to more natural conditions. Riparian habitat would return to that stream's banks.</p>
<p>2. Provide continued opportunities for research, study, and enjoyment of bald eagles and other wildlife.</p>	<p>All sanctioned access points to land within the Preserve would be maintained and one additional turnout is proposed within the Council Grounds (MP 20.5) that would add a safe location for the enjoyment of eagle observations and photography.</p> <p>Some of the eagle perching trees would be cut within the ROW. Other than the land acquired from the Preserve at MP 17, no trees would be cut within the Preserve. DOT&PF and USFWS are working on opportunities to mitigate for the loss of those trees cut within the ROW. Several opportunities have been identified to plant juvenile cottonwood trees in the ROW near the river around MP 20. There would be no change in opportunities for research and study.</p> <p>ADF&G would still have access to fish wheels in the Chilkat River used for monitoring the strength of salmon returns. DOT&PF would also add vegetated protrusions and ballasted log structures to the river at 25 mitigation sites adjacent to the Preserve. The vegetated protrusions would provide new locations for ADF&G to install fish wheel in the river.</p>
<p>3. Ensure to the maximum extent practicable water quality and necessary water quantity under applicable laws;</p>	<p>The project would not affect water quantity. The project is being designed to provide stable banks along the Chilkat River and its tributaries to ensure water quality. However,</p>

Goals (AS 41.21.610 (b))	Revised Proposed Action Effects
	<p>the Revised Proposed Action at the debris slide area at MP 19 would elevate the roadway and install large box culverts intended to allow slide debris and associated water to flow more naturally into the Chilkat River. These slides contain large amounts of silt, sand, and gravels as well as larger rocks. DOT&PF Maintenance and Operation staff estimates that during current slides, one-half to two-thirds of the slide material now enters the Chilkat River. The material that is deposited on the road is what has been stockpiled in the ROW. Water quality during a slide event is expected to have high suspended solids as slide debris enters the river. Water quality would not be degraded by high organic or artificial pollutants during these events.</p> <p>In accordance with the APDES Construction General Permit, water quality BMPs would be employed during construction to avoid and minimize water quality impacts. Disturbed ground would be stabilized as soon as practicable to provide both short term and long term water quality protection.</p>
<p>4. Provide for other public uses consistent with the primary purpose for which the Alaska Chilkat Bald Eagle Preserve is established; and</p>	<p>The other public uses in the Preserve include personal and commercial boating, fishing, and wildlife viewing. DOT&PF is working with ADFG to retain and improve sanctioned boat launches, as needed. Public turnouts would have operational access. The existing amount of parking would be maintained. Public views of the Preserve at MP 19 and, to a lesser extent, at the Chilkat River Bridge would change because of the proposed highway elevation change. Views at the public turnouts and parking areas would not be dramatically altered. Trees on the riverside of these parking areas and turnouts would not be cut.</p>
<p>5. Provide an opportunity for the continued traditional and natural resource based lifestyle of the people living in the general areas described in AS 41.21.611 (b), consistent with the other purposes of this</p>	<p>DOT&PF, in consultation with local Tribes, has designed the improvements to avoid known subsistence areas. The avoidance, minimization, and mitigation measures that have been developed to avoid impacts to</p>

Goals (AS 41.21.610 (b))	Revised Proposed Action Effects
subsection and (a) of this section.	salmon and eulachon have been reviewed by the Tribes. Chilkat Indian Village's (CIV's) request for the use of bioengineered structures to stabilize the Chilkat River embankments adjacent to the road has been considered. DOT&PF revised Chilkat River mitigation based on consultation with CIV and ADF&G to introduce woody debris along the river to enhance juvenile fish habitat. Introduction of woody debris would not occur in areas used for subsistence (drift nets or set nets).

Impact Avoidance, Minimization and Mitigation Measures

Avoidance Measures:

The following design modifications were implemented to avoid adverse impacts to the Preserve:

- The existing road alignment was followed to the extent feasible.
- Following release of the public review EA in July 2013, many comments were received asking for fewer impacts to the Preserve. Additional modifications were made to retain the existing alignment throughout the project. The previously proposed realignment adjacent to the Chilkat River near MP 8.5 was altered to avoid acquisition of 0.27 acres of the Preserve. The alignment was also adjusted at MP 17 to avoid acquiring 0.61 acres of the Preserve.
- As recommended by DNR, three access points would be blocked (HNS-10, HNS-11, HNS-18) to the public to restore habitat in these unsanctioned use areas where garbage is being dumped and habitat-disturbing activities are occurring.

Minimization Measures:

- Fill slopes in the Chilkat River are as steep as practicable (2:1) to minimize the fill footprint.
- The elevation of the road was adjusted to minimize the extent of the fill footprint throughout the project including in the area needed from the Preserve.
- Based on public comments, the amount of roadway that would be straightened was reduced by reducing the number of passing zones. This would minimize environmental impacts with ROW adjacent to the Preserve.
Public access points and turnouts would not be enlarged; only the vehicular access improved. This would minimize possible secondary impacts from increased public use.

Mitigation Measures:

To mitigate for the unavoidable ROW acquisition, DOT&PF proposes to relinquish approximately 6.16 acres of existing DOT&PF ROW to the Preserve. Figure 5 shows the location of the areas proposed for relinquishment. They are directly adjacent to the areas proposed for ROW acquisition. The ratio of relinquishment to acquirement is 2.1:1.

Table 4: Summary of Proposed ROW Relinquishments to Preserve

DOT&PF Parcel ID	Acreage	Approximate Station (beginning-end)	Habitat Type
R-25A	3.60	865+50 to 877	Forested Upland
R-25B and 25C	2.56	874+50 to 886	Forested Upland

DOT&PF is proposing on-site mitigation to restore and enhance fish habitat along the project corridor. The stream mitigation proposal is based on extensive coordination with a multi-agency team including ADF&G, DNR-DPOR and other state and federal resource specialists. Some of these proposed stream mitigation sites would be on Preserve property and would enhance the Preserve.

Stream mitigation and habitat enhancement activities would be conducted on a total of 1.93 acres divided among four areas in the Preserve. DOT&PF would apply to ADFG for Special Use Permits for these mitigation activities.

These areas are shown on the attached Sheets 1, 2, and 3 of 3– Mitigation Sites Proposed within the Preserve. Each of these sites provides an opportunity to restore and / or enhance the existing stream channels through various methods such as:

- Lengthening the channel to provide more fish habitat
- Shifting the stream further away from the road to avoid storm water pollutants,
- Constructing additional meanders and riparian buffers, and /or stream bank stabilization

Table 5: Summary of Special Use Permit Areas for Stream Mitigation

Figure Set B Sheet	Acreage	Approximate Station (beginning-end)	Habitat Type
Sheet 1 of 3	0.58	513+50 to 516+50	Emergent – permanently flooded wetlands (PEM1H)
Sheet 1 of 3	0.50	520+50 to 523	Emergent – permanently flooded wetlands (PEM1H)
Sheet 2 of 3	0.30	651 to 653+50	Scrub shrub – permanently flooded wetlands (PSS1H)
Sheet 3 of 3	0.55	867+50 to 871+50	Remnant channel and uplands to be converted to riverine/fish habitat

By a separate letter, we will ask for your agreement with the proposed temporary access needed for construction of these proposed stream mitigation projects.

Based on the above information, DOT&PF respectfully requests your written agreement that the Revised Proposed Action, as presented, would not adversely affect the activities, features and/or attributes of the Alaska Chilkat Bald Eagle Preserve.

Haines Highway MP 3.5 – 25.3
Request for concurrence: No Adverse Effect
Alaska Chilkat Bald Eagle Preserve
January 26, 2016

Please contact me at (907) 465-6564, or by email at hilary.lindh@alaska.gov, if you have any questions or would like to discuss this request. If you wish, we can schedule a meeting with DOT&PF, FHWA, ADF&G and DPOR to go over any details of concern.

Sincerely,



Hilary Lindh
Southcoast Region Environmental Manager

I BEN ELLIS, as the official with jurisdiction over the Alaska Chilkat Bald Eagle Preserve, a Section 4(f) property, concur that the project will not adversely affect the activities, features, and attributes that qualify the property for protection under Section 4(f). I have been informed of FHWA's intent to make a *de minimis* impact finding based on the information presented in this letter and the enclosed documentation.


Name: Ben Ellis Title: Division Director Date: 2/3/2016

Enclosures:

Table 2. Turnouts/Recreational Facilities within the Haines Highway (Mileposts 3.5 to 25.3) Project Corridor
Figure 1—Project Location
Figure 2—Typical Section of Roadway and Roadway with Guardrails adjacent to the Chilkat River
Figure 3—Proposed Chilkat River Bridge Location
Figure 4—Alaska Chilkat Bald Eagle Preserve and Critical Habitat Area
Figure 5—Proposed ROW Acquisition and Relinquishments within the Preserve
Figure 6—Proposed New Public Access Turnout at MP 20.5
Sheets 1, 2, and 3, through 3—Mitigation Sites Proposed within the Preserve
2009 Coordination between State of Alaska DNR on Turnout Improvements (Appendix A of Revised Environmental Assessment)
ABR, Inc. *An Assessment of Perch Use and Possible Impacts of Proposed Haines Highway realignments on Bald Eagles During Fall and Winter, 2013, Chilkat River, Alaska.* February 2014 (Appendix G of Revised Environmental Assessment)

CC:

Ryan Thomas, DNR-DPOR Director's Office
Mike Eberhardt, DNR-DPOR Southeast Region Superintendent
Jackie Timothy, ADF&G Habitat, Juneau Area Supervisor
Greg Lockwood, P.E., DOT&PF, Project Manager, Design Group Chief
Jim Scholl, DOT&PF Southcoast Region, Project Environmental Coordinator
Pat Carroll, P.E., DOT&PF Southcoast Region Preconstruction Engineer
Austin Armstrong, P.E., FHWA Area Engineer

References:

AASHTO. 2001. *A Policy on Geometric Design of Highways and Streets.* AASHTO.
DNR DMLW, DPOR. 2002a. *Alaska Chilkat Bald Eagle Preserve Management Plan September 2002.*
Prepared by State of Alaska DNR DMLW, DPOR. Available online at
<http://dnr.alaska.gov/parks/plans/eaglpn/eaglepln.htm>. Last accessed 2014.
DOT&PF. 2005 *Alaska Highway Preconstruction Manuel* Available at
http://www.dot.state.ak.us/stwddes/dcsprecon/pop_preconstman.shtm

**Table 2: Turnouts / Recreational Facilities along the Haines Highway
(Mileposts 3.5 to 25.3) Project Corridor**

Turnout ID	Approximate Milepost/ Figure Set A Sheet Number	Description	Revised Proposed Action
HNS1	4.3/1	Camping and fishing	Accepted DNR's recommendation; Maintain access and provide wider approaches (24 feet wide); Pave to curve return.
HNS2	4.4/1	Fishing	Accepted DNR's recommendation; Provide area for parking.
HNS3	5.7/4	Informal parking/camping area, fishing	Implement a modification of DNR's recommendation; Provide access with one 24-foot-wide driveway; Pave to curve return; Eliminate second driveway.
HNS4	7.3/5	Camping and fishing access	Accepted DNR's recommendation; Provide access with one 24-foot-wide driveway.
HNS4A	7.2/5	Mount Ripinski Trailhead (currently no parking area for this trailhead)	Develop new turnout with parking spaces for seven vehicles to access the Mount Ripinski trailhead near MP 7.
HNS5	7.8/6	River flats, boat launch at high water	Accepted DNR's recommendation; Provide area for parking.
HNS6	8.1/7	Fishing	Accepted DNR's recommendation; Provide area for parking.
HNS7	8.5/8	Access road to boat launch, parking for trailers	Accepted DNR's recommendation; Provide driveway on river side for fishing access.
HNS8	9.9/10	Boat launch and trailer parking	Modified DNR's recommendation; Provide access with one 24-foot-wide approach.

**Table 2: Turnouts / Recreational Facilities along the Haines Highway
(Mileposts 3.5 to 25.3) Project Corridor**

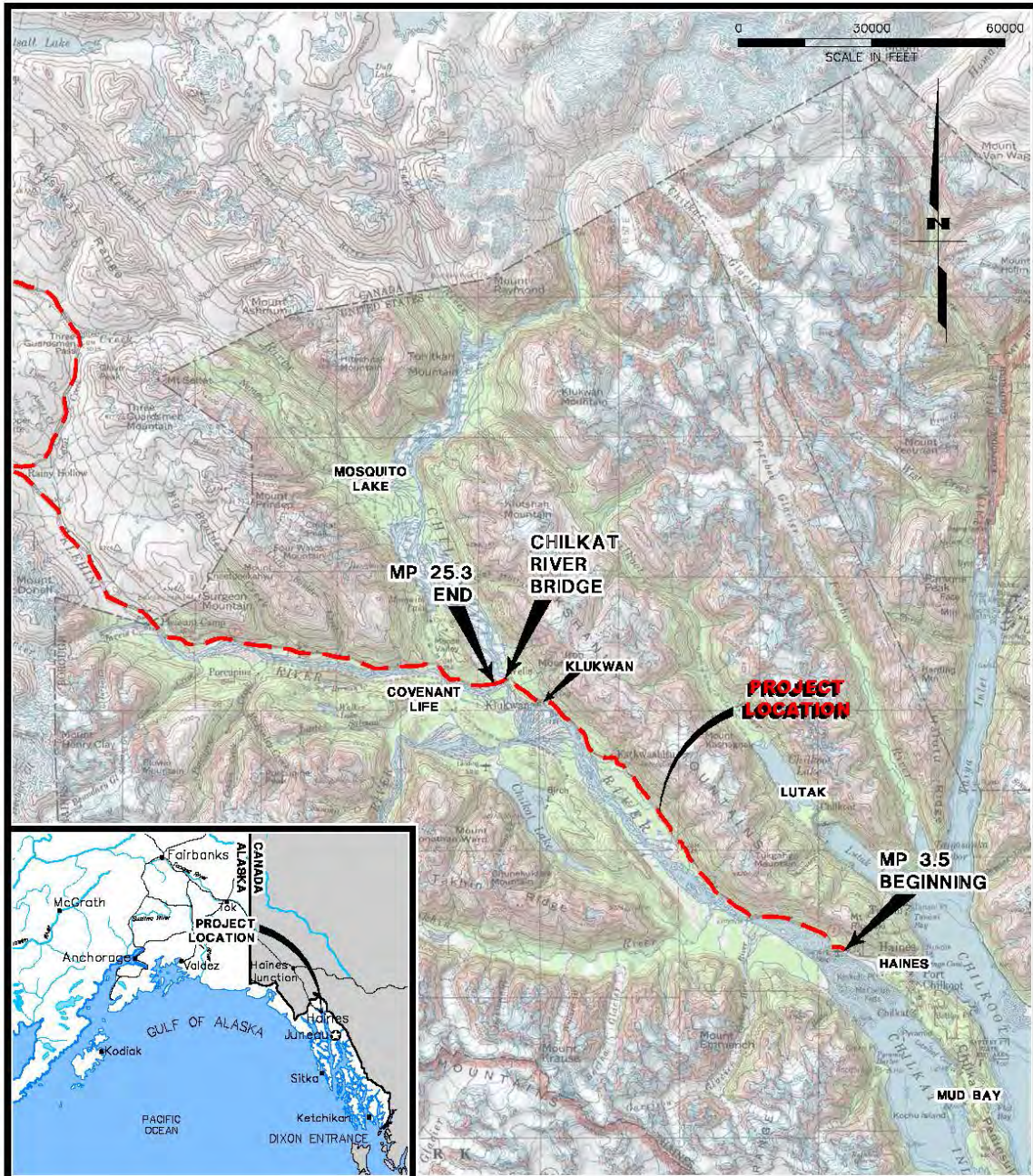
Turnout ID ¹	Approximate Milepost/ Figure Set A Sheet Number	Description	Revised Proposed Action
HNS9	10.9/12	Parking area and unauthorized trash dump	Accepted DNR's recommendation; Develop new parking area for adjacent pond that is sometimes used for ice-skating (see HNS10 and 11).
HNS10	11/12	Approach to an old loop road that encircled a small pond used sometimes for ice-skating (road is no longer drivable)	Accepted DNR's recommendation to remove access; HNS9 would be improved with additional parking for pond area.
HNS11	11.1/12	Approach to an old loop road that encircled a small pond used sometimes for ice-skating (road is no longer drivable)	Accepted DNR's recommendation to remove access; HNS9 would be improved with additional parking for pond area.
HNS12	11.5/13	Canoe launch	Accepted DNR's recommendation to provide access; Provide area for parking.
HNS 13	12.9/15	Steep approach to a small road leading to the river; sometimes used by sport fishermen. Recent river alignment shifts have made boat launching difficult here.	Implement a modification of DNR's recommendation; Provide fill to reduce slope and resurface HNS13 instead of creating new access at HNS14.
HNS14	13/15	No existing use; DNR proposed new boat launch site at HNS14 to replace HNS13.	Implement a modification of DNR's recommendation; It was decided to improve HNS13 instead of creating new access at HNS14.
HNS15	13.8/16	River access, fishing	Implement a modification of DNR's recommendation; Provide two 24-foot approaches and gravel surface to provide parking for up to 10 vehicles; Pave to curve return; DNR Parks would maintain this turnout.

**Table 2: Turnouts / Recreational Facilities along the Haines Highway
(Mileposts 3.5 to 25.3) Project Corridor**

Turnout ID	Approximate Milepost/ Figure Set A Sheet Number	Description	Revised Proposed Action
HNS16	13.9/16	Boat launch site	No proposed improvements at this time.
HNS17	14.3/17	Commercial raft operation retrieval site	Provide area for parking and re-grade from edge of pavement to existing driveway to improve slope for bus traffic; Obliterate and vegetate abandoned road footprint.
HNS18	16/20	Currently used as unauthorized trash dump and for parties	As recommended by DNR, access would be removed. Ditch would be dug across access driveway.
HNS19	19.2/24	Eagle viewing turnout (high use)	Implement a modification of DNR's recommendation; The highway would be raised approximately 15 feet through this area, and parking would be provided at HNS21. No other access proposed.
HNS20	19.4/25	Commercial raft launch and retrieval site	Accepted DNR's recommendation; Provide a plow-friendly approach and pave.
HNS21	19.5/25	Eagle viewing	Implement a modification of DNR's recommendation; Provide access with two 24-foot-wide plow-friendly approaches; Pave to curve return. Remove and revegetate abandoned road footprint.
HNS22	19.8/25	Eagle viewing (photograph opportunities)	Accepted DNR's recommendation to maintain parking and access to existing turnout; No additional parking would be provided.
HNS23	20.2/26	Eagle viewing	Accepted DNR's recommendation to maintain parking and access to existing turnout; No additional parking would be provided.
HNS new	20.5	New area for viewing and photographing bald eagles, other wildlife, and scenery	New eagle viewing turnout would be constructed on existing pavement after highway has been re-aligned away from the river.

**Table 2: Turnouts / Recreational Facilities along the Haines Highway
(Mileposts 3.5 to 25.3) Project Corridor**

Turnout ID	Approximate Milepost/ Figure Set A Sheet Number	Description	Revised Proposed Action
HNS24	20.6/27	Boat launch site	Provide access to scenic view point with two 24-foot approaches. Improve exit/entrance return radii to ease snow plow maintenance.
HNS25	20.6/27	Eagle viewing	Implement a modification of DNR's recommendation; Provide access with two 24-foot approaches; Improve exit/entrance return radii to ease snow plow maintenance.
HNS26	20.8/27	Fishing, bird watching	Implement a modification of DNR's recommendation; Grade approach to match proposed highway grade.
HNS27	23.9/32	Informal boat launch site along Chilkat River banks; DNR recommended construction of a new boat launch	Did not incorporate DNR's recommendation; No access proposed.



P:\Projects\050815\ENV\MG-HAINES.dwg PLOT DATE 2013-01-16 14:30 SAVED DATE 2013-01-16 14:28 USER: beaplin

Project Location
and
Vicinity Map

TS 28/29/30 South, R56/57/58/59 East,
Copper River Meridian, Alaska.

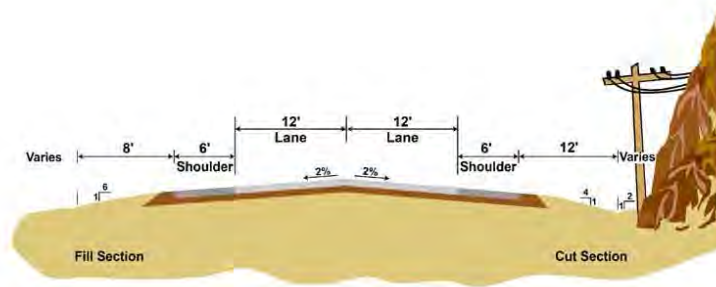


STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

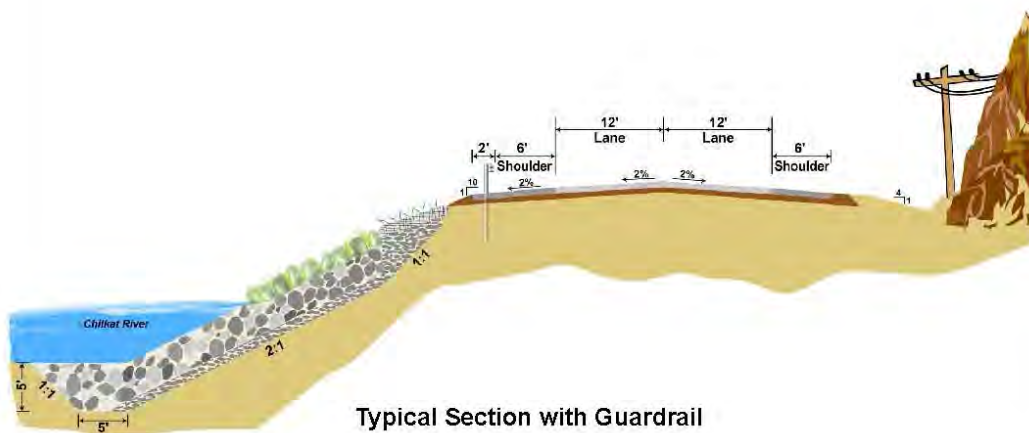
DOT & PF Project No. 68606
HAINES HIGHWAY
MILEPOST 3.5 - 25.3

Haines, Alaska

DATE: JANUARY 2013	FIGURE 1
--------------------	----------



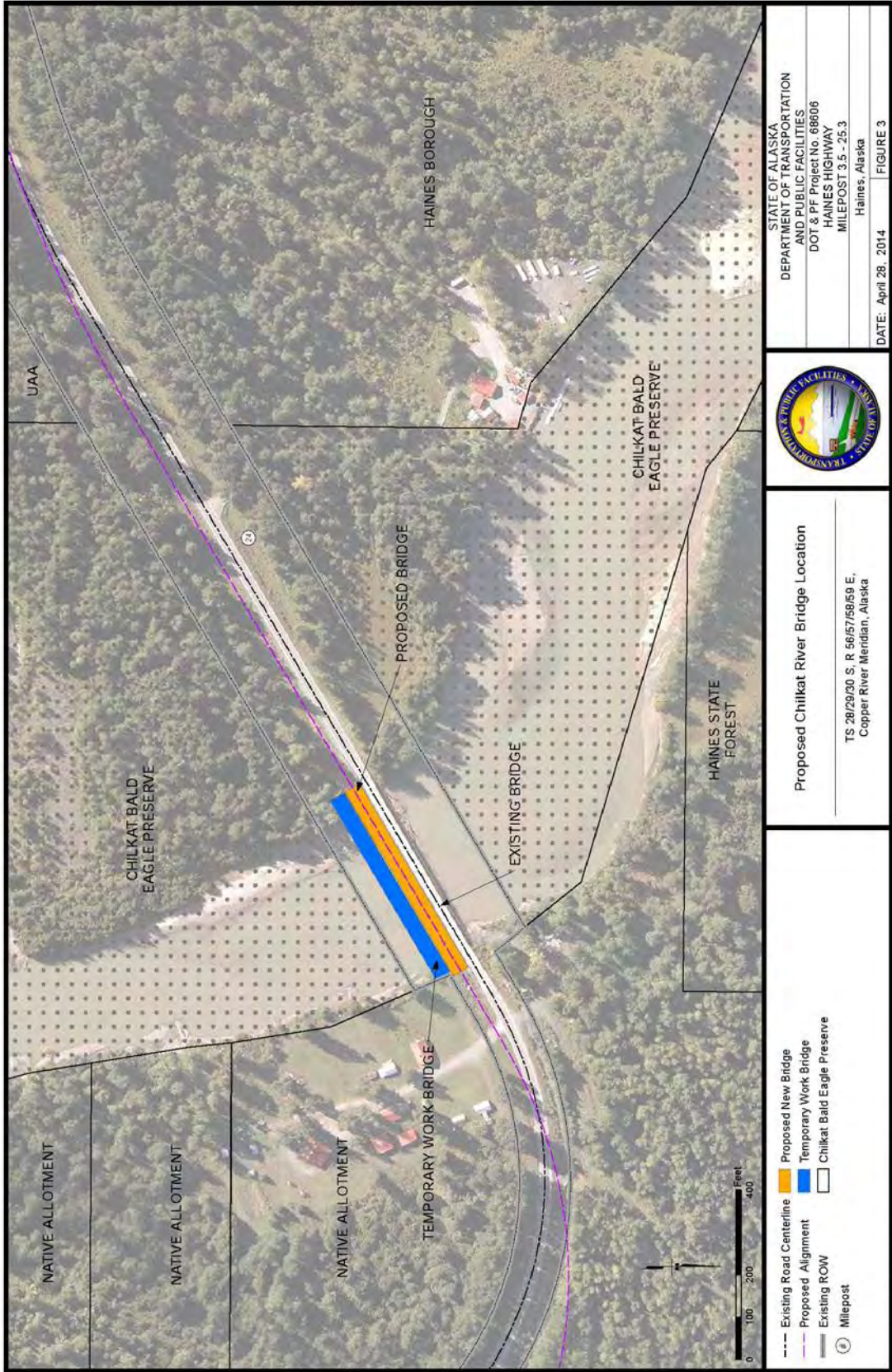
Proposed Typical Section



Typical Section with Guardrail

<p>Proposed Typical Sections</p> <hr/> <p>TS 28/29/30 S, R 56/57/58/59 E, Copper River Meridian, Alaska</p>		<p>STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES DOT & PF Project No. 68606 HAINES HIGHWAY MILEPOST 3.5 - 25.3 Haines, Alaska</p> <p>DATE: Apr 28, 2014 FIGURE 2</p>
--	---	--

P:\Projects\1059110\1059110\SEN\NDR Jane\Figure 2.mod Apr 28, 2014 7:18:23 AM User: charrington

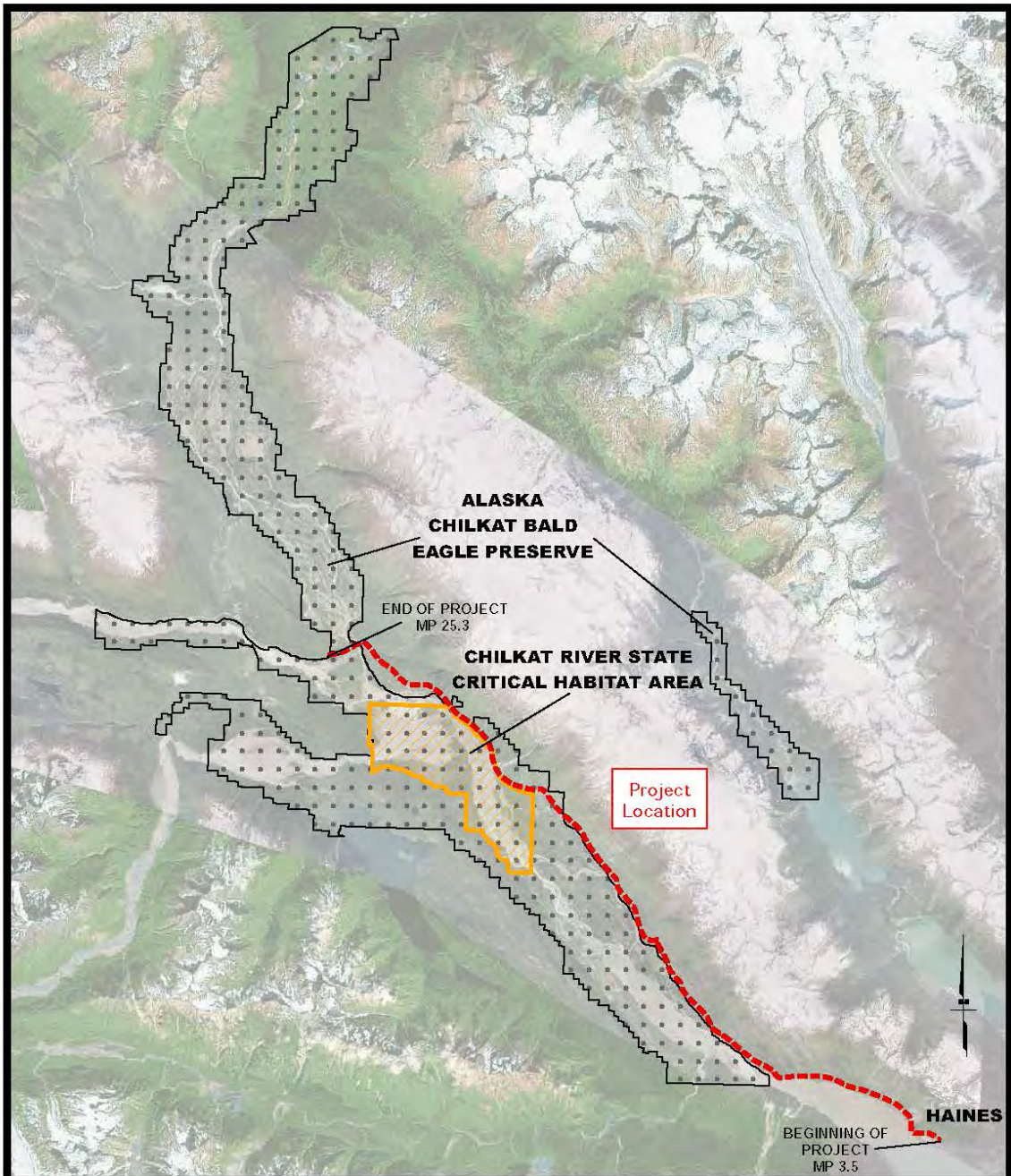


STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 AND PUBLIC FACILITIES
 DOT & PF Project No. 68606
 HAINES HIGHWAY
 MILEPOST 3.5 - 25.3
 Haines, Alaska



Proposed Chilkat River Bridge Location
 TS 28/29/30 S, R. 56/57/58/59 E,
 Copper River Meridian, Alaska

DATE: April 28, 2014 | FIGURE 3



**Alaska Chilkat Bald Eagle Preserve
and Critical Habitat Area**

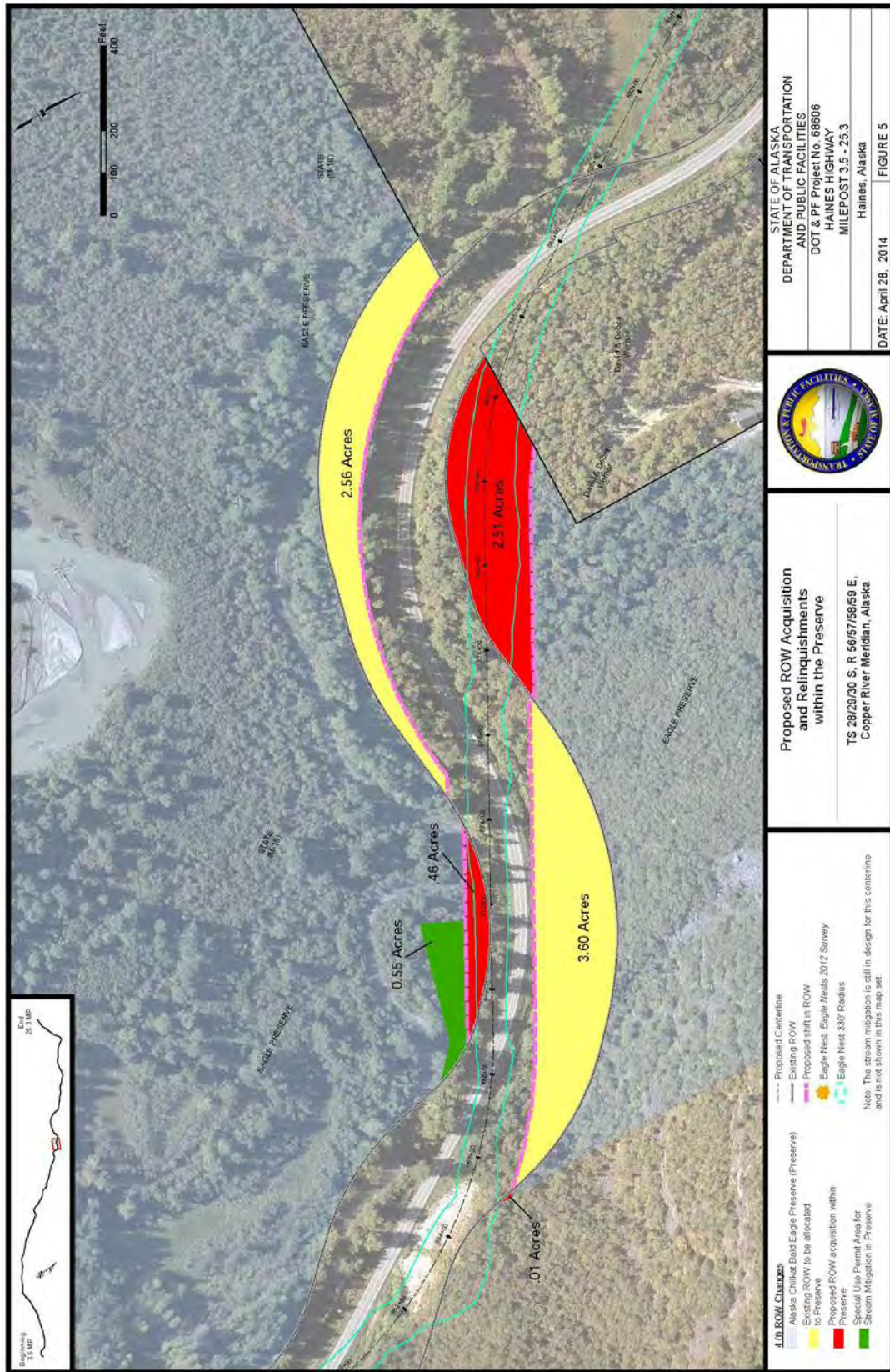
TS 28/29/30 S, R 56/57/58/59 E,
Copper River Meridian, Alaska

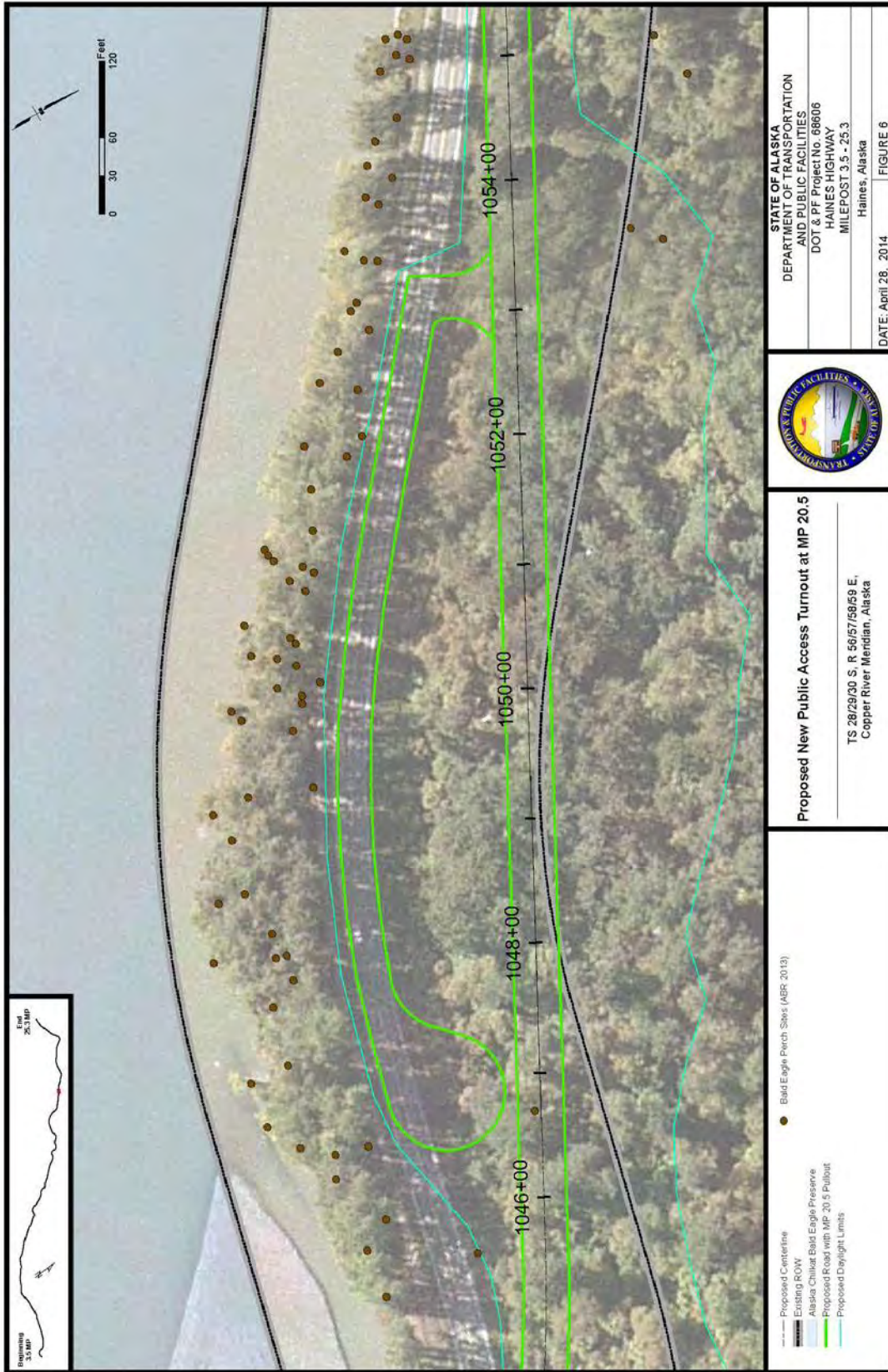


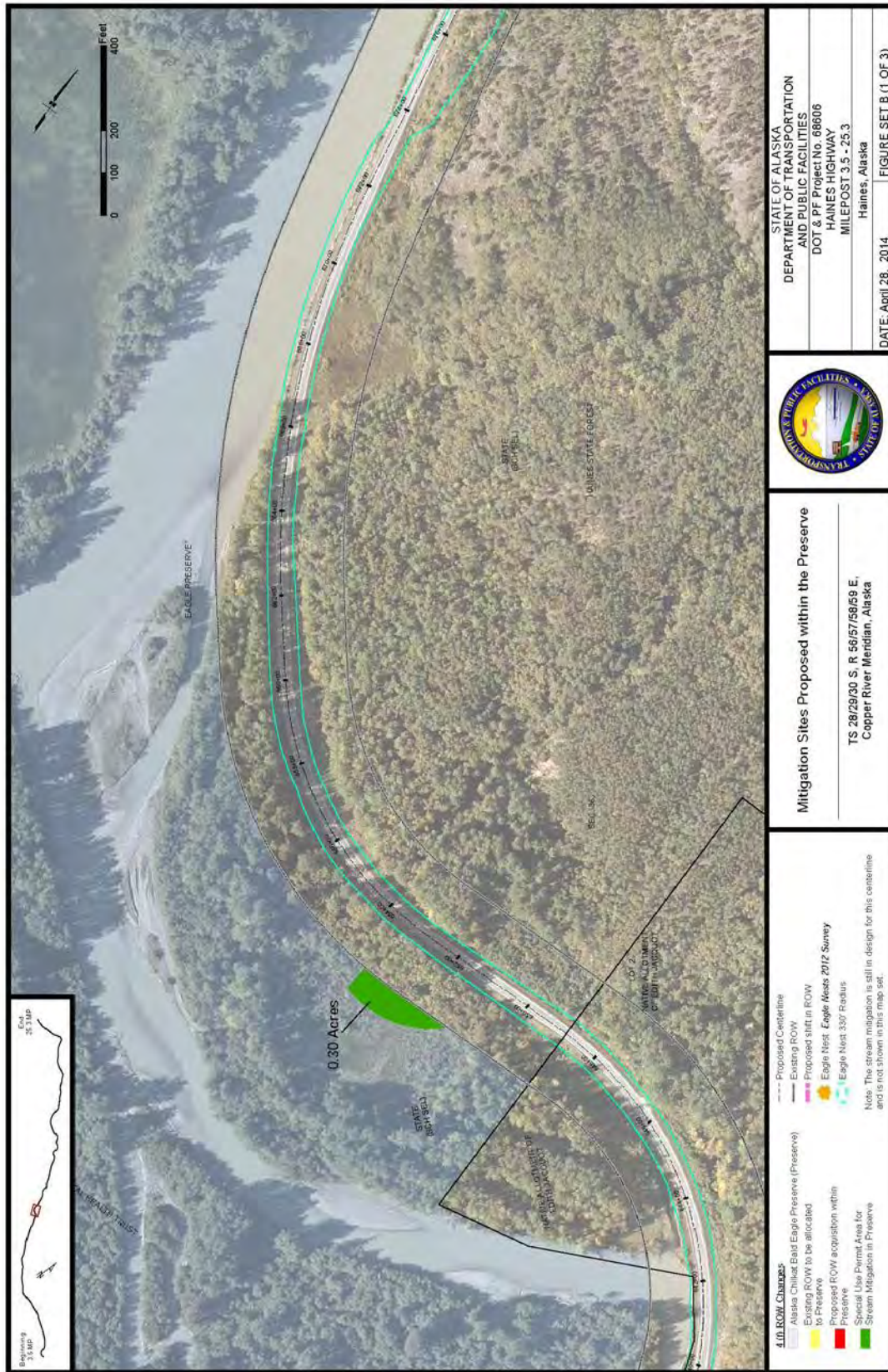
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
DOT & PF Project No. 68606
HAINES HIGHWAY
MILEPOST 3.5 - 25.3
Haines, Alaska

