

5 PROPOSED MITIGATION AND COMMITMENTS

The Alaska Department of Transportation and Public Facilities (DOT&PF) would make a number of commitments and implement a variety of mitigation measures to address the potential impacts of a build alternative if one is selected for the Juneau Access Improvements (JAI) Project. The preliminary alignments for highway segments of all alternatives have been adjusted several times over the course of environmental and preliminary engineering studies to avoid impacts to wetlands, marine areas, wildlife, and cultural resources. Specific commitments and mitigation measures for the JAI Project build alternatives¹ are described by resource area in Sections 5.1 through 5.11. As explained in Sections 5.1 through 5.11, most of these commitments and mitigation measures apply to any of the build alternatives; some apply only to road alternatives or certain ferry alternatives. However, because Alternative 1 - No Action has been identified as the preferred alternative, no mitigation is required or proposed.

5.1 Water Quality

1. An erosion and sediment control plan would be prepared to describe the Best Management Practices (BMPs) to use to avoid water quality impacts to wetlands and other water bodies. Only clean fill material (excavated rock or mineral soil) would be used for the roadway and ferry terminal embankments. Staking would be done at the planned outside limits of disturbance prior to construction to ensure that impacts are limited to that area.
2. In wetland areas, the roadway would be constructed using the minimum-width fill footprint necessary (see Figure 2-7b). In wetland and other sensitive areas, the roadway would be constructed with a low-profile embankment to limit the fill footprint, to the extent practicable. Rock would be used to stabilize the toes of slopes at ponds and stream crossings.
3. Grass seed would be placed on any road slope containing soil. To protect the integrity of the natural plant communities, plant species indigenous to the area and to the extent certified seeds are available, would be used for vegetating road slopes, except that non-native annual grasses may be used to provide initial soil cover. No grubbing would be done outside of the fill footprint and the only clearing done beyond the 10-foot vegetation clearing limit (shown in Figure 2-7b) would be for individual trees that might pose a safety hazard to the traveling public.
4. Sediment barriers would be used to control sediment transport during construction. Sediment basins would be used, as necessary, during construction.
5. Culverts would be installed through fill slopes in appropriate locations to maintain natural flow patterns for surface water.

¹ This Final Supplemental Environmental Impact Statement (SEIS) is based on the 2014 Draft SEIS, and substantive changes have been highlighted in gray for easy identification by the reader.

5.2 Hazardous Materials

Mitigation may be necessary should contaminated material be unearthed at the Auke Bay Ferry Terminal during structural modifications of the terminal with development of Alternative 4A, 4B, 4C, or 4D.

If waste rock disposal on U.S. Forest Service (USFS) lands outside the easement limits becomes necessary, DOT&PF would test the rock for acid-generating potential and total metals content to determine appropriate disposal. Hazardous materials would not be disposed of on USFS property.

5.3 Wetlands

1. DOT&PF has avoided wetlands to the extent practicable during development of the preliminary alignments. The roadway would be constructed using the minimum-width fill footprint necessary (see Figure 2-7b). During final engineering design of the selected alternative, DOT&PF would investigate ways to further minimize encroachment on wetlands.
2. Embankment heights and side slopes would be minimized during design to reduce wetland footprints.
3. During construction, slope limits in wetlands areas would be separately identified to ensure that workers are aware of wetlands and the need to avoid impacts beyond the slope and clearing limits.
4. Construction camps, borrow pits, and waste areas would be located in upland areas and stabilized during and after use to avoid water quality impacts to wetlands and water bodies.

5.4 Terrestrial Habitat

1. Only certified seed mixtures would be used to seed exposed soils.
2. No non-mineral soil from outside the project boundaries would be imported to the project site. Any soil within areas disturbed by construction of the project identified as containing invasive species would not be transported to other areas of the project.
3. Construction equipment would be pressure washed prior to use on the project.
4. To the extent practicable, shot rock slopes would be covered with overburden and seeded to reduce their visibility.
5. DOT&PF, in cooperation with the University of Alaska Fairbanks Cooperative Extension Service, has identified practices to prevent the spread of invasive species in *Best Management Practices – Controlling the Spread of Invasive Plants during Road Maintenance* (UAF 2014). These BMPs would be used by DOT&PF during routine maintenance activities along the road system, concentrating on high-priority invasive plant species, such as reed canarygrass and knotweed.

