
EXECUTIVE SUMMARY

Introduction

The State of Alaska Department of Transportation and Public Facilities is proposing to construct safety improvements to the Seward Highway from Milepost 105 to Milepost 107.

The purpose of this Environmental Assessment is to present and analyze the environmental consequences of reasonable alternatives in accordance with the National Environmental Policy Act. **The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being carried out by State of Alaska Department of Transportation and Public Facilities pursuant to 23 United States Code 327 and a Memorandum of Understanding dated November 3, 2017 and executed by Federal Highway Administration and State of Alaska Department of Transportation and Public Facilities.**

Existing Conditions

Seward Highway, between Potter Marsh and Girdwood, is constrained by the steep slopes of the Chugach Mountains on one side and the Alaska Railroad tracks and Turnagain Arm on the other. The existing highway functions as a Rural Principal Arterial roadway, consisting of two 12-foot-wide travel lanes and 8-foot-wide paved shoulders. See Figure 3. The highway sits within a 300-foot-wide right-of-way, much of which overlaps the railroad's 200-foot-wide right-of-way. The posted speed limit within the Windy Corner Project is 55 miles per hour, with no passing lanes or zones.

The Annual Average Daily Traffic is 7,756 vehicles per day (2017) and the highway operates at a Level of Service D under current peak-hour conditions. Traffic demands vary substantially depending on the season of the year, with daily traffic volumes exceeding 22,000 vehicles during peak summer weekends. These seasonal fluctuations result in the highway frequently operating at a Level of Service E or F during the summer months (Photograph 5).

Motorists slowing and stopping along the highway shoulder to view wildlife frequently disrupt traffic operations. This creates a high differential in speeds between motorists transiting through the corridor and those that are sightseeing. This differential in speeds and the uncontrolled movement of traffic entering and exiting the highway contributes to the elevated crash rate and severity of crashes in the corridor.

The existing curves between Mileposts 105 and Milepost 107 do not meet the minimum radius for a posted or design speed of 65 miles per hour; some do not meet the minimum radius for a posted or design speed of 55 miles per hour. The substandard curve radii and closely spaced curves reduce the margin for driver error. The combined effects of the disrupted traffic operations and roadway geometry results in a two-mile segment of highway that has the highest number of fatal crashes and the second highest rate of high-severity crashes of any two-mile segment of the Seward Highway between Potter Station and Girdwood over the last forty years.

Purpose and Need

The purpose of the proposed project is to implement safety upgrades and improve traffic operations between Milepost 105 and Milepost 107. Specifically, the project would:

- Implement safety upgrades to decrease high-severity crashes by providing separation of northbound and southbound lanes to diminish the risk of head-on crashes; and

- Improve traffic operations to alleviate traffic congestion by:
 - improving curves to a degree that meets recommended design speed for rural principal arterial on level terrain.
 - improving access for vehicles entering or exiting the highway, and

Alternatives

The State of Alaska Department of Transportation and Public Facilities has evaluated options to improve safety and traffic operations along this segment of the Seward Highway. Seven alternatives were considered for this Environmental Assessment. Two of these (Alternatives 1 and 4) were considered unreasonable and not advanced for detailed study. The No Action alternative and four reasonable alternatives (Alternatives 2A, 2B, 2C, and 3) were advanced for detailed study. Of the reasonable alternatives described below, Alternative 2A was selected as the Preferred Alternative. The rationale for selection can be found in Chapter 7.0 of the Environmental Assessment.

- **No Action**

The No Action alternative must be carried forward for analysis under National Environmental Policy Act regulations. It is described in Section 4.3.1 of the Environmental Assessment with environmental consequences covered in Section 5.0 of the Environmental Assessment.

The No Action alternative consists of maintaining the existing roadway and railroad alignments.

This alternative would not meet the project's purpose and need. Curves within the Windy Corner Project would meet criteria for a design speed of 50 miles per hour, much less than the selected design speed of 65 miles per hour. Auxiliary or turn lanes would not be constructed to improve access for vehicles on an off the highway. There would be no increase in separation of opposing traffic. As a result, safety upgrades to the roadway would not be implemented and traffic operations would not improve.