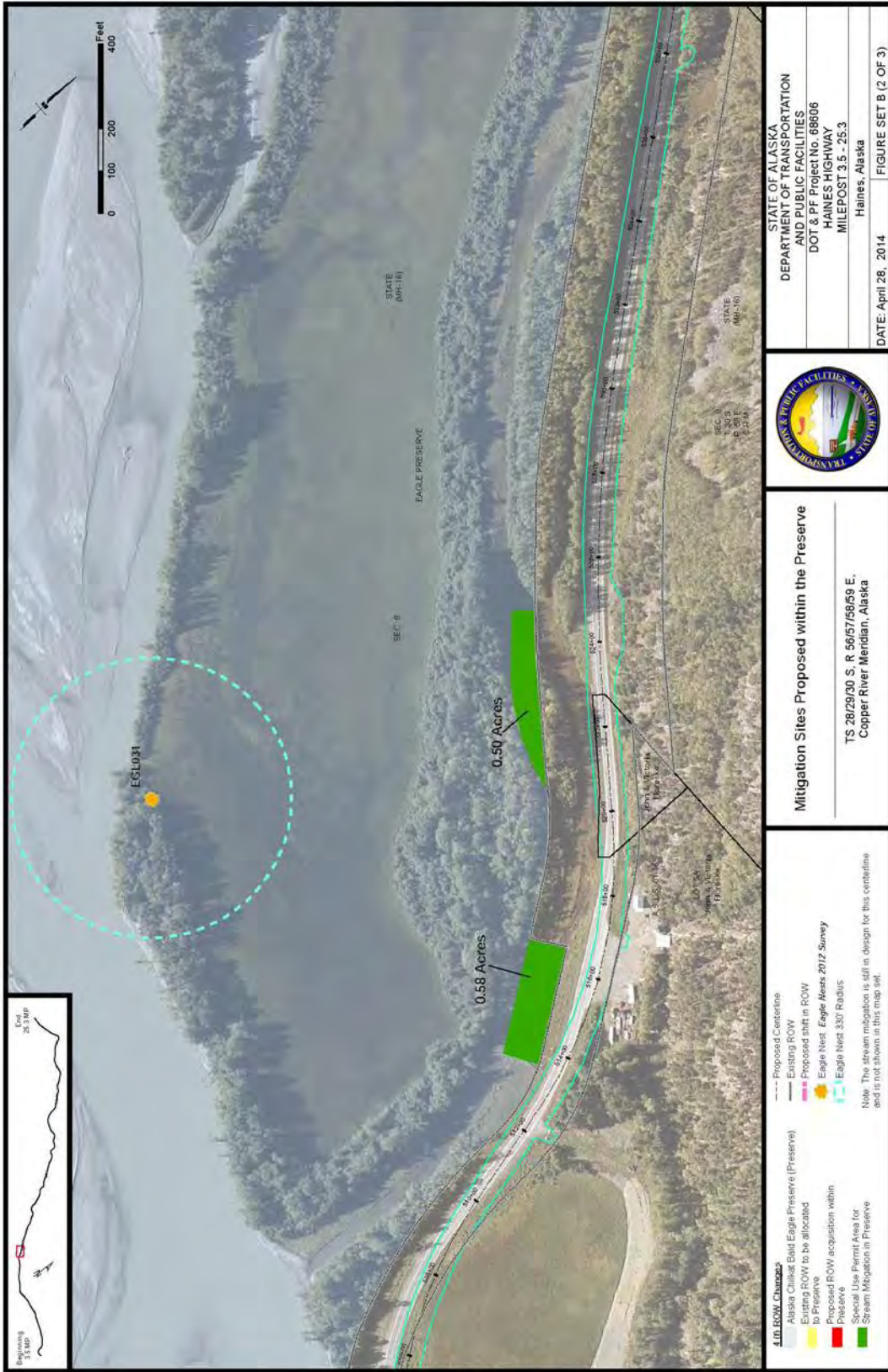
DATE: Apr 28, 2014 FIGURE 4

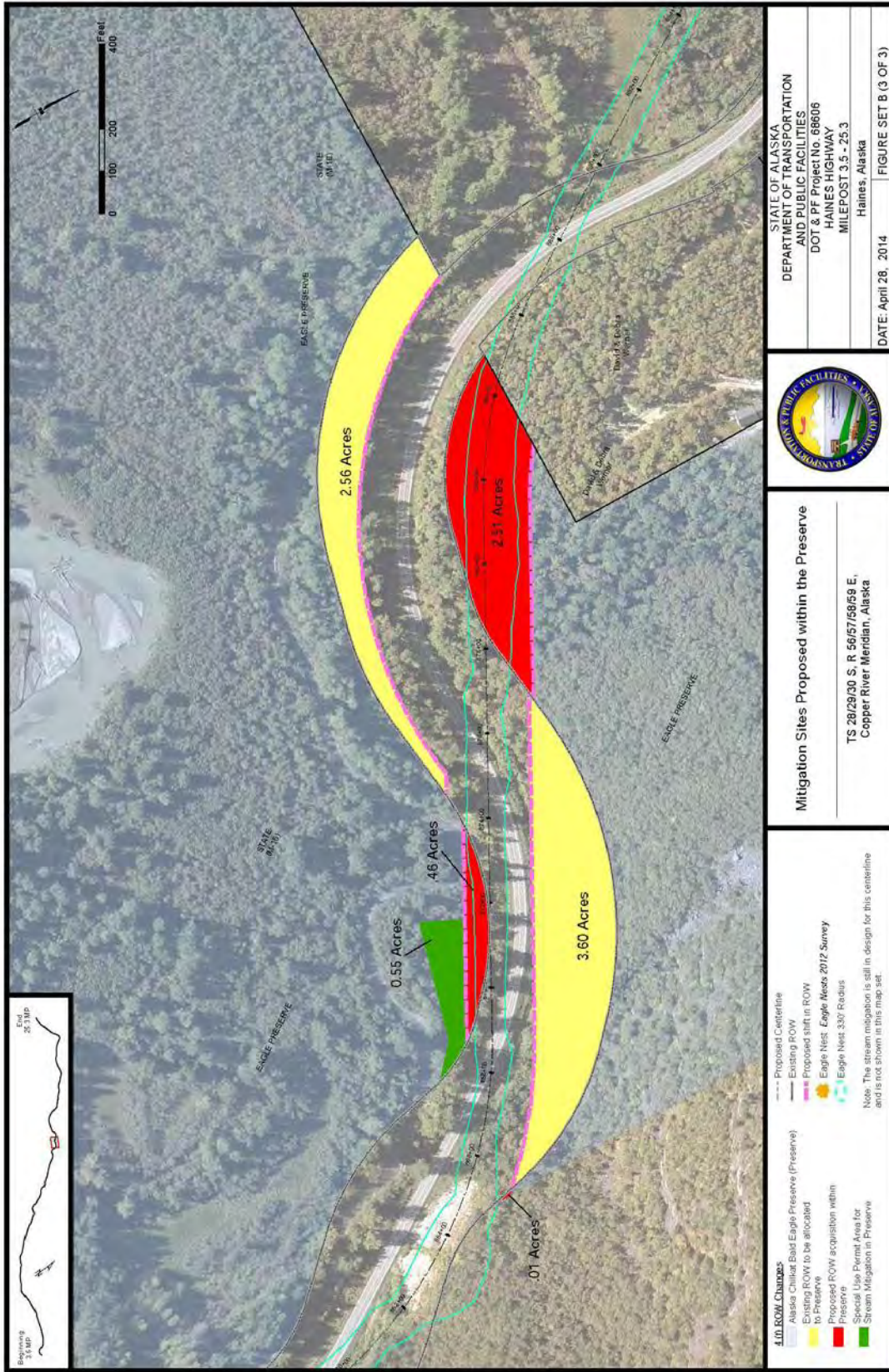
P:\Projects\059116\GIS\EN\ADNR_Jane\Figure4.mxd Apr 28, 2014 7:23:58 AM User: charrington











**See Appendix A in the Final Revised EA.
2009 Coordination between State of Alaska DNR on Turnout Improvements**

See Appendix G of the Final Revised EA.

ABR, Inc. An Assessment of Perch Use and Possible Impacts of Proposed Haines Highway Realignments on Bald Eagles During Fall and Winter, 2013, Chilkat River, Alaska. February 2014.



THE STATE
of ALASKA
GOVERNOR BILL WALKER

Department of Transportation
and Public Facilities

SOUTHCOST REGION
DESIGN & ENGINEERING SERVICES
Preconstruction

5900 C. O. RICHARDS WAY
PO BOX 12506
JUNEAU, ALASKA 99811-2506
MOBILE: 907.461.4466
TOLL FREE: 800.525.4545
TELE: 907.463.64.4

Haines Highway MP 3.5 – 25.3
State/Federal Project No. 68606/SHAK-095-6(28)

May 17, 2016

Mr. Ben Ellis
Director, Division of Parks and Outdoor Recreation
Alaska Department of Natural Resources
550 W. 7th Avenue, Suite 1380
Anchorage, AK 99501-3561

RE: Request for concurrence that the temporary occupancy for stream work does not constitute a use of the Chilkat Bald Eagle Preserve

Dear Mr. Ellis:

As you are aware, the Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Federal Highway Administration (FHWA), plans to improve the Haines Highway from Milepost 3.5 to 25.3. The Alaska Department of Natural Resources (DNR), Division of Parks and Outdoor Recreation (DPOR) concurred with our January 26, 2016 letter that the proposed action would not adversely affect the activities, features, and/or attributes of the Chilkat Bald Eagle Preserve (the Preserve). We now request your concurrence that the temporary access for stream work and related monitoring does not constitute a use of the Preserve as defined by Section 4(f) regulations.

DOT&PF is proposing on-site mitigation to restore and enhance fish habitat (stream work) along the project corridor. The stream mitigation proposal is based on extensive coordination with a multi-discipline team composed of state and federal resource agency staff, including a DPOR representative. While originally conceived as mitigation for stream and wetland impacts within the ROW, some of these proposed stream mitigation sites would be on Preserve property and would enhance the Preserve (see attached Mitigation Areas). Each of the sites provides an opportunity to restore and / or enhance the existing stream channels through various methods such as:

- Lengthening the channel to provide more fish habitat,
- Shifting the stream further away from the road to avoid storm water pollutants, and
- Constructing additional meanders and riparian buffers, and or stream bank stabilization.

Keep Alaska Moving through services and infrastructure.

Table 1: Summary of Proposed Stream Mitigation within the Preserve

	Acres	Linear Feet	Beginning Station	Ending Station	Nearest MP or Landmark	Habitat Type & Benefit	Sheet Number
	0.50	400	520+00	524+00	MP 10.5 Turnout 9	Fish passage, functional lift to upstream wetlands	1 of 3
	0.30	300	649+00	654+50	MP 12.5 Turnout 13	New fish habitat, functional lift to adjacent wetlands	2 of 3
	0.55	400	867+50	871+50	MP 16.5	Forested upland with stream	3 of 3
Total	1.35						

The temporary access for stream work does not constitute a use of the Preserve as defined by Section 4(f) regulations because there would be a temporary occupancy of land so minimal as to not constitute a use within the meaning of Section 4(f). The following conditions are satisfied:

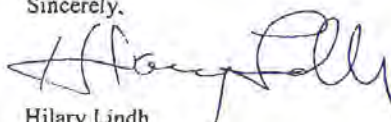
1. The duration of the time needed to construct the stream mitigation would be temporary, i.e., less than the time needed for construction of the project, and there would be no change in ownership of the land.
 - a. The stream channels would take an estimated 3 months to construct in comparison to an estimated 4 years to construct roadway improvements adjacent to the Preserve (from about MP 8.5 to MP 21.5).
 - b. DNR would retain ownership of the land used for the stream mitigation work. Stream work and any related future monitoring or maintenance would be performed in accord with a DPOR Special Park Use permit.
2. The scope of work would be minor, i.e., both the nature and the magnitude of the changes to the Preserve would be minimal.
 - a. The Preserve was established to protect and perpetuate the world's largest concentration of bald eagles and their critical habitat. It also sustains natural salmon runs and allows for traditional uses of salmon. The stream mitigation work would
 - i. improve salmon runs within critical habitat areas which may provide more food for eagles
 - ii. improve salmon runs which may provide more salmon for traditional uses
 - iii. impact less than 0.004 % of the Preserve (approximately 1.4 acres affected of about 48,000 acres, total)
3. There would be no anticipated permanent adverse physical impacts or interference with the protected activities, features, or attributes of the Preserve on either a temporary or permanent basis.
 - a. Permanent physical impacts to the Preserve would be beneficial. Proposed stream work would restore and enhance fish habitat, a stated purpose of the Preserve.
 - b. In-water stream work would proceed under the conditions of a Fish Habitat Permit issued by the Alaska Department of Fish and Game; permit conditions would ensure no interference with fish spawning, rearing or migration periods.
 - c. Stream work would also proceed under the conditions of a DNR-DPOR Special Park Use permit, which would ensure no interference with any of the protected activities, features, or attributes of the Preserve.

May 17, 2016

4. The Preserve land proposed for stream work would be fully restored, i.e., the land would be returned to a condition which is at least as good as that which existed prior to the project.
 - a. The lands to be used for proposed stream work all contain riparian, wetland, and upland areas that provide marginal fish habitat, at best. DOT&PF proposes to restore or enhance fish habitat and leave the land in a better conditions that that which exists currently.

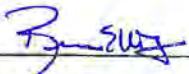
Based on the above information, DOT&PF respectfully requests your written concurrence that the temporary occupancy of Preserve land for stream work is so minimal as to not constitute a use of the Preserve within the meaning of Section 4(f). Please contact me at 465-6564, or by email at hilary.lindh@alaska.gov, if you have any questions or would like to discuss this request.

Sincerely,



Hilary Lindh
Southcoast Region Environmental Manager

I Ben Ellis, as the official with jurisdiction over the Alaska Chilkat Bald Eagle Preserve, a Section 4(f) property, concur that the temporary occupancy Alaska Department of Transportation and Public Facilities requires to conduct stream mitigation work is so minimal as to not constitute a use of the Preserve within the meaning of Section 4(f). I agree that the occupancy would be temporary and there would be no change in ownership of land; the scope of work would be minor; there are no anticipated permanent adverse physical impacts, nor would there be interferences with the protected activities, features, or attributes of the Preserve on either a temporary or permanent basis; and the land would be fully restored to a condition at least as good as that which now exists.

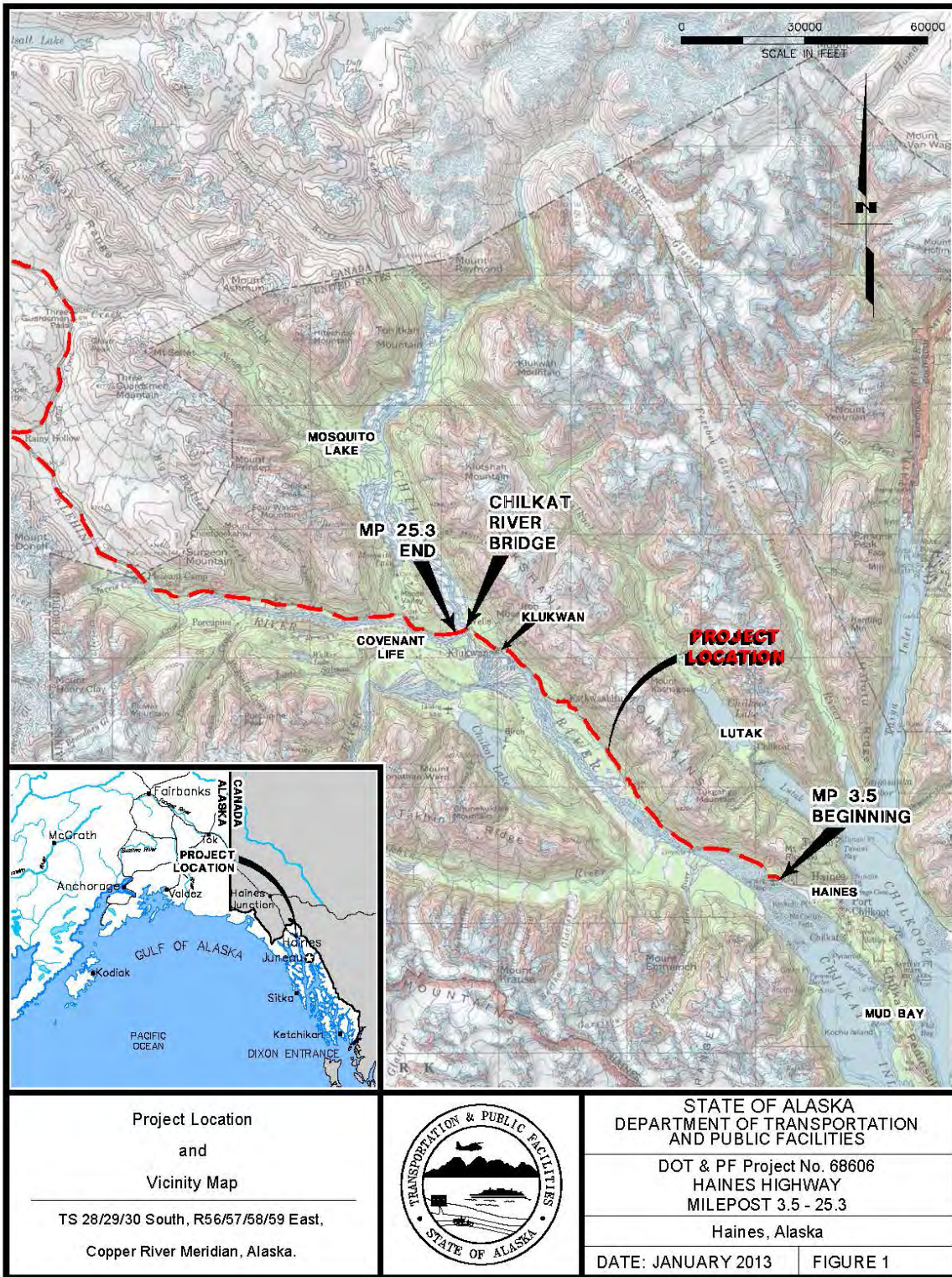

Name: Ben Ellis Title: Division Director Date: 5-18-2016

Enclosures:

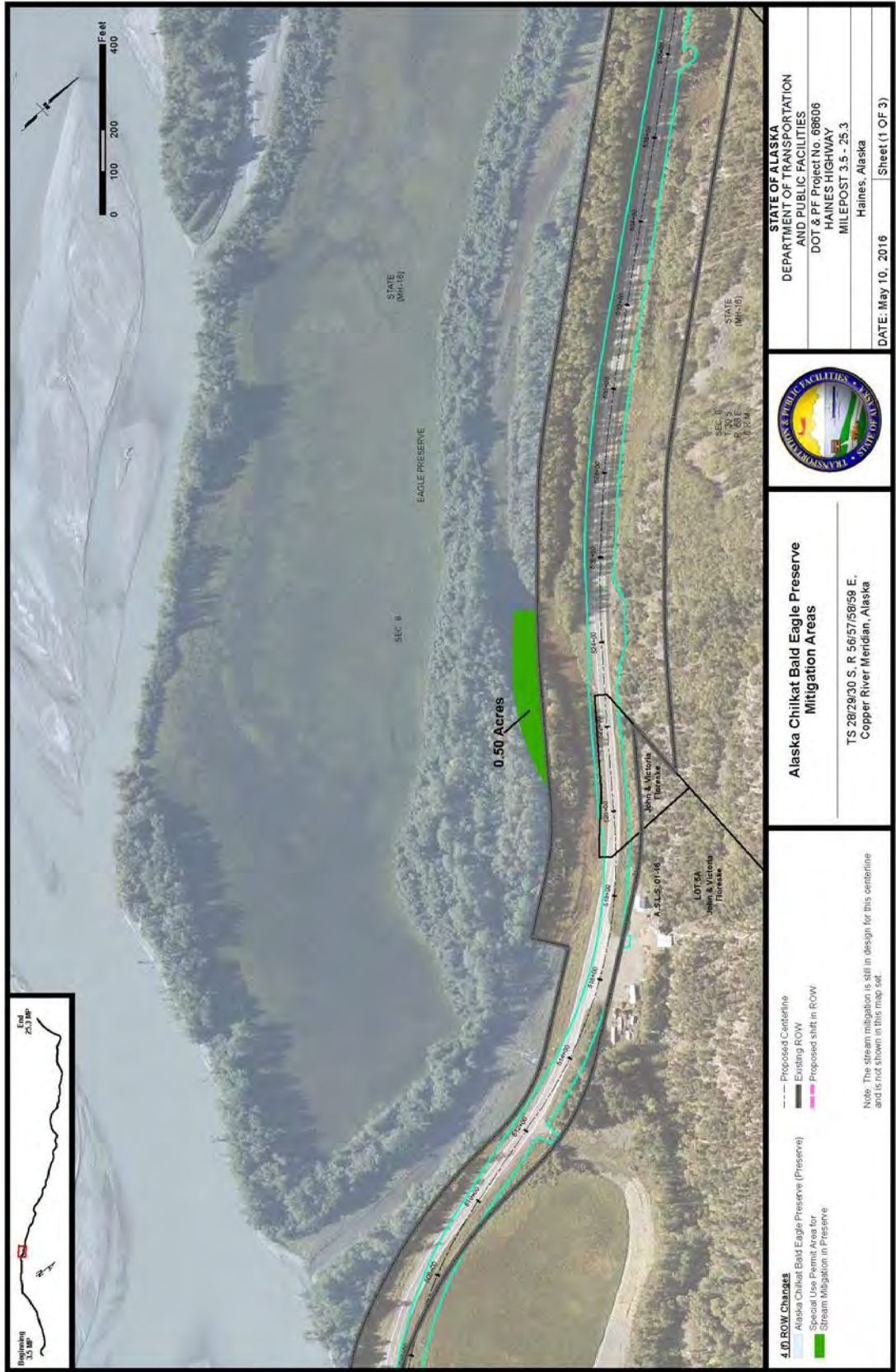
Figure 1 – Location / Vicinity Map
Mitigation Areas – Sheets 1-3

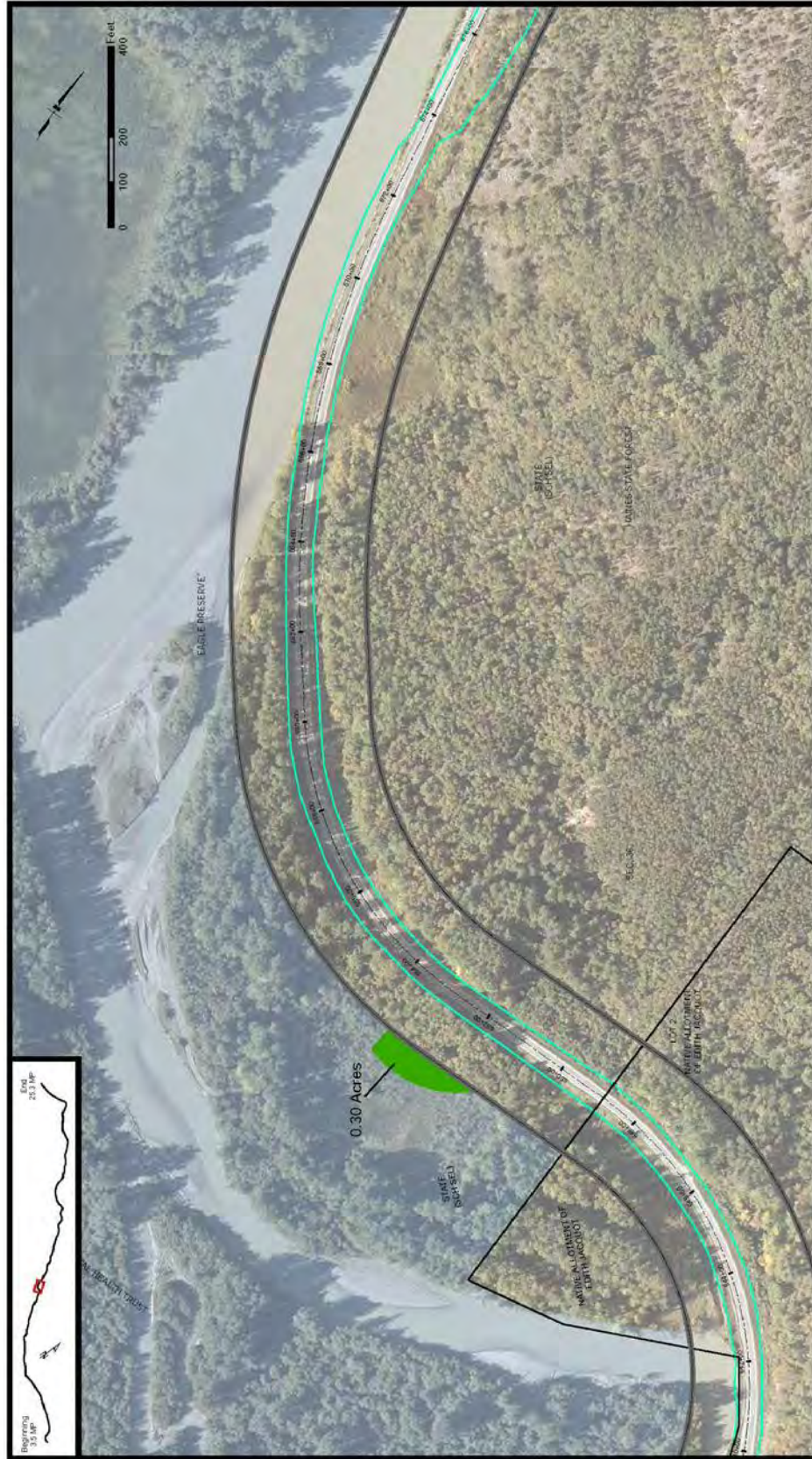
cc w/o enclosures:

Greg Lockwood, P.E. DOT&PF Project Manager
James Scholl, DOT&PF Project Environmental Coordinator



F:\Projects\058115\ENV\WC-HAINES.dwg PLOT DATE 2013-01-16 14:29 SAVED DATE 2013-01-16 14:29 USER: baquinh





STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 AND PUBLIC FACILITIES
 DOT & PF Project No. 68806
 HAINES HIGHWAY
 MILEPOST 3.5 - 25.3
 Haines, Alaska



**Alaska Chilkat Bald Eagle Preserve
 Mitigation Areas**

T.S. 2822930 S. R. 5615758959 E,
 Copper River Meridian, Alaska

4.0 ROW Changes

- Proposed Centerline
- Existing ROW
- Special Use Permit Area for Stream Mitigation in Preserve
- Stream Mitigation in Preserve

Note: The stream mitigation is still in design for this centerline and is not shown in this map set.

DATE: May 10, 2016 | Sheet (2 OF 3)

MEMORANDUM


State of Alaska

Department of Fish and Game
Division of Habitat

TO: Hilary Lindh
Regional Environmental Manager
Department of Transportation & Public Facilities
Southcoast Region

DATE: February 5, 2016

SUBJECT: Haines Highway Realignment -
Impacts on CBEP and CHA
Fish and Wildlife Resources

FROM: Jackie Timothy 
Southeast Regional Supervisor

PHONE NO: (907) 465-4275

In 2013 and 2014, I sent memorandums to Alaska Department of Natural Resources (DNR) Division of Parks and Outdoor Recreation (DPOR) Superintendent Mike Eberhardt regarding the potential for the Alaska Department of Transportation and Public Facilities (ADOT&PF) Haines Highway upgrades to impact fish and wildlife resources and habitats in the Chilkat Bald Eagle Preserve (CBEP) and Critical Habitat Area (CHA).^{a,b} In the memorandums, ADF&G concluded the Haines Highway project, as proposed in the July 2013 Environmental Assessment (EA), would improve fish habitat in the CBEP once the highway and proposed mitigation projects were constructed, and would not negatively affect bald eagles or the natural salmon spawning or rearing areas within the CHA.

In 2015, ADOT&PF revised the EA, further adjusting the road alignment and proposing additional mitigation, in response to public and agency comment. ADF&G's position remains unchanged from 2014 and we agree the Haines Highway project, as proposed in the October 2015 Draft Revised EA, will improve fish habitat in the CBEP once the highway and proposed mitigation projects are constructed, and will not negatively affect bald eagles or the natural salmon spawning or rearing areas within the CHA.

ADF&G was also copied on correspondence from ADOT&PF to DNR DPOR Director Ben Ellis, dated January 26, 2016, summarizing your analysis of the potential of the project to adversely affect the features and attributes of the CBEP, a Section 4(f)^c protected property. As a result of the analysis, ADOT&PF concluded the proposed action would not adversely affect the activities, features, or attributes of the CBEP, including the CHA. I have reviewed the information and concur the proposed action will not adversely affect the activities, features, or attributes of the CBEP.

^a Jackie Timothy, Southeast Regional Supervisor, ADF&G Habitat Division, to Mike Eberhardt, Park Superintendent, ADNR Division of Parks and Outdoor Recreation. Memorandum: Haines Highway Realignment – Impacts on CBEP Fish and Wildlife Resources; dated November 1, 2013.

^b Jackie Timothy, Southeast Regional Supervisor, ADF&G Habitat Division, to Mike Eberhardt, Park Superintendent, ADNR Division of Parks and Outdoor Recreation. Memorandum: Haines Highway Realignment – Impacts on CBEP and CHA Fish and Wildlife Resources; dated June 27, 2014.

^c The Federal Highway Administration's regulations governing the use of land for Federal highway projects in parks, recreation areas, wildlife and waterfowl refuges, and historic sites, are codified at 23 CFR Part 774, but are commonly referred to as Section 4(f) because the requirements originated in that section of the Department of Transportation Act of 1966.

Email cc:

Al Ott, ADF&G Habitat, Fairbanks
ADF&G Habitat Staff, Douglas
Rich Chapell, ADF&G SF, Haines
Mark Sogge, ADF&G CF, Haines
Stephanie Sell, ADF&G WC, Douglas
Mike Eberhardt, ADNR DPOR, Juneau
Jim Scholl, ADOT&PF, Juneau
Cindy Hartmann Moore, NMFS, Juneau
Steve Brockmann, USFWS, Juneau
Randy Vigil, USACE, Juneau

5.2 Chilkat River Bridge



Alaska Department of Transportation and Public Facilities

PROGRAMMATIC SECTION 4(f) EVALUATION FORM for Use of Historic Bridges

Project Name: Haines Highway MP 3.5 to 25.3
Project Number (Federal and State): 0956028/Z686060000
Bridge Name & Number (Federal and State): Chilkat River (Wells) Bridge, DOT&PF Bridge No. 0742
Date: May 16, 2013

This programmatic Section 4(f) form is to be used when a project will “use” a bridge that is on or eligible for listing on the National Register of Historic Places (NRHP) and when the action will impair the historic integrity of the bridge either by rehabilitation or demolition. Rehabilitation that does not impair the historic integrity of the bridge as determined by procedures implementing the National Historic Preservation Act (NHPA) of 1966 is not subject to Section 4(f).

If any of your responses are contained within [brackets], do not continue filling out the form, but consult the State of Alaska Department of Transportation and Public Facilities (DOT&PF) Statewide National Environmental Policy Act (NEPA) Manager for 6004 (for assigned Categorical Exclusion [CE]) or the Federal Highway Administration (FHWA) Environmental Program Manager (for all non-assigned projects) for the appropriate action.

I. Applicability

YES **NO**

The Revised Proposed Action will replace or rehabilitate a bridge with Federal funds.

Include a project description:

The Revised Proposed Action would improve the Haines Highway, replace the Chilkat River Bridge, provide highway protection at debris flow areas, and improve intersections, driveways, and recreational turnout accesses. The Revised Proposed Action components are listed below:

Improvements to Haines Highway

1. Realign sections of the highway and straighten most curves to meet design standards with the exception of two curves. Curves in the vicinity of MP 13 would not be straightened to avoid sensitive resources and to keep the project costs within available funding.
2. Add passing zones.
3. Widen the roadway shoulders to a continuous 6-foot width and provide minimum sight distance to meet design standards (FREA See Figures 1.2-1 through 1.2-3).
4. Construct drainage ditches and upgrade, replace, and/or add new culverts where appropriate.
5. Repave and restripe the roadway and add new signage.
6. Rehabilitate or relocate driveways, turnout access points, and road intersections to meet design standards.

7. Install or upgrade guardrails and other safety appurtenances along the highway where needed (See Figure 1.2-3).
8. Acquire approximately 26 acres of ROW for highway improvements.
9. Relocate utilities where required. Maintain access to utilities not relocated.

Replacement of Chilkat River Bridge

1. Install a temporary bridge downstream to be used as a construction staging platform.
2. Construct a new bridge directly adjacent to and downstream of the existing bridge with the same lane and shoulder widths as the proposed road (See FREA Figure 1.2-4). The new bridge would be constructed to meet the following criteria:
 - a. a 55 mph design speed,
 - b. current seismic standards,
 - c. accommodate a freight vehicle carrying heavier loads than are currently accommodated by the bridge to provide for potential future needs beyond the highway design life of 25 years, and
 - d. consistency with bridges constructed in the Haines Highway MP 24 to border project.
3. Remove existing bridge deck and rail; cut and remove foundation structures including remnant pilings from previous bridge structures.

Improvements for Highway Protection at Debris and Water Flood Flow Areas

1. Raise the elevation of the highway 15 to 18 feet at MP 19 and MP 23.
2. Install four to six larger diameter culverts at each debris flow areas (near MP 19 and MP 23).

Improvements for Recreational Access

1. Widen roadway shoulders from the existing 2 feet up to 6 feet.
2. Construct parking area for access to the Mount Ripinski Trailhead (See FREA Figure 1.2-5).
3. Improve surfacing and grading of turnouts within ROW.
4. Maintain and improve safe access to the Chilkat River recreational areas.

Construction of the Revised Proposed Action would occur in multiple phases. The order and number of phases would vary depending of funding.

- | | | |
|---|--|--|
| 2. The project will require the use of a historic bridge structure which is on or is eligible for listing on the NRHP. | <u>YES</u>
<input checked="" type="checkbox"/> | <u>NO</u>
<input type="checkbox"/> |
| 3. The historic bridge is a National Historic Landmark. | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4. Will the project impair the historic integrity of the bridge either by demolition or rehabilitation? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

5. Describe the Section 4(f) property (i.e., historic bridge) being directly used by any alternative under consideration.

The Chilkat River Bridge was built by the Alaska Road Commission in 1958 on the site of a previous timber trestle bridge. It is a 10-span steel girder bridge on concrete piers and abutments. It is 504 feet long and has a 24-foot-wide deck (Photo 1, Attachment 5.2-1). Although this is not the longest bridge of its type, it is the longest bridge of this type in Alaska that is over 50 years old. It has been determined eligible for listing on the NRHP.

Its method of construction, erected in linear halves while supported on falsework of the former bridge, is unique. This bridge has its original reinforced concrete piers and abutments and reinforced concrete deck. The railings appear like the original and may have been replaced in kind. The bridge has its original four steel stringers; although additional stiffening plates appear to have been added to these sometime later. Additional information on the bridge is included in Appendix C of this FREA.

6. Describe the Section 4(f) site (include a map/plan set/diagram depicting the boundaries and features of the historic bridge in relation to the proposed replacement or rehabilitation):

A. Type (Design) of Historic Bridge:

Continuous-span steel girder construction with concrete piers and abutments. See Figure 5.2-1 and photographs 1, 3 and 4 in Attachment 5.2-1.

B. Ownership:

DOT&PF

C. Location:

At approximately MP 23.8 of the Haines Highway (FREA Figure 1.1-1)

D. Historic Significance:

The bridge is eligible for the NRHP under Criteria C as characteristic of a type, period or method of construction. It is a continuous-span steel girder bridge with concrete piers, abutments and the bridge deck is characteristic of mid-century bridge architecture. A detailed analysis of the historic significance of this bridge is included in Appendix C of the EA.

7. Fully describe the project impacts to the historic bridge. Include a map/diagram depicting the boundaries and features of the historic bridge in relation to the proposed replacement or rehabilitation (it may be possible to include this on the earlier referenced figure).

The historic bridge would be demolished and a new bridge constructed adjacent to and just downstream of it within the DOT&PF ROW (Figure 5.2-1). This Revised Proposed Action would adversely effect the historic bridge.

8. Has State Historic Preservation Office (SHPO) and Advisory Council on Historic Preservation (ACHP) (if appropriate) concurred in writing with the assessment of impacts (i.e., finding of effect) and the proposed mitigation?

YES **NO**

Attach documentation:

SHPO has concurred with the finding of adverse effect. DOT&PF worked with SHPO on an MOA to resolve the adverse effects prior to FHWA issuance of the decision document. The ACHP has declined to participate in the MOA. Documentation of the SHPO concurrence and the ACHP decision follows this evaluation (Attachment 5.2-2).

II. Alternatives and Findings

Support the following project alternatives with evaluations that clearly discuss potential impacts and demonstrate each finding. Include maps and diagrams.

1. Discuss the impacts of the No-Build Alternative:

Demonstrate:

- A. **Maintenance**: *That the action does not correct the situation that causes the bridge to be considered structurally deficient or deteriorated, and normal maintenance is not considered adequate to cope with the situation; or*
- B. **Safety**: *That the action does not correct the situation that causes the bridge to be considered deficient, and the bridge poses serious and unacceptable safety hazards to the traveling public or places intolerable restriction on transport and travel.*

No-build Alternative Discussion:

The No-Build Alternative is also called the No-Action Alternative in this document. Under this alternative, no improvements to the Haines Highway would occur and the bridge would be left as is.

A. **Maintenance**:

The Chilkat River Bridge was constructed in 1958 using design standards from that period and with a design life of 50 years. The bridge is now beyond its 50 year design life and many of its components do not meet current code requirements for performance in the future. DOT&PF bridge inspections have identified structural deficiencies and deterioration of the Chilkat River Bridge that normal maintenance would not address. For example:

BRIDGE RAILS. The existing bridge rails do not meet current safety standards and, if the bridge were to be retained in service, DOT&PF bridge engineers recommend replacement of the rail with one that is crash-tested (Appendix C of the FREA). Normal maintenance would not address this deficiency.

