



Juneau Access Improvements Project Draft Supplemental Environmental Impact Statement

2014 Update to Appendix G Visual Resources Technical Report

Prepared for:

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& Public Facilities
6860 Glacier Highway
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1. Introduction

This report updates the 2004 *Visual Resources Technical Report*, which was prepared by the Alaska Department of Transportation and Public Facilities (DOT&PF) as Appendix G of the Juneau Access Improvements (JAI) Project Supplemental Draft Environmental Impact Statement (EIS). The 2004 report analyzed the visual impact of Alternatives 2, 2A, 2B, 2C, 3, 4B, and 4D. It utilized the U.S. Forest Service (USFS) Visual Management System as the basis for the visual resource assessment.

During the development of the JAI Project 2006 Final EIS, the Federal Highway Administration (FHWA) and DOT&PF responded to comments on the Supplemental Draft EIS, incorporated new data and further analysis for some resources, and incorporated additional mitigation measures to reduce impacts to wildlife and habitat. The FHWA and DOT&PF also made some changes to Alternative 2B and eliminated Alternatives 2, 2A, and 2C from consideration as reasonable alternatives. Many of these changes required updates to supporting technical reports, which DOT&PF prepared and compiled in Appendix W of the 2006 Final EIS. The FHWA and DOT&PF determined the 2004 *Visual Resources Technical Report* did not need to be updated at that time.

With more than seven years transpired since the 2006 Final EIS and Record of Decision (ROD) were published, the FHWA and DOT&PF recognized the need to update previous technical reports as part of the JAI Project 2014 Draft Supplemental Environmental Impact Statement (SEIS). Updates are needed to reflect changes in regulations, new information related to the potentially affected environment or conditions, updated analysis, evaluation of the newly added Alternative 1B, and changes in the design or alignment for Alternatives 2B and 3. Three key components that affected changes to the design and alignment of Alternative 2B since the 2006 ROD are: changes during the U.S. Army Corps of Engineers permitting process to further avoid and minimize impacts to wetlands and reduce the extent of rock sidecast areas, changes based on advanced geotechnical survey information, and recent changes in 2012 in response to updated bald eagle nest survey data.

As described in the 2004 *Visual Resources Technical Report*, the alteration of the existing landscape setting, resulting from construction of a highway on the alignments of Alternatives 2B, 3, 4B, and 4D, as well as ferry terminals for all alternatives, could potentially result in long-term adverse impacts on scenic integrity and on existing views. Based on the visual resources assessment, the marine alternatives (Alternatives 4A through 4D) would have the least overall impact. Of Alternatives 2B and 3, Alternative 3 was determined to have the least overall impact on visual resources because it would be sited in areas having less severe terrain than Alternative 2B and would have fewer viewers within the foreground- and middleground-viewing thresholds.

This update to the 2004 *Visual Resources Technical Report* provides a summary of the USFS Visual Management System transition to Scenery Management System (SMS) and updates the 2004 *Visual Resources Technical Report* sections on methodology, affected environment, and environmental consequences to correspond to the SMS. This addendum also updates the visual impact assessment of the new (Alternative 1B) and modified alternatives (Alternatives 2B and 3).

1.1 Project Description

As required by the National Environmental Policy Act (NEPA), this technical report considers the following reasonable alternatives.

1.1.1 Alternative 1 – No Action

The No Action Alternative (Alternative 1) includes a continuation of mainline ferry service in Lynn Canal and incorporates two Day Boat Alaska Class Ferries (ACFs). The Alaska Marine Highway System (AMHS) would continue to be the National Highway System (NHS) route from Juneau to Haines and Skagway, and no new roads or ferry terminals would be built. In addition to the Day Boat ACFs, programmed improvements include improved vehicle and passenger staging areas at the Auke Bay and Haines ferry terminals to optimize traffic flow on and off the Day Boat ACFs as well as expansion of the Haines Ferry Terminal to include a new double bow berth to accommodate the Day Boat ACFs. This alternative is based on the most likely AMHS operations in the absence of any capital improvements specific to the JAI Project.

Mainline service would include two round trips per week in the summer and one per week in the winter with Auke Bay-Haines-Skagway-Haines-Auke Bay routing. During the summer, one Day Boat ACF would make one round trip between Auke Bay and Haines six days per week, and one would make two round trips per day between Haines and Skagway six days per week. The Day Boat ACFs would not sail on the seventh day because the mainliner is on a similar schedule. In the winter, ferry service in Lynn Canal would be provided primarily by the Day Boat ACFs three times per week. The *M/V Malaspina* would no longer operate as a summer day boat in Lynn Canal.

1.1.2 Alternative 1B – Enhanced Service with Existing AMHS Assets

Alternative 1B includes all of the components of Alternative 1, No Action, but focuses on enhancing service using existing AMHS assets without major initial capital expenditures. Similar to Alternative 1, Alternative 1B includes a continuation of mainline ferry service in Lynn Canal; the AMHS would continue to be the NHS route from Juneau to Haines and Skagway; no new roads or ferry terminals would be built; and in addition to the Day Boat ACFs, programmed improvements include improved vehicle and passenger staging areas at the Auke Bay and Haines ferry terminals to optimize traffic flow on and off the Day Boat ACFs as well as expansion of the Haines Ferry Terminal to include a new double bow berth to accommodate the Day Boat ACFs. Service to other communities would remain the same as with the No Action Alternative. Alternative 1B keeps the *M/V Malaspina* in service after the second Day Boat ACF is brought online to provide additional capacity in Lynn Canal. Enhanced services included as part of Alternative 1B are a 20 percent reduction in fares for trips in Lynn Canal and extended hours of operations for the reservation call center.

Mainline service would include two round trips per week in the summer and one per week in the winter with Auke Bay-Haines-Skagway-Haines-Auke Bay routing. During the summer, the *M/V Malaspina* would make one round trip per day seven days per week on a Skagway-Auke Bay-Skagway route, while one Day Boat ACF would make one round trip between Auke Bay and Haines six days per week, and one would make two round trips per day between Haines and Skagway six days per week. The Day Boat ACFs would not sail on the seventh day because the

mainliner would be on a similar schedule. In the winter, ferry service in Lynn Canal would be provided primarily by the Day Boat ACFs three times per week.

1.1.3 Alternative 2B – East Lynn Canal Highway to Katzehin, Shuttles to Haines and Skagway

Alternative 2B would construct the East Lynn Canal Highway (50.8 miles, including 47.9 miles of new highway and upgrade to 2.9 miles of the existing Glacier Highway) from Echo Cove around Berners Bay to a new ferry terminal 2 miles north of the Katzehin River. Ferry service would connect Katzehin to Haines and Skagway. In addition, this alternative includes modifications to the Skagway Ferry Terminal to include a new end berth and construction of a new conventional monohull ferry to operate between Haines and Skagway. Mainline ferry service would end at Auke Bay. This alternative assumes the following improvements will have been made independent of the JAI Project before Alternative 2B would come on-line: two Day Boat ACFs, improved vehicle and passenger staging areas at the Haines Ferry Terminal to optimize traffic flow on and off the Day Boat ACFs, and expansion of the Haines Ferry Terminal to include two new double bow berths.

During the summer months, one Day Boat ACF would make eight round trips per day between Haines and Katzehin, a second Day Boat ACF would make six round trips per day between Skagway and Katzehin, and the Haines-Skagway shuttle ferry would make two trips per day. During the winter, one Day Boat ACF would make six round trips per day between Haines and Katzehin, and a second Day Boat ACF would make four round trips per day between Skagway and Katzehin. The Haines-Skagway shuttle would not operate; travelers going between Haines and Skagway would travel to Katzehin and transfer ferries.