Access to wildlife viewing and recreational parking would be unchanged as no improvements or modifications to park facilities would be made under this alternative.

- **Alternative 2A (Preferred Alternative) –Shift Into Turnagain Arm – CSP Material Locations**

Alternative 2A shifts the Seward Highway alignment into the Turnagain Arm and would include the following design features. See Figure 9.

Typical Highway Section. The proposed typical highway section for the realigned highway is for a two-lane divided highway consisting of:

- 12-foot-wide through (travel) lanes
- 12-foot-wide auxiliary lanes
- 24-foot-wide vegetated median
- 4-foot-wide inside shoulders
- 8-foot-wide outside shoulders
- Appropriately-sized rock catchment widths based on wall heights for the northbound edge of pavement and toe of slope

Design Speed. A design speed of 65 miles per hour is applied to this alternative.

Auxiliary and Turn Lanes. Alternative 2A would include an auxiliary lane in each direction and a dedicated southbound left-turn lane for passing and turning to improve access for vehicles entering or exiting the highway.

Traffic Separation. A median separating northbound and southbound traffic to diminish the risk of head-on crashes.

Railroad Realignment. Alternative 2A would include realignment of the Alaska Railroad Corporation track to make space for the highway alignment. Horizontal curves would be flattened which would allow track speeds to increase from 40 to 50 miles per hour throughout the Windy Corner Project. The railroad structural section includes:

- 10-foot top width for ballast; and
- 24-foot top width for sub-ballast.

Emergency Response Access. Alternative 2A would include a controlled-access emergency response access ramp to Turnagain Arm to facilitate water rescues.

Material Extraction. Extract nearly 2 million cubic yards of aggregate, riprap, and armor stone proposed to come from areas near Milepost 109 and possibly Milepost 104 within Chugach State Park.

Park Facilities Improvements. As mitigation for material extraction within the park, State of Alaska Department of Transportation and Public Facilities proposes to use the space created by the new highway alignment to construct new controlled access mountainside park facilities including a scenic parking area and pedestrian facilities that would improve sightseeing, wildlife viewing, and access to Chugach State Park.

Future Amenity Accommodations. Additional amenities that are not proposed for construction at this time, but which could be accommodated in the future, include a pedestrian underpass connecting the north and south sides of the highway and an improved parking area and viewing area on the waterside of the highway. Space for a potential future pedestrian pathway along the mountainside has been accommodated.

- **Alternative 2B –Shift Into Turnagain Arm – Existing Right-of-Way Material Locations**

Alternative 2B maintains the identical design criteria and alignment as that described in Alternative 2A with the following differences. See Figure 15.

Material Extraction. Alternative 2B evaluates multiple material sites within State of Alaska Department of Transportation and Public Facilities Seward Highway Right-of-Way from MP 104 to MP 113. These material extraction sites are anticipated to provide similar quantity of material as Alternative 2A material locations proposed within Chugach State Park at Milepost 109 and Milepost 104. Seven material sites within the Seward Highway Right-of-Way were selected based on the availability of large quantities of material and proximity to the project site (within six miles). At the seven sites, vertical rock cut slopes would extend to the edge of the Seward Highway Right-of-Way (designed at a 0.5 Horizontal:1 Vertical slope per State of Alaska Department of Transportation and Public Facilities geotechnical recommendations elsewhere in the corridor).

Parking Area. Alternative 2B would provide an improved mountainside off-shoulder paved parking area approximately 38 feet deep by 325 feet long instead of the new mountainside park facility proposed with Alternative 2A.

- **Alternative 2C – Construct Proposed Improvements with Material from a Distant Source**

Alternative 2C maintains the identical design criteria and location as described in Alternative 2A, with the following differences. See Figure 16.

Material Extraction. Alternative 2C imports materials from outside the project corridor and outside of Chugach State Park lands. The range of potential material sources includes: existing commercial sources in Anchorage, Eklutna, and Palmer; formerly used material sites in Portage; and material sources accessible via Cook Inlet. These material sources are anticipated to provide similar quantity and quality of material as Alternative 2A. Alternative 2C evaluated different material transport methods: truck haul, train, and barge. Details of the material site analysis are located under Section 6.0 of the Environmental Assessment.