BRIDGE DECK and STEEL GIRDERS. Neither the bridge deck nor the steel girders have adequate strength to meet current design standards for accommodating potential future freight loads. (Appendix C of the FREA). The most common method for strengthening girders involves welding additional steel to the existing structure. Unfortunately, the poor quality of the older steel relative to modern steel makes this technique susceptible to weld cracking which often leads to cracks through the entire steel section and potentially to the failure of the girder. Considering the age of the girders, replacing the girders would be more effective, and may be less expensive, than strengthening them. Normal maintenance would not address these deficiencies.

GIRDER END SUPPORTS. The bridge is located in a high seismic zone and, based on current seismic design standards, the girder end supports are inadequate to accommodate the seismic movements anticipated at this site. Bridges with the same type of inadequate bearing seat width have failed during earthquakes (Photo 2, Attachment 5.2-1). To bring the bridge up to current seismic design standards, DOT&PF Bridge Section recommends several retrofit details such as driving large diameter pipe piles on either side of the existing piers, filling the piles with reinforcing concrete, and casting a concrete cap beam above the piles to encapsulate the upper portion of the existing pier wall. Additional retrofit details include the use of cable restrainers to tie adjacent girder ends together and installation of concrete shear keys between the steel girders. Retrofitting the girder end supports by driving large diameter pipe piles or by adding cable restrainers and concrete shear keys between the steel girders is beyond normal maintenance (Appendix C of the FREA). Normal maintenance would not address these deficiencies.

DOT&PF bridge inspections have also identified structural deficiencies and deterioration of the Chilkat River Bridge that normal maintenance would not address. For example:

"SCOUR CRITICAL" BRIDGE. The concrete piers are pile extensions encased in concrete walls, which normally are buried below the riverbed. In some locations, the walls in the Chilkat River Bridge are not buried and the piles supporting the walls are exposed. Because the piles only extend about 45 feet into the riverbed, they are susceptible to the effects of 'scour', or erosion caused by flowing water where exposed. For this reason, the bridge is classified as 'scour critical' (Appendix C of the FREA). To address the scour critical condition of the piles, the DOT&PF Bridge Section recommends driving large diameter pipe piles on either side of the existing piers. The pipe piles would be filled with a reinforced concrete core. A concrete cap beam would be cast above the two large diameter piles, encapsulating the upper portion of the existing pier wall. The lower portion of the wall would be removed once the cap beam was installed. Normal maintenance would not address these deficiencies nor implement these measures.

The concrete pier walls are also showing signs of deterioration, including concrete spalls (chipping, flaking or scaling damage on the surface) that need to be repaired if the bridge is retained.

BRIDGE DECK. The concrete deck has damaged and delaminated concrete and exposed reinforcing bars. Repair would include cleaning and coating exposed reinforcing steel; chipping the concrete to expose sound material; and then patching with concrete or high-strength grout. These measures are considered beyond normal maintenance. Additionally, the deck expansion joints leak water onto the end diaphragms and substructure, contributing to deterioration of the structure as a whole. The joints would need to be replaced, which is also beyond normal maintenance.

BRIDGE PAINT. The paint on the steel girders is deteriorated and girders need repainting, which in most cases would be considered normal maintenance. However, due to girder age they are likely coated with lead-based paint which needs to be removed prior to repainting. Removal of the lead-based paint and repainting the girders is beyond normal maintenance because the work would require specialized contractors.

NAVIGATION. The Chilkat River is on the USCG list of navigable waters in Alaska. Navigational clearance is reduced during high water events or when there are logjams built up against the piers. Photograph 3 (Attachment 5.2-1) illustrates the lack of clearance at high water, and Photograph 4 (Attachment 5.2-1) shows how debris can accumulate around the piers at low water. Normal maintenance would not address low clearance during high water events.

The No-Build Alternative does not address bridge deficiencies.

B. Safety:

N/A

Finding: The No-Build Alternative has been evaluated for impacts and has been determined for reasons of maintenance and safety not to be feasible and prudent. YES NO

The bridge is at the end of its design life and is showing signs of deterioration. The No-Build Alternative would result in a bridge that remains deficient.

2. Discuss building a new structure at a different location without using the historic bridge or affecting the historic integrity of the old bridge:

Demonstrate:

A. Terrain: *That the present bridge structure has already been located at the only feasible and prudent site (i.e., a gap in the land form, the narrowest point of the river canyon, etc.), and to build a new bridge at another site will result in extraordinary bridge and approach engineering and construction difficulty or costs, or extraordinary disruption to established traffic patterns;*

OR

B. Adverse Social, Economic or Environmental Effects: *That building a new bridge away from the present site would result in social, economic, or environmental impact of extraordinary magnitude, and such impacts as extensive severing of productive farmlands, displacement of a significant number of families or businesses, serious disruption of established travel patterns, and access and damage to wetlands may individually or cumulatively weigh heavily against relocation to a new site;*

OR

C. Engineering and Economy: *Where difficulty associated with the new location is less extreme than those encountered above, a new site would not be feasible and prudent where cost and engineering difficulties reach extraordinary magnitude, and factors supporting this conclusion include significantly increased roadway and structure costs, serious foundation problems, or extreme difficulty in reaching the new site with construction equipment; additional design and safety factors to be considered include an ability to achieve minimum design standards or to meet requirements of various permitting agencies such as those involved with navigation, pollution, and the environment;*

AND

D. Preservation of Old Bridge: *That it is not feasible and prudent to preserve the existing bridge, even if a new bridge were to be built at a new location. This could occur when the historic bridge is beyond rehabilitation for transportation or an alternative use, when no responsible party can be located to maintain and preserve the bridge, or when a permitting authority, such as the USCG requires removal or demolition of the old bridge.*

New structure in different location discussion:

This alternative changes the road curve geometry between MP 23 and MP 24, constructs a bridge parallel to and just downstream of the existing bridge, and leaves the historic bridge in place.

A. Terrain:

N/A

B. Adverse Social, Economic or Environmental Effects:

Retaining the historic bridge and building a new structure parallel to it would result in additional structures in the water, continued reduced navigational clearance under the bridges during periods of high water, and accumulation of debris around the historic

bridge during periods of low water. When the bridge fails due to current deficiencies, it could result in damage to the new structure and emergency measures that could have a temporary adverse effect on travel and commerce through the transportation corridor, as well as fish and fish habitat. These effects are discussed below.

1. Reduced River Navigation

If the historic bridge is left in place its nine piers would also remain in addition to the three new piers that would support the new structure, resulting in a total of 12 off-set piers in the river. The vertical clearance of the reach of river at this location would be determined by the structure with the least amount of clearance. The historic bridge has a vertical clearance of 9 feet at OHW, while the new structure would provide a vertical clearance of 16 feet at OHW (FREA Figure 4.12-1). If the historic bridge is left in place, vertical clearance would remain at 9 feet at OHW. Benefits to navigation on the river would not occur.

2. Failure of Historic Bridge

As discussed above in the No-Build Alternative discussion, the existing bridge is beyond its design life, is comprised of components that do not meet current design standards, and is structurally deficient and deteriorated. When the historic bridge fails at some future time, it would potentially damage the adjacent new bridge, a situation which would likely require temporary emergency measures that could include restricting load limits on the new bridge, bridge closure, and equipment working in the water. Closures or restrictions on the new bridge would disrupt the major transportation route into and out of Haines, resulting in economic impacts related to freight transportation, tourism, and mobility of residents. Any emergency work in the water to remove bridge debris or repair the new bridge could have a direct adverse effect on fish and fish habitat, and indirect impacts to fisheries harvests.

C. Engineering and Economy:

Constructing a new bridge downstream of the existing bridge (the Revised Proposed Action) and leaving the historic bridge in place adjacent to the new bridge would be engineeringly feasible. Excess costs would come from long-term bridge maintenance and, at the worst case, repairs to the new bridge should the historic bridge fail and cause damage to the new bridge.

D. Preservation of Old Bridge:

DOT&PF finds that constructing a replacement bridge immediately downstream of the existing bridge as described above would not resolve any problems related to the historic bridge's condition or design. The historic bridge is beyond rehabilitation for either motorized or non-motorized transportation use. It is also beyond rehabilitation for an alternative use such as a visual display because of the potential impacts that would be caused by failure of the historic bridge, as discussed above under A.

Adverse Social, Economic or Environmental Effects. Construction of a new bridge in a location immediately adjacent to the old bridge would result in additional structures in the water and associated navigational issues. In-water structures would consist of the existing nine concrete piers plus three new piers offset from the existing, for a total of 12 distinct structures.

No responsible party could be located to maintain and preserve the historic bridge (See Appendix C of this FREA).

- DOT&PF's Bridge Design Section considered the potential to reuse the bridge on the Klehini Bridge Replacement project, but found it was not prudent since the existing bridge would not meet standards for the seismic conditions in Klehini crossing area.

- DOT&PF approached Southeast Roadbuilders in Haines to see if they were interested in salvaging, restoring, and reusing the bridge. Although Southeast Roadbuilders has acquired bridges for reuse in the past, they noted that they have not been successful in using the bridges obtained and that they did not see the value in trying to salvage this bridge, given the time and effort it would take to keep it structurally sound.
- DOT&PF also approached the Haines Borough to assess their interest in salvaging the bridge. The Haines Borough indicated that they could not salvage and reuse the bridge.

Finding: Constructing a bridge on a new location or parallel to the historic bridge has been evaluated and is not considered feasible and prudent.

YES **NO**

Building a new bridge downstream within the DOT&PF ROW, adjusting the geometry of the road curve between MP 23 and 24, and leaving the historic bridge in place is feasible from an engineering perspective, but is not prudent because:

- it would result in social, economic and environmental impacts; and
- no responsible party can be located to maintain and preserve the bridge.

3. Discuss rehabilitating the historic bridge without affecting the historic integrity of the structure, as determined by the Section 106 procedures implementing the NRHP and fully discuss the resulting impacts.

Demonstrate:

- A. *That the bridge is so structurally deficient that it cannot be rehabilitated to meet minimum acceptable load requirements without affecting the historic integrity of the bridge; OR*
- B. *That the bridge is seriously deficient geometrically and cannot be widened to meet the minimum required capacity of the highway system on which it is located without affecting the historic integrity of the bridge. Flexibility in the application of AASHTO geometric standards should be exercised, as permitted in Code of Federal Regulations (CFR) 23 CFR Part 625, during the analysis of this alternative.*

Rehabilitating the bridge discussion:

A. Structural Deficiencies

The strength of the bridge deck and steel girders can be improved for anticipated future loads, the ‘scour critical’ condition of the bridge can be corrected, and seismic retrofits can be constructed to rehabilitate the bridge. However, the measures needed to rehabilitate the bridge include either replacement and modification of existing bridge components, or addition of new components such as large diameter pipe piles. According to M. Yarborough, taking these rehabilitation measures would affect the historic integrity of the bridge (CRC Memorandum August 9, 2010 revised September 28, 2015; see Attachment 5.2-3).

B. Geometric Deficiencies

N/A

Finding: Rehabilitation without affecting the historic integrity of the bridge has been evaluated and is not considered feasible or prudent.

YES **NO**

These measures would impair the historical integrity of the bridge (Attachment 5.2-3). Rehabilitation of the bridge, while feasible, would affect its historic integrity and is not considered prudent.

III. Minimization of Harm

YES **NO**

1. Have you identified measures to minimize harm on the Section 4(f) property?

Measures to minimize harm will consist of those measures necessary to preserve the historic integrity of the site and agreed to, in accordance with 36 CFR Part 800 and the 2014 *Programmatic Agreement...for the Federal-Aid Highway Program in Alaska*, DOT&PF, SHPO, and as appropriate, ACHP:

For bridges that are to be rehabilitated, the historic integrity of the bridge is preserved, to the greatest extent possible, consistent with unavoidable transportation needs, safety, and load requirements.

Not Applicable

For bridges that are to be rehabilitated to the point that the historic integrity is affected or that are to be moved or demolished, the DOT&PF (in accord with the 2014 *Programmatic Agreement...for the Federal-Aid Highway Program in Alaska*) ensures that, in accordance with the Historic American Engineering Record standards, or other suitable means developed through consultation, fully adequate records are made of the bridge.

Not Applicable

For bridges that are to be replaced, the existing bridge is made available for an alternative use, provided a responsible party agrees to maintain and preserve the bridge.

The bridge was made available; no responsible party was identified.

For bridges that are adversely affected, written agreement with SHPO and ACHP (as appropriate) is reached through the Section 106 process of the NHPA on measures to minimize harm and those measures are incorporated into the project. This programmatic Section 4(f) evaluation does not apply to projects where such an agreement cannot be reached.

An MOA has been executed between DOT&PF and SHPO for resolution of adverse effects on the bridge. Mitigation measures include architectural documentation and development of an interpretive wayside.

Discuss minimization measures and attach relevant documentation:

The following measures have been developed in consultation with SHPO and are documented in the Memorandum of Agreement Between the DOT&PF and the Alaska SHPO pursuant to 36 CFR 800.6(c) regarding the Haines Highway MP 3.5- MP 25.3 – Project No. Z686060000 signed on June 2, 2016 (Attachment 5.2-4):

- The DOT&PF shall submit architectural documentation of the Chilkat River Bridge (also known as the “Wells Bridge”, SKG-247) to SHPO. The documentation shall meet Historic American Engineering Record (HAER) documentation Level II standards and include copies of the original plans, and black and white 35-millimeter photographs or digital photographs meeting the standards established by the National Register of Historic Places.
- The DOT&PF shall also submit copies of the architectural documentation to the Sheldon Museum in Haines.
- The DOT&PF shall be responsible for the construction of one (1) interpretive wayside. The interpretive wayside shall be developed by the DOT&PF in consultation with the SHPO.
- Location of the Interpretive Wayside shall be at the site named “Wells Bridge” on Map 12 of the August 2007 Haines Highway Corridor Partnership Plan (approximate location shown as Appendix B to MOA, Attachment 5.2-4).
- Design of the interpretive wayside would be in accord with:
 - The American Association of State Highway and Transportation Officials standards for rest areas, and
 - The Scenic Byways design guide for roadside improvements.
- The wayside shall include one (1) interpretive display panel and its theme will be on the history of transportation and major utilities within the Chilkat Valley including the Tlingit trade route, the Dalton Trail, the Haines-Fairbanks Pipeline, and the Haines Highway. A history of the Chilkat River crossings will also be included.

IV. Coordination

<u>YES</u>	<u>NO</u>
<input checked="" type="checkbox"/>	<input type="checkbox"/>

- 1. Has the proposed project been coordinated with SHPO, ACHP, Tribal and other interested parties (including property owners) as called for in 36 CFR Part 800; and has SHPO (and ACHP if appropriate) concurred in writing with the assessment of the impacts on the proposed project on and the proposed measures to minimize harm for the Section 4(f) property?**

- 2. Summarize coordination and include documentation of concurrence from SHPO. (The regional environmental manager should prepare a letter with the specific language required for the official’s concurrence. A “concurrence line” on the letter is acceptable documentation for compliance.)**

Section 106 consultations occurred throughout the development of the Revised Proposed Action as discussed in detail in Section 4.10, Cultural Resources, and Appendix E, Section 106 Consultation. SHPO concurred with a finding of adverse effect to the Chilkat River Bridge and the proposed measure (development of an MOA) to minimize harm to the Section 4(f) property (Attachment 5.2-2). An MOA between DOT&PF and SHPO was executed to resolve adverse effects that the Revised Proposed Action would have on the historic Chilkat River Bridge (Attachment 5.2-4).

V. Certification and Approval

I certify that all applicable coordination and consultations have occurred during the development of this Section 4(f) Evaluation, and that this project meets all criteria and findings required for approval under the FHWA, programmatic Section 4(f) evaluation approval dated July 5, 1983.

Certified by:  Date: 8/15/16
Regional Environmental Manager

Based on the above considerations, there is no feasible and prudent alternative to the use of land from the **Chilkat River Bridge** and the Revised Proposed Action includes all possible planning to minimize harm to the **Chilkat River Bridge** resulting from such use.

It has been determined that the project complies with the July 5, 1983, "Final Nationwide Section 4(f) Evaluation and Approval for FHWA Projects that Necessitate the Use of Historic Bridges" (1983 Programmatic), and that:

1. This project meets the applicability criteria prescribed.
2. All of the alternatives set forth have been fully evaluated.
3. The findings in this document, which include that there is no feasible and prudent alternative to the use of the historic bridge is clearly applicable to the project.
4. The project complies with the Measures to Minimize Harm section of the 1983 Programmatic.
5. The coordination called for in the 1983 Programmatic has been successfully completed.
6. For bridge replacement projects, FHWA has coordinated with the USCG.
7. Documentation in the project file clearly identifies the basis for the above determinations and assurances.

The approving authority has ensured that the measures to minimize harm will be incorporated into the project.

Non-Assigned Projects
Approved by:  Date: 8.15.16
FHWA Environmental Program Manager

OR

Assigned CE Projects
Approved by: _____ Date: _____
DOT&PF Statewide NEPA Manager for 6004

List of Attachments:

- Figure 5.2-1 Section 4(f) Properties in Vicinity of Chilkat River Crossing
- Attachment 5.2-1 Photographs
- Attachment 5.2-2 SHPO/ACHP Documentation
- Attachment 5.2-3 CRC Memorandum
- Attachment 5.2-4 Memorandum of Agreement between DOT&PF and SHPO

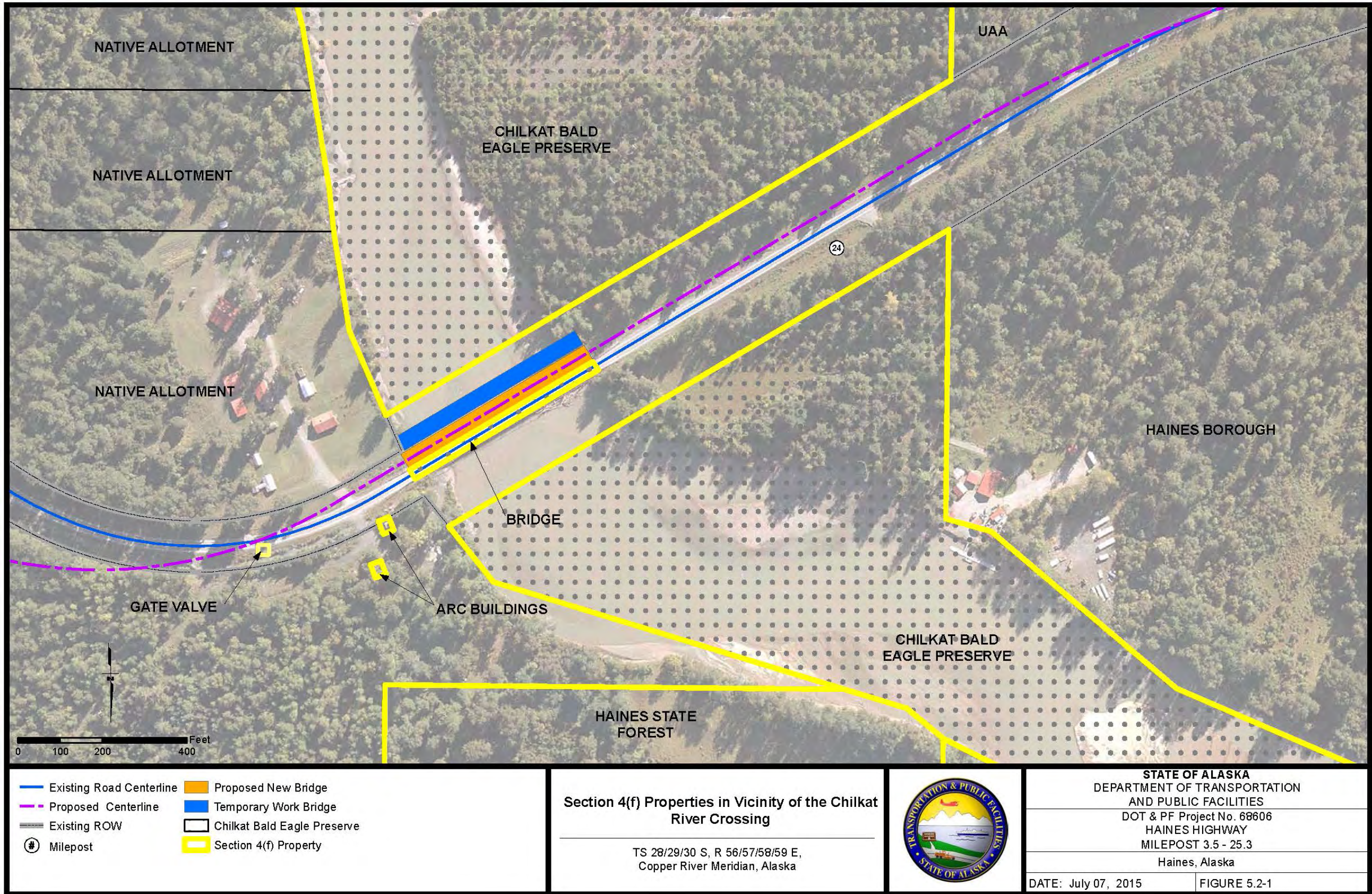


Figure 5.2-1: Section 4(f) Properties in the Vicinity of the Chilkat River Crossing

(This Page Left Intentionally Blank)

ATTACHMENT 5.2-1: PHOTOGRAPHS



Photograph 1: Chilkat River Bridge



Photograph 2: Example of Bridge Damage from Earthquake



Photograph 3: Bridge Low Clearance



Photograph 4: Logjam Underneath Bridge

**ATTACHMENT 5.2-2: STATE HISTORIC PRESERVATION
OFFICE/ADVISORY COUNCIL
ON HISTORIC PRESERVATION DOCUMENTATION**



THE STATE
of **ALASKA**
GOVERNOR SEAN PARNELL

Department of Natural Resources

DIVISION OF PARKS AND OUTDOOR RECREATION
Office of History and Archaeology

550 West 7th Avenue, Suite 1310
Anchorage, Alaska 99501-3565
Web: <http://dnr.alaska.gov/parks/oha>
Phone: 907-269-8721
Fax: 907-269-8708

January 28, 2013

File No.: 3130-1R FHWA

AV
Alex Viteri Jr., P.E.
Federal Highway Administration
Southeast Region Area Engineer
P.O. Box 21648
Juneau, AK 99802-1648



Subject: Haines Highway Improvements between Milepost (MP) 3.5 and 25.3 near Haines, Alaska

Dear Mr. Viteri:

The Alaska State Historic Preservation Office (AK SHPO) received your correspondence (dated January 15, 2013) on January 17, 2013.

As noted within this most recent documentation, our office has previously provided concurrence with FHWA's determinations of eligibility for 25 resources documented within the project's area of potential effects (APE). In addition to this past consultation, our staff has greatly appreciated opportunities to participate in consultation meetings among FHWA and Chilkat Indian Tribal Council and Tribal members to discuss the project.

We understand that a property of religious and cultural significance was identified by the Chilkat Indian Tribe, about which they have requested no information be recorded or shared. We understand that FHWA intends to treat this property as eligible for the National Register of Historic Places (NRHP) and has worked out measures to avoid and minimize adverse effects to it directly through their government-to-government consultation with the Tribe. To honor the Tribe's request and FHWA's government-to-government relationship with the Tribe, our office withholds any further comment on the eligibility of or effect to this property. We have no objection to FHWA's intent to make a Section 4(f) *de minimus* impact finding with respect to this property.

Regarding FHWA's findings of effect for the subject undertaking on the other eligible sites within the APE, we offer the following comments:

- We concur that a finding of **no historic properties affected** is appropriate for the subject undertaking with respect to the following properties: SKG-054 (Yindastuki), SKG-543, SKG-057, and SKG-085.
- We concur that a finding of **no adverse effect** is appropriate for the subject undertaking with respect to the following properties: SKG-044 (Smokehouse Village), SKG-050 (T'Anu Fort), SKG-544, SKG-545, and SKG-537 (Gil Smith House).

- We concur that a finding of **adverse effect** is appropriate for the subject undertaking with respect to the following properties: SKG-247 (Chilkat River Bridge) and SKG-206 (Haines-Fairbanks Pipeline District, Gate Valve #4).

We look forward to receiving the results of the additional field survey that is planned for the expanded APE area in the Klukwan vicinity, as noted within your cover letter.

Additionally, we look forward to continued consultation with FHWA, DOT&PF, and other consulting parties on the subject undertaking and to developing a Memorandum of Agreement (MOA) that would stipulate measures to resolve adverse effects. Please note that the agency official shall notify the Advisory Council of the adverse effect finding (36 CFR 800.6[a][1]).

We agree that archaeological Construction Monitoring as well as opportunities for a Tribal observer during construction should be incorporated into the MOA. The specific stipulations for monitoring requirement as well as stipulations measures to mitigate adverse effects should be developed through consultation amongst FHWA, DOT&PF, the Tribe, SHPO, and other consulting parties, as appropriate.

Please note that as additional information provided by the local government, Tribes or other consulting parties may cause our office to re-evaluate our comments and recommendations.

Thank you for the opportunity to comment. Please contact Shina duVall at 269-8720 or shina.duvall@alaska.gov if you have any questions or if we can be of further assistance.

Sincerely,



Judith E. Bittner
State Historic Preservation Officer

JEB:sad



Preserving America's Heritage

January 30, 2013

David C. Miller
Division Administrator
Federal Highway Administration
Alaska Division
P.O. Box 21648
Juneau, AK 99802-1648

Ref: *Proposed Haines Highway Improvement Project between MP 3.5 and 25.3
Haines, Alaska*

Dear Mr. Miller:

The Advisory Council on Historic Preservation (ACHP) has received your notification and supporting documentation regarding the adverse effects of the referenced undertaking on a property or properties listed or eligible for listing in the National Register of Historic Places. Based upon the information provided, we have concluded that Appendix A, *Criteria for Council Involvement in Reviewing Individual Section 106 Cases*, of our regulations, "Protection of Historic Properties" (36 CFR Part 800), does not apply to this undertaking. Accordingly, we do not believe that our participation in the consultation to resolve adverse effects is needed. However, if we receive a request for participation from the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer, affected Indian tribe, a consulting party, or other party, we may reconsider this decision. Additionally, should circumstances change, and it is determined that our participation is needed to conclude the consultation process, please notify us.

Pursuant to 36 CFR §800.6(b)(1)(iv), you will need to file the final Memorandum of Agreement (MOA), developed in consultation with the Alaska State Historic Preservation Office (SHPO), and any other consulting parties, and related documentation with the ACHP at the conclusion of the consultation process. The filing of the MOA, and supporting documentation with the ACHP is required in order to complete the requirements of Section 106 of the National Historic Preservation Act.

Thank you for providing us with the notification of adverse effect. If you have any questions or require further assistance, please contact Ms. Najah Duvall-Gabriel at 202-606-8585 or at ngabriel@achp.gov.

Sincerely,

LaShavio Johnson
Historic Preservation Technician
Office of Federal Agency Programs

ADVISORY COUNCIL ON HISTORIC PRESERVATION

1100 Pennsylvania Avenue NW, Suite 803 • Washington, DC 20004
Phone: 202-606-8503 • Fax: 202-606-8647 • achp@achp.gov • www.achp.gov

ATTACHMENT 5.2-3: CRC MEMORANDUM



CULTURAL RESOURCE CONSULTANTS LLC

3504 East 67th Avenue
Anchorage, Alaska 99507
(907) 349-3445

August 9, 2010
Revised September 28, 2015

To: Kristen J. Hansen, Senior Environmental Planner, DOWL HKM
From: Michael Yarborough, Senior Archeologist
Re: Chilkat River Bridge

Here are the comments of CRC's industrial archeologist Lawrence Mishkar on the relative effects of widening the Chilkat River Bridge versus adding a new, single lane bridge next to the existing structure.

The Alaska Department of Transportation & Public Facilities (DOT&PF) has set forth two options for possible construction at this site:

1. Widening the existing 1958 steel girder bridge for future traffic needs;
2. Building an entirely new structure and converting the historic bridge to single lane.

Historically, four bridges have carried people and goods across this river near this location, known as "Welles" and "Jacquot's Landing." The first timber trestle bridge was south of the current crossing location. Some of its piles are still visible in the river channel. The current steel and concrete bridge is the third highway bridge constructed at its site.

During the first half of the twentieth century, the time period of the second and third bridge crossings at this locale, remnants of these two timber trestles were visible to the general public. Old pilings and bents presented passersby with a sense of history, illustrating changes in bridge designs and the reconstruction of certain sections destroyed by flooding. In this respect, there has always been a historic record of previous bridges across the Chilkat River.

Even today, pilings and bent components--the remains of the first timber trestle carrying the Dawson Highway and the last timber trestle built here in 1943—remind the public of this historic crossing. A few sets of bents stand upright next to the highway to show the location of the earlier approach from the north as well.

CRC recommended the existing, 1958 bridge as eligible for the National Register because of its unaltered condition. Widening of the bridge deck and changing the concrete abutments, required for a wider deck, would adversely affect the bridge's integrity. The bridge, in its entirety,

Cultural Resource Consultants LLC

Anchorage, Alaska

communicates the traffic requirements and design principals of a time period. It reflects the level of understanding bridge engineers had concerning safety requirements and construction techniques. Alterations to this bridge would forever change this message. While it is possible that the new construction would not greatly change the profile of the bridge, it is not the profile that the general viewing public sees; it is the bridge deck itself, its width and its plan view.

The addition of an entirely new structure next to the current bridge could adversely affect the current bridge's integrity of setting. However, the development would be another bridge, not some structure unrelated to the crossing of the river. And, as outlined above, the remains of former bridges have been, and are currently still, in situ at this location.

It is CRC's opinion that the construction of a new bridge next to the current bridge would not adversely affect the eligibility of the 1958 structure. However, any alteration or rehabilitation of the bridge to address structural deficiencies would affect the historic integrity of the bridge.

ATTACHMENT 5.2-4: MEMORANDUM OF AGREEMENT

**MEMORANDUM OF AGREEMENT BETWEEN
THE ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES,
AND THE ALASKA STATE HISTORIC PRESERVATION OFFICER
REGARDING ADVERSE EFFECTS TO THE CHILKAT RIVER BRIDGE (SKG-247)
RESULTING FROM
THE HAINES HIGHWAY PROJECT FROM MILEPOST 3.5 TO 25.3
PROJECT NO. SHAK-095-6(28)/68606**

WHEREAS, the Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Alaska Division of the Federal Highway Administration (FHWA), proposes to carry out the Haines Highway Milepost (MP) 3.5 to 25.3 Project pursuant to the *Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the Alaska State Historic Preservation Officer, and the Alaska Department of Transportation and Public Facilities Regarding Implementation of Section 106 of the National Historic Preservation Act for the Federal-Aid Highway Program in Alaska* (Section 106 PA) that was signed in October 2014; and,

WHEREAS, the undertaking shall upgrade the existing Haines Highway between MP 3.5 and 25.3 and includes minor highway realignments, shoulder widening, realignment of Chilkat Avenue at the Haines Highway intersection, replacing the Chilkat River Bridge, and other accommodations to improve public safety and maintain recreational access; and

WHEREAS, DOT&PF and FHWA have defined the undertaking's area of potential effects (APE) as described in Appendix A; and

WHEREAS, the FHWA has determined, and the DOT&PF agrees, that the undertaking shall have an adverse effect on the Chilkat River Bridge (SKG-247), which is eligible for inclusion in the National Register of Historic Places (NRHP); and

WHEREAS, the FHWA and the DOT&PF have consulted with the State Historic Preservation Officer (SHPO) pursuant to 36 CFR § 800 of the regulations implementing Section 106 of the National Historic Preservation Act (54 U.S.C. § 300101 et seq.); and

WHEREAS, in accordance with 36 CFR § 800.6(a)(1), the FHWA has notified the Advisory Council on Historic Preservation (ACHP) of its adverse effect determination with specified documentation and the ACHP has chosen to not participate in the consultation pursuant to 36 CFR § 800.6(a)(1)(iii); and

WHEREAS, the FHWA, with the DOT&PF's participation, consulted with the Chilkat Indian Village (CIV), the Chilkoot Indian Association (CIA), and the Central Council Tlingit and Haida Indian Tribes of Alaska (CCTHITA) in order to fulfill Tribal consultation requirements as set forth in 36 CFR § 800.2(c)(2) as it relates to sites of traditional religious and cultural importance; and

WHEREAS, the FHWA, with the DOT&PF's participation, consulted with the Sealaska Corporation; Sealaska Heritage Institute; and Klukwan, Incorporated; and

WHEREAS, Tribal consultation identified cultural resources of Tribal concerns within the

1

Haines Highway Project From MP 3.5 to 25.3
Fed/State Project Number SHAK-095-6(28)/Z686060000

MOA
June 1, 2016

project's area of potential effect, and

WHEREAS, to address Tribal concerns, the FHWA and the DOT&PF refined the project design to not adversely affect such cultural resources and shall establish a Memorandum of Understanding with the CIV and the CIA for construction archaeological monitoring in sensitive areas, to also include Tribal monitors, which are separate and outside the terms of this Agreement; and

NOW, THEREFORE, the SHPO, and the DOT&PF (collectively "Signatories") agree that the undertaking shall be implemented in accordance with the following stipulations in consideration of the effects this undertaking shall have on the Chilkat River Bridge (SKG-247).

STIPULATIONS

The DOT&PF shall ensure that the following stipulations are implemented:

I. Professional Qualifications Standards

Unless otherwise specified, all work carried out under the terms of this Agreement shall be conducted and/or supervised by a qualified professional(s) who meets the Secretary of the Interior's (SOI) Professional Qualification Standards set forth in 36 CFR § 61 and who has previous related experience in documentation of historic bridges, Historic American Building Survey/Historic American Engineering Record (HABS/HAER) recordation, photography of structures, and interpretation of drawings.

II. Mitigation Measures for the Resolution of Adverse Effect on SKG-247, the Chilkat River Bridge

A. Architectural Documentation

1. The ACHP issued a Program Comment for Common Post-1945 Concrete and Steel Bridges (Program Comment) in 2012, after the FHWA and DOT&PF initiated consultation with the SHPO, and after DOT&PF completed HABS/HAER architectural documentation of the Chilkat River Bridge in anticipation that it would be used for mitigation for the bridge replacement.

Although the Program Comment indicates that HABS/HAER architectural documentation is no longer required for these bridge types, the SHPO will accept the documentation that has already been completed.

2. The DOT&PF shall submit architectural documentation of the Chilkat River Bridge (also known as the "Wells Bridge", SKG-247) to the SHPO. The documentation shall meet HAER documentation Level II standards and include copies of the original plans, and black and white 35-millimeter photographs or digital photographs meeting the standards established by the National Register of Historic Places (National Register).
3. The DOT&PF shall also submit copies of the architectural documentation to the

Sheldon Museum in Haines.

B. Interpretive Wayside

1. The DOT&PF shall be responsible for the construction of one (1) interpretive wayside. The interpretive wayside shall be developed by the DOT&PF in consultation with the SHPO.
2. Location of the Interpretive Wayside shall be at the site named “Wells Bridge” on Map 12 of the August 2007 *Haines Highway Corridor Partnership Plan* (approximate location shown in Appendix B)
3. Design of the interpretive wayside shall be in accord with:
 - a. The American Association of State Highway and Transportation Officials standards for rest areas¹, and
 - b. The Scenic Byways design guide for roadside improvements².
4. The wayside shall include one (1) interpretive display panel and its theme shall be on the history of transportation and major utilities within the Chilkat Valley including the Tlingit trade route, the Dalton Trail, the Haines Fairbanks Pipeline, and the Haines Highway. A history of the Chilkat River crossings shall also be included.

III. Mitigation Deliverables

A. Architectural Documentation

1. The DOT&PF has completed the architectural documentation, in accordance with *HABS/HAER/HALS Documentation for the Mitigation of Adverse Effects to Historic Properties* guidance from the Alaska Regional Office of the National Park Service, prior to any actions associated with this project that could disturb the Chilkat River Bridge.
2. The DOT&PF shall submit the architectural documentation required by Stipulation II.A to the SHPO and the Sheldon Museum in Haines within two (2) months from the execution date of this Agreement.

B. Interpretive Wayside

1. The DOT&PF shall submit the graphics, text, and design draft of the interpretive wayside and its display panel required by Stipulation II.B to the SHPO within twelve (12) months from the execution date of this Agreement. The SHPO shall have thirty (30) days from receipt of the DOT&PF submittals to review and comment. The

¹ American Association of State Highway and Transportation Officials, *A Policy on Geometric Design of Highways and Streets*, 2011, 6th Edition, pg. 3-171 to 3-172

² Yamada, A., Ostergard D., Jilbert, M., Brunswick N., *Scenic Byways, A Design Guide for Roadside Improvements*, July 2002

DOT&PF shall make revisions as necessary and resubmit to the SHPO within fifteen (15) days of receiving the SHPO comments. The SHPO shall complete a second review within fifteen (15) days of the revised submittal. DOT&PF shall take into account any comments received during the second review period.

2. The DOT&PF shall install the display panel at the interpretive wayside. Upon completion of the interpretive wayside and before project closure, the DOT&PF shall verify the wayside installation to the SHPO in writing, including photographic documentation.
3. The DOT&PF shall be responsible for maintaining the interpretative wayside.

IV. Treatment of Human Remains

- A. Any and all human remains shall at all times be treated with dignity and respect. Should human remains be encountered, work shall be stopped at once in the locality to prevent further disturbance and the DOT&PF project engineer shall be notified. The DOT&PF project engineer shall immediately notify the DOT&PF Southcoast Environmental Office, the Alaska State Troopers (AST) Missing Persons Bureau, the Alaska State Medical Examiner (SME), Haines Borough Police Department, Alaska Office of History and Archaeology (OHA), and the Tribes. See Appendix C to this Agreement for specific contact information for Agency and Tribal Officials involved with human remains consultation.
- B. The DOT&PF shall defer to the opinion of the AST and/or the SME for a determination of whether the remains are of a forensic nature and/or subject to criminal investigation.
- C. If the AST/SME determines that the remains are neither of a forensic nature nor subject to a criminal investigation, a SOL-qualified physical anthropologist experienced in the analysis of human remains shall examine the human remains to determine racial identity. The physical anthropologist shall document, analyze, and photograph the remains so that an independent assessment of racial identity can be made. The physical anthropologist shall be afforded no more than thirty (30) days' time to conduct his or her analysis.
- D. When a determination has been made by the AST and the SME that a death investigation is not warranted and the remains are not of Native origin, then the DOT&PF in consultation with the SME, shall identify, locate and consult with descendants of the deceased. If no descendants are found, any necessary permits from the Alaska State Bureau of Vital Statistics shall be obtained and the remains re-interred in a designated area.
- E. If the human remains are determined to be of Native origin, the CIV and the CIA shall cooperatively act as a facilitator(s) with other Tribal groups as needed to notify and coordinate with appropriate descendants. In addition, the CIV or the CIA shall conduct appropriate ceremonies and reburial(s) on behalf of the descendants, if requested. All reasonable expenses for this shall be negotiated on a case by case basis and shall be

reimbursed to the appropriate descendant.

- F. Should any associated or unassociated funerary objects, sacred objects, or objects of cultural patrimony as defined by the Native American Graves Protection and Repatriation Act (NAGPRA) (25 U.S.C. § 3001) be encountered, work shall be stopped at once in the locality to prevent further disturbance and the DOT&PF shall immediately notify the local Tribes and the SHPO, and proceed in accordance with Stipulation V *Inadvertent Discoveries*.

V. Inadvertent Discoveries

- A. If, during the implementation of the undertaking, a previously unidentified cultural resource is encountered, or a previously identified historic property is affected in an unanticipated manner, the DOT&PF shall consult with the SHPO, Tribes, and other consulting parties, as appropriate, pursuant to 36 CFR § 800.13. The DOT&PF shall ensure that work shall cease in the area of the discovery until the previously unidentified historic property or unanticipated effect can be evaluated, and an appropriate treatment plan consistent with the Secretary of the Interior's *Standards and Guidelines for Archaeology and Historic Preservation* (48 FR 44716) is developed and agreed upon by the SHPO. The DOT&PF shall ensure that the treatment plan is implemented.
- B. An SOI-qualified Archaeologist(s) shall evaluate any previously-unidentified cultural resource encountered during construction for eligibility to the National Register using established National Register criteria. The DOT&PF shall determine National Register eligibility in consultation with the SHPO, Tribes, and other consulting parties, as appropriate. All National Register evaluations shall follow the *Secretary of Interior's Standards and Guidelines for Evaluation of Historic Properties* and 36 CFR § Part 800.4(c). Disputes concerning eligibility shall be resolved by the Keeper of the National Register (Keeper) pursuant to 36 CFR § 800.4(c)(2).
- C. For those properties that are determined to be eligible for inclusion in the National Register, the DOT&PF shall apply the criteria of adverse effect (36 CFR § 800.5) in consultation with the SHPO, Tribes, and other consulting parties. The views of other consulting parties shall be sought through consultation as appropriate if there is a finding that the project activity shall cause an adverse effect.