1.1.4 Alternative 3 – West Lynn Canal Highway

Alternative 3 would upgrade/extend the Glacier Highway (5.2 miles, including 2.3 miles of new highway and upgrade to 2.9 miles of the existing Glacier Highway) from Echo Cove to Sawmill Cove in Berners Bay. New ferry terminals would be constructed at Sawmill Cove in Berners Bay and at William Henry Bay on the west shore of Lynn Canal, and the Skagway Ferry Terminal would be modified to include a new end berth. A new 38.9-mile highway would be constructed from the William Henry Bay Ferry Terminal to Haines with a bridge across the Chilkat River/Inlet connecting into Mud Bay Road. A new conventional monohull ferry would be constructed and would operate between Haines and Skagway. Mainline ferry service would end at Auke Bay. This alternative assumes the following improvements will have been made independent of the JAI Project before Alternative 3 would come on-line: two Day Boat ACFs, improved vehicle and passenger staging areas at the Haines Ferry Terminal to optimize traffic flow on and off the Day Boat ACFs, and expansion of the Haines Ferry Terminal to include two new double bow berths.

During the summer, two Day Boat ACFs would make six round-trips per day between Sawmill Cove and William Henry Bay (total of 12 trips each direction), and the Haines-Skagway shuttle ferry would make six round-trips per day. During the winter, one Day Boat ACF would make four round-trips per day between Sawmill Cove and William Henry Bay, and the Haines-Skagway shuttle ferry would make four round-trips per day.

1.1.5 Alternatives 4A through 4D – Marine Alternatives

All four marine alternatives would include continued mainline ferry service in Lynn Canal with a minimum of two trips per week in the summer and one per week in the winter with Auke Bay-Haines-Skagway-Haines-Auke Bay routing. Each marine alternative includes a new conventional monohull shuttle that would make two round trips per day between Haines and Skagway six days a week in the summer and a minimum of three round trips per week between Haines and Skagway in the winter. The AMHS would continue to be the NHS route from Juneau to Haines and Skagway. These alternatives assume the following improvements will have been made independent of the JAI Project before the alternative comes on-line: improved vehicle and passenger staging areas at the Auke Bay and Haines ferry terminals to optimize traffic flow on and off the Day Boat ACFs, and expansion of the Haines Ferry Terminal to include new double bow berths.

1.1.5.1 Alternative 4A – Fast Vehicle Ferry Service from Auke Bay

Alternative 4A would construct two new fast vehicle ferries (FVFs). No new roads would be built for this alternative, and the Auke Bay Ferry Terminal would be expanded to include a new double stern berth. A new conventional monohull ferry would be constructed and would operate between Haines and Skagway. The *M/V Malaspina* would no longer operate as a summer day boat in Lynn Canal, and the Day Boat ACFs would no longer operate in Lynn Canal. The FVFs would make two round trips between Auke Bay and Haines and two round trips between Auke Bay and Skagway per day in the summer. During the winter, one FVF would make one round trip between Auke Bay and Haines and one round trip between Auke Bay and Skagway each day.

1.1.5.2 Alternative 4B – Fast Vehicle Ferry Service from Berners Bay

Similar to Alternative 4A, Alternative 4B would construct two new FVFs. This alternative would upgrade/extend Glacier Highway (5.2 miles, including 2.3 miles of new highway and 2.9 miles of the existing Glacier Highway) from Echo Cove to Sawmill Cove in Berners Bay, where a new ferry terminal would be constructed. The Auke Bay Ferry Terminal would be expanded to include a new double stern berth. A new conventional monohull ferry would be constructed and would operate between Haines and Skagway. The *M/V Malaspina* would no longer operate as a summer day boat in Lynn Canal, and the Day Boat ACFs would no longer operate in Lynn Canal. In the summer, the FVFs would make two round trips between Sawmill Cove and Haines and two round trips between Sawmill Cove and Skagway per day. During the winter, one FVF would make one round trip between Auke Bay and Haines and one round trip between Auke Bay and Skagway each day.

1.1.5.3 Alternative 4C – Conventional Monohull Service from Auke Bay

Alternative 4C would use Day Boat ACFs to provide additional ferry service in Lynn Canal. No new roads would be built for this alternative. The Auke Bay Ferry Terminal would be expanded to include a new double stern berth, and the Skagway Ferry Terminal would be expanded to include a new end berth. A new conventional monohull ferry would be constructed and would operate between Haines and Skagway. In the summer, one Day Boat ACF would make one round trip per day between Auke Bay and Haines, and one Day Boat ACF would make one round trip per day between Auke Bay and Skagway. During the winter, one Day Boat ACF would alternate between a round trip to Haines one day and a round trip to Skagway the next day.

1.1.5.4 Alternative 4D – Conventional Monohull Service from Berners Bay

Alternative 4D would use Day Boat ACFs to provide additional ferry service in Lynn Canal. This alternative would upgrade/extend Glacier Highway (5.2 miles, including 2.3 miles of new highway and 2.9 miles of the existing Glacier Highway) from Echo Cove to Sawmill Cove in Berners Bay, where a new ferry terminal would be constructed. The Auke Bay Ferry Terminal would be expanded to include a new double stern berth, and the Skagway Ferry Terminal would be expanded to include a new end berth. This alternative includes construction of a new conventional monohull ferry that would operate between Haines and Skagway. In the summer, the Day Boat ACFs would make two trips per day between Sawmill Cove and Haines and two trips per day between Sawmill Cove and Skagway. During the winter, a Day Boat ACF would operate from Auke Bay, alternating between a round trip to Haines one day and to Skagway the next day.

2. Standards and Guidance Update

In 1995, the USFS transitioned from using the Visual Management System for visual resource assessment to the Scenery Management System (SMS), which is presented in the *Landscape Aesthetics: A Handbook for Scenery Management* (USFS 1995). While the essence of the Visual Management System remained essentially intact and was supported by research at the time, terminology of the SMS has changed and the system was expanded to incorporate updated research findings. The list of terminology and component changes from the Visual Management System to the SMS is provided in Attachment A. The 2004 *Visual Resources Technical Report* for JAI contains terminology from the Visual Management System; however, the visual resource assessment was conducted in accordance with the SMS and is therefore still valid.

The 2004 report included an alternative compatibility analysis with adopted Visual Quality Objectives described in the 1997 *Tongass Land and Resource Management Plan* (TLRMP) (USFS 1997). In 2008, the TLRMP was updated and the Scenery standards and guidelines were also converted from the Visual Management System to the SMS (USFS 2008). Visual Quality Objectives are now termed Scenic Integrity Objectives.

The 2004 report also included an assessment related to non-forest lands potentially affected by highway segments of the JAI alternatives, based on the enforceable policies associated with the Juneau, Haines, and Skagway Coastal Management Programs. The Coastal Management Programs¹ have no formalized and systematic process for evaluating visual resources; therefore, it was not possible to determine the compatibility of visual resource changes resulting from project alternatives with the enforceable policies of these programs.

The new terminology of the SMS is used for the remainder of this document.

¹ The Alaska Coastal Management Program (ACMP) expired on July 1, 2011.

3. Methodology

The 2004 *Visual Resources Technical Report* describes the inventory of visual resources and potential impacts associated with the proposed highway construction. The following viewing variables (in SMS terminology) were considered and evaluated throughout the 2004 study and remain applicable in this update:

- Constituent Information
- Scenic Attractiveness Class and Existing Scenic Integrity
- Visual Priority Travel Routes and Use Areas and Land Use Designations (LUD)
- Project Visibility and Factors Influencing Visibility
- Visual Absorption Capability Levels
- Scenic Integrity Objectives

The 2004 methodology considered three primary components: (1) locations and sensitivities of viewers, (2) characterization of scenic integrity and USFS scenery management guidelines, and (3) influences the project features would have on both viewers and the existing natural setting. These components were considered for both the original assessment and this update in three phases: (1) inventory phase, (2) analysis phase, and (3) compatibility determination phase.

During the inventory phase, aerial imagery, literature, agency consultations, and fieldwork established baseline data associated with viewers, landscape, and the highway.

