

4.11 VISUAL QUALITY

Pursuant to state and federal guidelines, an abbreviated visual impact assessment was prepared and the results documented in a *Visual Quality Discipline Report* (see Appendix B for access information). Highlights of the results are summarized in this EA. The visual assessment:

- ◆ Describes the Build Alternative.
- ◆ Identifies its area of visual effect.
- ◆ Discusses visual resources within the natural, cultural, and Build Alternative environments along with the viewing experience of neighbors and travelers.
- ◆ Documents existing visual quality.
- ◆ Describes how the visual character, quality, and viewer experience would change as a result of the Build Alternative.

Any mitigation measures needed to reduce potential visual impacts of the Build Alternative have also been identified.

The visual quality assessment focused on the I-5 interchanges at Berkeley Street (Exit 122) and Thorne Lane (Exit 123), and along I-5 between the Gravelly Lake Drive and Steilacoom-DuPont Road interchanges. The visual character of this area is dominated by JBLM and the cities of DuPont and Lakewood. On the east side of I-5, the view is dominated by JBLM military housing with associated office and training facilities. In the background, the view is forested with Mount Rainier serving as the focal point. To the west of I-5 the cities of DuPont and Lakewood, and Camp Murray, dominate the landscape view with the Sound Transit railroad dividing I-5 from adjacent areas. The visual character of the area would be changed by the additional height of future new interchanges if they are designed to provide grade-separation from the railroad. Most viewers along I-5 would be focused on the roadway due to traffic volumes and speed.

4.11.1 What Methods, Assumptions and Resources Were Considered in the Evaluation of Visual Quality?

What Are the Applicable Regulations That Govern Visual Quality Assessments?

This discipline report was conducted in accordance with state and federal guidelines related to visual quality

assessments including the identification of potential impacts and the development of mitigation recommendations. Primary guidance was provided by Section 459 of the *WSDOT Environmental Procedures Manual* (M 31-11.14). The procedures in this manual are consistent with the U.S. Department of Transportation, FHWA, *Guidelines for Visual Impact Analysis for Highway Projects* (FHWA-HEP-15-029), 2015, and *WSDOT's Roadside Policy Manual* (M3110).

What Is the Study Area for Visual Impact Assessment?

The visual impact study area extends in all directions from the Build Alternative footprint in a line-of-sight. Views towards the highway and away from the highway were analyzed.

How Was the Visual Quality Assessment Conducted?

Visual quality assessments are prepared by trained professionals exercising professional judgment. The FHWA methodology provides a process of evaluation that guides the professional's judgment and produces an objective assessment of visual quality.

NOTE TO READER: *This EA provides a tiered environmental review. Chapter 4 evaluates the project specific environmental impacts associated with construction of the North Study Area Build Alternative (See Section 3.4 for description). Chapter 5 provides a corridor level discussion of the South Study Area (See Section 3.5). Specific project footprint improvements are not currently defined for the South Study Area.*

It uses a qualitative and quantitative approach to analyze existing and proposed views in the study area. The assessment is used to determine the perceived aesthetic fit between the Build Alternative and its setting, and considers the expected perceptions of those who would be viewing the proposed improvements. While the perception of aesthetic quality can vary among different viewers, there are also patterns of similarity in viewer response that can be used to predict the public's reaction to changes in visual resources.

The FHWA visual impact methodology evaluates visual quality in a two-step process. The first step identifies the visual character of the landscape and the typical viewers of the Build Alternative, while the second step evaluates visual quality.

DEFINING VISUAL CHARACTER

The visual character of an area is determined by identifying its physical and visual resources. The FHWA guidelines recognize three types of visual resources:

- ◆ **Natural visual resources** include landforms and land cover such as trees, vegetation, and water.
- ◆ **Cultural visual resources** include man-made elements such as roadways, embankments, bridges, and buildings.
- ◆ **Project visual resources** include the existing highway's geometrics, structures, and fixtures and those that will be placed in the environment as part of the Build Alternative.