VI. Curation

- A. In accordance with the Alaska Historic Preservation Act, Title to Historic, Prehistoric, and Archaeological Resources (Alaska Statute [AS] 41.35.020), "(a) The state reserves to itself title to all historic, prehistoric, and archaeological resources situated on land owned or controlled by the state..." Therefore, artifacts, faunal remains, and related materials collected on land owned or controlled by the state shall be stored at the University of Alaska Museum of the North in Fairbanks in accordance with the DOT&PF curation agreement³. The Alaska Historic Preservation Act also recognizes the cultural rights of

³ Memorandum of Understanding between the Department of Transportation and Public Facilities and the University of Alaska Museum of the North Fairbanks, Alaska, executed January 31, 2014.

Tribal descendants for possession and use of their valued cultural resources. The AS 41.35.020(b) has provisions for Tribes and cultural groups to retain materials from their respective cultures in coordination with the State.

- B. Historic, prehistoric, and archaeological resources recovered from land controlled by the Tribes or other private entities shall remain the property of the landowners.

VII. Review

The Signatories shall review this Agreement two (2) years from its execution date and every two (2) years thereafter or until December 31, 2025. The DOT&PF shall submit a letter status update to the SHPO one (1) month prior to the review. Any amendments to this Agreement recommended during the review shall be considered in accordance with CFR § 800.6(c)(7). If the review results in a recommendation to terminate the Agreement, termination of the Agreement shall be considered in accordance with 36 CFR § 800.6(c)(8).

VIII. Dispute Resolution

- A. Should any Signatory to this Agreement object in writing to the other Signatory regarding any action carried out or proposed with respect to the implementation of this Agreement, consultation among the Signatories shall be initiated to resolve the objections.
- B. If the DOT&PF determines that the objection cannot be resolved through consultation DOT&PF shall request the further comments or staff level recommendations from the ACHP pursuant to 36 CFR § 800.6(b). Any ACHP comment provided in response to such a request shall be taken into account by the DOT&PF in accordance with 36 CFR § 800.6(c)(2).
- C. At any time during implementation of the measures stipulated in this Agreement, should an objection to any such stipulation or its manner of implementation be raised by a member of the public, the DOT&PF shall take the objection into account and consult with the objecting party and Signatories to this Agreement as needed to resolve the objection.

IX. Amendments

- A. Any Signatory to this Agreement may request that this Agreement be amended, whereupon they shall consult in accordance with 36 CFR § 800.6(c)(7) to consider such amendment. Amendments shall be executed in the same manner as the original Agreement.
- B. This Agreement may be amended when such an amendment is agreed to in writing by all Signatories. The amendment shall be effective on the date a copy is signed by all of the Signatories is filed with the ACHP.
- C. If any Signatory to this Agreement determines that its terms shall not or cannot be

carried out, that Signatory shall immediately consult with the other Signatory in writing to attempt to develop an amendment. If within sixty (60) calendar days an amendment cannot be reached, any Signatory may request to terminate the Agreement upon written concurrence of all other Signatories as set forth in Stipulation XI *Termination*.

X. Duration

This Agreement shall continue in full force and effect until all measures under Stipulation II. Mitigation Measures are completed or until 2025. At that time the DOT&PF may request the SHPO in writing to review the DOT&PF's project schedule and consider an extension or modification of this Agreement. No extension or modification shall be effective unless all Signatories to the Agreement have agreed in writing.

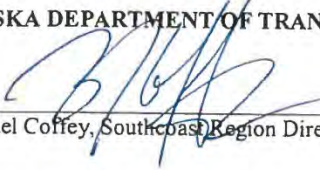
XI. Termination

Any Signatory to this Agreement may terminate it by providing thirty (30) days written notice to the other Signatories. The Signatories shall consult during the period prior to termination to seek agreement on amendments or other actions that would avoid termination. In the event of termination, the DOT&PF shall seek the comments of the ACHP pursuant to 36 CFR § 800.7(c).

Execution and Implementation of this Agreement evidences that the DOT&PF has consulted with the SHPO and other consulting parties on the Haines Highway MP 3.5 to 25.3 project, and has taken into account the project's effects on historic properties in accordance with its Section 106 responsibilities.

SIGNATORIES

ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

By: 
Michael Coffey, Southcoast Region Director

6/1/14
Date

ALASKA STATE HISTORIC PRESERVATION OFFICER

By: 
Judith E. Bittner, State Historic Preservation Officer

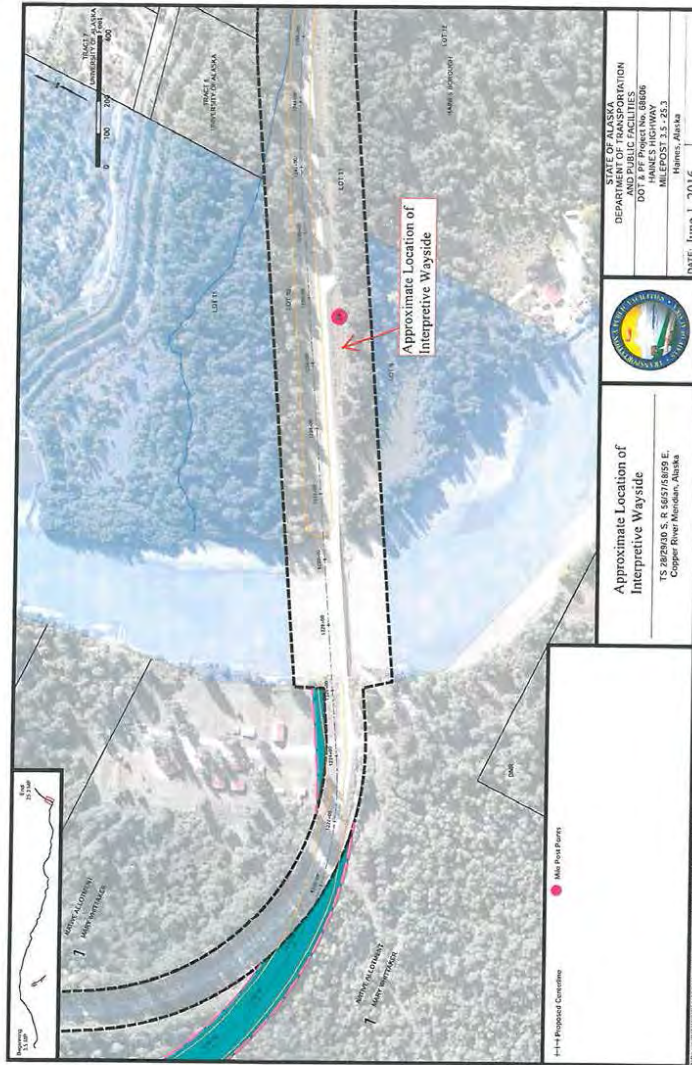
6/2/16
Date

APPENDIX A
Haines Highway from Milepost (MP) 3.5 to 25.3
Project SHAK-095-6(28)/68606

Area of Potential Effect

The area of potential effect (APE) for the Haines Highway project Milepost (MP) 3.5 to 25.3 encompasses lands that are anticipated to be affected by ground-disturbing activities including a 25-foot wide buffer zone beyond the project footprint to cover the clearing limits and accommodate for operations of heavy equipment. In areas where major realignments are planned, the APE includes the new road footprint plus a 50-foot wide buffer zone, and all areas between the old and new alignment, as well as visual impacts due to proposed highway realignments. The APE also includes the entire Yendistucky site and a small piece of the Haines airport just south of MP 4.

APPENDIX B
Haines Highway from Milepost (MP) 3.5 to 25.3
 Project SHAK-0956(28)/68606



10

Haines Highway Project From MP 3.5 to 25.3
 Fed/State Project Number SHAK-095-6(28)/Z686060000

MOA
 June 1, 2016

APPENDIX C

Haines Highway from Milepost (MP) 3.5 to 25.3

Project SHAK-095-6(28)/68606

Contact Information for Agency and Tribal Officials
Involved with Human Remains Consultation

DOT&PF:

Hilary Lindh, Regional Environmental
Manager and Michael Kell, Cultural
Resources Specialist
6860 Glacier Highway
Juneau, AK 99519
Phone: (907) 465-6564 / (907) 465-4715
Fax: (907) 465-3506
Hilary.lindh@alaska.gov
Michael.kell@alaska.gov

State Historic Preservation Officer:

Judy Bittner, SHPO
DNR Office of History and Archaeology
550 W. 7th Avenue, Suite 1310
Anchorage, AK 99501
Phone: (907) 269-8721
Fax: (907) 269-8908
Judith.bittner@alaska.gov

State Medical Examiner:

Stephen Hoage, Operations Administrator
4500 S. Boniface Pkwy
Anchorage, AK 99508-1264
Phone: (907) 334-8643
Fax: (907) 334-2216
Stephen.hoage@alaska.gov

Alaska Bureau of Vital Statistics:

Heidi Lengdorfer, Section Chief
Supervisor of the Anchorage Bureau
Phone: (907) 465-8643
Fax: (907) 465-4689
Heidi.lengdorfer@alaska.gov

AST Bureau of Investigation:

Lieutenant Nils Monsen
Phone: (907) 745-2131
Investigator Dave Johnson
Phone: (907) 465-8643

Alaska State Troopers:

Missing Persons Bureau
Sergeant Kid Chan
5700 East Tudor
Anchorage, AK 99507
Phone: (907) 269-5058
Fax: (907) 248-9834
Choong.chan@alaska.gov

Chilkat Indian Village:

Jones P. Hotch, Jr., President
32 Chilkat
Avenue
Klukwan,
Alaska P.O.
Box 210
Haines, AK 99827
Phone: (907) 767-5505
Fax: (907) 767-5518
klukwan@chilkat-nsn.gov

Chilkoot Indian Association:

Les Katzeek, President
P.O. Box 490
Haines, AK 99827-0490
Phone: (907) 766-2323
Fax: (907) 766-2365
hbrouillette@chilkoot-nsn.gov

Haines Borough Police Department:

Robert E. "Bob" Griffiths
P.O. Box 1209
Haines, AK 99827
Phone: (907) 766-2121
Fax: (907) 766-2190
police@haines.ak.us

5.3 Smokehouse Village and Yendistucky



Section 4(f) *De Minimis* Impact Finding for Historic Sites For FHWA Projects

—
Project Name: Haines Highway MP 3.5 to MP 25.3, including the Chilkat River Bridge

Project Number (State and Federal): Z686060000/0956028

AHRS Site Number or Site Name: Smokehouse Village SKG-044 (Site 1)

AHRS Site Number or Site Name: Yendistucky SKG-054 (Site 2)

De minimis impacts related to historic sites are limited to the determination of either “no adverse effect” or “no historic properties affected” in compliance with Section 106 of the National Historic Preservation Act (NHPA).

I. Project Description:

The DOT&PF is proposing to upgrade the Haines Highway between MP 3.5 and MP 25.3. See Section 1.0 of the FREA for the description of the entire proposed action. Table 5.0-1 in the FREA lists the properties protected by Section 4(f). This Section 4(f) *De Minimis* Impact finding is for two Section 4(f) properties; Smokehouse Village (SKG-044) and Yendistucky (SKG-054). The properties are located in the vicinity of the beginning of the project. In this area, project work includes realigning and widening the roadway, which would involve conducting work within Yendistucky and placing some fill within Smokehouse Village. The 2014 APE provides the boundaries of these two sites and the lists the area of impact within each one.

II. Section 4(f) Property Description(s):

Describe each historic site that is on or eligible for inclusion on the National Register of Historic Places (NRHP). For each site include type of historic property, the significance criterion & aspects of historic integrity that qualify the property to be eligible, and location of the historic site(s). Include a map depicting the boundaries and features of the Section 4(f) property in relation to the proposed improvement.

The information in this section is from CRC October 2011 "Archeological Field Survey of Proposed Alternatives for the Improvement of the Haines Highway from Milepost 3.5 to 25.3."

Smokehouse Village (SKG-044), also known as 4 Mile Eulachon Camp, is a site of historic significance on the northern bank of the Chilkat River at approximately MP 4.5. It was one of the main eulachon camps and has four older eulachon pits. Charcoal was discovered in some subsurface tests. The site retains integrity of location, design, setting, association, and feeling. The layout of the village is intact. The integrity of association and feeling is retained as a fish camp. Therefore it has been recommended as eligible for listing on the NRHP under Criterion A, Association with Significant Events. It has not been recommended under Criterion B, Association with the Lives of Significant Persons, because it is not known if the site is associated with significant persons. The site is not eligible under Criterion C, Distinctive Characteristics of a Type, Period, or Method of Construction, because they do not represent the work of a master, possess high artistic value, or represent a significant entity. The site is eligible for listing on the NRHP under Criterion D, as it retains sufficient integrity to potentially yield important information. Older eulachon pits are present in the area. It is important to note that Smokehouse Village is within the boundary of Yendistucky except for some meander lines along the Chilkat River. The features and attributes that make Smokehouse Village eligible differ from those features of that make Yendistucky eligible for listing.

The village of Yendistucky (SKG-054) is a site of historic significance. Yendistucky is located at MP 3.6 of the Haines Highway on the northern side of the airport. It was a permanent Chilkat and Chilkoot Tlingit fishing village and had significant occupation between the mid 1800's to early 1930's. It was an important gathering place for village chiefs, visitors, and dignitaries. The site retains integrity of location, design, setting, association, and feeling. The integrity of design is retained through the intact layout as a village. The village retains the integrity of association and feeling for the Chilkoot and Chilkat people as an important settlement and gathering place. Therefore it has been recommended as eligible for listing on the NRHP under Criterion A, Association with Significant Events. It has not been recommended under Criterion B, Association with the Lives of Significant Persons, because it is not known if the site is associated with significant persons. The site is not eligible under Criterion C, Distinctive Characteristics of a Type, Period, or Method of Construction, because they do not represent the work of a master, possess high artistic value, or represent a significant entity. The village is eligible under Criterion D, Potential to Yield Information Important in Prehistory or History. Past archaeological research at the site indicates that the village "possesses configurations of artifacts, soil strata, [and] structural remains..." that would allow the testing of hypotheses about lifeways and community patterns at a historic Chilkat village (USNPS, 2002:21). The village's significance lies in the areas of social history and historic/prehistoric archaeology. The village is important in a "local historic context" since it represents an aspect of the history of the southeastern region of Alaska.

A cultural resource investigation conducted by J.D. McMahan and C.E. Holmes of Department of Natural Resource's Office of History and Archaeology (OHA) (April 1989) found that the village of Yendistucky was located entirely to the north of the existing highway and airport. In support of a request from the CIA, Sealaska Corporation Inc., and SHI to avoid the Yendistucky bluff, Dr. Chuck Smythe prepared a white paper in July of 2013 regarding the importance of shamanistic landscapes. In it Dr. Smythe states that Yendistucky Village has a shamanistic landscape that should be protected.

III. Project Use of the Section 4(f) Property(s):

Describe all impacts the project will have on the historic site.

Figure 5.3-1 shows the Revised Proposed Action within the vicinity of Smokehouse Village and Yendistucky. In about 1949, the Haines Highway was originally constructed along the shoreline, partially within the Yendistucky boundary (see Section 4.21). The Revised Proposed Action would upgrade the highway within Yendistucky and adjacent to Smokehouse Village. Most of the work within Yendistucky would be upgrading existing pavement and widening shoulders. Construction activities in the existing roadbed would include excavating and removing the existing pavement, replacing the base course material, adjusting the vertical alignment of the road and repaving. To avoid the Yendistucky bluff (see Section IV below), the alignment has shifted south and west of the existing roadbed. This area is primarily outside of the boundary of Yendistucky. Fill would be placed in a wetland area within the DOT&PF ROW adjacent to the Haines Airport Property and the airport dike would be upgraded where the road would be built. The realignment does return into Yendistucky at the public access turnout. That turnout area would be 10,020 square feet (0.23 acres) smaller than it is now. Some fill would be placed within the boundaries of Smokehouse Village to provide for the widened shoulders and a recoverable slope embankment. An access point used by Chilkat and Chilkat tribal members in their fishing activities would be improved as well. The widening and realignment of the roadway would result in fill covering 5,275 square feet (0.1 acres) of Smokehouse Village. Roadwork to widen shoulders and upgrade the pavement within Yendistucky would be approximately 117,361 square feet (2.7 acres).

FHWA determined that there would be no adverse effect to Smokehouse Village (SKG-044) and Yendistucky (SKG-54). SHPO and the other consulting parties were notified of this finding in a letter dated August 6, 2014. SHPO concurred with the finding in a letter dated August 28, 2014 (Attachment 5.3-1 and Appendix E). No other consulting parties responded to the finding.

IV. Impact Avoidance, Minimization, and Mitigation or Enhancement Measures to the Section 4(f) Property(s):

Identify any avoidance, minimization, and mitigation or enhancement measures that are included in the project to address the Section 4(f) use.

The Revised Proposed Action would avoid the bluff of Yendistucky just above Haines Highway following consultations with the Chilkoot and Chilkat Native Tribes regarding the importance of that area to them.

Much of the proposed project minimizes impacts to Yendistucky site (SKG-054) and Smokehouse Village (SKG-044) by keeping within the existing roadway prism to the extent practicable. There is a minor amount of additional fill in Yendistucky and Smokehouse Village (SKG-044) to realign the road and provide the needed 6-foot shoulders.

The footprint avoids the fish pits, which are important features and attributes of the Smokehouse Village site.

V. Consulting Party Involvement:

List all Section 106 consulting parties that were contacted and summarize their comments. Please include contacts that were made even if no response was received.

The following parties have been contacted regarding the potential to affect Yendistucky and Smokehouse Village. See the attached table (Table 5.3-1) showing the concerns and issues discussed

and resolution.

- Chilkat Indian Village
- Chilkoot Indian Association
- Sealaska Heritage Institute
- Sealaska Corporation
- State of Alaska Historic Preservation Office

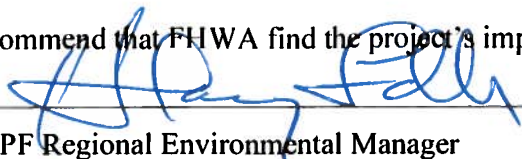
VI. Coordination:

The State Historic Preservation Officer (SHPO), the Advisory Council on Historic Preservation (ACHP) (if participating), and the National Park Service (if the historic site is within a National Historic Landmark) has been informed in writing of FHWA's intent to make a *de minimis* impact finding based on written concurrence of the Section 106 determination. Attach documentation.

YES NO

VII. Signatures:

A. I recommend that FHWA find the project's impacts on the Section 4(f) property(s) to be *de minimis*.

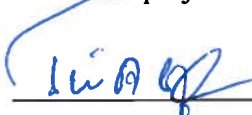


DOT&PF Regional Environmental Manager

Date: 8/15/16

B. I have determined that:

1. The process required by Section 106 of the National Historic Preservation Act (NHPA) resulted in the determination of "no adverse effect" or "no historic properties affected" with the written concurrence of the SHPO, the NPS (for a landmark), and the ACHP (if participating);
2. The SHPO, ACHP (if participating in the Section 106 consultation), and NPS (if the historic site is within a National Historic Landmark) was informed of FHWA's intent to make a *de minimis* impact finding based on their written concurrence(s) in the Section 106 determination;
3. FHWA has considered the views of any consulting parties participating in the Section 106 consultation; and
4. The project will result in a *de minimis* impact on Smokehouse Village SKG-044 (Site 1).
5. The project will result in a *de minimis* impact on Yendistucky SKG-054 (Site 2 if applicable).



FHWA Environmental Program Manager

Date: 8/5/16

Attachment(s):

- Figure 5.3-1: Revised Proposed Action in the Vicinity of Yendistucky Reservation and Smokehouse Village
- Table 5.3-1: Consultation on Potential Impacts Yendistucky & Smokehouse Village
- Attachment 5.3-1: State Historic Preservation Office Documentation

(This Page Left Intentionally Blank)

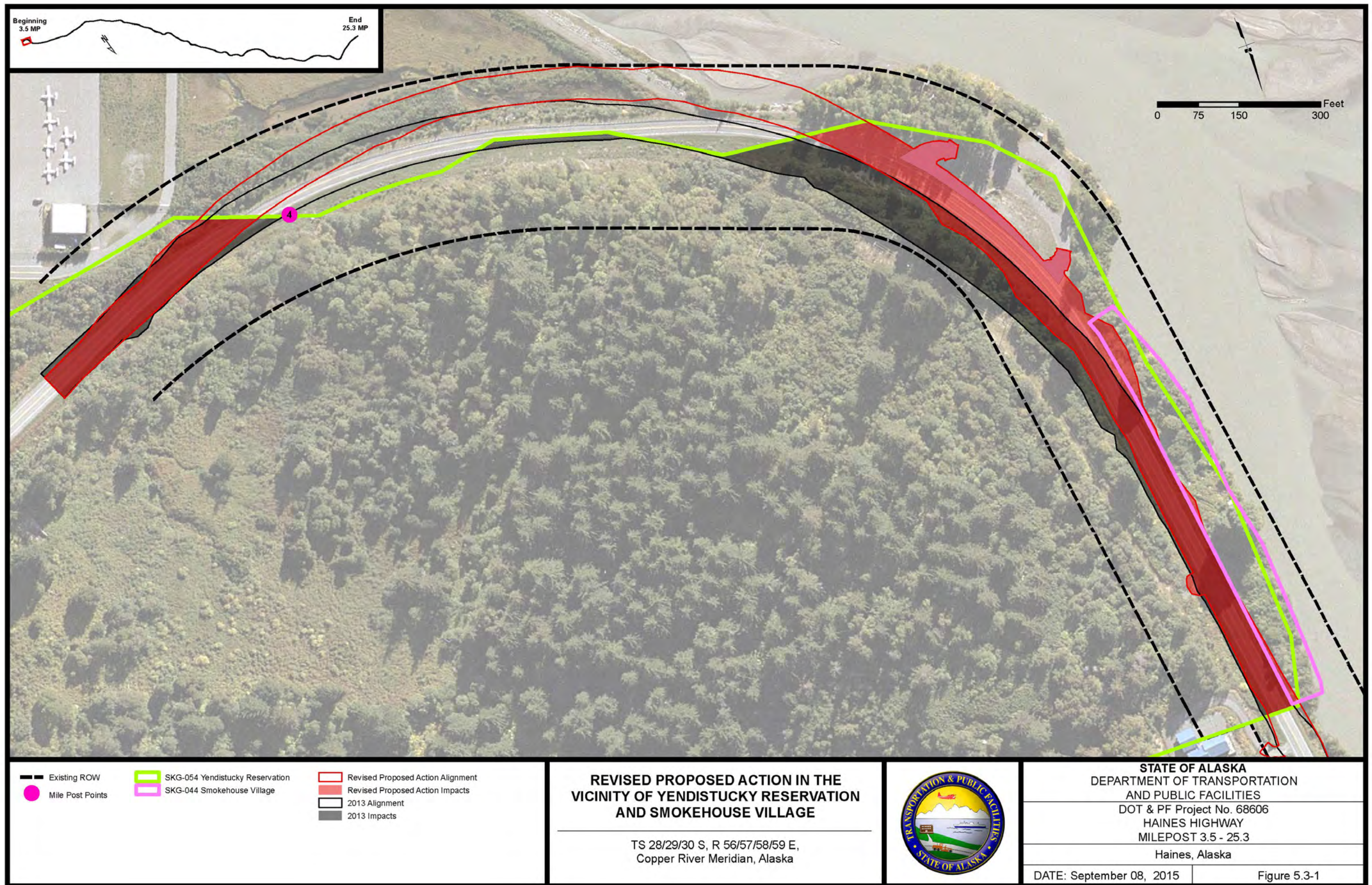


Figure 5.3-1: Revised Proposed Action in the Vicinity of Yendistucky Reservation and Smokehouse Village

(This Page Left Intentionally Blank)

Table 5.3-1: Consultation on Potential Impacts Yendistucky & Smokehouse Village

Date	Consulting Parties	Issue	Concerns	Resolution
8/5/2013	Chilkoot Indian Association Sealaska Corporation Sealaska Heritage	July 2013 EA Proposed Action at MP 4 to realign into Yendistucky bluff	Concern about the proposed cutting into Yendistucky bluff. Also concern that past road construction may have affected related features.	FHWA and DOT&PF: Committed to reviewing the July 2013 EA Proposed Action to determine if the bluff could be avoided. Evaluated and determined to have a survey conducted and used ground penetrating radar (GPR), in areas of concern to CIA.
10/10/2013	Chilkoot Indian Association	Location and methods proposed for the GPR survey	As noted for meeting on 8/5/13, CIA has concerns about unknown related features under or adjacent to the roadway where work is proposed.	CIA identified two priority areas. The first areas were surveyed.
10/21/2013	Chilkoot Indian Association Sealaska Corporation Sealaska Heritage	Debrief of GPR survey	None identified	GPR survey data was analyzed and a draft report prepared. The CIA agreed that the project would not affect historic properties in those areas.
12/19/2013	Chilkoot Indian Association	Discussed GPR survey results and alternatives to avoid affecting the Yendistucky bluff	CIA encouraged that there should be a change in the proposed action. If proposed action was not changed, a statement of adverse effect would be made. The possible use of guardrail to minimize footprint in Smokehouse Village was of concern because it would block their access to fishing grounds	The realignment away from the Yendistucky bluff was selected for further development and a commitment made to CIA to avoid the bluff. Options to avoid and minimize impacts to Smokehouse Village and ongoing fishing were evaluated and would be presented to the CIA and CIV.

Date	Consulting Parties	Issue	Concerns	Resolution
12/20/2013	Chilkat Indian Village	Alternatives to avoid affecting the Yendistucky bluff and the GPR survey conducted at MP 4	CIV was interested in what was done in response to consultations with CIA.	CIV would review the information provided.
3/6/2014	Chilkat Indian Village	Tribal preference to road alignment in the vicinity of Smokehouse Village.	CIV was in agreement with CIA regarding continued access to the fishing grounds at Smokehouse Village. Concern that the access would be blocked.	Additional information received from CRC regarding test pit data in areas that could be filled by the Tribe's preferred alignment. Only forest duff and sand/silt were in those areas. This option is being considered as part of the Revised Proposed Action.
4/9/2014	SHPO office staff Mark Rollins	Option to use fill in Smokehouse Village	Would fill along the roadway constitute an adverse effect on Smokehouse Village	M. Rollins stated that if area to be filled had no features and attributes of concern, SHPO may concur with no adverse effect.
August 6, 2014	All consulting parties	FHWA issued finding of no adverse effect to Smokehouse Village and Yendistucky		
August 28, 2014	SHPO	Concurred with FHWA finding of no adverse effect.		

**ATTACHMENT 5.3-1: STATE HISTORIC PRESERVATION OFFICE
DOCUMENTATION**



U.S. Department
of Transportation
**Federal Highway
Administration**

Alaska Division
September 9, 2015

P.O. Box 21648
Juneau, AK 99802-1648
(907) 586-7418
(907) 586-7420
www.fhwa.dot.gov/akdiv

In Reply Refer To:
SHAK-0956(028)/68606

Ms. Judith Bittner
State Historic Preservation Officer
Alaska Office of History and Archaeology
550 W. 7th Avenue, Suite 1310
Anchorage, AK 99501-3565

Dear Ms. Bittner:

As you are aware, the Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Alaska Division of the Federal Highway Administration (FHWA), is proposing a project to improve the Haines Highway between Milepost (MP) 3.5 and 25.3. FHWA sent you a finding letter dated August 6, 2014 regarding changes to the proposed alignment in the vicinity of Yendistucky (SKG-054) and Smokehouse Village (SKG-044). FHWA found that the Revised Proposed Action would not adversely affect these two Section 106 eligible resources.

That letter stated: Pursuant to 36 CFR 800.4(d)(2) and 800.5(d)(2), implementing regulations of Section 106 of the National Historic Preservation Act, the FHWA continues to find an adverse effect on one historic property by the proposed project, the Chilkat River Bridge (SKG-247). Furthermore, FHWA finds No Adverse Effects to Yendistucky (SKG-054), Smokehouse Village (SKG-044), and the Haines-Fairbanks Pipeline's Gate Valve 4 (SKG-206). This submission provides documentation in support of a No Adverse Effect Finding to Yendistucky and Smokehouse Village subsequent to road alignment changes in the proposed action, as required in 36 CFR 800.11(e).

Your office concurred with our finding in a letter dated August 28, 2014.

This letter serves as notice that FHWA intends to make Section 4(f) *de minimis* impact findings on Smokehouse Village (SKG-044) and Yendistucky (SKG-054) based on your written concurrence of our findings of No Adverse Effect.

Please direct your concurrence or comments on the content of this letter to me at the address above, by telephone at (907) 586-7245, or by e-mail at al.fletcher@dot.gov.

Sincerely,



Al Fletcher
Safety and Operations Engineer

Electronic cc:

Gregory Lockwood, P.E., DOT&PF, Project Manager
Jane Gendron, DOT&PF, Southcoast Regional, Environmental Manager
Michael Kell, DOT&PF, Southcoast Region, Regional, Archaeologist
Laurie Mulcahy, DOT&PF, Statewide Cultural Resources Manager
Jim Scholl, DOT&PF, Southcoast Region, Project Environmental Coordinator



U.S. Department
of Transportation
**Federal Highway
Administration**

Alaska Division

August 06, 2014

P.O. Box 21648
Juneau, AK 99802-1648
(907) 586-7418
(907) 586-7420
www.fhwa.dot.gov/akdiv

In Reply Refer To:
SHAK-0956(028)/68606

Ms. Judith Bittner
State Historic Preservation Officer
Alaska Office of History and Archaeology
550 W. 7th Avenue, Suite 1310
Anchorage, AK 99501-3565

Dear Ms. Bittner:

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Alaska Division of the Federal Highway Administration (FHWA), is proposing to improve the Haines Highway between Milepost (MP) 3.5 and 25.3 (see attached Area of Potential Effect Figure Set 1 thru 18, and Table 1 – Project Location by Township and Range).

Table 1 – Project Location by Township and Range

Township	Range	Section	USGS Quad Map	Meridian
30S	59E	19	Skagway A-2	Copper River
30S	58E	6,7,8,14,15,16,17,23,24		
29S	58E	31		
29S	57E	5,6,8,9,14,15,16,23,25,26,36		
28S	56E	29,32,33,34		

Pursuant to 36 CFR 800.4(d)(2) and 800.5(d)(2), implementing regulations of Section 106 of the National Historic Preservation Act, the FHWA continues to find an adverse effect on one historic property by the proposed project, the Chilkat River Bridge (SKG-247). Furthermore, FHWA finds No Adverse Effects to Yendistucky (SKG-054), Smokehouse Village (SKG-044), and the Haines-Fairbanks Pipeline's Gate Valve 4 (SKG-206). This submission provides documentation in support of a No Adverse Effect Finding to Yendistucky and Smokehouse Village subsequent to road alignment changes in the proposed action, as required at 36 CFR 800.11(e).

Specific purposes of this letter are:

- to formally acknowledge the correct boundary of Yendistucky Village (SKG-054)
- to provide details of the changes in the proposed project in the vicinity of Smokehouse Village (SKG-044) and Yendistucky Village (SKG-054),
- to provide a revised Area of Potential Effects (APE) resulting from the amended boundary of SKG-054 and the proposed project changes.

- to supplement information about features and attributes of Yendistucky based on a ground penetrating radar field survey, and
- to document a No Adverse Effect on Yendistucky (SKG-054) and Smokehouse Village (SKG-044 from the proposed action).

FHWA asks for your review and comments regarding the information presented in this letter including whether or not you agree with the FHWA finding of No Adverse Effect for Yendistucky and Smokehouse Village.

Summary of the Section 106 process from 2005 to the present.

The following Section 106 consulting parties are involved with the consultation for this project:

- State Historic Preservation Officer
- Chilkat Indian Village of Klukwan
- Chilkoot Indian Association of Haines
- Central Council Tlingit and Haida Indian Tribes of Alaska
- Sealaska Corporation
- Klukwan, Incorporated
- Sealaska Heritage Institute
- Bureau of Indian Affairs

Consulting parties were sent initiation of Section 106 consultation letters including the original APE for the proposed action on December 2, 2005. Consulting parties were sent information about a proposed geotechnical survey on January 31, 2006. On July 6, 2010, FHWA provided a project update after a two-year project delay and an expanded APE that included potential visual effects to adjacent historic properties.

On November 28, 2011 FHWA sent letters to the consulting parties with Determinations of Eligibility (DoEs) for 25 properties within the APE of which 11 properties were determined eligible for the National Register (see Table 2 of the enclosed DoE letter). The FHWA determined that Smokehouse Village (SKG-044) and Yendistucky Village (SKG-054) were eligible under National Register Criteria A and D.

On January 15, 2013, an overall project finding of Adverse Effect for historic properties (SKG-247—the Chilkat River Bridge and SKG-206—the Haines-Fairbanks Pipeline District, Gate Valve #4) was issued. In that letter, FHWA's findings of effect included No Effect on Yendistucky Village and No Adverse Effect on Smokehouse Village. The SHPO concurred with FHWA's findings and requested results of a field survey for a revised highway intersection near the village of Klukwan (January 28, 2013). No other response was received from consulting parties.

The FHWA submitted the additional field survey results that included an expanded APE for additional rock cut areas on June 24, 2013. The survey did not identify any additional properties in the APE. However, due to design changes, FHWA found that Gate Valve 4 of the Haines Fairbanks Pipeline (SKG-206) would not be adversely affected. After receiving additional

requested information (September 3, 2013), SHPO concurred with the finding of No Adverse Effect on Gate Valve 4 on September 19, 2013.

Follow up consultations during 2013 and into 2014 with Chilkat Indian Village (CIV) and Chilkoot Indian Association (CIA), resulted in a need to:

1. Correct the site boundaries of Yendistucky Village and re-assess the finding of effect for this site,
2. Expand the APE to include all of Yendistucky and Smokehouse Village sites as well as a small piece of Haines Airport property located at MP 4, and
3. Re-assess the potential effects to Yendistucky and Smokehouse Village.

Revised Project Description

As a result of public and agency comments received on the Environmental Assessment (EA) (July 2013), revisions to the proposed project alignment are being made to lessen impacts to: historic properties; the Chilkat River, streams, wetlands; and the Alaska Chilkat Bald Eagle Preserve. The revised alignment is shown in the enclosed Haines APE 2014 Figure Set 1 thru 18. An appropriately Revised EA is in preparation. The realignment proposed to lessen impacts to historic properties is in the vicinity of MP 4.

As a result of tribal consultations with the CIA and the CIV, the highway curve proposed near MP 4 in the EA was realigned further south and west toward the airport and Chilkat River to avoid impacts to the Yendistucky bluff, an area now known to be of cultural and spiritual significance to the Tribes (see Figure 2. Revised Proposed Action in Vicinity of Smokehouse Village (SKG-044) . This realignment would relocate a small anadromous fish stream inside a dike that protects Haines Airport from the Chilkat River. The APE shown on Sheet 2 in the Haines APE 2014 Figure Set 1 thru 18 enclosure encompasses the area that would be directly affected by highway realignment at MP4 and stream relocation plus a 25-foot buffer to account for possible construction impacts.

Revised Area of Potential Effects

The APE as described in the most recent finding letter (June 24, 2013) has been expanded to include:

1. All of the corrected Yendistucky site depicted in the 1916 plat of U.S. Survey No. 908 See Figure 1. Correct Boundary of Yendistucky (SKG-054)(see below for discussion), and
2. A small piece of airport property located just south of the highway at MP 4 (Sheet 2, Haines APE 2014 Figure Set 1 of 18).

The AHRS data base was reviewed in May 2014 to determine if any additional historic properties have been reported within the revised APE. No additional historic properties were identified.

Identification Efforts

The boundaries of Yendistucky used in the determination of eligibility and findings of effect have been found to be in error and need to be corrected. Additional features and attributes of Yendistucky (SKG-054) and Smokehouse Village (SKG-044) have also been identified.

Yendistucky Village (SKG-054).

The boundary of Yendistucky Village (see enclosed Figure 1 Correct Boundary of Yendistucky (SKG-054)) is different than previously shown in our DoE letter dated November 28, 2011, and information contained in a supporting report by Cultural Resource Consultants LLC (CRC) (*Archaeological Field Survey of Proposed Alternatives for the Improvements of the Haines Highway from Milepost 3.5 to 25.3*, October 2011). The boundary previously recommended by CRC was based on a hand sketch of the Yendistucky Village boundary that was part of a Sealaska Corporation 1975 document (*Native Cemetery and Historic Sites of Southeast Alaska*). That sketch did not show the correct boundary.

The 1916 plat of U.S. Survey No. 908 village reservation boundaries, which is supported by CIA and CIV, extend further west across the highway to the former meander line of the Chilkat River and includes Smokehouse Village. It also extends further south onto the Haines Airport property and further east toward the mountains.

Consultations with the CIA during the fall of 2013 confirmed the boundary of Yendistucky as well as the importance of this area to the Tlingit people. The original proposed action described in the 2012 DoE letter and January 2013 finding letter included realigning the Haines Highway by cutting into the Yendistucky bluff incorrectly assuming that the bluff was outside of the boundary of Yendistucky. CIA commented on the July 2013 Environmental Assessment that the proposed action of cutting into the bluff would be considered an adverse effect. This resulted in DOT&PF's decision to realign the road away from the Yendistucky bluff.

In support of a request from the CIA; Sealaska Corporation Inc. and Sealaska Heritage Institute to avoid the Yendistucky bluff, Dr. Chuck Smythe prepared a white paper dated January 28, 2014 regarding the importance of shamanistic landscapes (enclosed). In it Dr. Smythe states that Yendistucky Village has a shamanistic landscape that should be protected.

DOT&PF brought the Yendistucky boundary error to the attention of SHPO staff and the Alaska Heritage Resource Survey (AHRs) data base has been updated. FHWA is formally presenting this information in support of the revised APE and finding of affect to both Yendistucky and Smokehouse Village presented in this consultation letter.

Additional investigations in the vicinity of MP 4 of the highway were also requested by CIA to resolve uncertainty about past highway construction impacts on burials in this area.

Between October 16 and 21, 2013, CRC archaeologists Dr. Linda Finn Yarborough and Sarah Meil completed a Ground Penetrating Radar (GPR) survey in the vicinity of Yendistucky Village (CRC, January 2014, enclosed). The areas surveyed (see Figure 3 in the January 2014 report) were selected by representatives of the CIA Tribal Council and included:

1. A 361-foot long segment of the Haines Highway immediately south of the main Yendistucky Village site and north of the western end of the Haines Airport
2. The bluff west of Yendistucky Village and adjacent to the Haines Highway, between the bluff edge and the power and communications line to the east.

A third site, in the turnout area across from the bluff, was also identified for the GPR survey if there was adequate time. There was not adequate time to survey this site.

The GPR survey documented a modern culvert in the eastern part of the highway segment, but no anomalies were encountered that suggested the presence of burials either under the highway or on the bluff. A linear anomaly at a depth of about 7 to 10.5 feet in highway survey grid #1 may indicate the presence of compacted soil caused by a former road or trail. Small round anomalies at depths of about 5.8 to 10.3 feet in highway grid #6 might be pilings, posts, or post holes related to a structure or structures associated with Yendistucky. Both of these anomalies are within the APE. It is not possible to say with certainty what these anomalies represent without excavations.

The DOT&PF Southeast Regional archaeologist Michael Kell recently reviewed the findings of a cultural resource investigation conducted by J.D. McMahan and C.E. Holmes of Department of Natural Resource's Office of History and Archaeology (OHA) (April 1989). McMahan and Holmes found that, while the 1916 platted Yendistucky Reservation included the Chilkat River shoreline where the airport was built, the main features of the village of Yendistucky (houses and burials) were located entirely to the north of the existing highway. This detailed survey report was also used by CRC in support of their archaeological field survey and their recommendations for the proposed Haines Highway MP 3.5 to 25.3 project (CRC, 2011).