In the analysis phase, relationships were created that considered the following:

1. What is the compatibility of the highway with the Scenic Integrity Objective?
2. What is the scenic integrity of the existing natural setting?
3. What are some of the details associated with the highway (e.g., cut-and-fill areas) that may affect views and natural landscape features?

Based on the results of this analysis, levels of potential impact were determined. The 2004 report includes photo-realistic simulations of proposed highway segments and ferry terminals. These simulations assisted in (1) depicting typical views of project features, (2) evaluating potential locations of applied mitigation, and (3) verifying the results of the visual resources impact assessment. Because it is impossible to capture every viewpoint under every viewing condition, simulations depicted a typical range of reasonable viewing conditions from key viewpoints.

The 2004 analysis also evaluated the compatibility of the alternatives with Scenic Integrity Objectives of adjacent LUDs within the Tongass National Forest. This compatibility analysis was further reinforced through the photographic simulations, which characterized levels of impact that would occur and to what extent this impact would be compatible with management objectives.

For this 2012 update, changes to the alternatives were evaluated in the context of the topographic features and the visual settings of those locations where changes occur. The highway segments and ferry terminals included in the photographic simulations were analyzed for alignment shifts and design features that could noticeably alter the view from key viewpoints. No new simulations are warranted because the magnitude of the alignment shifts and other design changes would not substantially alter the existing simulated views. This conclusion is explained in detail in Section 5, Environmental Consequences.

4. Affected Environment

The visual resources inventory was comprised of the following components:

- Landscape Units, Scenic Attractiveness Class (A, B, C), and Existing Scenic Integrity (Moderate, High, Very High)
- Visual Priority Travel Routes, Use Areas, and LUDs
- Project Visibility and Factors Influencing Visibility
- Visual Absorption Capability Levels (Very Low, Low, Intermediate, High, Very High)
- Scenic Integrity Objectives (Very Low, Low, Moderate, High)

The description of these components of the affected environment for visual resources presented in the 2004 *Visual Resources Technical Report* remains valid. Although the terminology for the features and parameters used to characterize the visual environment has changed (see Attachment A), there have been no changes to the characteristics of the visual setting in the JAI project area since the 2004 report was issued.

5. Environmental Consequences

The following sections update the 2004 *Visual Resources Technical Report* to describe new information related to project alternative changes.

5.1 Alternative 1B

Alternative 1B involves improving ferry service with existing AMHS assets. This alternative will result in no new construction in the project area. No change in the visual setting would result from implementation of Alternative 1B; therefore, there is no impact to visual resources associated with this alternative and no mitigation is necessary.

5.2 Alternative 2B

Since the visual analysis of Alternative 2B (East Lynn Canal Highway to Katzehin with shuttles to Haines and Skagway) was presented in the 2004 *Visual Resources Technical Report*, the Alternative 2B alignment has been modified to reduce impacts to sensitive resources (wetlands and bald eagle nest trees) and avoid geologic hazard areas. To update the visual impact assessment of Alternative 2B, the new alignment location and preliminary design information (i.e., locations of cut/fill slopes, tunnels, and retaining walls) were compared to the 2004 alignment in the context of key viewpoints and simulated views. The comparison was used to determine whether the previously reported potential visual effects of Alternative 2B remain valid.

Alternative 2B simulations developed for the 2004 *Visual Resources Technical Report* (see Attachment B) were from key viewpoints of cruise ship, ferry, and small boat passengers on the Lynn Canal looking toward the East Lynn Canal area. As noted earlier, the simulations depict a typical range of reasonable viewing conditions from key viewpoints. The changes to Alternative 2B that could affect its visual impact include alignment shifts downslope in some areas and upslope in others, the addition of retaining walls primarily in the northern portion of the road alignment, two tunnels where the road encounters rockfall and talus slopes near Gran Point, and reduced bridge lengths over some creeks. Not all of these features are included in the key viewpoints.

The key viewpoints for Alternative 2B are (from north to south): ELVP 6, ELVP 7, ELVP 8, ELVP 9, ELVP 10, ELVP 12, ELVP 13, and ELVP 15. These viewpoints capture the Katzehin River delta and precipitous mountainsides with rock outcrops and forest cover (ELVP 6 and ELVP 7); waterfalls, rock slides, steep mountainous terrain, exposed rock outcrops, and glacier valleys at higher elevations (ELVP 8); moderate slopes and rolling terrain exposed outcrops and steep terrain and glacier valleys at higher elevations (ELVP 9); gentle slopes to rolling hills departing from the coastline (ELVP 10); delta flatlands, rolling hills, and large valleys at Lace, Antlers, and Berners rivers (ELVP 12); and thick forest on moderate slopes (ELVP 13 and ELVP 14). The anticipated visual effects of the design changes within each of the key views are described below. Note that simulated views at ELVP 11 and ELVP 15 are not discussed in this update because ELVP 11 shows the visual impact of the Slate Cove Ferry Terminal, which is no longer being considered, and ELVP 15 shows the segment of road already constructed as part of the Glacier Highway Extension.

5.2.1 ELVP 6 – Viewpoint in Chilkoot Inlet Looking East Towards the Katzehin Ferry Terminal

This is a view of the area where the proposed Katzehin Ferry Terminal would be located. The landscape includes the Katzehin River delta in the foreground and Mount Villard in the background. No changes were made to the proposed Alternative 2B alignment within this view, except a minor shift downslope (less than 20 vertical feet) to avoid crossing directly through an eagle nest primary zone and a small shift of the ferry terminal building location. The description of visual impacts in the 2004 report remains valid: the highway would continue to be in the middleground of the viewing threshold, appearing as a linear band along the base of Mount Villard and a co-dominant feature in relation to the existing setting. The ferry terminal would be noticeable, although a subordinate element in the natural setting.

5.2.2 ELVP 7 – Viewpoint in Chilkoot Inlet South of Katzehin River Looking East

This view includes a steep mountain, delta flatlands, and the Katzehin River valley. Within this view, the proposed Alternative 2B alignment was shifted to avoid a slough near the Katzehin River bridge. The bridge alignment was also changed to avoid a rockfall area. South of the bridge, slight alignment shifts (downslope) were made along a steeply sloped area also to minimize the road's exposure to rockfall. The alignment shifts associated with the slough and the Katzehin River bridge would be imperceptible from the key viewpoint because they have little or no vertical component and the horizontal change is less than 200 feet. The downslope shift in the alignment in the steep mountain area would bring the road closer to the water's edge, which may reduce the visibility of the road as it would occur in a visual transition area and blend with the features of the coastline. There would still be portions of the highway exposed in a linear band of cut and fill areas and, as described in the 2004 report, the highway would be a co-dominant feature in the existing natural setting. The Katzehin River bridge also would be noticeable, but its scale would be less than the cut and fill on the mountainside.

5.2.3 ELVP 8 – Viewpoint North of Met Point and South of Kataguni Island

The landscape in this view is comprised of steep mountainous terrain, incised creeks, rockfall and debris flows, and glacier valleys and exposed rock outcroppings at higher elevations. In this segment, the Alternative 2B alignment was adjusted upslope in two sections to improve crossings over debris flows. The sections of divergence from the previous alignment are approximately one-half and one-quarter mile long and place the highway approximately 80 feet higher than the original alignment. Cut slopes would extend an additional 25 feet above the road surface in these two adjusted segments of the roadway alignment. At the southern portion of this viewpoint, the alignment would be shifted downslope to avoid an active rockfall area. This alignment shift would require a 400-foot bridge structure near the shoreline. In addition to the alignment shifts, two 350-foot-long retaining walls would be added in this segment.

As stated in the 2004 report, the strong linear feature of the highway within the natural setting would be readily apparent to travelers on Lynn Canal. The highway would be a co-dominant feature in the viewshed. The changes to the alignment could moderately increase the visibility of the highway, but the overall effect of co-dominance between the highway and the natural setting would be the same.