The overall composition of visual resources includes such elements as landform, vegetation type, and land use patterns, and helps determine the visual character of a scene or landscape. The elements of form, line, scale, color, and texture of landscape features are considered in visual character descriptions. The descriptions of visual character are value-free and are obtained either through direct observation or by a

reasonable conclusion drawn from existing information such as LIDAR mapping or aerial/ground level photographs.

EVALUATING VISUAL QUALITY

The second step in evaluating visual quality is based on the perception and value judgment that viewers make about the landscape. Viewer categories generally include neighbors (people with views *to* the road) and travelers (people with views *from* the road). The discussion in this section considers neighbors and travelers because both are elements of the study. Neighbors consist of the JBLM military base, Camp Murray, businesses, and residential areas. Many of the travelers along I-5 are presumed to be either on their way to work or home and are, therefore, familiar with the visual resources being studied for the Build Alternative.

Corresponding to the three types of visual resources, the FHWA guidelines recognize three types of inherent visual perception:

- ◆ **Natural harmony** – viewing the resources of the natural environment creates a sense of natural harmony in people, interpreting them as either harmonious or inharmonious.
- ◆ **Cultural order** – viewing the resources of the cultural environment creates a sense of cultural order for people, interpreting them as either orderly or disorderly.
- ◆ **Project coherence** – viewing the resources of the Build Alternative environment creates a sense of coherence, interpreting them as either coherent or incoherent.

Visual perceptions can be determined by considering visual resources through the lens of viewer preferences. People have innate concepts of what constitutes natural harmony, cultural order, and project coherence. The greater the degree to which visual resources meet the viewer's preferred concepts, the higher the value placed on the resource. Visual quality is determined by what people value – like or

dislike – about the overall visual character of a scene or landscape. Viewer sensitivity is the degree to which viewers react to changes in visual character and is a combination of the following factors:

- ♦ **Viewer exposure** is the measure of the distance between viewer and the visual resource (proximity), number of viewers (extent), and how long the resource is viewed (duration). Closer proximity to resources, greater numbers of travelers, and slower speeds increase exposure.
- ♦ **Viewer awareness** is the measure of observation based on routine and familiarity (attention), level of concentration (focus), and legal or social constraints on visual resource impacts (protection). In general, attention increases with unfamiliarity with a route and the uniqueness of visual resources. Focus increases with slower speeds and the presence of specific visual elements and scenery transitions. Legal protection considerations (e.g., planning documents and zoning laws) and social protections (e.g., local and/or regional goals and values) also increase viewer awareness.

Viewer attention and focus is heightened by scenery transitions such as entering a city, cresting a hill, or the sudden appearance of water. Specific scenery transitions occurring in the study area would increase attention and focus.

HOW ARE VISUAL QUALITY IMPACTS DETERMINED?

Visual quality impacts are determined by assessing changes to visual resources and the predicted viewer response to changes. Impacts can be adverse, neutral, or beneficial. A project could have adverse impacts if it degraded visual resources or obstructed or altered views. Beneficial impacts would include enhancing visual resources, or creating better views of those resources and improving visual quality. The existing

visual character and predicted overall viewer sensitivity outlined in this evaluation were used to complete the impact analysis described here.

4.11.2 What Are the Existing Visual Resources in the Study Area?

Location and Setting

The Build Alternative is located along I-5 between the vicinity of the Steilacoom-DuPont Road interchange (Exit 119) and the Thorne Lane interchange (Exit 123). This portion of I-5 bisects the JBLM military base and is flanked on the west by the Sound Transit railroad line. The visual character of the study area is described below.

Visual Resources and Character

The study area includes the three visual resources outlined in the FHWA guidelines – natural resources, cultural resources and project visual resources. These visual resources are valuable to the character of the roadside.

There are three distinct roadside characters in the study area. Roughly 40% is forested, 35% is prairie, and 25% is semi-urban.

Traveling northbound along I-5, the roadside character is largely prairie between the Steilacoom-DuPont Road and the JBLM Main Gate interchanges. The east side of I-5 at the Main Gate interchange is bordered by military residential units.

Just north of the JBLM Main Gate, the roadside character transitions to a Garry Oak Savanna between approximately milepost 121.50 and milepost 122.50. The Garry Oak Savanna is located predominantly on JBLM property. The visual character transitions back to a forested roadside on the east side of I-5 while becoming semi-urban in character to the west, due to the bordering Tillicum neighborhood.