Smokehouse Village (SKG-044).

To further understand the potential to effect features and attributes of Smokehouse Village from the revised highway alignment at MP 4, Michael Yarborough (CRC) reviewed the field notes taken during CRC's field work done between 2005 and 2009 within the Smokehouse Village boundaries. The DOT&PF Southeast Regional archaeologist also visited the site on May 7, 2014 to verify the location of features identified by CRC in earlier field surveys. Both CRC and Michael Kell used Global Positioning System (GPS) technology to clarify the location of identified fish pits associated with traditional use of Smokehouse Village relative to our proposed project (see Figure 2. Revised Proposed Action in Vicinity of Smokehouse Village (SKG-044)) but the technology used by Kell allowed for a more accurate location of the feature closest to the proposed action (Fish Pit at waypoint #87).

Revised Finding of Effect for Yendistucky Village (SKG-054)

The FHWA is formally requesting SHPO's concurrence on revisions to the Yendistucky boundary and a finding of No Adverse Effect for the village of Yendistucky (SKG-054). The boundary of the Yendistucky Village has been expanded further west and south based on the 1916 plat of US Survey No. 908 (see Figure 1. Correct Boundary of Yendistucky (SKG-054)

and Sheet 2 of Haines APE 2014 Figure Set 1 thru 18.). Except for the boundary expansion, there are no changes to the Yendistucky Village DOE for the National Register under Criteria A and D. To more accurately represent the area of potential effects, the entire expanded boundary of Yendistucky Village is now within the project's APE.

The proposed realignment would result in an expansion of the Haines Highway footprint within Yendistucky (SKG-054) but the footprint would be less than the alignment proposed in the July 2013 EA. Figure 2. Revised Proposed Action in Vicinity of Smokehouse Village (SKG-044) shows the areas of Yendistucky where ground disturbing actions would occur during construction. All proposed ground disturbing actions within SKG-054 would be within areas that have been previously disturbed to some degree.

Based on the CRC and McMahn work, there are no archaeological features remaining in the vicinity of the road and below the road and the features and attributes that make this site eligible under Criteria A and D are associated with the village and burials located above the highway. According to Smythe (January 2014), the bluff is also an important feature in the eligibility of SKG-054. The bluff and the main village site located to the north and upgradient of the Haines Highway would not be directly affected. The results of the GPR survey found anomalies within the project footprint under the existing road. However, an analysis of the depth of the anomalies compared with the proposed cross sections show the anomalies are deeper than proposed groundwork at this location and so these anomalies would not be affected by project construction.

Based recent research and fieldwork conducted by CRC and with the realignment of the highway away from the Yendistucky bluff, there would be no direct adverse effects to features and attributes that make Yendistucky (SKG-054) eligible for the National Register.

The potential for indirect visual effects was also evaluated. With the change in alignment away from the Yendistucky bluff, the existing dense vegetation would visually shield the portion of Yendistucky located above the highway from project activities. Therefore, there would be no indirect adverse effects.

Based on the fact that DOT&PF would be working within the boundaries of Yendistucky (SKG-054) as described in the 1916 plat and enclosed APE, a finding of No Historic Properties Affected is not valid. For the aforementioned reasons, DOT&PF recommends and FHWA finds that the project would have No Adverse Effect on the characteristics that qualify Yendistucky for listing in the National Register.

Finding of Effect for Smokehouse Village (SKG-044)

The 1916 plat of Yendistucky Reservation includes the village area with houses, graves, and a demarcated fishing ground. Based on historic research and field surveys, the fishing ground has been determined to be a separate eligible historic site known as Smokehouse Village. The SHPO has concurred with this determination and Smokehouse Village is identified as SKG-044.

Smokehouse Village (SKG-044) is located next to the Chilkat River and within the southwestern area of Yendistucky (SKG-054) and is entirely within the project's APE.

As originally designed, the alignment upon which the January 2013 finding of No Adverse Effect for Smokehouse Village was based, avoided construction activities within SKG-044's boundary. That alignment would have resulted in cutting into the Yendistucky bluff. Through the summer of 2013 and into 2014, FHWA continued consultations with the CIA, CIV, Sealaska Heritage, and Sealaska Corporation due to concerns about the Proposed Action's impacts to Yendistucky resulting from excavation of a portion of the bluff. In addition, Tribal members confirmed that Smokehouse Village is still a traditional use area for eulachon rendering and salmon fishing and that highway access to the Smokehouse Village site is very important.

Following those consultations, DOT&PF developed a proposed highway alignment that would avoid Yendistucky bluff and meet the project's purpose and need. The newly developed alignment moves the road onto a small portion of airport property and into the Chilkat River but also would require some embankment fill in Smokehouse Village. Both CIA and CIV favor the newly developed alignment. See Figure 2. Revised Proposed Action in Vicinity of Smokehouse Village (SKG-044).

The new alignment tapers the embankment of the proposed road 1 to 12 feet into the boundaries of Smokehouse Village (5,275 square feet or 0.12 acre)(see Figure 2. Revised Proposed Action in Vicinity of Smokehouse Village (SKG-044)). The access point off Haines Highway used by Chilkat and Chilkoot tribal members during their fishing activities would be improved to meet standards. Although the traditional and current use of rendering pits, the existing sheds, and most vegetation would not be affected, an area of Smokehouse Village adjacent to the existing roadway would be impacted.

The fill avoids the site's identified fish pit features and further examination by CRC of the shovel test data collected in support of their October 2011 report indicates that the areas proposed for fill are likely comprised of a layer of forest duff over sandy/silty soil that have lower potential to contain cultural materials. According to M. Yarborough, it is unlikely that archaeological resources would be affected by the proposed fill. Based on consultations with CIA and CIV, this proposed action would not adversely affect activities associated with traditional use. Placing additional fill within the site would likely not affect or diminish the characteristics that qualify Smokehouse Village for listing on the National Register.

Therefore, DOT&PF recommends and FHWA finds that the Revised Proposed Action would not adversely affect the features and attributes that make Smokehouse Village eligible for the National Register under either Criteria A or D.

Consultation Efforts

Recent consultation during 2013 and 2014 with the CIV Tribal Council; the CIA Tribal Council; Sealaska Corporation, Inc.; and Sealaska Heritage Institute have indicated that Yendistucky is spiritually important to them because of ancestors who lived there and are buried close to the residential portion of the village. Miraglia's 2009 documentation (*Yindastuki and Chilkoot Village: The Fates of Two Chilkat Tlingit Villages Claimed Under ANCSA Section 14(h)(1)*) also supports the interpretation that the site is culturally significant to the Tribes. DOT&PF has responded to these comments by realigning the Haines Highway to avoid direct impacts to the Yendistucky bluff near MP 4.


In conclusion, we respectfully seek your review and comments with our:

- revised property boundary for Yendistucky (SKG-054), and
- findings of No Adverse Effect for Yendistucky and Smokehouse Village.

We have asked the consulting parties, including the Advisory Council on Historic Preservation, of their interest in participating in the resolution of the adverse effects with the development of a Memorandum of Agreement. In addition to your Tribe, the SHPO, Chilkoot Indian Association, Sealaska Corporation, and Sealaska Heritage Institute have all requested to participate. The Advisory Council has declined to participate. A draft MOA is being developed and will be made available to you when this finding of effect consultation is complete.

Please direct your concurrence or comments on the content of this letter to me at the address above, by telephone at (907) 586-7544, or by e-mail at alex.viteri@dot.gov.

Sincerely,


Alex Viteri Jr., P.E.
Southeast Area Engineer

Cited:

CRC. 2011. Archaeological Field Survey of Proposed Alternative for the Improvement of the Haines Highway from MP 3.5 to 25.3, DOT&PF Project Number 68606, Haines, Alaska. October 2011.

McMahan, J.D. and C.E. Holmes. 1989. *A Cultural Resource Investigation at Haines Airport, Haines, Alaska (Project No. 69523)*. Office of History and Archaeology Report Number 16. Office of History and Archaeology, Division of Parks and Outdoor Recreation, Alaska Department of Natural Resources. Anchorage, Alaska.

Miraglia, R.A. 2009. Yindastuki and Chilkoot Village: The Fates of Two Chilkat Tlingit Villages Claimed Under ANCSA Section 14(h)(1). In K.L. Pratt (ed.). *Chasing the Dark, Perspectives on Place, History, and Alaska Native Land Claims. Shadowlands, Volume 1*. U.S. Department of Interior, Bureau of Indian Affairs, Alaska Region, Division of Environmental and Cultural Resources Management, ANSCA Office. Anchorage, Alaska.

Sealaska Corporation. 1975. *Native Cemetery & Historic Sites of Southeast Alaska*. Submitted to Sealaska Corporation by Wilsey & Ham, Seattle.

Enclosures:

Table 1 – Project Location by Township and Range
Copy of the letter from FHWA to SHPO dated November 28, 2011
Haines APE 2014 Figure Set 1 thru 18
Figure 1. Correct Boundary of Yendistucky (SKG-054)
Figure 2. Revised Proposed Action in Vicinity of Smokehouse Village (SKG-044)
Yandeistakye Spiritual and Shamanic Landscape, CW Smythe PhD, January 28, 2014
Office of History and Archaeology Report:
Ground Penetrating Radar Survey for the Haines Highway Improvement Project, No. 68606, In the vicinity of Yendistucky Village. Prepared by Dr. Linda Finn Yarborough, Cultural Resource Consultants LLC. Prepared for DOWL HKM. January, 2014.

Electronic cc w/o enclosures:

Gregory Lockwood, P.E., DOT&PF, Project Manager
Jane Gendron, DOT&PF, Southeast Regional, Environmental Manager
Michael Kell, DOT&PF, Southeast Region, Regional, Archaeologist
Laurie Mulcahy, DOT&PF, Statewide Cultural Resources Manager
Jim Scholl, DOT&PF, Southeast Region, Project Environmental Coordinator



THE STATE
of ALASKA
GOVERNOR SEAN PARNELL

Department of Natural Resources

DIVISION OF PARKS AND OUTDOOR RECREATION
Office of History and Archaeology

550 West 7th Avenue, Suite 1310
Anchorage, Alaska 99501-3565
Web: <http://dnr.alaska.gov/parks/oha>
Phone: 907.269.8721
Fax: 907.269.8908

August 28, 2014

File No.: 3130-1R FHWA

SUBJECT: Haines Highway Improvements Milepost 3.5-25.3, SHAK-0956(028)/68606

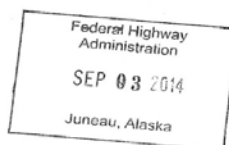
Alex Viteri Jr.
U.S. Department of Transportation
P.O. Box 21648
Juneau, AK 99802-1648

Dear Mr. Viteri,

The Alaska State Historic Preservation Office (AK SHPO) received your letter (dated August 6, 2014) on August 8, 2014 and attached report titled *Ground Penetrating Radar Survey for the Haines Highway Improvement Project, No. 68606, In the Vicinity of Yendistucky Village*. We reviewed the subject undertaking for conflicts with cultural resources pursuant to Section 106 of the National Historic Preservation Act. Following our review of the supplemental finding letter and report, our office concurs with your recent findings of No Adverse Effect for Yendistucky Village (SKG-054) and Smokehouse Village (SKG-044). Also, we have no objections to the revised boundary of Yendistucky Village, which is based on the 1916 plat of US Survey No. 908. The revised boundary has already been updated in the Alaska Heritage Resources Survey (AHRIS).

For future projects that utilize ground penetrating radar (GPR) equipment, we recommend that the AK SHPO be involved in consultation prior to the survey. Although GPR survey has been limited in Alaska, our office has had experience with projects around the State that have implemented this methodology. The GPR report that you submitted would have benefited from a test over previously identified grave sites. This technique would allow for a comparative sample to help identify anomalies and provide justification for the results.

Please note that as stipulated in *36 CFR 800.3*, other consulting parties such as the local government and Tribes are required to be notified of the undertaking. Additional information provided by the local government, Tribes or other consulting parties may cause our office to re-evaluate our comments and recommendations. Please note that our comment letter does not end the 30-day review period provided to other consulting parties.



Should unidentified archaeological resources be discovered in the course of the project, work must be interrupted until the resources have been evaluated in terms of the National Register of Historic Places eligibility criteria (36 CFR 60.4) in consultation with our office.

We look forward to future consultation on the overall project's finding of Adverse Effect for historic properties. It is our understanding that there will still be an adverse effect to the Chilkat River Bridge (SKG-247). As such, mitigation measures will be developed through a memorandum of agreement. Please contact Mark Rollins at 269-8722 or mark.rollins@alaska.gov if you have any questions or if we can be of further assistance.

Sincerely,

A handwritten signature in cursive script, appearing to read "Judith E. Bittner".

Judith E. Bittner
Chief, OHA

JEB:mwr

6.0 ENVIRONMENTAL COMMITMENTS

6.1 Avoidance, Minimization, and Mitigation

Following is a brief summary of preliminary avoidance, minimization, and mitigation measures and environmental commitments that have been incorporated into the Haines Highway MP 3.5 to MP 25.3 project to reduce potential environmental impacts (Table 6.1-1). A more detailed discussion of proposed avoidance, minimization, and mitigation is included at the end of each of the resource category sections in Section 4.0, Environmental Consequences.

Table 6.1-1: Proposed Avoidance, Minimization, and Mitigation Measures

TEMPORARY (CONSTRUCTION) IMPACTS	
Resource Category	Proposed Avoidance, Minimization, and Mitigation Measures
Chilkat Bald Eagle Preserve	<ol style="list-style-type: none"> 1. Clearing during migratory bird nesting periods would be avoided in compliance with the Migratory Bird Treaty Act. 2. Conduct pre-construction nest surveys to confirm bald eagle nest locations prior to Bald Eagle Disturbance Permit application. 3. All work would be in accordance with a Bald Eagle Disturbance Permit issued by the USFWS. 4. Access delays would be minimized under a TCP approved prior to construction.
ROW	Temporary construction permits or easements may be required.
ROW Encroachment	ROW encroachments would be resolved by permitting or relinquishment of excess ROW.
Utilities	<ol style="list-style-type: none"> 1. Relocation of the IPEC and AP&T utility lines would be done, to the extent necessary and possible. 2. Utility access would be maintained where the proposed Haines Highway alignment shifts away from its existing location.
Social (Traffic)	<ol style="list-style-type: none"> 1. The project would be constructed in stages to accommodate existing traffic during construction with minimal traffic delay and detour routing. 2. Traffic control during construction would be in accordance with standards and guidelines in the DOT&PF Alaska Traffic Manual. 3. Navigation restrictions would be coordinated to avoid sensitive time periods and publicized through public notices and communication to permitted commercial tour boat operators. 4. Access delays would be minimized under a TCP approved prior to construction.
Economy and Subsistence	<ol style="list-style-type: none"> 1. Prior to construction, the DOT&PF would consult with Native Tribal members regarding timing construction in subsistence fishing areas and at critical access points in an effort to avoid times when subsistence fishing is most active. 2. Bridge replacement construction would be timed to allow river traffic to pass to maintain access to subsistence areas, as practicable. 3. Navigation restrictions during bridge construction would be coordinated with commercial tour boat operators to avoid sensitive time periods and publicized through public notices and communication to permitted commercial tour boat operators.
Noise	<ol style="list-style-type: none"> 1. The contractor would adhere to work-hour limits. 2. The contractor would adhere to equipment muffler requirements.

Table 6.1-1: Proposed Avoidance, Minimization, and Mitigation Measures

TEMPORARY (CONSTRUCTION) IMPACTS	
Resource Category	Proposed Avoidance, Minimization, and Mitigation Measures
Cultural Resources	Archaeological monitors would be used during construction in areas with high potential for uncovering archaeological resources.
Water Body Involvement, Hydrology, and Water Quality	<ol style="list-style-type: none"> 1. Temporary water quality impacts would be minimized during construction through use of BMPs to minimize erosion and sedimentation. 2. A SWPPP that provides project-specific BMPs would be prepared and implemented by the construction contractor, in compliance with the APDES Construction General Permit. 3. A HMCP would be developed to minimize effects on water quality.
Wetlands and Other Waters of the U.S.	<ol style="list-style-type: none"> 1. Temporary water quality impacts would be minimized during construction through use of BMPs to minimize erosion and sedimentation. 2. Construction areas in or near wetlands and other Waters of the U.S. will be flagged prior to construction. 3. Construction staging areas, material sites, and disposal sites will be limited to upland areas and/or within permitted fill limits.
Fish (EFH)	<ol style="list-style-type: none"> 1. BMPs for erosion and sediment control would be used during construction to minimize the introduction of suspended sediment to receiving waters. 2. Specific BMPs include, but are not limited to, the use of silt fences, straw wattles, inlet and outlet protectors, check dams, and diversionary dam(s) to isolate work from flowing waters. 3. In-water work would occur during timing windows that are stipulations of the ADF&G Fish Habitat Permits.
Wildlife	<ol style="list-style-type: none"> 1. Clearing during migratory bird nesting periods would be avoided, to the extent practicable, in compliance with the Migratory Bird Treaty Act. 2. Clearing in the MP 21 area would be minimized to the extent practicable. 3. Pre-construction surveys to confirm bald eagle nest locations will be conducted prior to applying for the Bald Eagle Nest Disturbance Permit. 4. All work would be in accordance with a Bald Eagle Disturbance Permit issued by the USFWS. 5. It is expected that the USFWS Bald Eagle Disturbance Permit will require eagle nest monitoring before and after construction. 6. DOT&PF would coordinate blasting activities with ADF&G to identify and avoid sensitive time periods for mountain goats as practicable.

Table 6.1-1: Proposed Avoidance, Minimization, and Mitigation Measures

TEMPORARY (CONSTRUCTION) IMPACTS	
Resource Category	Proposed Avoidance, Minimization, and Mitigation Measures
Invasive Plant Species	<ol style="list-style-type: none"> 1. Invasive species surveys would be conducted prior to construction. An invasive plant control plan will identify appropriate control methods from the Disposal and Control of Invasive Plant Species report (DOT&PF SR, 2014) to be used to control identified species during construction. 2. Measures to control the introduction and spread of invasive species would be included in construction contract specifications, including requirements for clean materials, native plants, and certified native seed. 3. Construction equipment will be pressure-washed to remove soil, seed, and plant material prior to moving on or off the project site. 4. Disturbed areas would be stabilized, as soon as practicable.
Air Quality	BMPs would be used to minimize dust.
Hazardous Waste	<ol style="list-style-type: none"> 1. DOT&PF will work with the USACE and DEC to develop a contaminated soil and groundwater management plan consistent with 18 AAC 75.325(i). DOT&PF will submit the plan for DEC review and approval prior to construction activities in areas with known contamination, 2. Equipment fueling and servicing operations would not occur within 100 feet of water bodies, and sorbent material would be kept on-site to contain or clean up any petroleum spill. 3. The contractor would be required to prepare and implement a HMCP to address hazardous materials to be used during project construction and to detail measures to control discharge of such materials into Waters of the U.S.

Table 6.1-1: Proposed Avoidance, Minimization, and Mitigation Measures

LONG-TERM IMPACTS	
Resource Category	Proposed Avoidance, Minimization, and Mitigation Measure
Chilkat Bald Eagle Preserve	<ol style="list-style-type: none"> 1. Design modifications were incorporated to minimize ROW requirements. 2. Approximately 6.2 acres of ROW would be relinquished to the Preserve. 3. Avoided an additional 202 linear feet of fill in the Chilkat River under the Revised Proposed Alignment in the CHA (See Table A1 in Appendix F, Essential Fish Habitat). 4. Other features in the Preserve would be improved as noted in Table 4.6-1.
ROW	<ol style="list-style-type: none"> 1. See measures in the Preserve above. 2. The Uniform Act would be followed to minimize impacts from ROW acquisition.
Utilities	Access to utilities would be maintained, where practicable.
Visual	<ol style="list-style-type: none"> 1. Areas of eagle perching and roosting trees were specifically avoided, where feasible, during the design of this project. 2. Cleared areas would be revegetated.
Cultural Resources	A MOA between the DOT&PF and the SHPO was signed documenting measures to resolve adverse effects to historic resources.. Under the executed MOA, DOT&PF would construct a wayside with interpretive signage that includes historic photographs of the Chilkat River Bridge.
Water Body Involvement, Hydrology, and Water Quality	<ol style="list-style-type: none"> 1. Long-term water quality impacts would be avoided or minimized through riverbank stabilization where roadway improvements require fill in the Chilkat River. 2. Some streams would be relocated away from the roadside ditch, reducing the potential for sediment from road runoff or snow plow operations to enter fish-bearing tributaries. 3. Embankments constructed in and along the Chilkat River as part of this project would be permanently stabilized with riprap. 4. Culverts would be replaced, modified, or added to maintain natural water flows.

Table 6.1-1: Proposed Avoidance, Minimization, and Mitigation Measures

LONG-TERM IMPACTS	
Resource Category	Proposed Avoidance, Minimization, and Mitigation Measure
Fish (EFH)	<p>Avoidance and Minimization</p> <ol style="list-style-type: none"> 1. Passing zones, rather than passing lanes, are used to reduce the roadway footprint and avoid fill in the Chilkat River and its tributaries. 2. Guardrail is used to reduce the roadway footprint to avoid and minimize fill in the Chilkat River. 3. Chilkat River fill is further avoided and minimized by making the embankment as steep as feasible (2:1). 4. The number of in-water piers to support the Chilkat River Bridge would be reduced compared to the existing nine piers. 5. To minimize adverse impacts of fill in the Chilkat River, DOT&PF proposes to use rough angular rock to stabilize the fill and prevent erosion; additional stabilization and erosion control may be provided by incorporating large and small woody debris and other biostabilization techniques into the riprap. <p>Mitigation</p> <ol style="list-style-type: none"> 1. Install 26 fish passage culverts along the alignment, resulting in a functional lift to adjacent wetlands. 2. Replacement in kind of adjacent tributaries as well as improvement and expansion of fish habitat in streams and ponds. 3. Installation of ballasted log clusters at 30 locations in the river along the alignment to improve fish habitat diversity. 4. Installation of 18 vegetated protrusions in the river to mimic existing productive fish habitat.
Floodplains	Installation of large culverts would improve drainage and debris flow areas.

7.0 COMMENTS AND COORDINATION

The NEPA process includes requirements for interagency coordination and cooperation and public participation in planning and project development. During the scoping process, information was gathered from the public and agencies on the purpose and need for the project, potential alternatives, and possible issues and concerns to be addressed during the environmental review and design. Comments received from the public and agencies during the initial scoping period were compiled in a Scoping Summary Report (DOWL HKM, 2006a). The project team continued to solicit input from the agencies and the public during public and agency meetings, through public comments on the July 2013 EA and the October 2015 DREA, and in subsequent meetings and consultations. Comments received after the Scoping Summary Report, including public comments on the July 2013 EA and October 2015 DREA, have been compiled and are attached in Appendix H. All comments received have been considered during the development of this project.

This section contains:

- a brief summary of the agency coordination and public participation conducted prior to the July 2013 EA,
- a more detailed summary of coordination and public participation that occurred during and after the July 2013 EA public comment period,
- a summary of the major issues contained in the comments received on the July 2013 EA and responses to those issues, and
- a summary of coordination activities and response to comments received during the October 2015 DREA that has resulted in revisions to the Proposed Action as described in this FREA.

Note that consultations with Federally-recognized tribes and other consulting parties related to the Section 106 process are discussed in detail in Appendix E.

7.1 Project Website

A project website⁶⁶ was developed to provide specific information regarding the project area, objectives, schedule, documents, team members, and a place to provide public comments. The site has been updated as new information and documents have become available.

7.2 Mailing List of Potential Affected Interests

A public mailing list has been developed and maintained and includes residents and property owners within the vicinity of the proposed project as well as those persons who have shown an interest in the project, or have expressed interest in previous projects in the area. Two newsletters were mailed out to individuals on the mailing list, one in May 2006 and another in February 2009 (Appendix H). A post card notification was sent in June 2014 letting the public know that a DREA was being prepared and that it would be available for public comment when available.

The DOT&PF also maintained a mailing list included local, state, and federal resource agencies and tribal governments who were likely to have an interest or concern, environmental or otherwise, in the project. These entities have also received the newsletters as well as specific correspondence pertinent to their role in the project.

7.3 Early and Continuing Coordination Efforts

DOT&PF has conducted meetings including scoping meetings, public and stakeholder-specific meetings, and public hearings in response to the July 2013 EA and October 2015 DREA. These activities are discussed in greater detail below.

7.3.1 December 2005 Scoping

Scoping began in December 2005. A flyer announcing the meeting was sent to the public mailing list on November 23, 2005. In the week preceding the meeting, the local radio station ran a public service announcement and the meeting flyer was posted at various locations in the Haines area. Advertisements for the public scoping meeting appeared in the Juneau Empire newspaper on November 27 and December 6, 2005. Additional advertisements for the public scoping meeting appeared in the Chilkat Valley News on December 1 and December 6, 2005.

⁶⁶ The project website is available at http://dot.alaska.gov/sereg/projects/haines_hwy/index.shtml.

The scoping comment period ran through December 23, 2005. The public meeting materials and a summary of comments received and responses provided are included in the Scoping Summary Report.⁶⁷ A copy of letters to jurisdictional agencies requesting information and participation is in the Scoping Summary Report.⁶⁸

December 2005 scoping efforts include the following meetings:

- agency meeting held December 5, 2005,
- Preserve Advisory Council meeting held on December 6, 2005,
- public meeting held on December 6, 2005, and
- CIV meeting held on December 7, 2005.

By April 2007, the original proposed action that would straighten the curves at MP 13 was in question. The impacts of that action and needed funding to continue were under review. The project was put on hold until the beginning of March 2009 when the decision was made to remove the realignment of MP 13 in the Proposed Action.

7.3.2 March 2009 Scoping

Public outreach in preparation for a March 2009 scoping meetings was similar to the process conducted in December of 2005. A newsletter announcing the meeting and reporting progress on the project was mailed on February 16, 2009. The mailing list included property owners whose property is adjacent to the proposed alignment alternative as well as other interested parties. The meeting was advertised in the Juneau Empire on February 18, 2009, and in the Chilkat Valley News on February 19, 2009. Public service announcements were transmitted to the local radio and cable stations in Haines on February 23, 2009.

March 2009 scoping efforts included the following:

- agency meeting held on March 3, 2009,
- Preserve Advisory Council meeting held on March 4, 2009,

⁶⁷ Available on the project website at: http://dot.alaska.gov/sereg/projects/hains_hwy/documents.shtml.

⁶⁸ The IDT agencies invited to participate were NMFS, USACE, ADF&G, USFWS, DNR DPOR, DNR Office of Habitat Management and Permitting, Haines Borough, and Takshanuk Watershed Council.

- public meeting held on March 4, 2009, and
- CIV meeting held on March 5, 2009.

The public was provided with comment forms to have their opinions recorded as part of the project record. The public meeting materials and a summary of comments received and the responses provided are attached in Appendix H.

7.3.3 Meetings with Native Tribal Organizations

FHWA sent an Initiation of Consultation letter to Native tribal organizations on December 2, 2005, to inform them of the project and ask for information regarding traditional or cultural places of importance.

Meetings were held in the CIV of Klukwan, including formal government-to-government tribal consultation meetings on December 7, 2005, and October 25, 2011. The meetings were used to present the project and solicit comments (Appendixes E and H).

Members of the CIV of Klukwan and the CIA of Haines participated in much of the field survey that was conducted by the archaeological consultants in 2006.

An additional informational meeting was held in the community of Klukwan on March 5, 2009, to provide an update on the status of the project. In 2009, the Tribe expressed three primary concerns:

- the proposed Chilkat Bridge location,
- room for a future pedestrian path near MP 21, and
- potential impacts to subsistence activities in the river near MP 21.

The CIV specifically requested that DOT&PF return to provide information on how these issues were addressed. An October 25, 2011 government-to-government meeting was held between FHWA and CIV in Klukwan for that purpose.

At the October 25, 2011 government-to-government meeting there was discussion about the challenges of the highway alignment at MP 21. It would not be possible to avoid subsistence use areas and a nearby cultural resource, while simultaneously accommodating the CIV's other

requests. The Tribal Council of the CIV requested more information be provided before making decisions about the highway alignment in this area (Appendix E, Section 106 Consultation).

DOT&PF met with the CIV on June 14, 2012, to discuss their February 23, 2012, comments on FHWA's DoE. Additional government-to-government meetings were held in July and August for FHWA and the CIV to discuss project effects and possible measures to avoid or minimize impacts to cultural resources. DOT&PF met informally with the CIV in October 2012 to discuss proposed project changes. A government-to-government meeting was held in November 2012 to confirm that project changes were acceptable to the CIV.

Subsequent to the public release of the July 2013 EA further consultation took place with both Tribes.

On August 5, 2013, FHWA and DOT&PF met with the CIA on-site to discuss impacts to cultural resources at CIA's request. Further consultations between DOT&PF and CIA regarding those resources took place on October 10 and 21, 2013, and December 20, 2013 in Haines at CIA offices.

Further consultations with CIV to discuss cultural resource issues took place between DOT&PF and CIV on December 20, 2013 and March 3, 2014 in Klukwan. A field review between DOT&PF and CIV was held on April 16, 2014 near Klukwan.

FHWA, DOT&PF, and CIV had an informal consultation on February 7, 2014 and a formal government to government meeting was held on March 3, 2014.

Following release of the October 2015 DREA, FHWA and DOT&PF met with CIV in Klukwan on October 28, 2015 to discuss further development of Chilkat River mitigation features. On November 30, 2015 FHWA had a formal government to government meeting with CIV in Klukwan. DOT&PF and FHWA informally consulted with CIV later the same day. Development of the in-river mitigation, as well as other tribal concerns, was discussed.

7.3.4 Meetings with Alaska Chilkat Bald Eagle Preserve Advisory Council

A copy of the letter requesting scoping comments that was sent to agencies was also sent to members of the Preserve Advisory Council on November 25, 2005. This letter explained the project briefly and asked for feedback. The project team attended a regular meeting of the

Preserve Advisory Council in Haines on December 6, 2005. A brief presentation was conducted by the project team and was followed by a question and answer period (DOWL HKM, 2006a).

A second meeting with the Preserve Advisory Council was held on March 4, 2009, at the Assembly Chambers in Haines, Alaska. The meeting included additional information related to project, work completed to date, on environmental overview and the project schedule (Appendix H, Comments and Coordination).

A third meeting was held on February 21, 2013, to update the Preserve Advisory Council on the project status.

Following release of the October 2015 DREA, on October 27, 2015 DOT&PF attended a Preserve Advisory Council meeting at the Assembly Chambers and presented updated project information.

7.3.5 Agency Meetings

The agency scoping process was designed to communicate the purpose, need, details of the proposed project, and to solicit comments and information from various agencies.

A formal letter requesting scoping comments was sent to the agencies on November 25, 2005, notifying them of the proposed project and the agency scoping meeting that was scheduled for December 5, 2005 in Juneau. The meeting was used to present the project to the agencies, to gain an understanding of the existing environmental resource data available, and to identify the type of environmental studies that the agency representatives expected to see as part of the environmental analysis. Agency comments were solicited through December 27, 2005. Follow-up calls were made to solicit additional comments from agency staff that did not comment by the December 27, 2005 deadline. A summary of comments and responses is provided in the Scoping Summary Report (DOWL HKM, 2006a).

Given the environmental issues identified, the project team determined that an agency IDT should be formed to facilitate an open and cooperative process between the federal, state, and local resource agencies.

To date, DOT&PF has met with IDT members four times in Juneau (Appendix H, Comments and Coordination).

- April 18, 2006. The project team presented a project update and conceptual plans for stream and habitat mitigation. Plans were submitted to the IDT members for their review before the meeting. IDT members were notified by a letter and e-mail sent in March 2006 and follow up telephone calls in April 2006.
- July 17, 2006. The project team presented a project update, reviewed the final S&HI, gave an update on the mitigation ideas, and provided a brief description of the proposed turnout improvements planned as part of the project. IDT members were notified by a letter and a follow-up e-mail sent in July 2006.
- March 2009. The project team provided a project update and discussed the stream and habitat mitigation plan. IDT members were notified by a letter and e-mail invitations about the meeting were sent on January 28, February 27, and March 2, 2009.
- October 16, 2015. The project team updated the status of the project, presented a comparison of the mitigation presented to the IDT in July 2013 versus 2015, and discussed agency comments on the DREA. IDT members were notified via email and Outlook invitation.

An on-site field meeting in Haines was held with the IDT on June 19, 2013 to review the proposed mitigation sites. Discussions and recommendations from that meeting aided development of the revised alignment and revisions to the mitigation plan proposed in the FREA.

Agency comments and DOT&PF responses from the agency meetings are summarized in Appendix H.

DOT&PF met with representatives from NMFS, USFWS, and ADF&G on February 16, 2012 to discuss a draft EFH Assessment provided to the agencies on February 8, 2012. DOT&PF addressed the comments received from NMFS and other agencies to revise and finalize the draft EFH Assessment presented in the July 2013 EA. As discussed below, the July 2013 EA generated multiple public and agency comments and concerns. Following closure of the comment period in August 2013, FHWA and DOT&PF worked on revising the alignment to further minimize impacts, especially to fish habitat. Meetings were held with jurisdictional resource agencies to afford them the opportunity to review the changes to the proposed action and to further discuss ways to mitigate for Revised Proposed Action impacts to fish habitat.

Meetings were held on September 30, 2013; February 13, March 26, May 16, and on-site on May 19, 2014.

The concept of adding proposed features along the banks of the Chilkat River to mimic the existing irregular river bank riparian habitat were generated during that meeting. Between that meeting and the submittal of the final EFH Assessment to NMFS in August 2014, design of these riverine features were developed and formed the final component in DOT&PF and FHWA's proposed mitigation measures for the Revised Proposed Action. NMFS accepted the final EFH Assessment and concluded that consultation was complete on September 18, 2014 (see Appendix F, EFH Assessment). These concepts were further refined in coordination with CIV in December 2015 and January 2016. The mitigation measures added after EFH consultation was completed were presented to NMFS in May 2016; NMFS confirmed that consultation remains complete (Appendix F).

Other agency-specific consultations have occurred, and are included in the appendices as listed below.

- Appendix A - Coordination with DNR regarding recreation turnouts.
- Appendix C - Section 4(f) Impacts to the Preserve.
- Appendix E - Section 106 Consultation with SHPO and tribes regarding potential impacts to historic and archaeological sites.
- Appendix G - Consultation with USFWS regarding eagle nests.
- Appendix H - USACE coordination regarding the Jurisdictional Determination.

7.3.6 Public Hearings and Public Comment Periods

The Chilkat Valley News published a public notice on the availability of the July 2013 EA and a public hearing on July 13, 2013. The announcement stated that a public hearing would be held in Haines from 6:30-7:30 p.m. on August 5, 2013 and that a court reporter would be available to record public comments at a meeting held in Klukwan earlier that same day. The announcement also noted that the July 2013 EA was available for public review. A notice of availability and public hearing was posted in the Juneau Empire on July 17, 2013. Copies of the July 2013 EA were made available at the Haines Public Library on Tuesday, July 9, 2013 and online on July

10, 2013.⁶⁹ The public comment period ended on August 26, 2013. Two hundred fifty-five (255) comment documents were received during the review period. After the comment period ended, each comment document was assigned a unique comment number (1 through 255a). A list of persons and agencies who commented on the July 2013 EA is included in Appendix H.

A public notice on the availability of the DREA was published on September 24, 2015 in newspapers in Haines, Sitka and Juneau. A public workshop and hearing was held in Haines on October 28 and public comments on the DREA were accepted through December 8, 2015. Sixty-seven (67) comment documents, including statements recorded at the public hearing, were received during the 2015 review period. Comment documents from the 2015 DREA were assigned a unique comment number (255b through 321). Comments from the 2015 DREA are also included in Appendix H.

7.4 Issues of Concern

Public and agency comments received to date are documented in the Scoping Summary Report (DOWL HKM, 2006a) and Appendix H in the form of comment letters, general correspondence and consultations. The EA was released for public review and comment in July 2013. Based on those comments received, the highway alignment was revised and a Draft Revised EA (DREA) was released for public review and comment in October 2015. Of the comments received on the July 2013 EA and the October 2015 DREA, many had common issues and concerns. The most common ones have been grouped together by topic and addressed in a single response to each topic. Table 7.4-1 below presents the comments by group and provides a response for each group of comments and the location of changes in the EA that resulted from the comments. The right column in the table refers to the response to each individual comment in Appendix H, e.g. if the right most column in Table 7.4-1 indicates “294bb”, the reference is to comment 294 in Appendix H and the underlined section in comment 294 marked “bb”. Comments received during the 2013 EA review period are numbered from 1 to 255a; comments received during the 2015 REA review period are numbered from 255b to 321. Individual responses to October 2015 agency comments are included in Appendix H.

⁶⁹ Available at www.dot.alaska.gov/sereg/projects/haines_hwy/documents.shtml.

Approximately 41 percent of the comments expressed support for the project, but overall commenters requested FHWA and DOT&PF further reduce potential project impacts. Specifically, the public and stakeholders voiced concerns about the extent of fill in wetlands, potential effects to the Chilkat River and tributary streams, and to bald eagles either directly or indirectly through impacts to salmon. The most recent changes to the FREA were driven by these public comments on the July 2013 EA and the October 2015 DREA.

As a note, several comments from agencies asked why recommendations made by the IDT during the field visit on June 19, 2013 were not incorporated into the July 2013 EA. The DOT&PF felt it important to present the same information to the public that was presented to the IDT. If there were conflicting comments, we needed both commenters to be using the same documents so we could address comments referencing a single set of drawings and related information.

Information presented to the IDT and recommendations from that meeting were incorporated in the EFH and reflected in the FREA.

Changes that have occurred as a result of the comments are summarized below:

- The Revised Proposed Action has been modified by reducing the areas along the highway where passing would be permitted (passing zones). Most of the proposed highway modifications lie within the existing DOT&PF ROW, with the exception of 3 acres within the Preserve, outside the CHA (Council Grounds). To mitigate the ROW impacts in the Preserve, the DOT&PF will relinquish to the Preserve 6.2 acres of excess ROW adjacent to the Preserve (See Figure Set B).
- The highway modifications have resulted in reduced fill in the Chilkat River by 4.2 acres, and wetland fills have been reduced by 1.4 acres.
- A raptor specialist, ABR, Inc., has been consulted to increase DOT&PF's understanding of winter perching and roosting habits of bald eagles in the Preserve and potential effects of the proposed improvements to bald eagle habitats (Appendix G, Bald Eagle Research, Consultation and Conservation Measures). Bald eagles do perch and roost in the DOT&PF ROW. The modified alignment would shift the highway away from the river, in some areas, to avoid and minimize impacts to bald eagle roosting and perching trees (See Figure Set C). ABR advises that the Revised Proposed Action alignment would not have an effect

on the population of bald eagles in the Chilkat region. The DOT&PF has included some of ABR's recommendations to reduce impacts from perch removal and potential mortality due to vehicle collision. For example:

- the revised proposed alignment would provide improved visibility;
 - as few as possible cottonwoods would be removed, as practicable, on the river side of Haines Highway within the Council Grounds area; and
 - a section of the existing Highway at MP 20.5, where a significant number of bald eagles were found to perch and roost in the autumn 2013 study, will be left in place to provide a safe viewing area for tours, photographers, and birdwatchers.
- To offset for fill (riprap) in the Chilkat River, new measures have been developed which would add woody debris, large rocks, and overhanging trees along the Chilkat River banks, to enhance the diversity of fish habitat in the Chilkat River. Based on comments received on the DREA Chilkat River mitigation was further refined (FREA Section 4.15, Fish).
 - Modifications to the alignment have further avoided and minimized the Revised Proposed Action's impacts to EFH. New fish habitat and enhancement of existing fish habitat would be created near MP 12.5. Development of new fish habitat relied on past DOT&PF fish-enhancement efforts along Haines Highway. Results of creation of new fish habitat and enhancement of existing fish habitat have been successful on the Haines Highway improvement project between MP 25 and the Canadian border.⁷⁰ In addition, the project would replace 26 existing culverts with fish passage culverts improving upstream tributaries and fish-bearing wetlands that have been impaired by deficient culverts, resulting directly and/or indirectly in an increase in the quality and quantity of fish habitat and fish productivity (Appendix F, EFH Assessment). NMFS issued a letter regarding the revised EFH Assessment stating: "*NMFS acknowledges that the Alaska Department of Transportation and Public Facilities has designed the project to minimize impacts to EFH, and taken measures to mitigate impacts to EFH while still meeting the project objectives. The mitigation outlined in the August 2014 EFH Assessment is responsive to NMFS's EFH*

⁷⁰ ADF&G 10-year monitoring reports for the MP 25 to the Canadian border can be viewed at: http://www.adfg.alaska.gov/static/home/library/pdfs/habitat/11_10.pdf, and http://www.adfg.alaska.gov/static/home/library/pdfs/habitat/12_08.pdf.

recommendations. Therefore, NMFS considers EFH consultation for the project to be complete.”