5.5 Intertidal and Subtidal Areas

1. During design, DOT&PF would investigate ways to further reduce intertidal fills, including alignment shifts and steepened slopes. To the extent practicable, temporary beach access points would be chosen to take advantage of existing landings, previously disturbed sites, or locations of planned fill. Additional necessary access points identified during construction would be sited to minimize impacts to habitat. These access points would be restored after project completion to conditions similar to those that existed previously.
2. In-water work for fill placement, dredging, or pile driving would be timed to avoid impacts to spawning and migrating fish species in accordance with the Title 16 fish habitat permits.
3. Breakwaters at the ferry terminals would be constructed with gaps or large culverts to allow passage of juvenile fish near shore.
4. Shuttle ferries would have wastewater holding tanks to avoid discharge of waste while moored at the new terminal sites.
5. Specific to ferry operations under Alternatives 4B and 4D, ferries would not operate in Berners Bay in winter and spring, from October 1 to May 15. This would cover the herring spawning season, which ends in early May.

5.6 Anadromous and Resident Fish Streams

1. All anadromous fish streams would be crossed by bridges. Anadromous fish streams that can be crossed with 130-foot or shorter bridges would not have any structure or fill in the stream channel. Anadromous fish streams that require pier supports would have the fewest possible piers using 130-foot spacing, placed to reduce impact to the streams.
2. Streams identified as having resident fish, or the potential to have resident fish, would have culverts placed to provide fish passage, in accordance with the Memorandum of Agreement between the Alaska Department of Fish and Game (ADF&G) and DOT&PF titled “Design, Permitting, and Construction of Culverts for Fish Passage.”
3. In-water work at anadromous and resident fish streams would be timed in accordance with fish habitat permits. To avoid impacts to outmigrant salmonids and spawning eulachon, construction of all river crossings with in-stream piers would not occur from March 15 through June 15.

5.7 Bald Eagles

1. On-the-ground nest surveys would be conducted before clearing takes place to confirm the location of trees with eagle nests. Construction activities in the vicinity of bald eagle nests would be coordinated with the U.S. Fish and Wildlife Service (USFWS) to determine the need for alignment changes, blasting plan changes, or other measures to avoid impacts to eagles.

2. In areas where clearing would occur within 100 feet of a nest tree, DOT&PF and USFWS would jointly assess the potential for windthrow and stabilize the tree or adjacent trees, if determined necessary.
3. During construction, DOT&PF and USFWS would assess the sufficiency of natural screening between the highway and any eagle nests below the elevation of the road within the 330-foot zone. Additional screening would be developed if necessary.
4. DOT&PF would continue to fund USFWS aerial surveys for a period of 5 years after the JAI Project is open to traffic to assess the impact, if any, of the project on the Southeast Alaska bald eagle population.
5. DOT&PF would apply for bald eagle Disturbance Permits for nests located within 660 feet of work limits and for nests within 0.5 mile of blasting activities. Under alternatives that require the widening of 2.9 miles of the existing Glacier Highway, DOT&PF would obtain Disturbance Permits for construction activities within 660 feet of eagle nest trees as determined necessary in consultation with the USFWS.

5.8 Migratory Birds

In appropriate habitats, nesting surveys for Queen Charlotte goshawk would be conducted prior to construction. Clearing would be avoided in the vicinity of active nests. No clearing of vegetation would occur during the USFWS-approved nesting window without a pre-nesting survey. Pre-nesting surveys would be conducted by a qualified biologist immediately prior to clearing activities.