5.2.4 ELVP 9 – Viewpoint North of Comet and South of the Met Point Sea Lion Haulout

This view is of a dynamic landscape that includes very steep topography (rock outcroppings meeting the water's edge) interspersed with vegetation, less-steep rolling hills set back by from the water's edge and covered by continuous closed canopy forest, glacier valleys, and jagged peaks. In this view, three portions of the proposed Alternative 2B alignment have been shifted upslope. The vertical alignment shifts range from approximately 40 to 60 feet; these shifts were made to (1) decrease the amount of marine fill, (2) cross a debris flow area in a confined channel, and (3) avoid boulder debris. Cut slopes would be shifted upslope with the alignment change. The location of the linear band across the hillside would be shifted upslope, but the degree of impact would be the same as stated in the 2004 report: the highway would likely be a co-dominant feature within the existing natural setting.

5.2.5 ELVP 10 – Viewpoint South of Comet Looking Northeastward at the Coastline

This key view captures a layered landscape with gentle slopes in the foreground transitioning to rolling hills in the middleground and to the steeper mountains in the background. The land is nearly uniformly covered in dense vegetation except at the water's edge.

In this view, the proposed Alternative 2B alignment has been shifted shoreward, into the foreground, to improve the road alignment with respect to crossings of Sweeney and Sherman creeks. The shift in the alignment brings the proposed road to the shoreline for nearly one mile. With the road closer to the water's edge, its visibility would be reduced as it would occur in a visual transition area and blend with the features of the coastline. The bridges across Sweeney and Sherman creeks would be shorter, but their orientation to the shoreline would be less skewed, so their visibility would be similar to what is seen in the simulation from the 2004 report. Overall, the roadway would appear as a linear band at the land-water interface and, as described in the 2004 report, would continue to be a co-dominant to subordinate feature within the existing natural setting.

5.2.6 ELVP 12 – Delta Flatlands and River Valleys of Berners, Lace, and Antler Rivers

Distinct landscapes in this view are created by the wide valleys of the Berners, Lace, and Antler rivers; the delta flatlands in the foreground; the forested hills and mountains of the middleground; and the snow-capped peaks in the far background.

In this view, the road is shown as being visible where it cuts across the lower mountain, approaching the Antler River and associated delta, and at the bridge crossing of the Berners River/Lace River confluence. On the delta flatlands, the road is shown as being nominally visible because of vegetative screening and the topography. The bridge structure is shown as being visible as a thin band with support piers near the water-land interface. Three portions of the alignment have been modified in this view. The alignment was shifted horizontally in one place to optimize a bridge crossing of a small inlet, in another place to optimize animal crossings, and in the third location to avoid wetlands. None of the alignment shifts involve a vertical change that would be noticeable in the view. Because the alignment shifts did not change the elevation

of the road and were no more than a 400-foot horizontal change, the road would be no more or less visible from this key view.

5.2.7 ELVP 13 – Eastern side of Berners Bay

This view is primarily comprised of gentle to moderately steep slopes covered in relatively homogeneous vegetation. The previously proposed Alternative 2B alignment was relatively close to the coastline and appeared as a distinct line where vegetation would be removed and cut slopes would be visible. The current proposed Alternative 2B alignment in this section has been moved upslope to avoid geotechnical hazards as well as eagle nest trees. At its greatest divergence from the simulated alignment, the adjusted alignment was shifted upslope for a vertical change of approximately 220 feet. The alignment would still appear as a distinct line, but it would appear farther upslope. The amount of vegetation removal and cut slopes would be comparable to what is presented in this key viewpoint simulation from the 2004 report, although in some areas the cut slope may be more extensive.

Based on the review and findings discussed above, the changes to Alternative 2B do not change the assessment of impacts to visual resources presented in the 2004 *Visual Resources Technical Report*. The photo simulations of Alternative 2B in that report represent a typical range of reasonable viewing conditions from key viewpoints. As noted in the 2004 report, the Alternative 2B alignment would have various levels of dominance within the landscape and the severity of the visual impact would be dependent on the angle and distance from which the area is viewed. Alternative 2B would create a distinct line feature in the landscape due to vegetation removal, substantial cut-and-fill areas, and proposed Antler River and Berners/Lace River bridges. As described in the 2004 report, Alternative 2B would be a subordinate to co-dominant feature within the existing landscape depending on distance from viewers. The modifications to the alignment of Alternative 2B do not change this finding. Although the location of the proposed highway shifted in some places to avoid wetlands, geologic features, and eagle nest trees, the magnitude and type of impact would be the same. Viewers would continue to be able to see a linear band where vegetation removal and cut/fill have occurred and the long bridges associated with the Antler and Berners/Lace rivers.

The modifications to Alternative 2B would not change the assessment of its impacts on sensitive viewers or its compatibility with Scenic Integrity Objectives of adjacent LUDs.

5.3 Alternative 3

The alignment of Alternative 3 (West Lynn Canal Highway) was shifted in places to reduce impacts to bald eagle nest trees. These shifts in alignment occurred at three locations over distances of 1,500 to 3,000 feet. These locations are not within the viewshed of any of the key viewpoints for Alternative 3 presented in the 2004 *Visual Resources Technical Report*. The magnitude of the vertical and horizontal changes in the alignment (maximum of 65 feet and 30 feet, respectively) would not result in a perceptible change to any view of the alignment from Lynn Canal. The alignment shifts would not result in a quantifiable change in visual impacts associated with Alternative 3. With the exception of terminology changes under the SMS, the impact analysis of Alternative 3 has not changed and the information provided in Appendix G for this alternative remains valid.

5.4 Alternatives 4A, 4B, 4C, and 4D

As stated in the 2004 report, potential land-based visual impacts associated with Alternatives 4A and 4C (ferry improvement alternatives from Auke Bay to Haines and Skagway) are not quantifiable because they are entirely marine alternatives. There have been no changes to these alternatives that would affect this conclusion. Potential impacts associated with Alternatives 4B and 4D (ferry improvement alternatives from Sawmill Cove in Berners Bay to Haines and Skagway) have highway segments that extend from Glacier Highway to Sawmill Cove along the same alignment as Alternative 3 on the east side of Lynn Canal. Potential impacts associated with the highway segments of Alternatives 4B and 4D were discussed under Alternative 3 and have not changed since the 2004 report. Similar to Alternatives 4A and 4C, the marine segments of Alternatives 4B and 4D would not have quantifiable visual effects. With the exception of terminology changes under the SMS, the impact analyses of Alternatives 4A thru D have not changed and the information in Appendix G for these alternatives remains valid.

6. References

- Alaska Department of Transportation and Public Facilities (DOT&PF). 2004. *Appendix G, Visual Resources Technical Report for the Juneau Access Improvements Supplemental Draft Environmental Impact Statement*. Juneau, Alaska, December 2004. Available online at http://dot.alaska.gov/sereg/projects/juneau_access/assets/SDEIS_JAN05/Appendix_G.pdf
- . 2005. *Juneau Access Improvements Supplemental Draft Environmental Impact Statement*. Juneau, Alaska. January, 2005. Available online at http://dot.alaska.gov/sereg/projects/juneau_access/assets/SDEIS_JAN05/RevisedCAR_070605.pdf
- . 2006. *Juneau Access Project: Final Environmental Impact Statement*. Juneau, Alaska. Available online at http://www.dot.state.ak.us/stwdplng/projectinfo/ser/juneau_access.
- URS Corporation (URS). 2004. *Visual Resources Technical Report. Juneau Access Improvements Supplemental Draft Environmental Impact Statement*. Prepared for Alaska Department of Transportation and Public Facilities. December 2004.
- USDA Forest Service (USFS). 1995. FSM 2380.61. *Landscape Aesthetics: A Handbook for Scenery Management*. Agriculture Handbook 701.
- . 1997. *Tongass Land Resource and Management Plan*. May 1997.
- . 2003. FSM 2300. *Recreation, Wilderness, and Related Resource Management*. Chapter 2380 Landscape Management. May 2, 2003.
- . 2008. *Tongass Land Resource and Management Plan*. January 2008. Available online at: http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5367422.pdf.