Table 7.4-1: Comment Summary & Response Table

Response Number	Comment Summary	Response	Location of Changes in the EA that Resulted from the Comment	Comment Numbers Addressed by the Response
NEPA Process				
R01	Question whether the July EA comment period was too short; extend the comment period.	The comment period began on July 9, 2013, the date the EA was available for review in the Haines Library. The EA was available on line on July 10, 2013. The comment period was extended from its original end date of August 15, 2013 to August 26, 2013. The required 30-day review period has been met.	Not applicable.	2013 Comments 11a, 12b, 13a, 14a, 15a, 21a, 22i, 26a, 27c, 102a, 138j, 145a, 150d, 153c, 169a, 171a, 174b, 177a, 179ad, 183c, 196b, 198c, 202a, 203a, 205g, 206b, 209c, 214d, 227a, 229d, 2015 Comments 259a, 264a, 273a,
R02a	Question whether this project should be evaluated in an EIS partially because of a lack of quantitative information to be able to assess the significance of the proposed action:	After consideration of public comments, additional studies and technical revisions were conducted (but not limited) to: 1. further evaluation of the potential effects of the project on bald eagle habitat and bald eagles, 2. assessment of the effects to previously undisclosed cultural resources, and 3. modification of the alignment to avoid, minimize and, if unavoidable, mitigate for impacts. The “Proposed Action” has been revised to address public and agency comments and incorporate suggested improvements, and impacts to the most environmentally sensitive areas have been reduced.	Each resource discussed within Sections 4 and 5 presents the analysis of environmental impacts, avoidance, minimization, and mitigation. Changes resulting from the Revised Proposed Action are summarized. Changes to the Proposed Action are summarized in Table 1.2-1. Additional information on bald eagles is included in Section 4.2.1 and Appendix G, Bald Eagle Research, Consultation and Conservation Measures. Additional information on cultural resources is provided in Section 4.10, and Appendix E, Section 106 Consultation.	2013 Comments 22h 27b, 29b, 72b, 102b, 105e, 115j, 117b, 141c, 149a, 153a, 156b, 179a, 179o, 179v, 195a, 196a, 196c, 198b, 205b, 222b, 238a, 240a, 245a, 251d
R02b	<u>Question whether there is a potential for significant impacts and an EIS should be prepared.</u> 1. Inadequate information/ data about eagle trees to be cut to be able to determine significance 2. Riprap placed in Chilkat River would cause significant impacts 3. Salmon mitigation measures’ effectiveness is unknown 4. A more thorough analysis of all resource impacts and cumulative impacts is needed to determine significance of impacts 5. The Preserve is a unique characteristic that should be evaluated in an EIS 6. Human environment impacts not adequately evaluated; could have significant impacts	Based on the type of action (upgrading an existing highway but not adding traffic lanes or major realignments), an EIS is typically not warranted. An EA was prepared to determine whether an EIS was needed. 1. Commenters accurately identified a data gap regarding possible impacts to bald eagles using the Preserve from the proposed cutting of perching and roosting trees within the DOT&PF ROW. Two surveys of roosting and perching bald eagles within the Council Grounds have been done following the July 2013 EA. We do estimate that between 80 and 100 of the trees noted to have perching eagles within the proposed footprint of the project adjacent to the Council Grounds could be cut. This represents up to 18 percent of the trees along the Haines Highway in the Council Grounds where eagles were recorded to be	1. Information on eagle tree use is included in Appendix G, Bald Eagle Research, Consultation and Conservation Measures. 2. The EFH Assessment in Appendix F contains analysis of impacts to fish habitat and proposed mitigation. 3. See 2 above.	2013 Comments 22h, 27b, 29b, 72b, 105e, 115j, 117b, 138c, 141c, 145a, 150a, 153a, 156b, 157k, 159b, 160a, 167d, 169aa, 170a, 171f, 174a, 177d, 178a, 179b, 179o, 179v, 181a, 183a, 184a, 191f, 192b, 196a, 196c, 198b, 201a, 203e, 205g, 206b, 209c, 224d, 227a, 229a, 230d,

Table 7.4-1: Comment Summary & Response Table

Response Number	Comment Summary	Response	Location of Changes in the EA that Resulted from the Comment	Comment Numbers Addressed by the Response
		<p>perching during these two surveys. Most of these trees are upgradient of the highway. The consulting bald eagle specialists recommend that the proposed cutting of this estimated number of trees would not adversely affect the bald eagle population. DOT&PF in coordination with USFWS has identified two areas for replanting of cottonwoods within the Council Grounds area near the Chilkat River. Both these areas are important eagle foraging areas during the fall eagle congregation.</p> <p>2. DOT&PF has worked with members of the IDT about the possible impacts to salmon from riprap placement along the Chilkat River where it is needed to protect the roadway. The revised alignment has eliminated some of this riprap and the mitigation plan in the Appendix F, EFH Assessment, includes vegetating riprap as well as adding woody debris and other riparian features that will improve existing riverbank habitat.</p> <p>3. Members of the IDT have worked with DOT&PF for the past year to review the proposed mitigation measures. At this time, these measures have been accepted by NMFS and ADF&G. Monitoring of their effectiveness is expected to be a requirement of the permits issued.</p> <p>4. Additional studies and analyses have been conducted and can be found within this FREA. They are:</p> <ul style="list-style-type: none"> a. an analysis to show which perching trees in the Council Grounds area may be cut (see Figure Set C); b. an additional survey of perching sites during the 2014 fall eagle congregation (Appendix G); c. a revised alignment to further avoid and minimize impacts to the Chilkat River (Appendix F, EFH Figure Set 1); d. an analysis to determine appropriate additional mitigation for impacts to the Chilkat River (Appendix F); e. a revised plan with additional salmon bearing tributary created/enhanced as mitigation for impacts to fish bearing wetlands. The revised plan is similar to other successful tributary creation in the Chilkat River Watershed as mitigation for previous Haines Highway projects (Appendix F); f. an expanded impact analysis is included with the appropriate EA sections. All sections have been modified to provide clarity and any new information; and g. an additional cultural resource survey was performed to address concerns about a previously undisclosed historic property. The results are confidential. <p>5. The presence of the Preserve was recognized as an important resource that could be secondarily affected by the project. DNR DPOR and ADF&G, officials with jurisdiction, as well as FHWA, had not concluded that an EIS was warranted prior to release of the July 2013 EA. With the revisions that have been made resulting in reductions in impacts and the added analyses done that have recommended the bald eagle population would not be adversely effected, this Revised Proposed Action does not appear to warrant an EIS-level of NEPA documentation. The finding of significance will be made in the final decision document signed by FHWA.</p>	<p>4. Each resource discussed within Sections 4 and 5 presents the analysis of environmental impacts, avoidance, minimization, and mitigation. Changes resulting from the Revised Proposed Action are summarized.</p> <p>5. The Preserve is assessed in Section 4.2, Alaska Chilkat Bald Eagle Preserve, and Section 5.1, Chilkat Bald Eagle Preserve.</p> <p>6. Human environment effects are discussed in Sections 4.1 through 4.10. Section 4.6.2 discusses social, economic, and subsistence issues.</p>	<p>233d, 238a, 238h, 238k, 240a, 240p, 242e, 248e, 249c, 251d, 254a</p> <p>2015 Comments 273l, 282k, 291c, 294f, 294vw, 294zz, 300a, 301b, 307c, 308e, 308f, 313a</p>

Table 7.4-1: Comment Summary & Response Table

Response Number	Comment Summary	Response	Location of Changes in the EA that Resulted from the Comment	Comment Numbers Addressed by the Response
		6. Additional analyses of potential impacts to the human environment (subsistence, environmental justice, economics) have been added to this FREA.		
R02c	<p><u>Question whether there are unusual circumstances.</u></p> <ol style="list-style-type: none"> 1. public controversy, 2. scientific controversy, and 3. the presence of the Preserve, a Section 4(f) protected resource. 	<ol style="list-style-type: none"> 1. Public controversy, alone, does not warrant an EIS. At the time of release of the July 2013 EA, the level of public controversy over environmental issues was not known. Based on comments received on the 2013 EA, the Revised Proposed Action was developed to address public and agency concerns and further avoid and minimize impacts. 2. The Revised Proposed Action eliminates some curve straightening and further avoids and minimizes impacts to the Chilkat River and provides additional mitigation to address agency and public concerns (responses to agency comments are included in Appendix H). NMFS's completion of consultation was based on acceptance of the revised EFH Assessment and the Revised Proposed Action alignment. 3. The presence of the Preserve adjacent to the highway corridor did heighten the level of analysis of impacts to public use opportunities, as well as fish and eagle habitat impacts. During meetings and in response to consultations prior to the release of the July 2013 EA, officials with jurisdiction over this Section 4(f) property (DNR DPOR and ADF&G) indicated the project would provide improvements to the Preserve and resources and habitat. 	<ol style="list-style-type: none"> 1. Each resource discussed within Sections 4 and 5 presents the analysis of environmental impacts, avoidance, minimization, and mitigation. Changes resulting from the Revised Proposed Action are summarized. 2. Appendix F contains the revised EFH Assessment with NMFS' concurrence on EFH. 3. The Preserve is addressed in Section 4.2, Alaska Chilkat Bald Eagle Preserve, and Section 5.1, Chilkat Bald Eagle Preserve. Additional information on the Preserve is in Appendix A, Coordination with DNR on Turnout Improvements and Appendix C, Section 4(f). 	2013 Comments 48a, 238a, 238k, 242e
R02d	Question whether the project is not consistent with federal, state, or local laws.	<ol style="list-style-type: none"> 1. USDOT Section 4(f): The FHWA has determined and the Officials with Jurisdiction (OWJ) have concurred that the project will meet the conditions required for <i>de minimis</i> impact findings. 2. USACE Section 10 and 404: Based on consultations with the USACE, a member of the IDT, the project would be permitted based on incorporation of all practicable avoidance and minimization measures and application of an approved compensatory mitigation plan. 3. NMFS MSFCMA: In a letter dated September 18, 2014, NMFS acknowledged that DOT&PF's project is now designed to minimize impacts to EFH and taken measures to mitigate impacts. The mitigation outlined in the August 2014 EFH Assessment is responsive to NMFS recommendations. 4. USFWS: Under the Bald and Golden Eagle Protection Act, permits may be issued for "inadvertent takes" (disturbance) of bald eagles as well as the 	<ol style="list-style-type: none"> 1. Section 5.0 describes compliance with Section 4(f) and Appendix C, Section 4(f) provides additional information. 2. Section 4.14, Wetlands and Other Waters of the U.S. documents compliance with CWA Section 404. 3. Section 4.15, Fish, and Appendix F, EFH Assessment documents compliance with MSFCMA. 4. Section 4.2, Alaska 	2013 Comments 48a 2015 Comments 238a, 238m, 240m, 294zz

Table 7.4-1: Comment Summary & Response Table

Response Number	Comment Summary	Response	Location of Changes in the EA that Resulted from the Comment	Comment Numbers Addressed by the Response
		<p>physical take of some nesting, feeding, and roosting habitat. DOT&PF, in consultation with USFWS, has begun work to prepare permit applications for bald eagle and habitat takes. No bald eagle nest trees are currently identified that would be taken by the proposed action.</p> <p>5. Section 106 of the NHPA: The Section 106 process found an adverse effect to the eligible historic Chilkat River Bridge and consultations with SHPO have concluded that documentation of that structure following the Historic American Engineering Record process and construction of an interpretative wayside would mitigate for the loss of that historic property. Tribal concerns about incidental discovery during construction would be mitigated by including Archaeological Monitors during disturbance of sensitive previously undisturbed ground.</p> <p>6. AS 41.21.610-41.21.610 - 630 (Establishment of the Alaska Chilkat Bald Eagle Preserve): This statute excludes the Haines Highway transportation and utility corridor from the Preserve. The Preserve Plan establishes a process that allows some work be done in the Preserve, such as the proposed exchange of land between the DOT&PF ROW and the Preserve. That process will be followed.</p> <p>7. State and Local Laws, Codes, and Plans: As detailed in Section 4.1, Land Use and Land Management Plans, the proposed project has been evaluated to determine if it would meet or contradict with other state and local laws, codes, and plans. The analysis has determined that the project is consistent with these laws.</p>	<p>Chilkat Bald Eagle Preserve, describes compliance issues associated with bald eagles and their habitat.</p> <p>5. Section 4.10, Cultural Resources, and Appendix E, Section 106 Consultation document compliance with the NHPA.</p> <p>6. Section 4.2 and associated appendices document consistency with State Laws on the Preserve.</p> <p>7. Section 4.22, Permits and Authorizations, and Table 4.22-1 discuss compliance with relevant federal, State, and local laws.</p>	
R78	The EA, by size and volume alone, indicates an EIS is required.	FHWA's decision on the appropriate class of action is based a determination of significance rather than the size of the document.	Not applicable	2015 Comments 294xx
	Proposed Action			
R03	Question whether to keep the road in its original footprint. You do not need to straighten the road so much.	Due to public and resource agency concerns that the proposed straightening of curves would excessively impact fish habitat and wetlands, the Revised Proposed Action has been modified to include fewer realignments and less straightening. The Revised Proposed Action has reduced passing zones to about 50 percent to retain curves and to reduce impacts to the environmentally sensitive areas while still addressing the highway deficiencies identified.	See Section 1.0, Revised Proposed Action and Section 2.0, Purpose and Need	2013 Comments 221, 109b, 139c, 157f, 159c, 173a, 176d, 179n, 179aa, 185a, 191i, 197b, 197e, 202c, 208a,
R04	Question whether to widen the road.	The proposed action maintains the existing 12-foot vehicle travel lanes. Only the shoulders are being widened. The recommended minimum width for shoulders for a 55 mph roadway is 6 feet. (AASHTO, 2001).	The purpose and need is discussed in Section 2.0.	2013 Comments 109d, 151d, 157c, 170c, 173a, 176d, 179n, 179w, 182g, 185a, 186a, 197a, 197b, 208a, 240d
R42	When can we expect construction to begin?	Construction could begin as soon as Summer of 2016.	Not applicable.	2015 Comments 255a
R44	Use the money for maintenance of the highway.	The money that would be used for the capital improvements to the Haines Highway is federal-aid funding and required State match. Routine highway maintenance is funded only with State and Local funds.	Not applicable.	2015 Comments 258b

Table 7.4-1: Comment Summary & Response Table

Response Number	Comment Summary	Response	Location of Changes in the EA that Resulted from the Comment	Comment Numbers Addressed by the Response
R48	1) Do not raise the speed limit.	The speed limit is 55 mph today. Proposed highway improvements would not raise the speed limit. Several commenters used the terms “speed limit” and “design speed” interchangeability. They are different; “speed limit” is a regulatory maximum enforceable speed, “design speed” sets geometric highway standards. See R08 for a response to the comments concerning design speed.	The Alternatives discussion in Section 3.0 addresses the proposed speed limit.	2015 Comments 276b, 287a, 292a, 293a, 302a, 307b, 308c, 313c, 314a
R49	Signage should not block river views.	State law restricts the placement of commercial signs along public roads. Posted speed limits and other regulatory signage need to be placed in designated locations (DOT&PF 2013c) however there is discretion in the final placement of signs. DOT&PF would make every effort to place signs in such a manner that minimizes blocking of scenic views.	Sign placement is discussed in Section 4.8.3.	2015 Comments 292b
R54	Vary shoulder widths to reduce tree and brush clearing. Reduce shoulder widths in sensitive areas to reduce fill areas.	Varying the width of the shoulder would not reduce tree and brush clearing because the width of the clear zone, the unobstructed, traversable area beyond the edge of the travel lane, would remain the same. The width of the clear zone is measured from the outside edge of the travel lane (AASHTO 2011). Safety is a consideration in the selection of a continuous shoulder width. To clarify the rationale for a 6 foot shoulder width, the standard for shoulders on highways used by bicyclists call for widths greater than 4 feet (AASHTO 2012). However, a minimum shoulder width of 6 feet is preferred so vehicles can make emergency stops and pull completely off the travel lane (AASHTO 2001). A continuous shoulder width is predictable and provides a sense of security for most motorists knowing they can pull completely off the travel lane anywhere along the highway. Variable shoulder widths create uncertainty for the driver, thereby diminishing that sense of a security which may increase the risk of accidents (AASHTO 2001). A continuous shoulder width also provides a consistent and predictable area for bicyclists to operate in without obstructing faster moving motor vehicles. See FREA photo 2.0-1 (AASHTO 2001).	Shoulder width standards (AASHTO) are discussed in Section 3.2, Alternative 3, including footnotes 1 and 2.	2015 Comments 273g, 273h, 282f, 320d
R81	Plant small shrubs or Sitka rose bushes in the clear zone.	DOT&PF would have construction contract documents include the salvage and replanting of Sitka rose bushes within the project limits.	NA	2015 comments 275b
R59	Add a turnout near MP 10.	DOT&PF is avoiding and/or minimizing the project impacts by maintaining existing Chilkat River access. DOT&PF worked with DNR and ADF&G to develop a balance between Chilkat River access and avoiding or minimizing impacts. Adding an additional turnout near MP10 would increase impacts to sensitive resources where access already exists. See Table 4.6-1 for locations of project turnouts.	Not applicable..	2015 Comments 309a
R60	Add an acceleration/deceleration lane at the Klukwan intersection.	The Chilkat Avenue/Haines Highway intersection would be raised approximately 15 feet and moved slightly toward the Canadian border to provide much better visibility and gentler grades. With the improved visibility vehicles would have better opportunity to slow down or stop, allowing other vehicles to turn into or out of Klukwan. Traffic volumes are low enough that acceleration/deceleration lanes are not warranted. See Table 4.6-1 for a list of turnout/wayside improvements	Not applicable	2015 comment 309b

Table 7.4-1: Comment Summary & Response Table

Response Number	Comment Summary	Response	Location of Changes in the EA that Resulted from the Comment	Comment Numbers Addressed by the Response
R62	Added passing lanes are unnecessary.	<p>DOT&PF eliminated passing lanes, early in the project, to avoid impacts to sensitive environmental resources.</p> <p>There may be some confusion between a passing lane and passing zone. A passing lane is an additional traffic lane allowing vehicles to overtake slower moving traffic. A passing zone is an area where the roadway geometry allows faster vehicles to overtake slower vehicles in the lane normally used by opposing traffic.</p>	Not applicable.	2015 Comments 310b, 320e
R64	Plow the walking path in the MP 19 to 21 areas.	DOT&PF does not have the resources to maintain facilities other than DOT&PF facilities. The walking path is owned and maintained by DNR Division of Parks.	Not applicable.	2015 comment 308aa
R68	Provide a separate, detached, bike path.	Given the highway's location, between steep mountain slopes and the Chilkat River, DOT&PF is minimizing the project footprint while meeting the purpose and need for the project. Providing 6-foot-wide shoulders provides for bicycle access while avoiding or minimizing environmental impacts to the extent practicable.	This is addressed in Alternatives, Section 3.2.	2015 Comments 317a, 318a
R69	Do DOT&PF standards need to be followed in the three or four stretch of critical habitat for eagles and salmon?	Yes. The Haines Highway is an arterial highway and capital improvements to the Highway will be to 55 mph standards (AASHTO 2001).	Not applicable.	2015 Comments 319a
R71	The proposed action is not consistent with the Yukon portion of the Haines Highway.	<p>The design speed of the proposed project is consistent with the adjoining highway segments in the U.S. Although we have changed the appropriate references to the Canadian section of the highway we have made no change to the purpose of the project which states (in part),</p> <p><i>"The purpose of this project is, to address highway deficiencies between MP 3.5 and MP 25.3 and bring the highway up to current design standards for a 55 mph design speed, as practicable, so it is consistent with the adjacent highway segments ..."</i></p>	This has been clarified throughout the document, including Sections 1.2, 3, 4.6 and 5.1.	2015 comment 294mm
R75	Adding the "as practicable" language gave DOT the ability to employ design exceptions that met other needs and requirements.	<p>The approved project type has not changed and is reconstruction (DOT&PF SR 2005b and 2015). Reconstruction requires bringing all substandard curves to design standards as practicable. The Revised Proposed Alignment does bring all substandard curves up to design standards as practicable. It is not practicable to bring two curves in the vicinity of MP 13 up to design standards because it would result in a significant impact to a sensitive resource. Bringing all other curves up to design standards is practicable; the action would impact sensitive resources, but not to the same level of significance.</p> <p>Reconstruction standards seem to be confused with rehabilitation standards, which do allow for more design exceptions than reconstruction standards. However, the approved design designation for this project is reconstruction.</p>	Section 1.1, Introduction/Affected Environment Section 3.0, Alternatives	2015 Comments 294cc, 294dd
R87	Guardrails should be improved and strengthened.	The proposed project includes guardrails.	Not applicable.	2013 Comments 131j

Table 7.4-1: Comment Summary & Response Table

Response Number	Comment Summary	Response	Location of Changes in the EA that Resulted from the Comment	Comment Numbers Addressed by the Response
	Purpose and Need			
R05	The project is needed to improve the safety of the highway.	The DOT&PF and the FHWA agree with this comment. The purpose of the project is to address highway, bridge, and recreational-access deficiencies and to address slope stability at MP 19 and MP 23. Safety would be improved by satisfying the purpose and need.	Section 2.0 discusses the purpose and need for the project.	<p>2013 Comments 28a, 34a, 35a, 36a, 37a, 38a, 39a, 40a, 41a, 42a, 45a, 46a, 47a, 49a, 50a, 51a, 52a, 53a, 54a, 55a, 56a, 57a, 58a, 59a, 60a, 61a, 62a, 63a, 64a, 65a, 66a, 67a, 68a, 70a, 71a, 73a, 74a, 76a, 78a, 79a, 80g, 82a, 83a, 84a, 85a, 86a, 87a, 88a, 89a, 90a, 91a, 92a, 93a, 94a, 95a, 96a, 97a, 98a, 99a, 100a, 101a, 103a, 104a, 105f, 106a, 107a, 110a, 11a, 112a, 113a, 114a, 115g, 116a, 118a, 120a, 121a, 122a, 123a, 124a, 125a, 126a, 127a, 128a, 129a, 130a, 131b, 132a, 133a, 134a, 137a, 140a, 143b, 144a, 146a, 147a, 148a, 149a, 155a, 157d, 161a, 163a, 166a, 168a, 168h, 173a, 175d, 176a, 182h, 188a, 189a, 194a, 207a, 219a, 219d, 233e, 235a, 246h</p> <p>2015 Comments 256a, 256b, 260a, 206b, 262a, 266a, 267a, 268a, 270a, 271a, 272a, 275b, 277a, 283a, 286a, 288a, 288b, 288c, 296a, 297a, 312a, 316a</p>
R06	<ol style="list-style-type: none"> 1. The project is not needed. 2. The road is low-volume. 3. The project is too costly for low volume. 4. The road is safe. 	<ol style="list-style-type: none"> 1. The purpose of the project is to address highway, bridge, and recreational-access deficiencies and slope instability in the MP 19 and MP 23 slide areas. Please refer to the Project Purpose and Need (Section 2.0) for more information. 2. Haines Highway is a principal arterial connecting Southeast Alaska with the rest of the State and the intercontinental network of roads. It is an important surface transportation link, regardless of traffic volume. 3. We are sensitive to project cost, and the DOT&PF has performed a value engineering study to develop the most prudent solution to satisfy the purpose of the 	Section 2.0 discusses the purpose and need for the project.	<p>2013 Comments 221, 27f, 29e, 108a, 135a, 138i, 139b, 141a, 143b, 149b, 152c, 154e, 166a, 173a, 175c, 175d, 176a, 180c, 182h, 191i, 192d, 198e, 201b, 205e, 209b, 233e, 235a, 240c</p>

Table 7.4-1: Comment Summary & Response Table

Response Number	Comment Summary	Response	Location of Changes in the EA that Resulted from the Comment	Comment Numbers Addressed by the Response
		project. 4. The purpose of the project is to address highway, bridge, and recreational-access deficiencies and to address road closures at debris slide areas at MP 19 and MP 23. Although the accident rate is low, safety would be improved by satisfying the purpose and need.		2015 Comments 261a, 261b
R43	Fix the bridge.	The Chilkat River Bridge will be replaced with a new bridge.	This is addressed in Section 1.2 which discusses the Revised Proposed Action.	2015 Comments 258a
R45	The road is more of a destination than a travel route.	The Haines Highway provides users both access to destinations within the project limits and mobility through the project area. The highway is an arterial because it links Southeast Alaska with Canada, the rest of Alaska and the continental network of roads. An arterial highway's primary function is to provide mobility rather than access. DOT&PF recognizes that many people do view the Haines Highway as a destination because it is a scenic byway; however, its primary function is mobility.	Not applicable.	2015 Comments 269a
R82	Safety concerns must be addressed in a responsible manner.	DOT&PF has worked hard with the public to develop a proposed project that addresses the safety concerns driving the project while responsibility addressing potential impacts on social, physical and biological resources.	Not applicable	2013 Comments 131c
Alternatives				
R07	1. The EA only has two alternatives, the Proposed Action and the No-Action. 2. Provide a less impacting Alternative for the public to review.	1. Haines Highway is an existing corridor that is deficient in several areas. DOT&PF determined that those deficiencies could be resolved by modifying the existing roadway. Several types of modifications were considered in the screening process. Section 3.0 has a more thorough description of the screening process that was carried out. As described in Section 3.0, alternatives have been considered and rejected and only the Proposed-Action and the No-Action alternatives were brought forward for further evaluation in the July 2013 EA. Because of comments received a revised alternative has now been evaluated and is presented in this Revised EA. 2. The Revised Proposed Action is a less-impacting alternative made available to the public prior to the FHWA's NEPA decision document (see the Executive Summary for a summary of beneficial changes). The Revised Proposed Action would achieve needed upgrades while keeping the highway on or about the existing alignment, while minimizing the project footprint. Some of the reductions have been achieved by reducing passing zones to about 50 percent to further reduce impacts to sensitive resources (See "Revised Proposed Action"). Prior to the release of July 2013 EA, agency and public feedback and analyses conducted had not identified an impact that was considered significant Comments received on the July 2013 EA from the public and agencies EA indicated the need to reassess the Proposed Action and determine whether a less-impacting alternative could be developed. The result of that reassessment is this FREA, with a less-impacting revised proposed alternative than the one originally proposed in the July 2013 EA.	Section 3.0, Alternatives, discusses the evaluation and selection of Alternatives.	2013 Comments 9a, 22b, 27a, 29a, 30a, 32b, 48c, 48h, 72a, 72e, 75c, 80a, 105a, 115a, 115i, 115m, 115o, 117a, 117e, 119a, 138a, 138g, 139a, 142a, 156a, 158e, 168b, 170a, 174c, 176c, 176e, 177b, 178b, 179m, 179n, 179w, 180c, 182e, 182j, 184b, 185a, 190a, 191g, 191h, 192c, 195a, 197b, 201b, 208a, 222a, 228a, 230a, 231a, 231b, 233a, 233d, 234a, 236a, 236c, 237c, 238f, 239h, 240k, 243a, 245a, 246a, 246l, 248a, 249c, 250a 2015 Comments 273b, 282a, 291b, 294e, 294j, 294p, 294t, 294bb, 294dd, 294ee, 320a

Table 7.4-1: Comment Summary & Response Table

Response Number	Comment Summary	Response	Location of Changes in the EA that Resulted from the Comment	Comment Numbers Addressed by the Response
	<p>3. Select an alternative with a smaller footprint in eagle and salmon habitat.</p> <p>4. Implement design flexibility or seek a Federal exception to design standards.</p>	<p>3. See response to 2 above. Overall the Revised Proposed Action reduces:</p> <ul style="list-style-type: none"> a. impacts on eagle and salmon habitat, b. ROW acquisition in the Preserve, c. wetland impacts, and d. impacts in the Chilkat River. <p>Additional mitigation measures have been added for impacts to salmon and eagle habitats.</p> <p>4. An alternative with a lower design speed and narrower shoulders was evaluated to determine whether this approach would provide a prudent alternative that would meet the purpose and need. Having variable shoulder widths such as going to a 4-foot shoulder in the Council Grounds, is shown to cause driver uncertainty and increase risk of accidents; the DOT&PF SCR Traffic & Safety Engineer does not support this alternative. The terrain within the Council Grounds would allow a 55 mph design speed roadway with 6-foot shoulders, therefore it is practicable and would meet the purpose and need of the project. It would not be prudent or meet the purpose and need for the corridor to construct a section of highway to a lower design speed at this location. However, DOT&PF would consider an application for a festival permit to lower the speed limit in the Council Grounds area during the Alaska Bald Eagle Festival. Reducing the speed limit during the festival would be only one of the factors considered before issuance of the permit.</p>		
R08	Select an alternative with a lower design speed standard.	<p>Haines Highway is a principal arterial highway linking Southeast Alaska with the intercontinental road network and is the primary surface transportation link between Southeast Alaska and Interior Alaska.</p> <p>The existing speed limit for the Haines Highway from Haines, Alaska to the Canadian border is 55 mph; however, the roadway between MP 3.5 and MP 25.3 has not been updated to current design standards as the other sections of highway have. The AASHTO recommends that roads with this functional classification in level terrain be designed with design speeds in the 60- to 75-mph range (AASHTO, 2011 p. 444). Trips on these types of roads are typically longer trips with the majority of motorists traveling several miles or even tens of miles per trip. The design speed should be logical to the topography, anticipated operating speed, adjacent land use, and functional classification.</p> <p>The classification of Haines Highway as a principal arterial, the level terrain, the relatively few driveways and approach roads, and the operating speeds of motorists on the existing road all point to a design speed that would be no less than 55 mph, consistent with the existing speed limit on both sides of the project corridor.</p>	Section 3.0, Alternatives, discusses the evaluation and selection of Alternatives.	<p>2013 Comments 29f, 105c, 109e, 149b, 162a, 164b, 174e, 176b, 177c, 179q, 179aa, 180a, 187e, 187m, 209a, 230b, 236c, 243a, 248b</p> <p>2015 Comments 273e, 282d, 294bb, 310a</p>
R73	<p>Alternative 3, which would provide, more avoidance and minimization, has been arbitrarily dismissed and fails to demonstrate it is not practicable in light of the project purpose.</p> <p>DOT&PF dismisses Alternative 3 because</p> <ul style="list-style-type: none"> • it is not consistent with adjacent highway segments, • of a 4 foot shoulder width. This is an AASHTO preference not a requirement. • an unsubstantiated claim is made that a 50 mph road is somehow less safe than a 55 mph road 	Alternative 3 was included in the October 2015 DREA because several commenters, including the USFWS, requested inclusion of an alternative with a reduced design speed to reduce impacts to sensitive environmental resources. DOT&PF considered and dismissed alternative 3 because it would not meet the purpose of the project, e.g. the highway would not be consistent with adjacent segments of the highway and would not meet the need of the project to bring the highway to 55 mph design standards, as practicable. Also, Alternative 3 has similar operational performance as	The dismissal of Alternative 3 is discussed in Sections 3.0 and 3.2.	2015 comment 273a, 294d, 294g, 194l, 294m, 294o, 294cc, 294dd, 294ee, 294fff, 299a, 313b, 320b

Table 7.4-1: Comment Summary & Response Table

Response Number	Comment Summary	Response	Location of Changes in the EA that Resulted from the Comment	Comment Numbers Addressed by the Response
		<p>the no-build alternative and would not improve the percent passing in the corridor from the existing 41 percent.</p> <p>Driving involves a perception of critical events in the future including a judgement of time-to –collision. The highway segments adjoin the project are constructed to 55 mph design standards including 6 foot shoulders. If DOT&PF were to provide a segment inconsistent with adjoining segments, including but not limited to, varying roadway width in the highway corridor the perception of time-to collision would vary creating driver anxiety; a contributing cause of crashes.</p> <p>For the reasons stated in R08, 55 mph is the properly posted speed limit. Improperly posting a roadway can lead to variation in speed and elevated dangers due to the speed variation. Posting too low creates a greater speed differential and potential for more safety conflicts. For these reasons, this alternative was rejected from further consideration.</p>		
R53	Evaluate a new Alternative proposed by Lynn Canal Conservation (LCC).	<p>The LCC Alternative does not meet the need of the project, e.g. to address highway and recreational deficiencies.. The LCC alternative mistakenly relies on rehabilitation standards for highways. The approved project type is reconstruction (DOT&PF SR 2005b and 2015). Reconstruction requires bringing all curves to design standards as practicable. The revised proposed alignment brings all highway curves up to design standards, as practicable, whereas the LCC alternative allows many more curves to remain substandard than the Revised Proposed Action.</p> <p>The LCC alternative would vary highway width. Driving involves a perception of critical events in the future including a judgement of time-to –collision. Varying roadway width varies the perception of time-to collision by diminishing driver expectancy of a constant road width creating driver anxiety; a contributing cause of crashes (Institute of Transportation Engineers, 1999).</p> <p>The Revised Proposed Action provides an alternative that incurs no significant impacts and provides the best solution to address purpose and need e.g. brings as many curves to standard as practicable and diminishes driver anxiety by providing a standard width roadway. In comparison the LCC Alternative does not meet reconstruction standards and would create driver anxiety. It will not be evaluated further.</p>	Section 1.1 Section 3.0, Alternatives.	2015 Comments 294k, 294s, 294dd, 299g
R55	The proposed alternative does not meet the requirements of 4(f), 404(b)(1), or Preserve statutes.	<p>Refer to response R56 for a discussion of how the project meets the requirements of Section 4(f).</p> <p>The project complies with the requirements of the CWA Section 404(b)(1) Guidelines (Guidelines). We have taken all measures to avoid, and minimize if unavoidable, impacts to Wetlands and other Waters of the US given the constraints of the project, e.g. steep topography, sensitive resources on both sides of the Highway in the same area, geologic and hydrologic challenges among others further discussed in Section 4.0</p>	<p>Section 4.1.4 addressed compliance with 404(b)(1).</p> <p>Section 4(f) compliance is described in Section 5.0 and Appendix C.</p> <p>Section 4.2 describes compliance issues related to the Chilkat Bald Eagle Preserve.</p>	2015 Comments 294a, 294q, 294v, 294w, 294x, 294dd, 294ee, 294kkk

Table 7.4-1: Comment Summary & Response Table

Response Number	Comment Summary	Response	Location of Changes in the EA that Resulted from the Comment	Comment Numbers Addressed by the Response
		<p>DOT&PF has developed an appropriate mitigation plan to offset unavoidable impacts in accord with the Guidelines and best meets purpose and need. All other alternatives, including the LCC alternative, were eliminated from further consideration. Straightening all curves (Alternative 1) may result in significant impacts. Alternative 2a was modified to reduce impacts resulting in the proposed alignment in sensitive areas identified by public and agency comments. Alternative 3 was dismissed as discussed in section 3.2. The LCC alternative was not evaluated for reasons given in R 53</p> <p>The USACE would issue a permit for fill placed in Wetlands and Waters of the US in accord with the requirements of the CWA prior to construction. The Revised Proposed Action is the only alternative that meets purpose and need. It was revised to further avoid and minimize impacts to the maximum extent. The Revised Proposed Action is the Least Environmentally Damaging Practicable Alternative.</p> <p>Refer to response R58 for a discussion of how the project meets the requirements of the Preserve statutes.</p>		
R65	It is unclear why the preferred alternative was selected. Employ additional design exceptions to reduce impacts.	DOT&PF selected the preferred alternative because it is the practicable alternative that best meets the purpose and need as described in the DREA Section 3. DOT&PF revised the preferred alternative and developed mitigation measures to address unavoidable environmental impacts. Other alternatives, which allow more design exceptions (the 'no build' alternative allows substandard curvature and width) than the preferred alternative, as described in Section 3 of the FREA, did not meet the purpose and need for the project.	Discussion of the selection of the Preferred Alternative is included in Section 3, Alternatives.	2015 Comments 294i, 294k
R66	We prefer Alternative 4 unless 2A can be further mitigated as detailed in the CIV letter.	DOT&PF has worked with the CIV and their representative Herrera Engineering to further mitigate the Preferred Alternative (2A) by modifying the proposed Chilkat River mitigation concepts to more closely match the details presented in the CIV letter (FREA section 4.15).	Additional mitigation is addressed in Section 4.15, Fish.	2015 comment 306
R74	Provide a full range of alternatives. Take a hard look at all alternatives.	<p>DOT&PF considered a full range of alternatives to meet the purpose and need for this project (see FREA Section 3 for further discussion), from completely eliminating highway deficiencies along the corridor to not eliminating any of the deficiencies. The Highway's current location between mountains and the Chilkat River, limits the number of practicable alternatives that meet the project purpose and need.</p> <p>In response to public and agency comments from the July 2013 EA, the alignment was revised to reduce impacts. The Revised Proposed Action best meets the project need to bring the highway up to 55 mph standards, as practicable, to address highway deficiencies, recreational access deficiencies, bridge deficiencies, and highway instability from debris and water flooding while best avoiding and minimizing impacts on environmental and human resources.</p> <p>The Revised Proposed Action proposes a reconstruction project that would have no significant impact. Nonetheless, the Agencies did consider a range of alternatives. Agencies considered and presented to the public four alternatives and several bridge alternatives. This environmental document provides a brief discussion of alternatives considered and the basis for rejecting them and further evaluates two alternatives: No Build and the Proposed Alternative (see FREA Section 3.0). Alternatives 1, 2a, and</p>	Section 3 discusses the range of alternatives considered.	2015 Comments 255b, 282b, 291a, 294b, 294e, 294h, 294j, 294p, 294t, 294dd, 294ff, 294kkk, 320b

Table 7.4-1: Comment Summary & Response Table

Response Number	Comment Summary	Response	Location of Changes in the EA that Resulted from the Comment	Comment Numbers Addressed by the Response
		3, were not carried forward for the reasons discussed in FREA Section 3.2. Additionally, one alternative presented by the public was considered and eliminated (see R53).		
R77	1. There is no clear construction window that avoids impacts to eagles: 2. Alternatives 3 and 4 would be more protective of salmon and eagle habitats than the Revised Proposed Action, and must be evaluated in an EIS.	<p>1. DOT&PF will be applying for an eagle permit and will work with USFWS to determine specific construction timing measures and measures to minimize disturbance near eagle nests and the Council Grounds feeding area. DOT&PF has also agreed to compensatory mitigation measures including planting cottonwood trees to accelerate recruitment of new perch and roost trees. DOT&PF is also working with USFWS and the ADF&G on improvements to fish spawning and rearing habitats, which will provide benefits to the eagle population. ADOT&PF will work with USFWS and ADF&G to develop an appropriate monitoring program for up to three years following construction.</p> <p>2. Neither Alternative 3 nor 4 meet the project purpose and need and were not selected. Alternative 3 was considered based on requests, including a USFWS request, for a lower design speed. DOT&PF appreciates USFWS' concern that the proposed project, if it facilitates higher vehicle speeds, could result in increased numbers of vehicle-eagle collisions. Although some motorists could have the propensity to drive faster on a straighter road, the speed limit would remain the same as it is now, 55 mph. Improved visibility would diminish the potential for animal collisions and would continue to work with USFWS on locations of appropriate signage.</p> <p>Preparation of an EIS is required for Federal actions that significantly affect the quality of the human environment. The FREA proposes a reconstruction project with no significant impacts (see Finding of No Significant Impact). Preparation of an EIS is unnecessary.</p>		2015 Comments 294ww
R76	We believe the Revised Proposed Action is an improvement over the only build alternative offered in 2013.	Thank You	NA	2015 Comments 294r
Local Land Use and Transportation Plans				
R09	The project would jeopardize the Haines Highway Scenic Byway designation.	The HHCPP (Scenic Byway Management Plan) is an advisory document that has been consulted from the project's inception. The project is consistent with the management plan, which suggests that future highway projects would be built to a 55 mph design standard and incorporates some of the recommended improvements. The project would not jeopardize the Haines Highway Scenic Byway designation.	See Section 4.1, Land Use and Land Management Plans, for a discussion of the HHCPP and a list of items suggested by the HHCPP that are included in the Revised Proposed Action.	2013 Comments 22c, 22m, 27g, 29g, 72f, 105b, 108c, 115n, 117f, 131a, 143a, 154c, 156f, 157g, 159a, 174d, 179r, 182k, 186e, 240e, 243a, 248c 2015 Comments 276a, 299d