Parking Area. Alternative 2B would provide an improved mountainside off-shoulder paved parking area approximately 38 feet deep by 325 feet long instead of the new controlled access mountainside park facility proposed with Alternative 2A.

- **Alternative 3 – Shift Proposed Alignment Inland at Windy Corner**

Alternative 3 maintains the same design criteria as Alternative 2A with the following differences. See Figure 17.

Shift Alignment Inland. Alternative 3 attempts to balance cut and fill quantities by shifting the alignment inland at Windy Corner. This design would require 005 Horizontal:1 Vertical rock cuts extending into Chugach State Park at Windy Corner, with design features for the highway remaining the same as Alternative 2A.

Material from Windy Corner Cut. By moving the design alignment inland, fill quantities would be reduced and could then be satisfied with the material cut from the slopes and faces for the highway construction. The material generated from the Windy Corner slope cuts are anticipated to provide sufficient quantity and similar quality of material as Alternative 2A material locations proposed within Chugach State Park at Milepost 109 and Milepost 104.

Parking Area. Alternative 3 would provide an improved mountainside off-shoulder paved parking area approximately 38 feet deep by 325 feet long instead of the new controlled access mountainside park facility proposed with Alternative 2A.

- **Other Alternatives**

Alternatives 1 and 4 were considered but do not meet the purpose and need of the project and have therefore been eliminated as part of the evaluation process under both the National Environmental Policy Act and Section 4(f) of the Department of Transportation Act. These alternatives are discussed in Section 4.2 of the Environmental Assessment.

Environmental Consequences

Resources Not Impacted

Environmental resources not present in the proposed Windy Corner Project and not affected by the proposed project; and therefore not evaluated in this environmental document are:

- Economics;
- Wetlands (other Waters of the United States are addressed in Section 5.2.8);
- Alaska Coastal Management Program;
- Hazardous Waste;
- Air Quality;
- Floodplains;

- Noise;
- Farmland;
- Title VI and Environmental Justice; and
- Wild and Scenic Rivers and Wilderness Areas.

Resources Impacted

Environmental resources present in the proposed Windy Corner Project and potentially affected by the proposed project are listed below. An evaluation of the Preferred Alternative's effects to these resources are summarized in Table ES-1.

- Right-of-Way;
- Social Considerations;
- Local Land Use and Transportation Plans;
- Cultural Resources;
- Anadromous or Resident Fish and Essential Fish Habitat;
- Wildlife and Birds;
- Threatened and Endangered Species;
- Waterbody Involvement and Water Quality;
- Vegetation and Invasive Species;
- Bicycle and Pedestrian Issues;
- Section 4(f);
- Section 6(f);
- Visual Resources;
- Irreversible and Irretrievable Commitment of Resources; and
- Construction Impacts.