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Attachment A

Terminology and Component Changes

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Attachment A

SMS Terminology and Component Changes

Excerpt from: *Landscape Aesthetics: A Handbook for Scenery Management* (FS 1995)

Numerous changes in terminology were made when *The Visual Management System* was updated. Following are lists of terminology changes in the Scenery Management System from the *Visual Management System*.

<u>Scenery Management System</u>	<u>The Visual Management System</u>
Concern levels	Concern levels
Constituent information	Sensitivity levels
Distance Zones	Distance Zones
Scenic attractiveness	Variety class
Landscape character	Characteristic landscape
Section	Landscape character type
Very Low Scenic Integrity	Maximum modification
Low Scenic Integrity	Modification
Moderate Scenic Integrity	Partial retention
Very High Scenic Integrity	Preservation
High Scenic Integrity	Retention
Scenic integrity objective	Visual quality objective
Travelways and use areas	Travelways and use areas
Unacceptably Low	Unacceptable modification

Some components of the Scenery Management System are from **subsystems** developed after 1974, when *The Visual Management System* was published. Here is a list of components with new and old terminology from subsystems.

<u>Scenery Management System</u>	<u>Original Subsystem Terminology</u>
Corridor viewshed	Corridor viewshed
Desired landscape character	Desired character
Existing scenic integrity	Existing visual condition
Visual absorption capability	Visual absorption capability
Visual magnitude	Visual magnitude

Some terminology and components of the Scenery Management System are new, having never been part of *The Visual Management System* or any previous sub-system, as follows:

- Basin or feature viewshed**
- Existing landscape character**
- Ecological land unit**
- Landscape character goal**
- Landscape character theme**
- Scenic class**
- Scenic integrity level**
- Scenic viewing opportunity**

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Attachment B Alternative 2B Visual Simulations

**Excerpt from
*2004 Visual Resources Technical Report – Appendix G
of JAI Project Supplemental Draft EIS***

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AFFECTED ENVIRONMENT



This viewpoint is seven-tenths of a mile from the highway. It includes a view of Katzehin River delta (portions farther east of the highway are proposed as wild and scenic). Extreme topographic variances typify this setting, as the mountainous terrain sharply meets the water's edge. The Katzehin Delta adds an additional layer of visual interest to this setting.

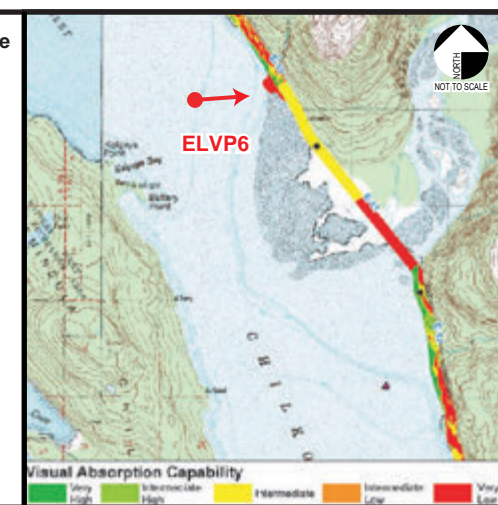
ENVIRONMENTAL CONSEQUENCES



From this viewpoint, the highway would be in the middleground viewing threshold. The highway (for Alternatives 2, 2A, 2B, and 2C) would appear as a linear band along the base of Mount Villard. The proposed ferry terminal (under Alternatives 2, 2A, 2B, and 2C) would be noticeable, related to the interruption in the existing setting created by the line of the highway; but this would be considered a subordinate element within the natural setting. The existing natural setting dominates viewsheds, and it is likely that the highway would be a co-dominant feature in relationship to the existing setting.

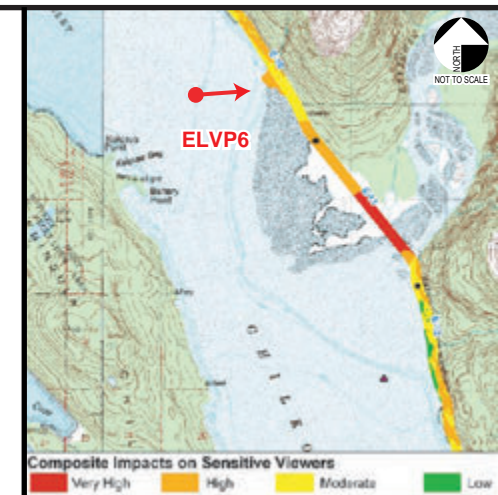
AFFECTED ENVIRONMENT

- 1) Views most susceptible to impact include those seen by tourists and visitors within recreation areas.
- 2) Visual Absorption Capability - very low to intermediate.
- 3) Variety Class - A/B



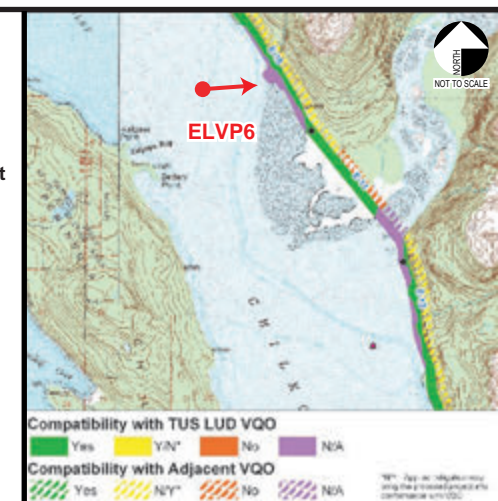
ENVIRONMENTAL CONSEQUENCES

Impacts associated with this portion of the highway would range from moderate to high levels.



VISUAL QUALITY OBJECTIVES

The highway within the TUS LUD is compatible with the adopted Modification VQO. Depending on the final alignment and design of the highway the adjacent adopted VQOs may or may not be met.



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 **Juneau Access Improvements Project**

Visual Simulation of Alternatives 2 through 2C and Katzehin Ferry Terminal from Lynn Canal at Katzehin Delta Looking East

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AFFECTED ENVIRONMENT



This viewpoint is one-half mile from the highway. The existing setting is one of steep mountains juxtaposed with the delta flatlands and river valley of the Katzehin River.

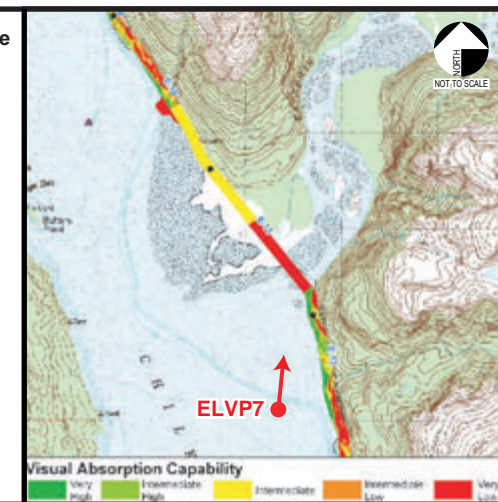
ENVIRONMENTAL CONSEQUENCES



From this viewpoint, a marine traveler within the Chilkoot Inlet in the vicinity of the Katzehin River would likely notice a co-dominant linear band created by the exposure of lighter soils, as well as a subordinate bridge spanning the river headwater. Although the proposed bridge would be noticeable, the scale of both the landform and the vegetation modification would be less than that of cut and fill areas constructed on mountain slopes (depicted on the right side of the simulation). Southbound marine travelers would not notice this portion of the highway to the same degree as northbound marine travelers approaching the river headwaters. This is based on the forced focal point perspective that occurs as the inlet turns to a more northwesterly direction than a northerly direction. Given the dominant natural features within the viewshed, it is likely that the highway would have a co-dominant feature within the existing natural setting.