Table 7.4-1: Comment Summary & Response Table

Response Number	Comment Summary	Response	Location of Changes in the EA that Resulted from the Comment	Comment Numbers Addressed by the Response
R10	The project is not consistent with the Alaska Chilkat Bald Eagle Preserve Management Plan.	<p>While the primary goals of the Preserve Management Plan are the preservation of bald eagles and salmon habitat, the AS establishing the Preserve also recognizes the importance of the transportation and utility corridor located adjacent to the Preserve. The statute specifically states that “...existing transportation and utility corridors located partially or completely within the Alaska Chilkat Bald Eagle Preserve are excluded from the Alaska Chilkat Bald Eagle Preserve.” (AS 41.21.612(a)). The Preserve Management Plan states that the existing transportation corridor includes Haines Highway and other roads recognized and maintained by the DOT&PF.</p> <p>The DOT&PF has worked with the DNR DPOR, the ADF&G, and the USFWS to minimize the footprint of the project and to protect or enhance salmon habitat in the Chilkat River and its tributaries. The land in the DOT&PF ROW is excluded from the Preserve and most of the project is contained in the existing ROW; yet DOT&PF is also working to avoid and minimize the impacts to fish and eagle habitat located within the ROW and in the adjacent Preserve. Mitigation actions requested by the resource agencies are being included in the Revised Proposed Action. With the avoidance, minimization, and mitigation actions agreed to, the Revised Proposed Action would result in equivalent or enhanced habitat for salmon.</p> <p>As a result of public and agency comments, a bald eagle survey and analysis of the potential for the project to affect the Preserve’s bald eagle population was conducted. The project would cut trees used for perching within the ROW where it bisects or abuts the Preserve. Based on the analysis, ABR advised that there are adequate trees that would remain such that the population of eagles would not be affected. The DOT&PF is working with the USFWS to develop a mitigation strategy to replace some of these trees and to add trees to the river side of the highway where possible. The Revised Proposed Action would not remove nesting, roosting, or perching trees in the Council Grounds; in addition, when final design is progressing in the area of the Council Grounds, DOT&PF would work with USFWS to determine where other trees can be avoided and cutting of trees minimized.</p> <p>Table 5.1-3 summarizes the Revised Proposed Action consistency with the Preserve’s statutory purpose.</p>	Section 4.2, Alaska Chilkat Bald Eagle Preserve, discusses compliance with Preserve management regulations.	2013 Comments 17a, 18a, 20b, 24a, 115d, 143a, 143c, 151a, 151e, 154b, 167b, 179d, 179n, 179q, 179r, 179s, 179v, 179y, 182b, 191j, 196e, 198a, 205f, 230c, 237b, 238l, 240i, 242b
Chilkat Bald Eagle Preserve				
R11	There is no information about the number of eagle-roosting trees that would be cut and the effects of cutting eagle roosting and perching trees. Eagle trees important to the tourism industry should be protected. There is no proposal or practical way to replace eagle perching trees adjacent to the CHA.	Based on the Revised Proposed Action alignment, no nesting trees are expected to be cut, but one or two nesting trees may be at risk from the road realignment and rock cut. No eagle roosting or perching trees would be cut in the Preserve. The limited number of roosting and perching trees that would be cut for the project would only be cut within the DOT&PF ROW. We understand that information about which trees would be cut and how many would be cut is important. We have quantified the perching/roosting trees that were observed with perching eagles within the footprint of the Revised Proposed Action. This is the best information on the number of roosting trees within the ROW and the best estimate for the number of perching and roosting trees that may be cut for construction of the Revised Proposed Action. See response to R02b (1).	Section 4.2, Alaska Chilkat Bald Eagle Preserve and Appendix G, Bald Eagle Research, Consultation and Conservation Measures discusses effects on bald eagle habitat.	2013 Comments 19a, 20b, 32a, 72g, 72i, 80d, 105d, 109g, 117b, 131h, 138b, 141b, 142c, 143a, 150c, 151c, 152a, 153b, 154b, 157e, 159c, 160b, 160c, 162b, 165a, 167b, 168e, 170d, 170f, 171d, 176c, 176e, 178b, 179a, 179d, 179e, 179n, 179v, 179y, 182a, 182d, 182i, 186b, 191b, 191c, 192c, 193a, 195a,

Table 7.4-1: Comment Summary & Response Table

Response Number	Comment Summary	Response	Location of Changes in the EA that Resulted from the Comment	Comment Numbers Addressed by the Response
		<p>The prime eagle perching trees are cottonwoods, a very fast growing species. Since the Chilkat River Valley is a dynamic system with unstable soil in the Council Grounds area, mature cottonwood trees can fall onto the highway as well as fall over the river where the tree is continued to be used by perching eagles. DOT&PF would work with the USFWS to best accommodate eagle habitat and provide the public with a safer highway.</p> <p>A bald-eagle consultant (ABR) conducted a survey of eagle perching-tree use between September and December, 2013. A second survey was conducted in the fall of 2014 and a third in the fall of 2015. The 2013 report and 2014 data are provided in Appendix G. Figure Set C shows the trees where eagles were commonly observed during both studies, along with the estimated clearing limits of the Revised Proposed Action. The approximate clearing limits vary in width, depending on topography, site conditions, sight distance and clear zone requirements.</p> <p>More surveys of eagle perching-tree use would be conducted prior to final design in the areas adjacent to the Council Grounds.</p> <p>Following final design and prior to construction, the actual clearing limits needed would be flagged. Perching trees that are at the outer edge of the clearing limit may not require cutting. If the base of a tree lies on the clearing limit line and it leans away from the project, it may not be cut. This will be determined on a case-by-case basis.</p> <p>In the conclusions and recommendations section of the bald eagle study, a key conclusion, in part, is, “...in our professional opinion we do not think the proposed alterations to the Haines Highway corridor will have a population effect on Bald Eagles... (ABR, 2014)” The study goes on to recommend two measures to reduce impacts from potential tree removal; remove as few of cottonwood trees as possible and plant cottonwoods in open area between the highway and Council Grounds area. DOT&PF has considered and would implement those recommendations to the extent practicable.</p> <p>The narrowest section between the highway and the river within the Council Grounds area is at MP 21. The Proposed Revised Action alignment places the highway on top of a constructed wall at this location. Tree cutting is minimized at this location.</p> <p>Also, in consultation with USFWS, DOT&PF has identified cottonwood planting areas between the highway and river, within the Council Grounds area to plant cottonwoods to provide, in time, roosting trees for foraging eagles.</p>		<p>205a, 206a, 212c, 214c, 219c, 229b, 231b, 233c, 236a, 238c, 238g, 238i, 240k, 241b, 242c, 244b, 246e, 248d, 249b, 255a</p> <p>2015 Comments 282l, 294ss, 294uu, 294hhh</p>

Table 7.4-1: Comment Summary & Response Table

Response Number	Comment Summary	Response	Location of Changes in the EA that Resulted from the Comment	Comment Numbers Addressed by the Response
R12	Reduce the speed limit through the Preserve to protect bald eagles.	<p>The posted speed limit of 55 mph would not change as a result of this project. Current speed studies show vehicles drive at an average estimated 62 mph now. Lowering the speed limit on a 55 mph road would result in a group of slower vehicles and those driving to the conditions. This situation would be less safe than what exists today.</p> <p>The wider shoulders and improved sight distance have potential to minimize vehicle and eagle collisions. To further minimize the potential for higher rates of eagle/vehicle collisions, the DOT&PF would support appropriate signage and public-awareness displays.</p>	The potential for reduced speeds during festivals is discussed in Section 4.2, Alaska Chilkat Bald Eagle Preserve.	<p>2013 Comments 22g, 42b, 48g, 80d, 80f, 109f, 109g, 115f, 143a, 145c, 157g, 167b, 168e, 168g, 174e, 178b, 179d, 179n, 180a, 182k, 187e, 197d, 229c, 233b, 246e, 246g</p> <p>2015 Comments 302a, 308b</p>
R13	<p>1) Design the road to avoid impacts in and around the CHA (aka Council Grounds) (MP 19 and MP 22)</p> <p>2) No trees may be removed that are in the ROW adjacent to the CHA.</p>	<p>The Revised Proposed Action more closely follows the existing alignment along the entire project including within the CHA/Council Grounds. Placement of fill/riprap in the Chilkat River has been avoided in the Preserve and CHA. Ongoing studies of eagle-use areas (trees) would be used to minimize and avoid impacts to trees in the ROW adjacent to the Council Grounds. See also R11 and R02b(1) for more detailed information on tree removal from the ROW. The existing studies results can be found in Appendix G.</p> <p>At MP 20.5, the highway would be realigned uphill to correct a substandard curve. The abandoned pavement is proposed to be modified into an additional public pullout and eagle-viewing location.</p>	This issue is discussed in Section 4.2, Alaska Chilkat Bald Eagle Preserve; 4.11 and in Appendix G, Bald Eagle Research, Consultation and Conservation Measures.	<p>2013 Comments 22k, 27e, 29d, 72d, 80d, 80e, 109c, 109g, 115e, 115l, 117d, 131m, 131x, 143a, 154a, 156d, 159b, 167b, 168e, 168f, 170b, 171m, 174e, 179d, 179n, 204b, 204c, 204d, 205c, 205d, 212c, 244d, 246e, 246f</p> <p>2015 Comments 294uu, 321a</p>
R58	The project does not comply with the Preserve statutes.	The Haines Highway corridor is excluded from the Preserve by statute (AS 41.21.612). However, DOT&PF has coordinated with DNR and ADF&G to avoid or minimize impacts to the Preserve in accord with the purpose of the Preserve. DNR, the agency with jurisdiction over the Preserve, has found that the project does comply with Preserve statutes. For further details see FREA Section 5.1.	Compliance with state statutes on the Preserve is addressed in Section 4.2, Alaska Chilkat Bald Eagle Preserve.	<p>2013 Comments 241a</p> <p>2015 Comments 294u, 294ss, 294kkk, 304a</p>

Table 7.4-1: Comment Summary & Response Table

Response Number	Comment Summary	Response	Location of Changes in the EA that Resulted from the Comment	Comment Numbers Addressed by the Response
Right-of-Way				
R14	Why has ROW acquisition been initiated, before NEPA review has been completed?	ROW needed for the first phase of construction is being purchased with State funds. Due to funding obligations and pressure to begin the project, the schedule would not accommodate the FHWA-required linear sequence of ROW acquisition and final design tasks following the completion of the FREA and the Decision Document. In order to meet the schedule requirements, the DOT&PF initiated the ROW acquisition efforts and final design efforts using State funds, before completion of the NEPA process and FHWA approval. The FHWA was notified of this action. The FHWA will assure that the results of these early activities will not bias the required NEPA process for the Revised Proposed Action.	This is documented in Section 1.3, Use of State Funds.	2013 Comments 179t, 182c
Social				
R15	<p>1. How will eagle and wildlife viewing be impacted?</p> <p>2. Eagle viewing opportunities within DOT&PF ROW adjacent to the Preserve would decrease viewing opportunities to the public.</p>	<p>1. A bald eagle consultant conducted a survey of perching- and roosting-tree use. The survey can be found in Appendix G. As a result of the Revised Proposed Action, there may be changes in patterns of eagle distribution and use of trees that would impact other qualities and resources of this area. For example, removing cottonwoods in the ROW may cause bald eagles to move farther from locations now accessible to recreationists (e.g., photographers, bird-watchers). Further, aesthetics and natural habitats in the ROW may be temporarily affected.</p> <p>The DOT&PF would remove as few trees as possible, especially from stands along the shoreline side of Haines Highway within the Council Grounds. The DOT&PF would work with the USFWS to identify locations to plant cottonwoods in open areas between the highway and the river to mitigate for trees removed elsewhere in the Council Grounds and to sustain cottonwood stands along the river (FREA Section 4.2.3). Additionally, safer pullouts, additional parking, and improved highway safety would improve opportunities for wildlife viewing.</p> <p>At MP 20.5 there would be a short highway section abandoned for realignment. DOT&PF proposes to reconfigure this abandoned highway section as a pullout for eagle viewing. The new pullout would be a beneficial impact to the public because this is a popular eagle-perching area and the roadway is very close to the river at this location. Moving the road uphill would expand the viewing opportunities at this location. This new pullout would be physically removed from highway traffic and would provide an improved opportunity for the visually impaired to listen to the eagles and other birds as they forage.</p> <p>2. The added turnout at MP 20.5 would support improved eagle viewing and photographic opportunities. DOT&PF expects perching and roosting trees of similar quality will be exposed on the new uphill vegetated perimeter of the Haines Highway. DOT&PF is working with the USFWS to develop ways to provide additional perching and photographic opportunities next to the river to replace cut trees. Additional measures would include replanting of Cottonwood trees in the MP 20 area and potential perching opportunities on ballasted log clusters in the Chilkat River near MP 20 (see table 4.15-3 for locations).</p>	This is documented in Section 1.2 Revised proposed action, Section 4.2.3; Alaska Chilkat Bald Eagle Preserve, Table 4.6-1, Section 4.8.3, Section 4.21.2 Cumulative Impacts, and Appendix G, Bald Eagle Research, Consultation and Conservation Measures.	<p>2013 Comments 22a, 213a, 224b</p> <p>2015 Comments 294vv, 307a</p>

Table 7.4-1: Comment Summary & Response Table

Response Number	Comment Summary	Response	Location of Changes in the EA that Resulted from the Comment	Comment Numbers Addressed by the Response
R16	The road is being widened to promote mining.	Mining activities in the Haines area and the Yukon are speculative. There are no proposals, commitments, or financial investments to produce ore at this time. See Section 4.21 for an expanded discussion. The Highway is being widened to meet project purpose and need as discussed in Section 2.0.	See Section 4.21, Cumulative Impacts for a discussion of potential future mining activities.	2013 Comments 224b
R17	The Kluane-Chilkat International Bike Relay should be accommodated during construction.	The DOT&PF would include provisions in the construction contract, (Specifications Section 643 Traffic), to accommodate the Kluane-Chilkat Bike Race during construction.	This is documented in Section 4.7.3.	2013 Comments 43a
R18	How will the project affect the annual Bald Eagle Festival?	The DOT&PF would coordinate construction activities to accommodate the annual Alaska Bald Eagle Festival, to avoid or minimize temporary impacts. There may be changes in patterns of distribution and use by eagles during construction in the Council Grounds area. When construction is complete, the proposed improvements would enhance safety and access for festival attendees.	This is documented in Section 4.2, Alaska Chilkat Bald Eagle Preserve; and Section 4.7.3.	2013 Comments 117
R19	Bike lanes should be added.	The project will add 6-foot paved shoulders on either side of the existing roadway, enhancing non-motorized safety. Segregated bicycle infrastructure was not considered due to the limited amount of space, sensitive environmental areas, and increased maintenance costs.	This is discussed in the Revised Proposed Action, Section 1.2.	2013 Comments 22c, 180b, 202d
R88	Avoid conflicts in the community on this project.	DOT&PF has tried to work with the public to develop a project that addresses safety and minimizes impacts on the community. However, it may not be possible to achieve unanimous community support for the project.	Not applicable.	2013 Comments 131k
Economy and Subsistence				
R20	The importance of subsistence to the communities of Klukwan and Haines is not adequately presented in the EA.	Additional information has been provided to heighten the public's understanding of the importance of subsistence to the communities of Klukwan and Haines.	Subsistence is addressed in Section 4.7, Economy and Subsistence.	2013 Comments 200i, 224a, 238d, 238e
R21	How would access to key subsistence sites be affected by the project?	Through consultation with traditional resource users, measures, such as modifying proposed alignments and selected placement of woody debris enhancement features outside of fish net areas, were developed to avoid and minimize impacts to key subsistence sites during project development. Long-term access would be maintained to all identified subsistence-use areas. Highway access to some subsistence sites may be temporarily interrupted.	Subsistence is addressed in Section 4.7, Economy and Subsistence.	2013 Comments 154a, 224a, 238d, 238e
R22	How will the project impact the number of salmon available for all uses including commercial fishing and subsistence?	Over the past year, DOT&PF has worked with the IDT to review and further develop a mitigation plan that would address project impacts to essential fish habitat and salmon. The project would at least offset unavoidable impacts to the natural availability of salmon. Fish-bearing tributaries too close to the highway would require tributary relocation. This represents about 2,748 lineal feet or 0.65 acres of habitat. These relocations would be in-kind or habitat would be enhanced and/or enlarged. Temporary construction impacts would be expected but BMPs would be used to minimize those impacts. Twenty-five culverts would be upgraded to fish passage standards, improving the use of existing upstream fish habitat (an estimated improved access to 7.2 miles of habitat). Chilkat River impacts would be offset by simulating productive Chilkat River fish habitat as detailed in Section 4.15, Fish. To mitigate for potential impacts to fish habitat, an additional approximately 7,062 lineal feet of fish bearing tributaries would be created. As a note, the limiting factor to salmon spawning and	Impacts to salmon are discussed in Section 4.15, Fish, and Appendix F, EFH Assessment.	2013 Comments 154a, 157a, 224a, 238d, 238e, 240h, 294aaa, 294bbb

Table 7.4-1: Comment Summary & Response Table

Response Number	Comment Summary	Response	Location of Changes in the EA that Resulted from the Comment	Comment Numbers Addressed by the Response
		rearing is overwintering habitat. The proposed mitigation plan (see Appendix D – <i>Stream Habitat Mitigation Plan</i> in Appendix F, EFH Assessment) may provide improved overwintering habitat near MP 14, in the Chilkat River, and near MP 17 on Horse Farm Creek.		
R23	How will the Klukwan subsistence lifestyle be affected? How would adverse effects to subsistence be mitigated?	<p>The intersection at Klukwan would be improved but this is not expected to affect the lifestyle of tribal members. The Revised Proposed Action impacts on subsistence are:</p> <ul style="list-style-type: none"> > During construction, highway access to some subsistence resources may be temporarily interrupted. > Berry, fern, Devil’s Club, and mushroom harvesting within major realignments near the Chilkat River Bridge (about 12.3 acres) would be lost. ROW relinquishment of about 6.6 acres and removal of pavement would allow favored plant species to re-establish naturally over time. > Wildlife gathering would be minimally affected. Except for small fur-bearing species, subsistence hunters identified most harvest areas well beyond the project area. > Work along the Chilkat River banks and major side tributaries and channels could temporarily affect fish resources but timing windows would be adhered to that would avoid prime subsistence fishing seasons. Impacts net fishing would be avoided by placing woody debris in the Chilkat River areas outside the areas identified as set-net or drift-net sites. As noted in the previous response to comments, the ultimate amount and quality of salmon habitat is expected to be the same or better than existing conditions. 	Subsistence is addressed in Section 4.7, Economy and Subsistence.	2013 Comments 154a, 224a, 238d, 238e
R50	Require Local Hire.	State law prevents local hire on public construction projects (AS 36.10). However, it is likely that qualified local labor and local firms would be hired directly during construction simply because it is cheaper to hire local. Direct benefits to local construction workers and Haines businesses is nearly \$60 million over the life of the project (see Appendix B, Payroll and Proprietor’s Income).	Not applicable.	2015 Comments 292c
R51	A straighter road encourages higher speeds and more accidents.	Some motorists may have the propensity to drive faster on a straighter road, but the speed limit would remain the same as it is now (55 mph) and the highway would be safer for motorists due to improved sight distance visibility. Improved visibility would diminish the potential for animal collisions.	Section 4.6.1 addresses traffic safety issues.	2015 Comments 299b
R52	The Haines economy relies on tourism. The project should not adversely affect opportunities to view fish and wildlife by tourists.	Wider shoulders, improved sight distances, and the proposed new viewing area near MP 20.5 (Fig. 4.2-5) would improve viewing opportunities. See FREA section 4.7.2 for further discussion of improved viewing opportunities.	Effects on tourism are addressed in Section 4.6.	2013 Comments 171h 2015 Comments 299c
Cultural Resources				
R24	Cultural resources in the project area should be protected.	Historic and pre-historic sites listed on or eligible for the NRHP in the area of the project have been evaluated. We have also been sensitive to the cultural past of the Chilkat Valley. Consultations with local and regional tribes, Alaska Native Settlement Claims Act corporations, and the SHPO have been ongoing since the beginning of the project in 2005. Project alternatives have considered cultural	Protection of cultural resources is discussed in Section 4.10, Cultural Resources and Appendix E, Section 106 Consultation.	2013 Comments 80b, 115b, 128b, 131d, 157i, 160c, 167c, 168c, 171o, 182m, 186d, 197f, 199a, 200a, 200b,

Table 7.4-1: Comment Summary & Response Table

Response Number	Comment Summary	Response	Location of Changes in the EA that Resulted from the Comment	Comment Numbers Addressed by the Response
		<p>resources during concept development. One alternative (Alternative 1 in Section 3.0, Alternatives) was eliminated early in the project development because it would have adversely affected an important cultural resource.</p> <p>The Proposed Action presented in the July 2013 EA would have affected an important cultural resource near the beginning of the project. After consultations with the local tribes, that part of the Proposed Action was modified to avoid one sensitive area. The Revised Proposed Action reflects this modification.</p> <p>All cultural-resource consulting parties have been notified of the updated actions and the FHWA's finding of affect. Also, the SHPO has concurred with FHWA's findings of effect. Measures to avoid and minimize impacts to resources of concern to tribal entities have been implemented throughout the project area. Additional coordination and consultations will continue through construction and completion of the project.</p> <p>Section 106 of the NHPA, requires adverse effects to historic properties be resolved. A MOA to resolve adverse effects to the Chilkat River Bridge, the only historic property adversely affected, was signed by consulting parties prior to FHWA issuance of decision document.</p>		200c, 200d, 200e, 200f, 200g, 200h, 213c, 213d, 215d, 216a, 221b, 236a, 246b, 255a
R67	Do not disturb Klukwan Hill.	DOT&PF moved the alignment approximately 15 feet away in this area to completely avoid Klukwan Hill.	The Figure Sets in the document show how the alignment has been shifted.	2015 Comments 306
Water Body Involvement, Hydrology, and Water Quality				
R25	How will debris from the MP 19 slide area affect water quality or change the environment in the Chilkat River?	The highway in the MP 19 area currently restricts the natural flow of rock, sand, and silt (debris) falling from the mountains into the Chilkat River. While the sediment laden water enters into the Chilkat River during a slide event, the heavier debris flow material settles out on the uphill side of the road and, at times, overtops the highway. Elevating the highway 15 to 18 feet and replacing debris flow culverts at MP 19 could result in debris flowing directly into the Chilkat River, a naturally occurring condition that has been disrupted by the construction of the highway. This would permanently return debris flows into the Chilkat River at this location. Given the Chilkat River's wide channel and has a heavy sediment bed load, this would have a negligible effect, except for immediately downstream of this area during naturally occurring debris flow events. Localized changes to the river banks and beds would occur and stabilize over time.	Impacts from slide areas are discussed in Section 4.11.2.	2013 Comments 171h, 210a, 212a, 214a
R26	How will the use of riprap affect river dynamics downstream?	The Chilkat River is a dynamic river consisting of multiple channels within an extensive floodplain. Placing riprap along the riverbank may slow velocities within a few feet of the riverbank but would not have an effect on the river dynamics downstream.	River dynamics are discussed in Section 4.11.1.	2013 Comments 192h, 212b, 214a
R27	We are concerned about the loss of river-edge habitat and impacts to salmon when replaced with riprap.	Highway armoring, in this case rip rap, typically impacts riparian succession processes beginning with the loss of existing vegetation. Riparian vegetation is a nutrient source for fish and much of the existing riverbank along the highway consists of riprap that has revegetated naturally since its placement. Vegetated riprap would be replaced, in-kind, with vegetated riprap. All newly placed riprap would be planted with vegetation to accelerate the re-establishment of river-edge (riparian) habitat. Added woody debris, rock clusters, and vegetated riverine bump-out features are included in the EFH Assessment Conceptual Mitigation Opportunities (Appendix F) to further enhance river-edge habitat used by salmon.	Impacts to salmon habitat are discussed in Section 4.15, Fish, and Appendix F, EFH Assessment.	2013 Comments 170g, 192h, 197c, 198d

Table 7.4-1: Comment Summary & Response Table

Response Number	Comment Summary	Response	Location of Changes in the EA that Resulted from the Comment	Comment Numbers Addressed by the Response
Wetlands and Other Waters of the U.S.				
R28	Re-evaluate opportunities to avoid impacts to wetlands and Waters of the U.S. Reconsider the alignment to reduce compensatory mitigation requirements.	The Revised Proposed Action avoids an additional 4.1 acres of fill in the Chilkat River and avoids any fill in the Chilkat River in the Preserve CHA. Additionally, 1.3 acres of fill was avoided in wetlands. In accord with Section 404(b)1 of the CWA, all practicable measures to avoid, minimize, and mitigate harm to wetlands and other Waters of the U.S. are included in the Revised Proposed Action. The appropriate compensatory mitigation forfill in wetlands and other Waters of the U.S. will be proposed as a part of the USACE permit application process.	Wetland avoidance is discussed in Section 4.14, Wetlands and Other Waters of the U.S.	2013 Comments 48b, 131o, 150b, 158a, 158b, 158c, 158d, 186c, 215c 2015 Comments 273f, 273j, 282e, 282i, 310c
R29	No mitigation is proposed, or proposed mitigation is inadequate to replace wetland functions on-site. The wetland will not be improved; there will just be fewer wetlands. There will be little boost in wetland values due to stream relocation.	<p>As a result of consultation with the IDT and including agencies with jurisdiction, it was determined that the highest function of wetlands in the project area is the provision of fish habitat. The agencies identified mitigation options, including stream enhancement and creation, to mitigate for some of the loss of wetland functions. The proposed mitigation plan restores or enhances 7,308 linear feet of fish habitat.</p> <p>In addition to provide mitigation for the highest function of wetlands several other efforts are proposed to replace other wetlands functions. They are: 25 culverts (1,991 lineal feet) in fish bearing streams would be upgraded to fish passage standards. Upgraded culverts would reconnect or improve habitats that have been fragmented by deficient culverts, resulting directly and/or indirectly in an increase in the quality of fish habitat and fish productivity. Access to an estimated 7.2 miles of anadromous fish habitat would be improved.</p> <p>An off-site fish passage improvement project on Mud Bay Road, near MP 7 would be constructed enhancing the function of upstream wetlands. About one-quarter acre of wetlands would be created near MP 18 (see Figure Set D, Sheet 22)</p>	Wetland mitigation is discussed in Section 4.14, Wetlands and Other Waters of the U.S.	2013 Comments 131q, 131r, 2015 Comments 203d, 203f, 294y, 294z, 294tt, 304b, 320c

Table 7.4-1: Comment Summary & Response Table

Response Number	Comment Summary	Response	Location of Changes in the EA that Resulted from the Comment	Comment Numbers Addressed by the Response
R57	<p>1) The project does not comply with the Section 404(b)(1) guidelines. The document fails to disclose or analyze responsible, contrary scientific opinions.</p> <p>2) Chilkat River in-river mitigation does not achieve a 1 to 1 ratio of mitigation for the impact and does not address stream bank riparian edge conditions.</p> <p>3) Chilkat River in-river mitigation does not appear to be adequate based on unstable wood elements.</p> <p>4) A Mitigation Plan must be developed that addresses unavoidable loss of fish habitat and wetlands.</p> <p>5. It is not clear how the ‘faunal’ carry capacity will be improved.</p>	<p>1) DOT&PF documented the lack of practicable alternatives (FREA Section 3.0) and has worked with the IDT, including the USACE, to utilize professional opinions and USACE approved analytic methods to avoid and minimize impacts to Wetlands and Waters of the US. The USACE will not issue a Section 404 permit unless the project does comply with the section 404 (b)(1) guidelines including, but not limited to, mitigation monitoring and remedial measures to assure success.</p> <p>Contrary scientific opinion about the effects of placing rip rap in USACE jurisdictional waters is presented and considered in the design development of rip rap embankment and referenced as USACE (2003). Commenter cites no other contrary scientific opinions.</p> <p>2) In kind mitigation is appropriate to replace the functions lost at sites with previously placed riprap. DOT&PF intends to mitigate for placement of rip rap over previously placed rip rap by replacement, in-kind, of vegetated rip rap simulating typical streambank as shown in Photograph 4.21-5. Where 3,812 lineal feet of fill (rip rap) would be placed in the Chilkat River on natural streambank, DOT&PF proposes to mitigate for those unavoidable impacts by placing an estimated 6,845 lineal feet of in-river mitigation e.g. ballasted log clusters and vegetated river protrusions as shown in figs. 4-15- 2 & 3. That is greater than a 1:1 ratio.</p> <p>3) Design concepts we further refined with assistance from Herrera engineering (Figs. 4-15.2 & 3. Mitigation concepts will be further developed in final design for a design life of 20 years. When the design of the in-river mitigation structures progresses to the point where we can include them in a USACE permit application there will be an opportunity to review and comment to the USACE as a part of the permit process.</p> <p>4) A mitigation plan is proposed as described in Section 4.14.3 to address unavoidable loss of fish habitat and wetlands.</p> <p>5) Relocation of streams away from the road provides surface drinking water in a location removed from the road</p>	<p>Compliance with Section 404(b)(1) guidelines is discussed in Section 4.14.</p>	<p>2013 Comments 131n, 131s, 131u, 131w, 150b</p> <p>2015 Comments 294x, 294y, 294z 294aa, 294mm, 294nn, 294oo, 294tt, 299f</p>
R63	<p>Mitigation needs to take place in the Chilkat Valley.</p>	<p>All mitigation proposed in the FREA would take place in the Chilkat Valley. DOT&PF has eliminated in-lieu fee mitigation that may have been used outside the Chilkat River watershed. Additional Chilkat River in-water mitigation that is proposed in the FREA (FREA Section 4.15) would more than offset the elimination of the in-lieu fee mitigation.</p>	<p>Mitigation is discussed in Sections 4.14 and 4.15.</p>	<p>2013 Comments 131p</p> <p>2015 Comments 273k, 282j, 294ll, 294qq, 313e</p>

Table 7.4-1: Comment Summary & Response Table

Response Number	Comment Summary	Response	Location of Changes in the EA that Resulted from the Comment	Comment Numbers Addressed by the Response
Fish				
R30	Impacts to fish habitat are substantial and permanent and would lead to fisheries' decline.	The Revised Proposed Action provides additional avoidance, minimization and, if impacts are unavoidable, provides mitigation. Impacts to fish would be reduced to the extent practicable and avoidance, minimization and mitigation measures would, at least, offset impacts. In comments on the July 2013 EA, NMFS stated <i>"If constructed as currently proposed, adverse effects to EFH from the Haines Highway project will be substantial and permanent."</i> The design was subsequently changed to further avoid, minimize and, if unavoidable, mitigate for remaining impacts to EFH. Based on the revised design, the NMFS concluded on Sept. 18, 2014, <i>"NMFS acknowledges the Alaska Department of Transportation and Public Facilities has designed the project to mitigate impacts to EFH while still meeting the project objectives. The mitigation outlined in the August 2014 EFH Assessment is responsive to NMFS's recommendations. Therefore NMFS considers consultation for the project to be complete."</i> See Section 4.15, Fish, for NMFS role in implementing EFH under the MSFCMA.	Impacts to fish habitat are addressed in Section 4.15, Fish, and Appendix F, EFH Assessment.	2013 Comments 29h, 75a, 102b, 108b, 131t, 131u, 131v, 151b, 154d, 162c, 164a, 167a, 169b, 171b, 171c, 175a, 179f, 179h, 179j, 182d, 192c, 236a, 249a, 250a 2015 Comments 285a, 285b, 293b, 294jj, 294ss, 294tt, 294aaa
R31	Provide adequate analysis of the effects of the extensive disturbance to fish habitat.	Section 305(b)(2) of the MSFCMA requires Federal agencies consult with NMFS regarding any of their actions authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken that may adversely affect EFH. Conservation recommendations made by the IDT, including biologists with NMFS, USFWS, and the ADF&G have been incorporated into the EFH Assessment and Revised Proposed Action alignment. Streams, wetlands, and steep slopes, in-water, have been avoided, to the extent practicable. DOT&PF has successfully upgraded culverts to fish-passage culverts throughout southeast Alaska and stream relocation projects are conducted regularly. Based on the final conservation recommendations included with the revised EFH, NMFS has concluded consultation. Monitoring of the effectiveness of the proposed mitigation measures and culvert replacements would be a condition of project permits.	Impacts to fish habitat are addressed in Section 4.15, Fish, and Appendix F, EFH Assessment.	2013 Comments 75a, 138f, 151b, 153b, 154d, 160b, 160c, 162c, 164a, 167a, 169b, 171b, 171c, 175a, 179f, 179h, 179j, 182d, 191d, 255a 2015 Comments 276d, 294jj, 294tt, 294ggg, 294iii, 299e
R32	Impacts to EFH will not be offset by the proposed mitigation. If an in-lieu fee is used, wetlands (fish habitat) would not be replaced on-site.	The Revised Proposed Action reduces impacts to, at least, offset the impacts to EFH. Additional on-site mitigation opportunities were evaluated and incorporated into the mitigation plan. As a result of consultation with the IDT, including NMFS, USF&WS, USACE and ADF&G, it was determined that the highest function of wetlands in the project area is to provide the correct quality and quantity of water for fish habitat. The agencies identified mitigation options, including stream enhancement and creation, to mitigate the loss of wetland functions. After avoidance and minimization measures are taken, the proposed mitigation plan: <ul style="list-style-type: none"> • creates or enhances 7,308 linear feet of fish habitat; • upgrade 1,857 linear feet of culverts in fish bearing streams to fish passage standards reconnecting or improving fish habitats that have been fragmented by deficient culverts, resulting directly and/or indirectly in an increase in the quality and quantity of fish habitat and fish productivity; • construct an off-site fish passage improvement project on Mud Bay Road enhancing the function of upstream wetlands; 	Mitigation for EFH impacts are addressed in Section 4.15, Fish, and Appendix F, EFH Assessment.	2013 Comments 145b, 151b, 154d, 157k, 158a, 158b, 158c, 158d, 162c, 164a, 167a, 169b, 171b, 171c, 175a, 179f, 179h, 179j, 182d, 213b 2015 Comments 263a

Table 7.4-1: Comment Summary & Response Table

Response Number	Comment Summary	Response	Location of Changes in the EA that Resulted from the Comment	Comment Numbers Addressed by the Response
		<ul style="list-style-type: none"> enhance overwintering salmon habitat in a small section of the Chilkat River near MP 16. As mitigation for potential impacts to waters of the U.S., DOT&PF will provide funds to a USACE approved in-lieu fee preservation agent to preserve portions of Horse Farm Creek (a cataloged fish stream within the project limits) and adjacent wetlands, near MP 18, or preservation of a similar or better property within the Chilkat River Valley. 		
R33	<p>1) Riprap would damage fish habitat; use natural technology, such as engineered logjams instead.</p> <p>2) There is a total failure to discuss valid contrary opinions.</p>	<p>1) Engineered log jams were considered and analyzed for their ability to armor highway embankments from the erosive forces of the Chilkat River. A DOT&PF project technical memo, Bank Stabilization Structures (Appendix F, EFH Assessment) concludes, “Where bank stabilization is required, wood revetment structures, in and of themselves, would not provide adequate assurances of protection.” Proven embankment armoring is required to protect critical transportation infrastructure associated with Haines Highway. Simultaneously, habitat enhancement can be achieved by varying bank geometries, placement of large rock materials and rock/weir/spurs, and the incorporation of strategically placed wood debris along stable bank protection structures. DOT&PF revised the Chilkat River mitigation measures to include more river protrusions with additional woody debris including overhanging shade trees (to replace overhanging shade trees beneficial to fish passage) and ballasted logs in the Chilkat River outboard of rip rap revetment (FREA Section 4.15) Measures such as these are being incorporated into areas where riprap is proposed to avoid and minimize effects to riverine habitat.</p> <p>Riprap would be the primary bank stabilization structure for the Haines Highway project. Much of the proposed riprap would be placed in areas where riprap has previously been used. The Revised Proposed Action reduces the amount of riprap that would be placed on riverbank that did not previously have riprap.</p> <p>2) DOT&PF utilized the best science adapted to site-specific field conditions to select the appropriate bank stabilization method. A rip rap report (USACE 2003) summarizing contrary and supporting scientific opinions concerning impacts from rip rap placement was used as background to determine a rip rap type that was most likely to benefit fish habitat. The DOT&PF hydrologic engineer performed further studies and determined rip rap was the most appropriate bank stabilization methods (see reference to Bank Stabilization Methods above). Based on year 2013 site-specific agency and public comments, the alignment was revised to further avoid bank hardening.</p> <p>Based on year 2015 site comments, the Chilkat River in-water mitigation concepts were revised in consultation with CIV’s consultant Herrera Engineering; a firm with special expertise. Final design of those concepts is under development and will be made available for public review as a part of the USACE Section 404 process. Commenter provides no other contrary opinions.</p>	Fish habitat effects are addressed in Section 4.15, Fish, and Appendix F, EFH Assessment.	<p>2013 Comments 22j, 27d, 29c, 48d, 48e,72c, 72h, 75b, 115k, 117c, 131y, 151b, 152b, 154d, 156c, 157j, 158g, 162c, 167a, 169b, 170g, 171b, 171c, 171e, 175a, 179f, 179h, 179i, 179j, 179ab, 182n, 192h, 192i, 198d, 203c, 214b, 236b, 238f</p> <p>2015 Comments 273i, 282g, 282h, 294kk, 294rr, 294ccc, 294fff, 298a, 301a, 304c, 308d</p>