Table ES-1: Preferred Alternative Summary of Environmental Consequences

<i>Environmental Impact Category</i>	<i>No Action</i>	<i>Alternative 2A (Preferred Alternative)</i>
Right-of-Way	Would require no right-of-way acquisition.	Would require the Department of Transportation and Public Facilities and the Alaska Railroad Corporation to acquire 26.3 acres of Chugach State Park and relinquish 14.7 acres of existing right-of-way to Chugach State Park.
Social Considerations	<ul style="list-style-type: none"> • Would leave traffic and safety issues to persist: <ul style="list-style-type: none"> ○ Two of the five curves do not meet 55 miles per hour design speed criteria; ○ High speed differential between commuters, recreation, and tourist motorists; and ○ Access to recreational areas not improved. • Would not improve the reliability and efficiency for commuter, freight, and emergency response vehicles. • Would not provide emergency responder access to Turnagain Arm. 	<ul style="list-style-type: none"> • Would improve traffic safety issues by: <ul style="list-style-type: none"> ○ Upgrading curves to meet a 65 miles per hour design standard; ○ Adding north and southbound auxiliary lanes; ○ Adding southbound dedicated left-turn lane; ○ Improving parking and recreational access and facilities; and ○ Separating north and southbound traffic. • Would provide access to Turnagain Arm for water rescue operations to improve public safety by adding a controlled-access emergency response access ramp. • Would improve safety, reliability, and efficiency of commuter, freight, and emergency vehicle travel. • Would affect water recreation in the direct vicinity of the project where highway and railroad track are realigned onto mudflats.
Local Land Use and Transportation Plans	<ul style="list-style-type: none"> • Would not meet goals for improved safety and transportation upgrades identified in local land use and transportation plans. • Would not provide park facilities at recreational sites identified in the park management plan. 	<ul style="list-style-type: none"> • Would meet goals to improve safety and provide transportation upgrades identified in local land use and transportation plans. • Would meet the Chugach State Park purpose to provide recreational opportunities for the people by: <ul style="list-style-type: none"> ○ providing areas for specified uses, and ○ constructing necessary facilities in the area. • The project includes construction of new controlled access mountainside park facilities identified in the park management plan.
Cultural Resources	Would not affect cultural historic properties.	Would not adversely affect cultural or historic properties.
Anadromous or Resident Fish and Essential Fish Habitat	Would not affect essential fish habitat.	Would require no additional essential fish habitat consultation if previously accepted mitigation is implemented.
Wildlife and Birds	Would not affect wildlife or birds.	Would not fragment habitat, change migratory routes, or substantially diminish available wildlife or bird habitat.
Threatened and Endangered Species	Would not affect the federally endangered Cook Inlet beluga whales or their critical habitat.	Would be unlikely to adversely affect the endangered Cook Inlet beluga whales or their critical habitat if National Marine Fisheries Service required mitigation is implemented.
Waterbody Involvement and Water Quality	Would not affect waterbodies or stormwater flow pathways. Culverts for three unnamed streams would remain at 24- and 36-inch diameters.	<ul style="list-style-type: none"> • Would fill 26.3 acres of intertidal mudflats. • Would provide credits from a permittee responsible site as compensatory mitigation to offset proposed project waterbody impacts. • Would increase impervious area contributing to storm water flows.

<i>Environmental Impact Category</i>	<i>No Action</i>	<i>Alternative 2A (Preferred Alternative)</i>
Waterbody Involvement and Water Quality, Continued		<ul style="list-style-type: none"> • Would increase culvert diameters for three unnamed streams to 36 and 42 inches.
Vegetation and Invasive Species	Would not affect vegetation and invasive species composition.	Would disturb 104.7 acres of total ground including 43.0 acres of previously disturbed uplands, 35.4 acres of undisturbed upland, and 26.3 acres of intertidal waters). Disturbance may increase the risk of introduction of invasive species and potentially change the composition of vegetation within or adjacent to the Windy Corner Project.
Bicycle and Pedestrian Issues	Would not improve access to recreational and wildlife viewing areas. Traffic safety issues would remain between commuters and recreationists/tourists.	<ul style="list-style-type: none"> • Would improve safe access to recreational and wildlife viewing areas. • Would improve safety of pedestrians and recreationalists by providing a buffer between the highway and parking area.
Section 4(f)	Would not affect Section 4(f) resources.	Would require the permanent acquisition of 26.3 intertidal acres of Chugach State Park along Turnagain Arm, and temporary Section 4(f) use of 39.56 acres of undeveloped Chugach State Park lands.
Section 6(f)	Would not affect Section 6(f) resources.	Would require the Section 6(f) conversion of 35.4 acres of undisturbed parkland for material extraction, 4.16 acres Section 6(f) lands on we water side of the highway. The Section 6(f) conversion would be mitigated through replacement lands of 14.7 acres for construction of the new mountainside park facilities.
Visual Resources	Would not affect visual resources.	<ul style="list-style-type: none"> • Would impact the sinuosity of the Turnagain Arm shoreline. • Would expose a total rock cut face area of approximate 79,900 square yards for material extraction and road cut. To minimize the potential effects, a topographic buffer would be maintained at the Milepost 109 location so that only approximately 300-foot wide portion of the rock face would be directly visible from the highway at the access point. Material extraction at Milepost 109 would be visible to northbound travelers for approximately 0.25 miles (approximately 15 seconds), to southbound travelers for 0.5 miles (approximately 30 seconds), and to observers from across Turnagain Arm. Material extraction at Milepost 104 would be visible to northbound travelers for approximately 0.9 miles (approximately 42 seconds) and to southbound travelers for approximately 0.7 miles (approximately 54 seconds). Turnagain Arm Trail users may occasionally be able to view the extraction area at Milepost 109 from some off-trail viewpoints.
Irreversible and Irrecoverable Commitment of Resources	Would not change the existing commitment of natural resources.	Would disturb 104.7 acres in total and require the extraction and placement of nearly 2 million cubic yards of materials for project components.