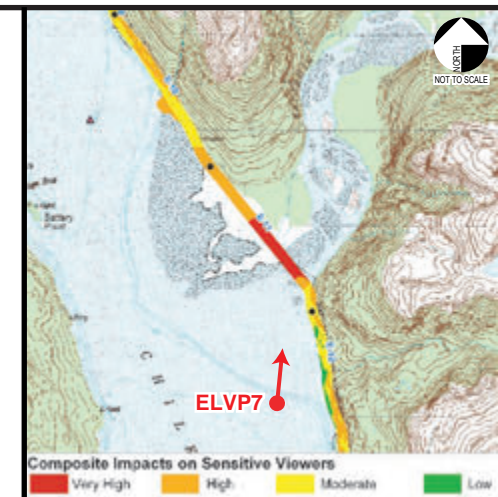
AFFECTED ENVIRONMENT

- 1) Views most susceptible to impact include those seen by tourists and visitors within recreation areas.
- 2) Visual Absorption Capability - very high to very low.
- 3) Variety Class - A/B



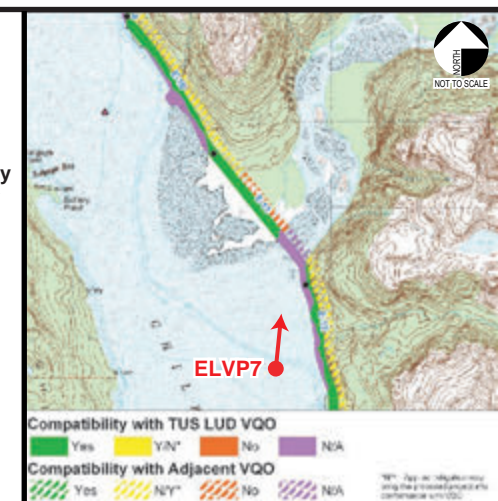
ENVIRONMENTAL CONSEQUENCES

Impacts associated with this portion of the highway would range from moderate to very high levels.



VISUAL QUALITY OBJECTIVES

The highway within the TUS LUD is compatible with the adopted Modification VQO. However, for VQOs immediately adjacent to the TUS LUD the highway would deviate so greatly from form, line, color, and texture elements within the existing natural setting that it is not likely to be compatible with the adjacent adopted VQO.



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Visual Simulation of Alternatives
 2 through 2C from Lynn Canal South of
 Katzehin River Looking East

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AFFECTED ENVIRONMENT



This viewpoint is 1.5 miles from the highway. The existing setting is visually interesting, with changes in color of vegetation, the lively presence of waterfalls and rock slides, steep mountainous terrain juxtaposed with glacier valleys at higher elevations, and exposed rock-outcroppings.

ENVIRONMENTAL CONSEQUENCES



From this viewing distance, the strong linear feature of the highway within the natural setting would be readily apparent to a traveler within Lynn Canal. Some portions of the highway would be sited close to the water's edge, thus reducing visibility of this linear band as it blends more naturally with features along the coastline. In other areas, the highway would be sited 60 to 80 feet above the water's surface and would traverse areas of extreme slope, including noticeable, sheer-cut faces. The existing natural setting can be characterized as one that dominates the viewshed. However, at close distances the highway may become a co-dominant feature along this portion of the corridor, and from background distances, a more subordinate feature.

AFFECTED ENVIRONMENT	
<p>1) Views most susceptible to impact include those seen by tourists, and visitors within recreation areas.</p> <p>2) Visual Absorption Capability - very high to very low.</p> <p>3) Variety Class - B</p>	<p>Visual Absorption Capability</p> <p>Very High High Intermediate Intermediate-Low Very Low</p>
ENVIRONMENTAL CONSEQUENCES	
<p>Impacts associated with this portion of the highway would range from low to high levels.</p>	<p>Composite Impacts on Sensitive Viewers</p> <p>Very High High Moderate Low</p>
VISUAL QUALITY OBJECTIVES	
<p>The highway within the TUS LUD is compatible with the adopted Modification VQO. The highway would also be compatible with adopted adjacent VQOs.</p>	<p>Compatibility with TUS LUD VQO</p> <p>Yes N/Y No N/A</p> <p>Compatibility with Adjacent VQO</p> <p>Yes N/Y No N/A</p>
<p>Alaska Department of Transportation</p> <p>Juneau Access Improvements Project</p>	
<p>Visual Simulation of Alternatives 2 through 2C from Lynn Canal at Eldred Rock Looking East</p>	
<p>ELVP8</p>	

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AFFECTED ENVIRONMENT



This viewpoint is nine-tenths of a mile from the highway. The landscape setting transitions from very steep topography (rock outcroppings meeting the water's edge) interspersed with vegetation, to less-steep, rolling hills (set back from the water's edge) covered by continuous, closed-canopy forest. Glacier valleys, exposed side-slope mountain rock, and jagged peaks add to the visual interest of this setting.

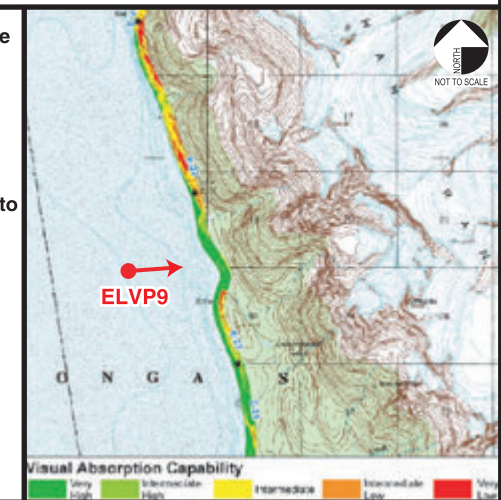
ENVIRONMENTAL CONSEQUENCES



Along this portion of the highway, the existing topography and vegetation would help prevent the highway from becoming a severely competitive feature, as was discussed, within the existing setting. Along, for example the Taiya Inlet. However, it is likely that the highway, in this location and from this distance, may become a co-dominant feature within the existing natural setting.

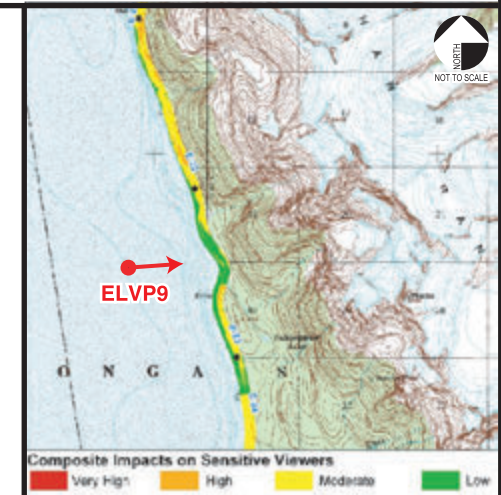
AFFECTED ENVIRONMENT

- 1) Views most susceptible to impact include those seen by tourists and visitors within recreation areas.
- 2) Visual Absorption Capability - intermediate to very high.
- 3) Variety Class - B



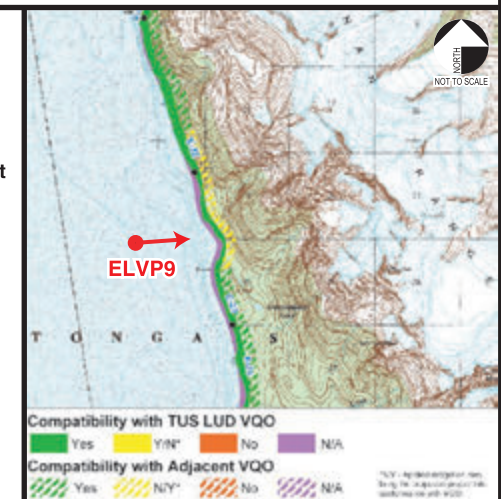
ENVIRONMENTAL CONSEQUENCES

Impacts associated with this portion of the highway would range from moderate to low levels.