Traveling north just past the Thorne Lane interchange along I-5, the freeway is bordered by the Sound Transit railroad on the west, while a line of Douglas fir trees separates the Tacoma Country and Golf Club (TCGC) from the railroad and I-5. To the east, individual Douglas fir trees occur within the interchange, eventually becoming a grass stand in front of a noise abatement wall to the east.

4.11.3 What Would Be the Impact of the No Build Alternative?

The existing visual quality will not change in value if the No Build Alternative is selected, as no improvements to I-5 would be made.

4.11.4 What Would Be the Long-Term Impact of the Build Alternative?

Potential impacts of the Build Alternative include three primary long-term changes to visual character in the study area:

- ◆ **Retaining walls related to the reconstruction of the two interchanges would be prominent** in the views from adjacent residences and businesses, largely affecting residents within the Tillicum neighborhood. The replacement structures would be elevated between 25 to 30 feet higher and wider than the existing structures.
- ◆ **Increased pavement width and modified geometry** for I-5 to provide an added travel lane in each direction, as well as additional entry and exit circulation at the interchanges.
- ◆ **Loss of existing trees** primarily at the Thorne Lane interchange and along the Gravelly-Thorne connector. At the Thorne Lane interchange it would be necessary to remove a large number of trees to accommodate the new interchange overpass. At the Gravelly-Thorne connector, the existing forest along the west side of I-5 would be impacted. At other locations, the

loss of mature trees in the Build Alternative footprint would be restricted to quadrants within the existing interchanges.

Impacts Associated with Specific Elements of the Build Alternative

The Build Alternative would impact visual character at the locations of the new interchanges. The additional heights, widths, elongated ramps, and proposed retaining walls would dominate the views of both drivers and neighbors. Following is a brief summary of visual quality impacts associated with the two modified interchanges included in the Build Alternative.

BERKELEY STREET INTERCHANGE

Currently the roadside visual character of the Berkeley Street interchange is forested to the east with a semi-urban character to the west due to the presence of the Tillicum neighborhood and Camp Murray. The Sound Transit railroad separates Tillicum and I-5. The existing Berkeley Street interchange area has low natural harmony. The existing natural landscapes have been developed by JBLM or Tillicum, and are disjointed by commercial areas or military infrastructure. The Sound Transit railroad dominates the view to the west due to its at-grade alignment.

The replacement of the interchange would modify the visual character of the landscape unit by constructing a structure considerably taller than the existing overpass. This new structure would also be larger than the existing bridge with much longer ramps to accommodate the associated gradient. The addition of the new interchange would result in minimal tree removal which would limit visual impacts from I-5 and adjoining neighbors.

Most viewers would be in their vehicles along I-5 and would be focused on the roadway, including the new interchange, due to traffic



Figure 4.11-1 Berkeley Street Interchange with No Build and Build Alternatives

volumes and speed. Neighbors that would likely notice the change in the existing view are located within JBLM and Tillicum. Figure 4.11-1 illustrates before and after conditions for the proposed Berkeley Street interchange.

THORNE LANE INTERCHANGE

Currently the roadside visual character of the Thorne Lane interchange is forested to the east with a semi-urban character to the west due the presence of Tillicum. The Sound Transit railroad separates Tillicum and I-5. The existing Thorne Lane interchange has low natural harmony. The existing natural landscapes have been developed by JBLM or Tillicum, and are fragmented by commercial areas or military infrastructure. The Sound Transit railroad dominates the view to the west due to its at-grade alignment.

The replacement of the interchange would modify the visual character of the landscape. This structure would be higher and larger than the existing bridge, with much longer ramps to accommodate the associated gradient. This new interchange would have limited vegetation removal which minimizes visual impacts from I-5 and adjoining neighbors. Most viewers are in their vehicles along I-5 and are focused on the roadway and the interchange due to traffic volumes and speed. Neighbors that would likely notice the change to the existing view are located within JBLM and the Tillicum neighborhood.