5.9 Wildlife

1. Planning for any camps necessary during construction of the project would be developed in consultation with ADF&G and would include BMPs for handling food, trash, and other potential wildlife attractants to reduce impacts.
2. In areas where established wildlife crossings are noted and ADF&G requests, side slopes along the road alignments would be designed to provide easier access across the road for wildlife.
3. Pile driving at ferry terminals and multi-span bridge construction sites would be done with vibratory hammers to the extent practicable to minimize impacts to marine mammals. Impact proofing² necessary for weight-bearing piles would be accomplished as quickly as practicable to reduce acoustic impact.
4. During all piling installations, a trained observer would monitor for the presence of marine mammals, and pile driving would be halted if any marine mammal comes within 660 feet of the activity unless a different distance is set in a Marine Mammal Protection Act authorization.
5. Preconstruction wolf den surveys would be conducted in consultation with the ADF&G. Identified active dens would be avoided during clearing to the extent practicable.

² Impact proofing: The number of blows necessary to move the piles a set distance to confirm piles can bear the intended load.

6. Roadway signs indicating wildlife presence would be placed in areas of high brown bear, moose, and mountain goat use to reduce potential vehicle collisions with wildlife.
7. In areas of high moose use as identified by the ADF&G, roadside seeding would use only non-palatable species to discourage browsing near the roadways. Roadside alder growth would be cut regularly to reduce browsing by moose and mountain goats, and to maintain adequate sight distances to avoid vehicle collisions with wildlife.
8. The project would incorporate adequate sight lines in the final design to enable drivers to see moose and mountain goats that are in proximity to the road (particularly relevant in conifer forest areas).
9. Bridges that span waterways or other geographical features likely to be used as wildlife passages would be constructed to facilitate the movement of brown bears. The distance between the proposed bridge abutments/supports and water bodies would be lengthened to provide travel corridors for brown bears and other wildlife.
10. Wildlife observers would examine the nearby area for the presence of mountain goats prior to construction rock blasting and, if necessary, haze them in an attempt to have them depart the area.
11. All construction personnel on site would be required to attend wildlife awareness training and orientation.
12. DOT&PF would work with ADF&G to develop a wildlife interaction plan prior to the start of construction for use by all personnel on site during construction to protect both people and wildlife. The plan would include topics such as safety measures for on-site personnel, (e.g., use of bear guards and bear spray); proposed storage and disposal of construction materials and trash; wildlife orientation training for on-site personnel; description of the handling of people/wildlife interactions, including contingencies in the event wildlife does not leave the site (e.g., hazing by trained staff); description of the layout of temporary buildings and work areas to minimize interactions between humans and bears/moose (e.g., use of electric fencing); and requirement to document and communicate the sighting of bears/moose on site or in the immediate area to all shift employees.
13. During construction, all garbage would be properly disposed of in closed bear-proof containers to avoid attracting bears and other wildlife.
14. To the extent practicable, snow drifts or piles that could conceal bears would be kept cleared away from buildings and fences at construction camps.
15. Procedures to control sediment runoff, fugitive dust fallout, and wastewater during construction would be followed to avoid or minimize impacts on salmon-spawning streams, which provide important seasonal food for bears.
16. To minimize the potential for flying debris during blasting and construction activities, the contractor would be required to implement control measures during initial surface blasts, production blasting, and other construction for areas that have the potential to reach Lynn Canal.

5.10 Cultural Resources

1. Known archaeological and historical resources in the vicinity of the project would be identified in the construction plans to ensure that the contractor is aware of the need to avoid impacts to these resources.
2. Cultural resources within the project limits would be flagged in the field to ensure that staging and construction activities do not inadvertently damage these resources.
3. **If** a previously unknown cultural resource **were** discovered during construction, work in the area would cease and DOT&PF would contact the Federal Highway Administration and the State Historic Preservation Officer and develop an approved plan before proceeding.

5.11 Recreation and Visitor Facilities

Any ferry terminals constructed for the project would include Americans with Disabilities Act accessible restrooms that would be available to highway users as well as ferry customers.