VISUAL QUALITY OBJECTIVES

The highway within the TUS LUD is compatible with the adopted Modification VQO. Depending on the final alignment and design of the highway the adjacent adopted VQOs may or may not be met.



Alaska Department of Transportation
 **Juneau Access Improvements Project**

Visual Simulation of Alternatives
 2 through 2C from Lynn Canal North of
 Comet Looking East

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AFFECTED ENVIRONMENT



The viewpoint is three-tenths of a mile from the highway. The viewshed is quite unique within the VSOI as it affords viewing opportunities of distinct and layered foreground, middleground, and background landscape units (coastline to mountain peaks as interrupted by rolling foothills).

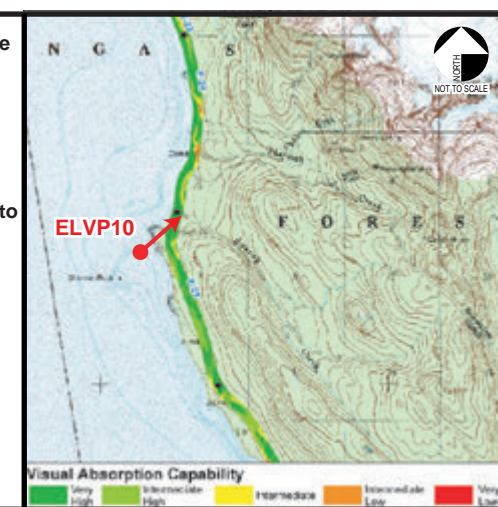
ENVIRONMENTAL CONSEQUENCES



In an area of gentler topography, the visibility of cut-and-fill areas would be reduced. However, the linear banc created by the removal of vegetation would be noticeable, primarily in the middleground and foreground viewing thresholds. It is likely that the highway would be a co-dominant to subordinate feature within the existing natural setting.

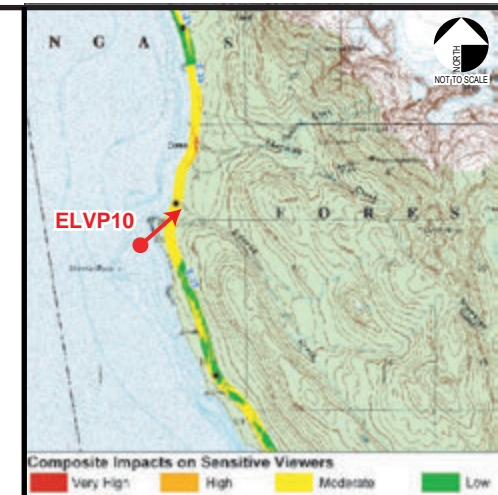
AFFECTED ENVIRONMENT

- 1) Views most susceptible to impact include those seen by tourists and visitors within recreation areas.
- 2) Visual Absorption Capability - intermediate to very high.
- 3) Variety Class - A/B



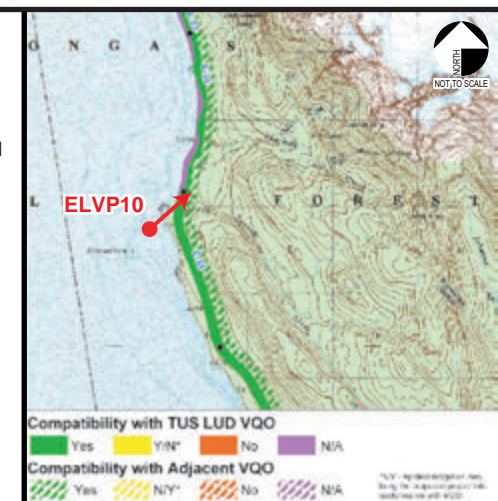
ENVIRONMENTAL CONSEQUENCES

Impacts associated with this portion of the highway would range from moderate to low levels.



VISUAL QUALITY OBJECTIVES

The highway within the TUS LUD is compatible with the adopted Modification VQO. The highway would also be compatible with adopted adjacent VQOs.



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 **Juneau Access Improvements Project**

Visual Simulation of Alternatives
 2 through 2C from Lynn Canal at Sherman Point Looking East

ELVP10

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AFFECTED ENVIRONMENT



This viewpoint is 2.2 miles from the highway. The existing setting is one of the most visually interesting along the East Lynn Canal Alternative. Layering of distinct landscape units is well defined within the viewshed. Distance background views of snowcapped mountains, and middleground and background views of similar forms provide added textural and color elements to the setting. Foreground views of delta flatlands and river valleys create extreme visual interest within the setting.

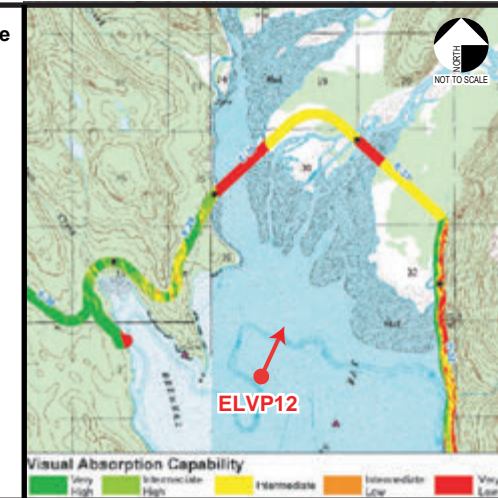
ENVIRONMENTAL CONSEQUENCES



Viewers within Berner's Bay, primarily those accessing the Lace, Antlers, and Berners Rivers, would notice the highway. The proposed bridge (for Alternatives 2, 2B, and 2C) would create form contrast. However, the bridge would be more or less noticeable depending on the angle and the distance of the view.

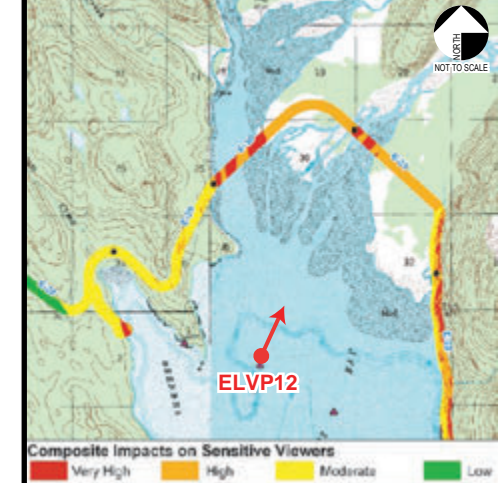
AFFECTED ENVIRONMENT

- 1) Views most susceptible to impact include those seen by tourists and visitors within recreation areas.
- 2) Visual Absorption Capability - very low to intermediate.
- 3) Variety Class - A



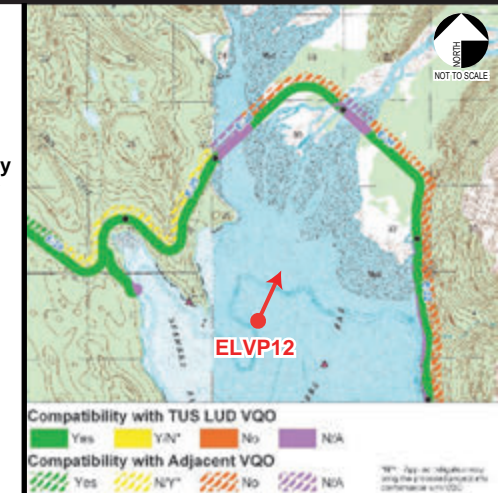
ENVIRONMENTAL CONSEQUENCES

Impacts associated with this portion of the highway would range from high to very high levels.



VISUAL QUALITY OBJECTIVES

The highway within the TUS LUD is compatible with the adopted Modification VQO. However, for VQOs immediately adjacent to the TUS LUD the highway would deviate so greatly from form, line, color, and texture elements within the existing natural setting that it is not likely to be compatible with the adjacent adopted VQO.