<i>Environmental Impact Category</i>	<i>No Action</i>	<i>Alternative 2A (Preferred Alternative)</i>
Construction Impacts	Would not have construction-related impacts to resources.	Would result in the following temporary construction impacts: <ul style="list-style-type: none"> • Reduce water, stream, and air quality; • Disrupt traffic patterns; • Increase travel time; • Increase noise levels; • Alter wildlife movements; and • Close trail access.

Permits and Authorizations

- Right-of-Entry permit administered by the Alaska Railroad Corporation.
- Clean Water Act Section 401 Certificate of Reasonable Assurance administered by the Alaska Department of Environmental Quality.
- Clean Water Act Section 404/10 Individual Permit administered by the United States Army Corps of Engineers.
- Clean Water Act Section 402 and 18 AAC 83 administered by the Alaska Department of Environmental Conservation.
- Non-Domestic Storm Water Disposal Plan Approval administered by Alaska Department of Environmental Conservation.
- Noise Permit administered by the Municipality of Anchorage.
- Conditional Use Permit administered by the Municipality of Anchorage.
- Endangered Species Act, Section 7 Consultation administered by National Marine Fisheries Service.
- Magnuson Stevens Fishery Conservation and Management Act, Essential Fish Habitat Consultation administered by National Marine Fisheries Service.
- Section 106 National Historic Preservation Act and the Alaska Historic Preservation Act administered by Alaska Department of Natural Resources, State Historic Preservation Officer.
- Alaska Department of Natural Resources Commissioner’s Finding.
- Section 4(f) administered by the official having jurisdiction of Chugach State Park lands, Alaska Department of Natural Resources.
- Section 6(f) Land and Water Conservation Fund Program administered by the Department of Interior.
- Bald and Golden Eagle Protection Act administered by United States Fish and Wildlife Service.

Public Involvement and Agency Coordination

Starting in 2013, Department of Transportation & Public Facilities conducted public and agency coordination with interested stakeholders to inform them of the project and to solicit comments. Information was provided on the project scope and potential environmental impacts, including use of the Chugach State Park lands for material extraction.

Agency Scoping letters were sent out on March 5, 2013 to collect agency comments. Meetings were held with Community Councils, State Agencies and an agency Technical Advisory Group. The project has been presented at nine local Transportation Fairs between 2015 and 2019.

Public meetings and open houses were held on March 4, 2013; April 24, 2014; April 19, 2016; and April 20, 2016. Appendix G of the Environmental Assessment includes information on these meetings including a summary of comments received and Department of Transportation & Public Facilities responses to those comments.

Public comments received resulted in the following design changes:

- Comments concerning the highway and railroad extending too far into Turnagain Arm, resulted in design shifting the highway and railroad inland through Gorilla Rock.
- Comments concerning the new material location and visibility from the highway, design included a natural buffer to minimize visual impacts at Milepost 109.
- Comments concerning a lack of emergency response access to Turnagain Arm, resulted in the addition of an emergency response access ramp and at-grade railroad crossing.
- Comments requesting less use of Chugach State Park, resulted in commitment to not use material location at Milepost 104 for extraction unless the material location at Milepost 109 does not have sufficient quantity or quality of materials for this project.

Department of Transportation & Public Facilities continues to engage the public and agencies by way of a dedicated website and an additional public meeting is planned as part of the Environmental Assessment process.