The proposed size of this structure can be softened by planting trees in the surrounding landscape quadrants and appropriate roadside locations. Figure 4.11-2



Figure 4.11-2 Thorne Lane Interchange with No Build and Build Alternatives

illustrates before and after conditions for the proposed Thorne Lane interchange.

GRAVELLY-THORNE CONNECTOR

The visual character of the Gravelly-Thorne connector location currently includes a mature stand of Douglas fir trees which provide a visual screen between the TCGG, the Sound Transit railroad and I-5. Existing vegetation increases the natural harmony and cultural coherence by tying the two ends of this segment together and is valued by golf club members. The primary viewers are the neighbors to the west of I-5, including Tacoma Country and Golf Club members and adjacent homeowners.

The beneficial Douglas fir screen would have to be removed to provide enough width for a vehicle travel lane and a shared use path. Opening up the view from the golf course to I-5 would be an adverse visual impact to the adjacent neighbors. Figure 4.11-3 reflects the area of potential tree removal associated with the Gravelly-Thorne connector.

Impacts of the Build Alternative to Specific Locations

There are specific locations in the study area that have been identified for potential impacts. Discussions of these specific locations follow:

TACOMA COUNTRY AND GOLF CLUB (TCGG)

The existing Douglas fir greenbelt, which currently obscures the view towards I-5 would be removed (see Figure 4.11-3). This would have an adverse effect for some

associated with this portion of I-5, but this would not decrease the value of the existing view based on FHWA Guidelines.

THE SALVATION ARMY RED SHIELD INN / LEWIS ARMY MUSEUM

The Lewis Army Museum, originally the Salvation Army Red Shield Inn, is located to the west of the Garrison Historical District and I-5. Currently, the Sound Transit railroad separates the museum and I-5. A shared use path is proposed in between the railroad and the museum, with a perimeter fence serving as a barrier (see Figure 4.11-4). With the addition of the shared use path another fence would serve as a barrier between the museum and the path. Currently, the JBLM perimeter fence is visible from I-5 with limited obstructions to the architecture of the museum. An additional fence would have a visual impact from the highway to

the museum, but would not obscure the architecture of the structure from the traveling public.

RECOMMENDED NOISE ABATEMENT WALLS

There are up to six locations recommended noise abatement walls. The location of the proposed walls are documented in Chapter 4.5. The current views from I-5 to the east range from residential, to forested, to an existing noise wall just north of Tillicum. The noise abatement walls would generate a sense of enclosure and replace the variety of colors and textures connected with the prairie and associated native vegetation. The size, texture, and color of the noise



Figure 4.11-3 Gravelly-Thorne Connector Tree Removal Area

homeowners within the TCGC, and would expose views of I-5 to the golf course.

THE GARRISON HISTORICAL DISTRICT

The Garrison Historical District of JBLM was comprised of six hundred buildings constructed between 1929 and 1939. The district includes barracks, family housing, a chapel, a theater, a bakery, and other associated buildings. It is located on the east side of the Steilacoom-DuPont Road interchange. Currently the roadside between I-5 and the JBLM perimeter fence is comprised of grasses with an unobstructed view of JBLM from the freeway. There would be some widening



Figure 4.11-4 View at Lewis Army Museum from Southbound I-5 with Proposed Shared Use Path

walls could receive a “green over grey” treatment to reduce the impact of the structures. Planting native vegetation in front of the walls would reduce the scale and soften the severity of the concrete.

Other Impacts to Visual Quality Under the Build Alternative

As part of the Build Alternative, all roadside areas within the Build Alternative footprint would receive a minimum of Treatment Level 2 as described in the WSDOT *Roadside Policy Manual (RPM)*. This would entail replanting of all roadside areas disturbed by construction with native vegetation.

The existing visual quality in this study area ranges from low to medium natural harmony throughout. After the completion of the new interchanges and roadway widening, the visual harmony would decrease due to larger structures and the removal of mature trees.

4.11.5 What Would Be the Short-Term or Construction Impacts of the Build Alternative?

Impacts on visual resources are typically highest during the construction phase of a project, and the Build Alternative would be no exception. Construction activities typically detract from visual quality because construction sites are often dynamic and hectic. For the Build Alternative, the majority of construction activities would occur within the highway right of way, especially along I-5.