Table 7.4-1: Comment Summary & Response Table

Response Number	Comment Summary	Response	Location of Changes in the EA that Resulted from the Comment	Comment Numbers Addressed by the Response
R34	Repair damaged fish habitat/create structures to increase spawning habitat at Little and Big Boulder Creeks. Repair damage to fish habitat from past projects.	Mitigation for past highway projects that involved Big Boulder and Little Boulder Creeks are ongoing; there would be no impacts to these creeks from the current project. There is an existing fish habitat permit in effect that was issued during prior highway construction projects. In consultation with the ADF&G, multiple mitigation measures have been constructed as a result of the Haines Highway MP 24 to the border. Some of the mitigation projects such as planting of riparian vegetation along the banks of the Klehini River have been affected by flooding, and others appear to be effective. About 22.6 acres of wetlands were created and most of the fish pass culverts have met their objectives. The DOT&PF will continue to coordinate with the ADF&G to complete all requirements of the existing permit as a separate action (see ADF&G Trip report dated October 23, 2013 in Appendix H).	Not applicable.	2013 Comments 75d, 80c, 115c, 117b, 131e, 131ac, 157b, 168d, 182f, 192e, 219b, 239p1-11, 246c
R35	Fish wheels should be retained.	The project would positively address ADF&G commercial fishery monitoring concerns associated with fish wheel operation on the Chilkat River. The installation of rock/weir/spur structures would improve local hydraulic conditions that favor sustainable fish wheel operation.	This is addressed in Section 4.15, Fish and Appendix F, EFH Assessment.	2013 Comments 80h, 115h, 127b, 131i, 157h, 182l, 246j
R61	Rip Rap destroys fish habitat.	If designed and installed properly, rip rap could have a neutral effect on fish habitat. To offset the potential impact to fish habitat in the Chilkat River, DOT&PF has designed vegetated rip rap streambank armoring that would help slow flow velocity and provide cover along the bank. Additionally, DOT&PF would introduce structural and hydraulic complexity to the river by placing and protrusions in the river and ballasted logs in such a fashion to create or enhance fish passage, rearing and overwinter rearing. See FREA Section 4.14 for details.	Effects on fish habitat are discussed in Section 4.15, Fish and Appendix F, EFH Assessment.	2015 Comments 294kk, 310d
R84	The proposal to replace 200 linear feet of spawning habitat with a like amount of created spawning habitat is not reasonable.	This mitigation activity is no longer proposed.	Not applicable	2013 Comments 131v
R85	The project should not damage fish passage.	The Revised Proposed Action would replace and upgrade culverts to fish pass standards in anadromous streams. The improved fish passage would increase fish access to about 7.2 miles of upstream habitat (see FREA Section 4.15).	See Section 4.15, Fish	2013 Comments 131f, 171f
R89	The project will harm fish and wildlife and their habitats.	DOT&PF has worked with ADF&G and other resource agencies to refine the project and develop a mitigation plan designed to address potential effects to bald eagle habitat, wetlands and fish habitats.	See Section 4.15, Fish and 4.16 Wildlife.	2013 Comments 102b, 171f, 173a, 242d
Wildlife Resources				
R36	How will the project impact the food supply (salmon) for Bald Eagles?	The project will at least offset unavoidable impacts to the natural availability of salmon. All impacts to fish-bearing tributaries would require tributary relocation, in-kind or better. An estimated 25 culverts would be upgraded to fish passage standards, improving fish access to upstream habitat. These anadromous fish streams have an approximate total length of 7.2 miles. These culverts are deficient at this time primarily because of culvert size but also condition, perching, or their locations could be improved. Chilkat River impacts would be offset by simulating productive Chilkat River fish habitat as detailed in Section 4.15, Fish. To mitigate impacts to fish habitat in the Chilkat River and relocated tributaries, an additional approximately 7,308 linear feet of fish-bearing tributaries would be restored or enhanced.	Bald eagles and their habitat is addressed in Section 4.2, Alaska Chilkat Bald Eagle Preserve and Appendix G, Bald Eagle Research, Consultation and Conservation Measures.	2013 Comments 26b, 145b, 151f, 157a, 157b, 157k, 158a, 158b, 158c, 158d, 160b, 160c, 170e, 175a, 179k, 179l, 179p, 182f 2015 Comments 282l

Table 7.4-1: Comment Summary & Response Table

Response Number	Comment Summary	Response	Location of Changes in the EA that Resulted from the Comment	Comment Numbers Addressed by the Response
R37	Consider including wildlife passage on this project.	During the project development process, wildlife collisions were analyzed. The incident numbers were too low to warrant additional safety measures. However, traffic data indicates that there are five sections where wildlife-related accidents are more common than in others. The wider shoulders and straightening of existing curve radii provided by the Revised Proposed Action would improve sight distance. Removal of willows along roadside ditches would reduce moose browse near the highway. Relocation of selected roadside stream channels would shift willow growth along those streams to areas that would not need to be cleared for roadway sight distance. These changes may reduce the potential for animal-related collisions.	Wildlife habitat is addressed in Section 4.16, Wildlife Resources.	2013 Comments 193c
R38	Increasing highway speed would result in more wildlife being killed.	The current posted speed limit of 55 mph would not change as a result of the project. The classification of Haines Highway as a principal arterial, rolling terrain, the relatively few number of driveways and approach roads, and the operating speeds of motorists on the existing road all point to a design speed that would be no less than 55 mph. The Revised Proposed Action would improve stopping sight distance along the highway, allowing drivers to better see an animal on the roadway and to bring their vehicles to a safe stop without colliding with the animal.	The speed limit is addressed in Section 4.2, Alaska Chilkat Bald Eagle Preserve.	2013 Comments 22e, 208a
R46	Don't cut so many eagle trees.	DOT&PF estimates 85 trees will be cut. To offset loss of perching and foraging trees, high value foraging trees, on the river side of the highway, have been avoided as much as practicable. Measures DOT&PF employed to avoid cutting more trees are, but are not limited to, shifting the alignment slightly uphill between MP 20 and MP 21.5 and constructing the highway on embankment walls to minimize the highway footprint in the area of MP 21. Mitigation measures to offset the impacts of unavoidable tree cutting include planting cottonwoods on the river side of the highway in two areas near MP 20, planting cottonwoods on river protrusions in the Chilkat River, and introducing woody debris in the embankment of the river protrusions to provide eagle foraging perch sites (See EA Section 4.14.3).	Effects of the projects on eagle habitat and eagles are discussed in Section 4.2 and Section 4.16.	2015 Comments 269b, 273d, 276e, 282c, 294uu, 294ddd, 299e, 308a, 313d
R86	Respect the habitats needed for the gatherings of eagles. There is a total failure to discuss contrary opinions.	<p>DOT&PF implemented measures to avoid and minimize impacts to eagle habitat, including shifting the alignment slightly uphill between MP 20 and MP 21.5 and constructing the highway on embankment walls to minimize the highway footprint in the area of MP 21. Mitigation measures to offset the impacts of unavoidable tree cutting include planting cottonwoods on the river side of the highway in two areas near MP 20, planting cottonwoods on river protrusions in the Chilkat River, and introducing woody debris in the embankment of the river protrusions to provide eagle foraging perch sites (See EA Section 4.14.3).</p> <p>DOT&PF used a biological firm with expertise in raptor biology, ABR, Inc., to assess impacts to Bald Eagles. Their report cites literature and interviews with local biologists to assess project impacts to eagles. The ABR Report utilizes scientific and local opinion (contrary and supporting) to develop conservation measures (see Appendix G, Bald Eagle Research, Consultation, and Conservation Measures).</p>	Section 4.2 and Section 4.16	<p>2013 Comments 131g</p> <p>2015 Comments 294rr</p>

Table 7.4-1: Comment Summary & Response Table

Response Number	Comment Summary	Response	Location of Changes in the EA that Resulted from the Comment	Comment Numbers Addressed by the Response
Invasive Species				
R39	What measures would be used to reduce the risk of spreading invasive species?	<p>Surveys of invasive species would be conducted prior to construction. An invasive plant control plan will identify the appropriate methods to be used to control identified species during construction.</p> <p>Construction equipment will be pressure-washed to remove soil, seed, and plant material, prior to moving on or off the project site.</p> <p>Clean fill material, native plants, and certified native seed will be used.</p> <p>Disturbed areas will be stabilized as soon as practicable. Stabilization can include paving, laying down a designed gravel layer, or seeding/vegetating. Certified native seed would be used, when seeding is the selected stabilization method.</p>	This issue is addressed in Section 4.17, Invasive Plant Species.	2013 Comments 138e, 179i
Construction Impacts				
R40	How will blasting during construction affect eagles, salmon, and wildlife and property?	<p>Blasting would be conducted by a qualified licensed blaster with experience on projects of similar magnitude and difficulty. The contractor would be required to prepare blasting plans that would minimize the potential for flyrock during blasting operations. Public notices would be posted and radio public service announcements would be required to inform the public of the blasting schedules. Most blasting is in areas not developed so the impacts to the public would be temporary highway closures. Blasting areas are directly adjacent to the highway. The construction activities prior to blasting would be expected to have discouraged wildlife from using the areas adjacent to the blast. Blasting where flyrock could enter anadromous habitat would have conditions to minimize that possibility. As part of the USFWS Bald Eagle Disturbance Permit, blasting details and specifications would be developed to require methods that avoid and/or minimize impacts to eagles.</p>	Blasting is addressed in Section 4.7.3, 4.16.3, and 4.20.2.	2013 Comments 22d, 221a
R47	Have a local oversee environmental work in the CHA.	<p>We envision tributary creation/enhancement and Chilkat River protrusions to be constructed by a subcontractor required to have special expertise in similar work. If a local subcontractor has the required expertise nothing prevents the construction contractor from hiring a local firm.</p>	Not applicable.	2015 Comments 275c
R72	Minimize impacts to traffic.	<p>DOT&PF would minimize impacts to traffic by requiring the construction contractor to develop an approved Traffic Control Plan to accommodate highway traffic during construction. Access and traffic restrictions would be coordinated to avoid sensitive time periods and publicized through public notices.</p>	Construction effects on traffic are addressed in Section 4.20.	2015 Comments 275a

Table 7.4-1: Comment Summary & Response Table

Response Number	Comment Summary	Response	Location of Changes in the EA that Resulted from the Comment	Comment Numbers Addressed by the Response
Cumulative Effects				
R41	<p>1) Provide additional analysis of the cumulative effects of the project on fish and wildlife. 2) Proposed Chilkat River mitigation would not restore riparian function loss to pre-riprap conditions.</p>	<p>Additional information about the cumulative effects on each resource of the Revised Proposed Action plus other active projects and reasonably foreseeable actions has been added to Section 4.21, Cumulative Impacts. Briefly, the actions that have contributed to the cumulative effects to fish and wildlife habitat in the Chilkat Valley that would also be affected by the Revised Proposed Action are primarily associated with past development of this transportation and utility corridor. The road segmented wildlife habitat, and that has primarily affected small mammals and amphibians. The Revised Proposed Action would further widen that fragmentation and, in the areas of major realignments, add additional habitat fragmentation. Eagle nesting, roosting, and perching trees have been cut down by past actions, and added perching and roosting trees would be cut. Fish habitat has changed along several miles of Chilkat River banks from a natural riverbank to a hardened bank composed of shot rock and riprap (discussed below). Past transportation projects have also constructed culverts in anadromous fish streams, and drainage ditches have become rearing habitat in some areas.</p> <p>The conclusion of the cumulative impact analysis regarding fish and wildlife is that the Chilkat Valley and Chilkat River Watershed provides a large amount of fish and wildlife habitat such that the population of fish and wildlife would not be adversely affected by the Revised Proposed Action. Fish habitat in tributaries would become more available and enhanced because the fish culverts would pass fish, and several enhancement projects are proposed. The bald eagle analysis indicates there are adequate perching and roosting trees in the Valley to support the eagle population. The segmented wildlife habitat would adversely affect small numbers of large and small wildlife. After construction, the populations and habitat would stabilize to the new conditions. Major realignment areas are proposed to have the old highway removed and, in some cases, vegetated. The details of this aspect of the project have not been developed. The wildlife population of some species maybe reduced immediately after construction but, once abandoned highway areas become wildlife habitat, populations could return to present conditions. With the added shoulders and sight distance clear zones, there could be fewer wildlife hit by vehicles.</p> <p>2) The function of Chilkat River riparian areas affected by past projects (pre - rip rap)is unknown. USACE preferred mitigation, however, is in-kind replacement of existing habitat as it is the most likely to compensate for lost at the impact site (44 CFR 230.93 (f))</p>	Section 4.21, Cumulative Impacts, discusses cumulative impacts on relevant resources.	2013 Comments 138d, 142b, 143b, 170h, 179a, 179d, 179tt, 191e, 192c, 193b, 200d, 215a, 229d, 238b, 238j, 248c, 294pp, 308f
R79	The mere existence of cumulative impacts requires an EIS.	An EIS is a document required by NEPA for certain actions significantly affecting the human environment. There is no such requirement that the mere existence of cumulative impacts requires an EIS. FHWA has found there is no significant impact from the project		2015 Comments 238a, 294yy, 308f
R80	<p>1. Widened shoulders will be more area to plow. Increased maintenance needs and decreasing maintenance budgets should be addressed in the Final EA. 2. An analysis discussing increased maintenance efforts resulting from extreme weather events as a result of climate change is required.</p>	1. According to DOT&PF Haines Maintenance Station Foreman, widened shoulders would create more room to maneuver, which would offset any increase in square footage. For activities like sign repair or guardrail repair the wider shoulders provide room to do lane shifts, instead of having to use flaggers. During snow plowing the	Section 4.21.8	2015 Comments 294jjj

Table 7.4-1: Comment Summary & Response Table

Response Number	Comment Summary	Response	Location of Changes in the EA that Resulted from the Comment	Comment Numbers Addressed by the Response
		<p>drivers know they have more space during bad visibility conditions and don't have to cautiously creep down the edge of the road.</p> <p>2. Debris and water flow events erode and damage the highway surface. An identified need of the project (Sec. 2.0) is to keep the highway open during these events reducing frequent maintenance. The debris flows occur from a release of material that may be frozen at higher elevation. Some of the debris flow areas are more mature than others and the frequency and magnitude of the flows are unpredictable. Rainfall events contribute to the debris flows and may increase in the future due to climate change. However, the frequency and magnitude of the debris flow are unpredictable regardless of the cause. The purpose of the project includes addressing the need to keep the highway open during saturated debris flow events thereby reducing the frequency of maintenance to clean debris flow material from the Highway. As a result of this comment, we did take a further look into project effects on climate change, however. Thank you. See section 4.21.8</p>		
Section 4(f) Analysis				
R83	<i>De minimis</i> impact finding is not allowable for the Preserve.	<p>The DOT&PF and the FHWA consulted with the official with jurisdiction over the Preserve. The DNR DPOR and the ADF&G co-manage this land and its habitat. Both agencies have evaluated the Revised Proposed Action and its potential direct and indirect impacts to the Preserve. Briefly, the Revised Proposed Action has reduced the amount of Preserve land that needs to be acquired, as well as reduced the amount of land in the ROW that is needed for realignment. The DOT&PF has worked with resource agencies to further avoid, minimize, and mitigate impacts to salmon habitat and had an analysis done of perching bald eagles and the possibility of impacts to the Chilkat Valley eagle population. The conclusion of that analysis is that, while trees currently used for perching would be cut, there are adequate adjacent trees that would continue to support perching eagles. The Chilkat Valley eagle population would not be significantly impacted. An added public turnout is proposed at MP 20.5 for viewing and photographing eagles. During the permitting process for bald eagles, the DOT&PF would continue to work with the USFWS on ways to avoid, minimize, and mitigate for lost perches.</p> <p>DNR DPOR and ADF&G (the Officials with Jurisdiction over the Preserve, including the Critical Habitat Area) have concurred with the FHWA's determination that the project will not adversely affect the activities, features, or attributes of the Preserve. Based on this concurrence, the FHWA has approved a <i>de minimis</i> impact finding for the Alaska Chilkat Bald Eagle Preserve. (See FREA Section 5.1)</p>	Section 5.1, Chilkat Bald Eagle Preserve discusses the <i>de minimis</i> finding for the Preserve. Additional information is included in Appendix C, Section 4(f).	<p>2013 Comments 179m, 182o, 240a, 240n, 242a</p> <p>2015 Comments 276c, 282l, 293b, 294hh, 294ii, 294kkk,</p>
R70	<p>1. Constructive Use of the Preserve has not been analyzed.</p> <p>2. We believe there is a constructive use of the Preserve.</p>	Consistent with Section 4(f) regulations, Constructive Use may only occur when a project does not incorporate land from a Section 4(f) resource. The proposed project would incorporate land from the Preserve. Thus, a Constructive Use of the Preserve cannot result in this scenario, and a Constructive Use analysis is not necessary and would be inappropriate. However, indirect impacts of the proposal were fully evaluated and considered as a part of the Section 4(f) approval. (See FREA Section 5.0).	Section 4(f) compliance is addressed in Section 5.0 and additional information is included in Appendix C, Section 4(f).	<p>2013 Comments 183b, 196f, 238n, 240f, 240j, 240m, 240n, 242a</p> <p>2015 Comments 294gg, 294hh, 294vv, 320f</p>

Table 7.4-1: Comment Summary & Response Table

Response Number	Comment Summary	Response	Location of Changes in the EA that Resulted from the Comment	Comment Numbers Addressed by the Response
R56	The project does not comply with the strict requirements of 4(f) with regards to Preserve.	<p>Section 4(f) requires that the FHWA may not approve the use of Section 4(f) property unless a determination is made that: 1) There is no prudent and feasible avoidance alternative to the use; and 2) the action includes all possible planning to minimize harm to the property from such use; or 3) the use, including any measures to minimize harm (such as any avoidance, minimization, mitigation, or enhancement measures) will have a <i>de minimis</i> impact on the property.</p> <p>A <i>de minimis</i> impact determination is made when use of a Section 4(f) property does not result in adverse effects to the protected activities, features, and attributes of the property. DOT&PF has consulted with the Preserve’s officials with jurisdiction (OWJ), DNR-DPOR and ADF&G, to identify the activities, features, and attributes of the Preserve and to identify appropriate avoidance, minimization, mitigation, or enhancement measures. DOT&PF informed the OWJ of FHWA’s intent to make a <i>de minimis</i> impact determination, and has provided the public an opportunity to review and comment. DOT&PF has obtained the OWJ’s written concurrence with the FHWA’s preliminary determination that the project will not adversely affect the activities, features, or attributes of the Preserve. Based on this concurrence, the FHWA has approved a <i>de minimis</i> impact finding for the Alaska Chilkat Bald Eagle Preserve (including the CHA) and has complied fully with the requirements of Section 4(f) (see FREA Section 5.0).</p>	Section 4(f) compliance is addressed in Section 5.0 and additional information is included in Appendix C, Section 4(f).	<p>2013 Comments 241b</p> <p>2015 Comments 294d, 294ii, 294kkk</p>

(This Page Left Intentionally Blank)

8.0 List of Preparers

Table 8.0-1: List of Preparers

Name/Affiliation	EA Responsibility	Profession	Years of Experience
Project Development and Supervision			
Greg Lockwood, P.E., DOT&PF	Project Management and EA Review	Project Manager/Engineer	7
Jim Scholl, DOT&PF	Revised EA Author/Section 4(f) Review	Project Environmental Coordinator	33
Jane Gendron, DOT&PF	Revised EA Co-Author/Section 4(f) Author/Review	Retired Southeast Alaska Regional Environmental Manager	37
Hilary Lindh, DOT&PF	Research/Section 4(f) Co-Author/ EA Review	Southcoast Region Environmental Manager	10
Kristin Dirks, DOT&PF	EA Comment Analyses/ Reviewer	Publication Specialist	4
Alex Viteri, Jr., P.E., FHWA	EA Review	Senior Transportation Engineer--Retired	15
Al Fletcher, FHWA	EA Review	Senior Transportation Engineer	25
Tim Haugh, FHWA	Section 4(f) Review	Environmental Program Manager	23
Steve Noble, P.E., DOWL	Project Manager - EA Quality Assurance/Quality Control Review	Civil Engineer	19
With Support From:			
Kristen Hansen, DOWL	Environmental Lead	Environmental Manager	17
Maryellen Tuttell, AICP DOWL	EA Document Preparation Assistance	Senior Environmental Project Manager	28
Linda Snow, Southeast Strategies	Land Use and Socioeconomic Sections	Senior Economist	28
Dan Miller, Inter-Fluve	Hydrology and Stream Mitigation Plan	Hydrologic Engineer	23
Mark Sogge, Inter-Fluve	Stream Mitigation Plan	Fisheries Biologist	28
Michael Yarborough, CRC	Cultural Resources	Archaeologist	38
Chris Harrington, DOWL	GIS/Graphics	GIS Technician	14
Kelly Kilpatrick, P.E., DOWL	Engineering Support	Civil Engineer	14
Naomi Hobbs, P.E., DOWL	Engineering Support	Civil Engineer	21
John E. Shook, ABR	Bald Eagle Assessment	Senior Scientist	30

(This Page Left Intentionally Blank)

9.0 REFERENCES

- AASHTO (American Association of State Highway and Transportation Officials). (2001). *A Policy on Geometric Design of Highways and Streets*. (Fourth Edition).
- AASHTO. (2011). *Roadside Design Guide*. (Fourth Edition).
- AASHTO. (2012). *Guide for the Development of Bicycle Facilities*. (Fourth Edition).
- AASHTO. (2013). *Load and Resistance Factor Design (LRFD) Bridge Design Specifications*. (Seventh Edition).
- ARC. (Alaska Road Commission).(1949). *Plan and Profile of Proposed Highway Haines to Boundary including spur to town of Haines*. Approved As-Built, May 8, 1949. Available at <http://www.dot.state.ak.us/sereg/asbuilts/Assets/HNS/1949-Highway.pdf>
- ABR (ABR, Inc. – Environmental Research and Services). (2014). An Assessment of Perch Use and Possible Impacts of Proposed Haines Highway Realignment on Bald Eagles During Fall and Winter, Chilkat River, Alaska. Final Report Prepared for DOWL HKM, February 2014.
- ABR. (2015). An Assessment of Perch Use by Bald Eagles Along the Haines Highway, Fall and Winter 2014. February 2015.
- Adamus Resources Assessment, Inc. (1987). *Juneau Wetlands, Functions and Values*. Report prepared for the City and Borough of Juneau, Alaska.
- ADF&G (Alaska Department of Fish and Game). (1994). *Reports on Klukwan, Haines, and Skagway*. Division of Subsistence. June.
- ADF&G. (2003). *Charter Vessel Registration List*. Retrieved from: <http://www.sf.adfg.state.ak.us/Guides>.
- ADF&G. (2009). *Atlas to the Catalog of Waters Important to the Spawning, Rearing, or Migration of Anadromous Fishes* (interactive Geographic Information Systems viewer: EAWC_IMS/viewer.htm). Last accessed in November 2009.

- ADF&G. (2012). *Species*. Retrieved March 2012 from
<http://www.adfg.alaska.gov/index.cfm?adfg+animals.listfish>.
- ADF&G. (2012a). *Haines Highway Mile 25 to the Border: 10-Year Mitigation Monitoring*, Technical Report No. 11-10, available at
https://www.adfg.alaska.gov/static/home/library/pdfs/habitat/12_08.pdf
- ADF&G. (2014). *Memorandum to the DOT&PF: Authorization to Take Bald Eagles during 2014*. January 30, 2014.
- ADF&G. (2015). Short-tailed Albatross (*Phoebastria albatrus*). Accessed July 7, 2015 at
<http://www.adfg.alaska.gov/index.cfm?adfg=shorttailedalbatross.main>.
- AKEPIC. (2014). *Mapping of Known Occurrences of Invasive and Non-Native Species*. Alaska Exotic Plants Information Clearinghouse database (<http://aknhp.uaa.alaska.edu/maps-js/integrated-map/akepic.php>). Alaska National Heritage Program, University of Alaska Anchorage. 2014.
- CFEC (Alaska Commercial Fisheries Entry Commission). (2008). *Commission Permits Database*. accessed online at <http://www.cfec.state.ak.us/>.
- CIV (Chilkat Indian Village). (2007). Chilkat Indian Village 2007 Consumer Confidence Report, <http://www.chilkatindianvillage.org/>.
- Chilkat Valley News. (2011). “*Bicycle Group to Roll Out Goals, Moniker*” in Chilkat Valley News, Volume XLI, Number 14, Thursday, April 7, 2011.
- CRC (Cultural Resource Consultants LLC). (2011). Archaeological Field Survey of Proposed Alternative for the Improvement of the Haines Highway from MP 3.5 to 25.3, DOT&PF Project Number 68606, Haines, Alaska. October 2011.
- DCCED (Alaska Department of Commerce, Community and Economic Development) (2006). Alaska Economic Information System, Haines Census Area’s Subsistence.
- DCCED. (2012). Alaska Table 2011, Municipal Taxation-Rates and Policies, Full Value Determination, Population and G.O. Bonded Debt, Volume LI. January 2012.

DCRA (Division of Community and Regional Affairs, within the DCCED) (2012). Community Database Online website accessed September 21, 2012. Available at <http://commerce.state.ak.us/cra/>.

DEC (State of Alaska Department of Environmental Conservation) (2006). *Air Quality Standards*. Accessed at: <http://www.dec.state.ak.us/air/>.

DEC. (2010a). *Southeast Region Canneries and Land-Based Seafood Processors*. <http://labor.alaska.gov/research/seafood/Southeast/SEProcLocMap.pdf>.

DEC. (2010b). *Integrated Water Quality Monitoring and Assessment Report - Alaska's List of Impaired or 303(d) Listed Water Bodies*. <http://www.dec.state.ak.us/water/wqsar/waterbody/integratedreport.htm>.

DEC. (2011). Alaska Pollutant Discharge Elimination System, *General Permit for Discharges from Large and Small Construction Activities*, Permit Number AKR100000.

DEC. (2013). *Contaminated Sites Database*. Federal and state databases of known or potential hazardous sites. Accessed at: http://www.dec.state.ak.us/spar/csp/db_search.htm.

DEC. (2014). *Certificate of Reasonable Assurance for placement of fill material in waters of the U.S. in association with the removal of landslide deposits from mile post 19 of the Haines Highway*, issued to DOT&PF on December 31, 2014

DEC. (2015). *Approval of the Final Additional Environmental Investigation Report: Cleanup Complete of Pipeline Milepost (PMP) 19.5; Haines-Fairbanks Pipeline Sites 17.7, 19.5 and 25.5*. Letter from Anne Marie Palmieri, DEC, to Beth Astley, USACE, February 6, 2015.

Dengler Images Blog. (2014). *Exploration continues at Constantine Metal Resources' Palmer Deposit mine project*. John L. Dengler. May 3, 2014. Available at: <http://blog.denglerimages.com/constantine-metal-resources-palmer-deposit-mine-project/>.

DLWD (State of Alaska Department of Labor and Workforce Development) (2010). *The Haines Borough, Alaska Economic Trends, Industry and Occupational Forecasts, 2008 to 2018*, September 2010. Available at: <http://dnr.alaska.gov/m/wplanning/mgtplans/hsfp>.

DLWD. (2013). Haines Borough, 2011 Workers by Industry, Alaska Local and Regional Information, Research and Analysis website. Available at: <http://live.laborstate.alaska.gov/>.

DLWD. (2014a). Haines Borough, 2012 Workers by Industry, Alaska Local and Regional Information, Research and Analysis website. Available at: <http://live.laborstate.alaska.gov/>.

DLWD. (2014b). Haines Borough, Resident Workers by Industry, 2012, Alaska Local and Regional Information, Research and Analysis website. Available at: <http://live.laborstate.alaska.gov/>.

DNR DMLW and DNR DPOR (Department of Natural Resources, Division of Mining, Land & Water and Division of Parks and Outdoor Recreation). (2002a). *Chilkat Bald Eagle Preserve Management Plan*, September 2002. Prepared by DNR DMLW Resource Assessment and Development Section and DNR DPOR. Available online at <http://dnr.alaska.gov/parks/plans/eaglpn/eaglepln.htm>. Last accessed 2014.

DNR DMLW. (2002b). *Northern Southeast Area Plan*, October 2002. Available online at <http://dnr.alaska.gov/mlw/planning/areaplans/nseap/>. Last accessed 2012.

DNR DMLW. (2002c). *Haines State Forest Management Plan*, August 2002. DNR DMLW and Division of Forestry. Available online at <http://forestry.alaska.gov/pdfs/haines/hsfpfinal.pdf>. Last accessed 2012.

DNR DMLW. (2010). *Navigability Program*. Accessed at <http://www.navmaps.alaska.gov/navwatersmap/>.

DOT&PF (State of Alaska Department of Transportation and Public Facilities) (2004). *Southeast Alaska Transportation Plan*. Available at <http://dot.alaska.gov/sereg/projects/satp/assets/FinalSATP.pdf>

- DOT&PF. (2005a). *Alaska Highway Preconstruction Manual*. Available at http://www.dot.state.ak.us/stwddes/dcsprecon/pop_preconstman.shtml
- DOT&PF SR (2005b). *Design Designation*. Approved by DOT&PF, September 2, 2005.
- DOT&PF. (2008). *Let's Get Moving 2020, Alaska Statewide Long-Range Transportation Policy Plan*. DOT&PF, February, 2008.
- DOT&PF. (2011a). *Alaska Department of Transportation and Public Facilities, Alaska Environmental Procedures Manual, Noise Policy*. April 2011.
- DOT&PF. (2011b). *Unstable Slope Management Program*, updated September 1, 2011. Accessed at www.akdot-usmp.com on February 14, 2012.
- DOT&PF. (2012) *Policy and Procedure 05.05.020*, July 6, 2012, accessed on-line at http://www.dot.state.ak.us/edocs_code/edocs_document_relay_nativefile_bydocname.cfm?inline=1&ddocname=DOT-JNU_063416
- DOT&PF. (2013a). *Alaska Environmental Procedures Manual*. Revised March 20, 2013.
- DOT&PF. (2013b). *Upper Lynn Canal Traffic Map 2011*. DOT&PF, Division of Design and Engineering Services, Southeast Region Traffic and Safety.
- DOT&PF. (2013c). *Alaska Traffic Manual*, Effective January 2012, available at http://www.dot.state.ak.us/stwddes/dcstraffic/pop_traffmansup.shtml
- DOT&PF Division of Program Development. (2014). *Highway System Analysis*. Reviewed on May 27, 2014.
- DOT&PF SR (State of Alaska Department of Transportation and Public Facilities Southeast Region). (2014). *Invasive Species Plant List and Control Matrix*. Prepared by Three Parameters Plus. February 2014.
- DOT&PF SR (2015). *Design Designation*. Approved by DOT&PF, February 20, 2015.
- DOT&PF and ADF&G. (2001). *Memorandum of Agreement between Alaska Department of Fish and Game and Alaska Department of Transportation and Public Facilities for the*

Design, Permitting, and Construction of Culverts for Fish Passage. August 2001.

[http:// www.dot.state.ak.us/stwddes/desenviron/resources/memos.shtml](http://www.dot.state.ak.us/stwddes/desenviron/resources/memos.shtml).

DOT&PF and ADNR. (1987). Cooperative Agreement between the Alaska Department of Transportation and Public Facilities and the Alaska Department of Natural Resources. November 1987.

DOWL HKM. (2006). All-Appropriate Inquiry/Phase 1 Environmental Site Assessment: Haines Highway MP 3.5 to 25.3, Haines, Alaska. March 2006.

DOWL HKM. (2006a). *Final Scoping Summary Report*, Haines Highway MP 3.5 to 25.3, Haines, Alaska. August 2006.

DOWL HKM. (2006b). Wetland Delineation and Wetland Functional Assessment, Vegetation Classification, Wildlife Assessment, Haines Highway MP 3.5 to 25.3, Haines, Alaska. September 2006.

DOWL HKM. (2009). *Updated Final Alignment Study, Haines Highway MP 3.5 to 25.3*. April 2009.

DOWL HKM. (2009a). *Location Hydraulic Study and Preliminary Hydrology and Hydraulics Report, Haines Highway MP 3.5 to 25.3*. October 2009.

DOWL HKM. (2010a). Memorandum regarding Haines Highway 3R Project from MP 3.5 to MP 25.3 Revised Debris Flow Mitigation Options. January 26, 2010.

DOWL HKM. (2010b). *Wetland and Stream Functions and Values Assessment*. August 2010.

DOWL HKM. (2010c). *Preliminary Engineering Report, Haines Highway MP 3.5 to 25.3*. February 2010.

DOWL HKM. (2012). *Wetland and Stream Functions and Values Assessment, Haines Highway MP 3.5 to MP 25.3*. January 2012.

DOWL HKM. (2013a). *Design Study Report, Haines Highway MP 3.5 to 25.3*. August 2013.

- Emmons, George Thornton (edited with additions by DeLaguna, Fredica). (1991). *The Tlingit Indians*. University of Washington Press, Seattle and London, and the American Museum of Natural History, New York.
- FHWA (Federal Highway Administration). (2002). *Scenic Byways, A Design Guide for Roadside Improvements*, July 2002.
- FHWA. (2011). *Highway Traffic Noise: Analysis and Abatement Guidance*. FHWA-HEP-10-025. December 2011.
- FHWA. (2013). *List of America's Byways, All American Roads*, accessed March 8, 2012, at <http://byways.org/press/listbyways.html>.
- FHWA. (2014). http://www.fhwa.dot.gov/environment/air_quality/conformity/
- Gates, M. (2012). *Dalton's Gold Rush Trail: Exploring the Route of the Klondike Cattle Drives*. British Columbia, Canada: Harbour Publishing Co. Ltd.
- Grover, M.A. (2007). *Haines-Fairbanks Pipeline Formerly Used Defense Site (FUDS): Cultural Resources Monitoring and Survey Report*. Prepared for the U.S. Army Corps of Engineers, Alaska District. (Updated November 2007).
- Haines Alaska News and Comment. (2012). *Haines, Whitehorse, Yukon Officials Meet*. Accessed online at <http://hainesnews.net/2011/09/29/haines-whitehorse-yukon-officials-meetinternational-meetings-reveal-good-news-for-haines/>. March 9, 2012.
- Haines Borough. (2004). *Comprehensive Plan, Haines Borough, Alaska*. April 2004.
- Haines Borough. (2012). *Haines Borough 2025 Comprehensive Plan*. September 2012.
- Haines City and Borough. (2007). *Haines Highway Corridor Partnership Plan*. Haines Borough. August 2007.
- Institute of Transportation Engineers. (1999). *Traffic Engineering Handbook, 5th Edition*. James L. Pine, editor. Published 1999 by Institute of Transportation Engineers, Washington, DC. Publication No. TB-010A.

- Inter-Fluve, Incorporated. (2006). *Haines Highway - MP 3.5 to MP 25.3, Stream and Habitat Inventory*. June 2006.
- Inter-Fluve, Incorporated. (2009). *Location Hydraulic Study and Preliminary Hydrology and Hydraulic Report, Haines Highway MP 3.5 to 25.3*. October 2009.
- Inter-Fluve, Incorporated. (2012). *Haines Highway MP 3.5 to 25.3 Conceptual Mitigation Opportunities*. January 2012.
- Johnson, J. and P. Blanche. (2012). *Catalog of waters important for spawning, rearing, or migration of anadromous fishes – Southeastern Region, Effective June 1, 2012*. Alaska Department of Fish and Game, Special Publication No. 12-07, Anchorage.
- Maine Department of Transportation. (2001). *Collisions between Large Wildlife Species and Motor Vehicles in Maine Interim Report*. Maine Interagency Work Group on Wildlife/Motor Vehicle Collisions: Maine Department of Transportation, Maine Department of Inland Fisheries and Wildlife, Office of the Secretary of State, Maine Department of Public Safety, Maine Turnpike Authority. April 2001.
- NOAA (National Oceanic and Atmospheric Administration). (2011). *Endangered, Threatened, Proposed, Candidate, and Delisted Species in Alaska, May, 2011*. Available at: http://www.fakr.noaa.gov/protectedresources/esa/ak_specieslst_051110.pdf.
- NOAA. (2012). Fisheries Office of Protected Resources. Accessed March 20, 2012, at <http://www.nmfs.noaa.gov/pr/species/fish/>.
- Thornton, Thomas F. (2012). *Haa léeklk'w Hás Aaní Saax'ú - Our grandparents Names on the Land*. Sealaska Heritage Press.
- USACE (U.S. Army Corps of Engineers). (1987). Environmental Laboratory. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1, USACE, Waterways Experiment Station, Vicksburg, MS.
- USACE. (2003). *Effects of Riprap on Riverine and Riparian Ecosystems*. USACE, Engineer Research and Development Center, Wetlands Regulatory Assistance Program. ERDC/EL TR-0304.

- USACE. (2006) *Final Work Plan, Haines-Fairbanks Pipeline Site Investigation, Haines Alaska*. USACE Document Number 09000-353-006. ENSR Corporation. July 2006.
- USACE. (2007). *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Alaska Region (Version 2.0)*.
- USACE. (2013). *Draft Remedial Investigation Report, Haines Area Sites*. (PMP 1.9, 17.7, 19.5, 25.5), Project F10AK1016-01, ADEC File: 900.38.001.
- USACE. (2014). *Final Work Plan for Additional Environmental Investigation at sites PMP 17.7, 19.5, and 25.5*. June 2014.
- USACE. (2014). *Final Report, Additional Environmental Investigation, Haines Area Sites (PMP 17.7, 19.5, and 25.5), Haines-Fairbanks Pipeline, Formerly Used Defense Site, Haines, Alaska*. December 2014.
- U.S. Bureau of Reclamation. (2010). *Inspection and Cleaning Manual for Equipment and Vehicles to Prevent the Spread of Invasive Species, 2010 Edition*. Technical Memorandum No. 88-68220-07-05. Denver, Colorado: U.S. Department of the Interior, Bureau of Reclamation. May 2010.
- U.S. Census Bureau. (2015a). *2000 Decennial Census*. Profile of Selected Economic Characteristics, Census 2000 Summary File (SF 3). Haines Borough and Klukwan CDP, Alaska. Accessed at American Fact Finder www.factfinder.census.gov on June 23, 2015.
- U.S. Census Bureau. (2015b). *2009 - 2013 American Community Survey 5-Year Estimates, DP03 and DP05*. Haines Borough and Klukwan CDP, Alaska. Accessed at American Fact Finder, www.factfinder.census.gov on June 23, 2015.
- USCG (U.S. Coast Guard). (2012). *Navigable Waters of the United States within the Seventeenth Coast Guard District*. Revised March 2012. Accessed at http://www.dot.state.ak.us/stwddes/desenviron/assets/pdf/resources/D17_ListofNavigableWaters.pdf.
- USDA (U.S. Department of Agriculture). (2010). *Prime and Important Farmlands*. Available at www.ak.nrcs.usda.gov/technical/soils/soilslocal.html.

USDHHS (U.S. Department of Health and Human Services). (2014). 2014 Poverty Guidelines for Alaska. Available at <http://aspe.hhs.gov/poverty/14poverty.cfm>. Accessed March 2014.

U.S. Forest Service. (2007). *A Snapshot of Spread, Locations of Invasive Plants in Southeast Alaska*. U.S. Department of Agriculture, Alaska Region, R10-MB-597. By Melinda Lamb and Michael Shephard, Forest Health Protection, State and Private Forestry, April 17, 2007.

USFWS (U.S. Fish and Wildlife Service). (2007a). Queen Charlotte Goshawk Status Review. USFWS Alaska Region Juneau Fish and Wildlife Field Office. April 25, 2007.

USFWS. (2007b). National Bald Eagle Management Guidelines. Available at: http://alaska.fws.gov/eaglepermit/pdf/national_guidlines.pdf.

USFWS. (2010). John H. Chafee Coastal Barrier Resources System. Available at <http://www.fws.gov/CBRA/Act/index.html#CBRS>.

USFWS. (2013). *Endangered, Threatened, Proposed, Candidate, and Delisted Species in Alaska*. Accessed online at [http://alaska.fws.gov/fisheries/endangered/pdf/es_alaska_species_list_\(2013\).pdf](http://alaska.fws.gov/fisheries/endangered/pdf/es_alaska_species_list_(2013).pdf). (updated May 24, 2013).

USFWS. (2015). Wetland Data Mapper. USFWS National Wetland Inventory. Accessed at www.fws.gov/wetlands/datamapper.html in May 2015.

USNPS (United States National Park Service). (2002). *How to Apply the National Register Criteria for Evaluation*. National Register Bulletin 15. Department of the Interior, Washington, D.C.

USNPS. (2010). *Designated Wild and Scenic Rivers*. Accessed online at <http://www.rivers.gov/wildriverslist.html>.

FIGURE SETS

Figure Set A	Existing and Proposed Right-of-Way
Figure Set B	Alaska Chilkat Bald Eagle Preserve Property Acquisition and Right-of-Way Relinquishment
Figure Set C	Bald Eagle Perch Sites
Figure Set D	Wetland Impacts and Proposed Stream Mitigation

(This Page Left Intentionally Blank)

FIGURE SET A

Existing and Proposed Right-of-Way

(This Page Left Intentionally Blank)

FIGURE SET B

**Alaska Chilkat Bald Eagle Preserve Property Acquisition
and
Right-of-Way Relinquishment**

(This Page Left Intentionally Blank)

FIGURE SET C
Bald Eagle Perch Sites

(This Page Left Intentionally Blank)

FIGURE SET D

Wetland Impacts and Proposed Stream Mitigation

(This Page Left Intentionally Blank)

APPENDICES A through HW
(available on attached CD)

Appendix A.....	Coordination with State of Alaska Department of Natural Resources on Turnout Improvements
Appendix B.....	Socioeconomic Analysis
Appendix C.....	Section 4(f)
Appendix D.....	Appendix Deleted (Refer to Appendix F <i>Essential Fish Habitat</i> , Stream and Mitigation Plan)
Appendix E.....	Section 106 Consultation
Appendix F.....	Essential Fish Habitat Assessment
Appendix G.....	Bald Eagle Research, Consultation and Conservation Measures
Appendix H.....	Comments and Coordination
Appendix HW.....	Hazardous Waste

(This Page Left Intentionally Blank)