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Visual Simulation of Alternatives 2, 2B, and 2C from Berners Bay at Antler, Lace, and Berners River Delta Looking North

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AFFECTED ENVIRONMENT



This viewpoint is eight-tenths of a mile from the highway. Topography within this area varies from gentle to moderately steep. The layering of landscapes surrounding primarily all but the central western portion of the bay dominates existing viewsheds and is considered by the Forest Service as a scenic viewshed LUD.

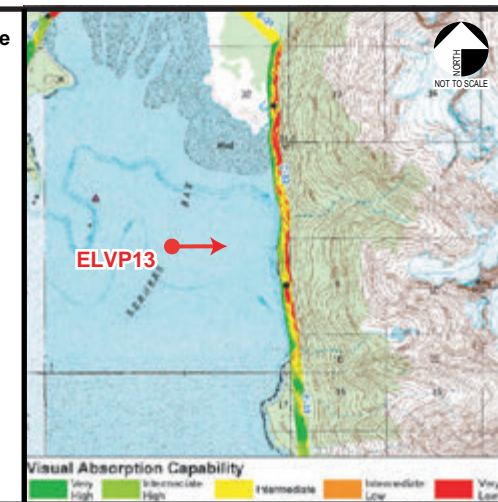
ENVIRONMENTAL CONSEQUENCES



This viewpoint is on the east side of Berners Bay, just south of the confluence of the Berners, Lace, and Antler Rivers, in proximity to an existing Forest Service cabin. It is likely that cut-and-fill areas would be intermittently visible along the coastline from this viewpoint (for Alternatives 2, 2B, and 2C). A distinct line created by the removal of vegetation would also be noticeable. The project would have various levels of dominance within the landscape for marine viewers within Berners Bay, depending on the viewer's distance from the highway. From the distance represented by this simulation, however, the highway would likely be subordinate within the existing setting.

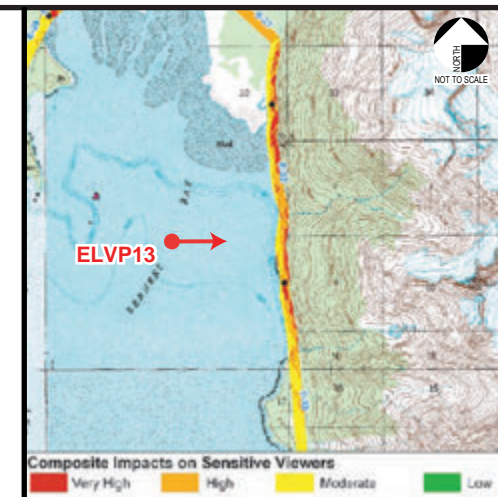
AFFECTED ENVIRONMENT

- 1) Views most susceptible to impact include those seen by tourists and visitors within recreation areas.
- 2) Visual Absorption Capability - very low to intermediate.
- 3) Variety Class - B



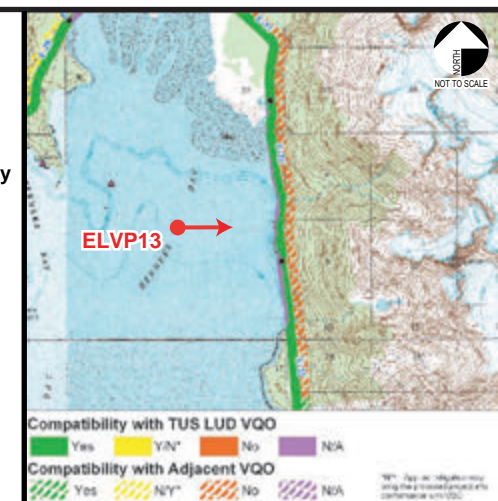
ENVIRONMENTAL CONSEQUENCES

Impacts associated with this portion of the highway would range from moderate to very high levels.



VISUAL QUALITY OBJECTIVES

The highway within the TUS LUD is compatible with the adopted Modification VQO. However, for VQOs immediately adjacent to the TUS LUD the highway would deviate so greatly from form, line, color, and texture elements within the existing natural setting that it is not likely to be compatible with the adjacent adopted VQO.



Alaska Department of Transportation

Juneau Access Improvements Project

Visual Simulation of Alternatives
 2, 2B, and 2C from Berners Bay South of
 Antler River Looking East

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AFFECTED ENVIRONMENT



This viewpoint is 2.4 miles from the highway. The existing setting can be characterized as a background view of Berners Bay. Topographic features juxtaposed with the water's edge create visual interest in this panoramic view of the regional landscape.

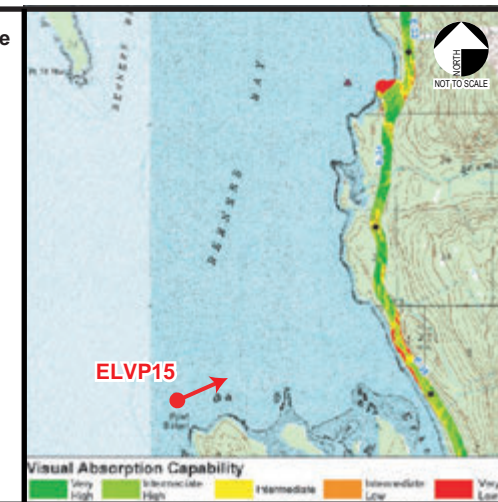
ENVIRONMENTAL CONSEQUENCES



From this viewpoint, the highway is not likely to dominate substantially the existing natural setting. From closer distances, the proposed ferry terminal and associated roadway would be more noticeable. It is likely that visitors to Berners Bay, Echo Cove, and Point Bridgett State Park would notice the highway. However, this would be highly dependent on the viewing distance, and other visibility factors.

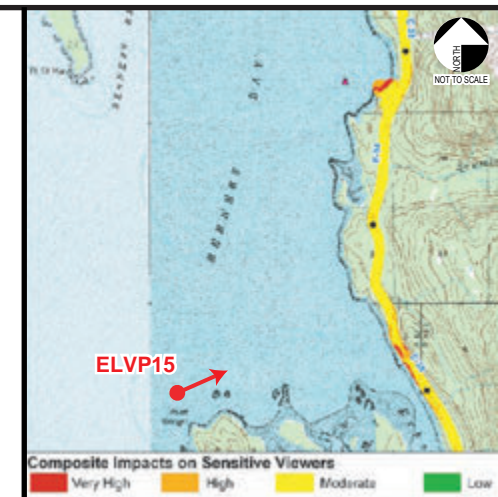
AFFECTED ENVIRONMENT

- 1) Views most susceptible to impact include those seen by tourists and visitors within recreation areas.
- 2) Visual Absorption Capability - very low to very high.
- 3) Variety Class - A/B



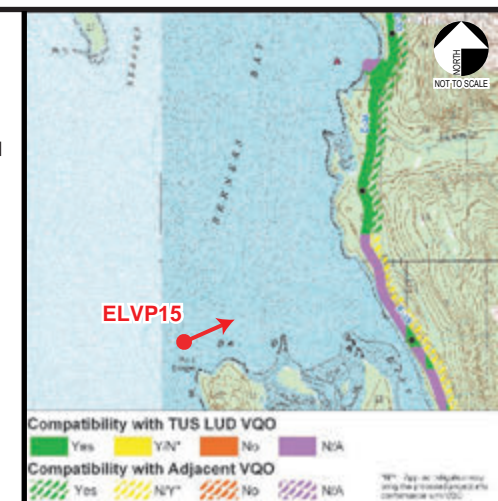
ENVIRONMENTAL CONSEQUENCES

Impacts associated with this portion of the highway would range from moderate to very high levels.



VISUAL QUALITY OBJECTIVES

The highway within the TUS LUD is compatible with the adopted Modification VQO. The highway would also be compatible with adopted adjacent VQOs.



Alaska Department of Transportation

Juneau Access Improvements Project

Visual Simulation of Alternatives
 2 2B, and 2C from
 Point Bridget Looking East

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