Construction activities that are anticipated to occur would include:

- ◆ Clearing and grading that would detract from the natural character of the roadside.
- ◆ Using heavy construction equipment within the Build Alternative footprint that would be visible to highway users and from adjacent land uses. This equipment would likely create dust and distractions affecting drivers in the vicinity.
- ◆ Using construction staging for the storage and preparation of construction materials. Construction staging areas typically detract from visual quality and reduce the overall visual quality of the Build Alternative area. Construction staging areas would be identified during final design.
- ◆ Narrowing of existing travel lanes along I-5 during construction of the proposed new lanes. This may entail use of jersey barriers or traffic cones, and/or restriping of the roadway.
- ◆ Removing vegetation and trees to accommodate the widened roadway and proposed interchanges. Tree and vegetation removal would be kept to a minimum whenever possible.

The construction duration is expected to be about 30 months. The contractor will determine the order of work.

- ◆ Using lighting to allow a contractor to work at night. Directional lighting to minimize night sky impacts would be utilized.

Construction-related impacts are temporary in nature and do not require mitigation for impacts to visual quality.

4.11.6 How Can Impacts of the Build Alternative Be Minimized or Mitigated?

As noted in the discussion above, potential impacts of the Build Alternative could include adverse, beneficial, and neutral effects to visual quality. Some neighbors and travelers may experience adverse impacts to views of the surrounding landscape, including Mount Rainier or mature tree removal. Other neighbors, such as pedestrians, cyclists, and motorists travelling over the proposed interchanges, may have beneficial or improved views of the surrounding landscape. Travelers along I-5 may perceive the improvements to the highway and interchange modifications as a neutral impact because of the short viewing duration and cohesiveness of the new interchanges with the transportation corridor. Travelers, residents, and businesses near the interchanges may perceive a negative impact.

Mitigation recommendations were developed in response to the specific impacts identified in the analysis. Potential mitigation measures for impacts to visual quality could include:

- ◆ Minimize the removal of trees and shrubs and the pruning needed to accommodate new or reconstructed noise barriers.
- ◆ Replace landscaping, fencing, privacy walls, and other similar features for private properties, to the degree possible.
- ◆ Implement tree replacement ratios found in the *Roadside Policy Manual*.
- ◆ Implement roadside landscaping.

- ◆ Apply aesthetic treatments to visible structures.
- ◆ Apply aesthetic treatments to the design of bridges and grade-separated crossings over roadways and/or the Sound Transit railroad.
- ◆ Construct walls and barriers with aesthetic treatments, and low-sheen and non-reflective surface materials.
- ◆ Implement retaining wall aesthetics.

In addition, mitigation options follow the WSDOT *Roadside Policy Manual* (2015), which are intended to replace the functional characteristics of the vegetation removed from the roadside as much as practicable. Key elements of revegetation would include:

- ◆ Use native vegetation to provide visual unity.
- ◆ Plant grass and shrubs within the clear zone of the roadway. Native grasses and forbs seed mixture would be selected to blend cut and fill slopes within the Build Alternative footprint with adjacent land uses. These grasses would also be selected to promote pollinator habitat.
- ◆ In sensitive areas and buffers, consider the following:
 - Disturbance to native plant communities and specimen trees would be minimized by clearly identifying clearing and grading limits. In critical areas and their buffers temporarily disturbed by construction, roadside restoration with densely planted native trees and shrubs would be considered (as long as it is not within the highway clear zone).
 - As many trees as possible would be maintained by allowing minimal fill around the base of existing trees.
 - Tree species would be selected for replacement that are native and in context.

4.11.7 Would There Be Any Unavoidable Adverse Impacts from the Build Alternative?

The Build Alternative would temporarily decrease the visual quality in the I-5 corridor during construction, but the decrease would not be significant. Removal of vegetation and trees would be kept to a minimum, and native vegetation would be replanted on all disturbed roadside areas.

Where structural components are anticipated, approved finishes and architectural treatments would represent the character of the neighborhoods, while unifying the corridor.