

3.9 Visual Quality

Highways and major transit facilities are highly visible elements of landscapes. They are noticeable to local residents, travelers using the facilities, and nearby motorists, bicyclists, pedestrians, and transit users. This section describes and evaluates changes to visual character from the alternatives and how that change in visual character would affect visual quality as perceived by viewers.

The information presented in this section is based on the Visual Quality Technical Report, which contains greater detail and analysis.

3.9.1 Changes or New Information Since 2013

The Columbia River Crossing (CRC) Selected Alternative identified in the 2011 Record of Decision (ROD), as revised by the 2012 and 2013 re-evaluations, is referred to as the CRC Locally Preferred Alternative (CRC LPA). Over the past 10+ years since the CRC LPA was identified, the physical environment in the study area, community priorities, and regulations have changed, which necessitated design revisions and resulted in the IBR Modified LPA (see Section 2.5.2). Evaluation of potential impacts associated with visual quality has been updated in this Draft SEIS to include:

- Updated FHWA methodology for evaluating visual quality in their Guidelines for the Visual Impact Assessment of Highway Projects (2015).
- Updated locations of some key viewpoints and landscape units (LUs) to reflect the Modified LPA.
- Changes in viewsheds, based on the location and extent of the Modified LPA.
- Modifications in the highway and structure form, scale, and materials.
- Changes to the project footprint necessitated by these changed conditions including adding bridge configuration options with varying heights with respect to proximity to viewsheds.

Differences in methodology make direct comparison difficult but Table 3.9-1 compares the general impacts and benefits of the CRC LPA to those of the Modified LPA as a result of the changes listed above. Based on the analysis described in this section, the effects of the Modified LPA would be similar to those of the CRC LPA.

Table 3.9-1. Comparison of CRC LPA Effects and IBR Modified LPA Effects

Visual Quality LU	CRC LPA Effects as Identified in 2011 Final EIS	Modified LPA Effects as Identified in this Section	Explanation of Differences
Columbia Slough LU	Visual effects in the LU and Scenic Corridor would be minor.	Some viewers would likely have negative visual quality impacts, but most would have neutral to beneficial. The overall impact to visual quality would be beneficial.	Differences between the CRC LPA and the Modified LPA would be minor in this LU. Visual quality would be similar.
Columbia River and Vancouver Downtown LUs	Views of bridge towers replaced with new bridges. Visual changes from higher bridges and the removal of bridge towers.	Some viewers would likely have negative visual quality impacts, but most would have neutral to beneficial. The overall impact to visual quality would be beneficial.	Similar change in the visual environment. The form, scale, and materials of the CRC LPA and the Modified LPA would be similar. Visual quality in the Vancouver Downtown LU would likely

Visual Quality LU	CRC LPA Effects as Identified in 2011 Final EIS	Modified LPA Effects as Identified in this Section	Explanation of Differences
			be more adverse because of the parking structures being moved from the Greater Central Park LU. The light-rail station would also move to the Vancouver Downtown LU but the extension of the light-rail guideway would be shorter and not located on downtown streets.
Greater Central Park LU	Visual impacts associated with the SR 14 structures and Clark Park and Ride. Other views improve with the Evergreen Community Connector.	Most viewers would likely have negative visual quality impacts, and the overall impact to visual quality would be adverse.	Compared to the CRC LPA, the Modified LPA moves the LRT station and park and ride structure to the Vancouver Downtown LU, which would reduce visual changes in the Greater Central Park LU. However, the Modified LPA’s visual change from the prominence of the higher Columbia River bridges, C Street ramp, and SR 14 would have an overall adverse visual quality impact for sensitive recreational viewers compared to the CRC LPA.
Burnt Bridge Creek LU	Visual effects in the LU would be minor. (No Change in Visual Impact).	The visual environment would be similar to the existing conditions. The overall impact to visual quality would be neutral.	Visual differences between the CRC LPA and the Modified LPA would be minor in this LU. Visual quality would be similar.
Ruby Junction LU	Visual impacts are expected to be low because the added structures and uses are consistent with existing character and uses.	The visual environment would be similar to the existing conditions. The overall impact to visual quality would be neutral.	Differences between the CRC LPA and the Modified LPA would be minor in this LU. Visual quality would be similar.

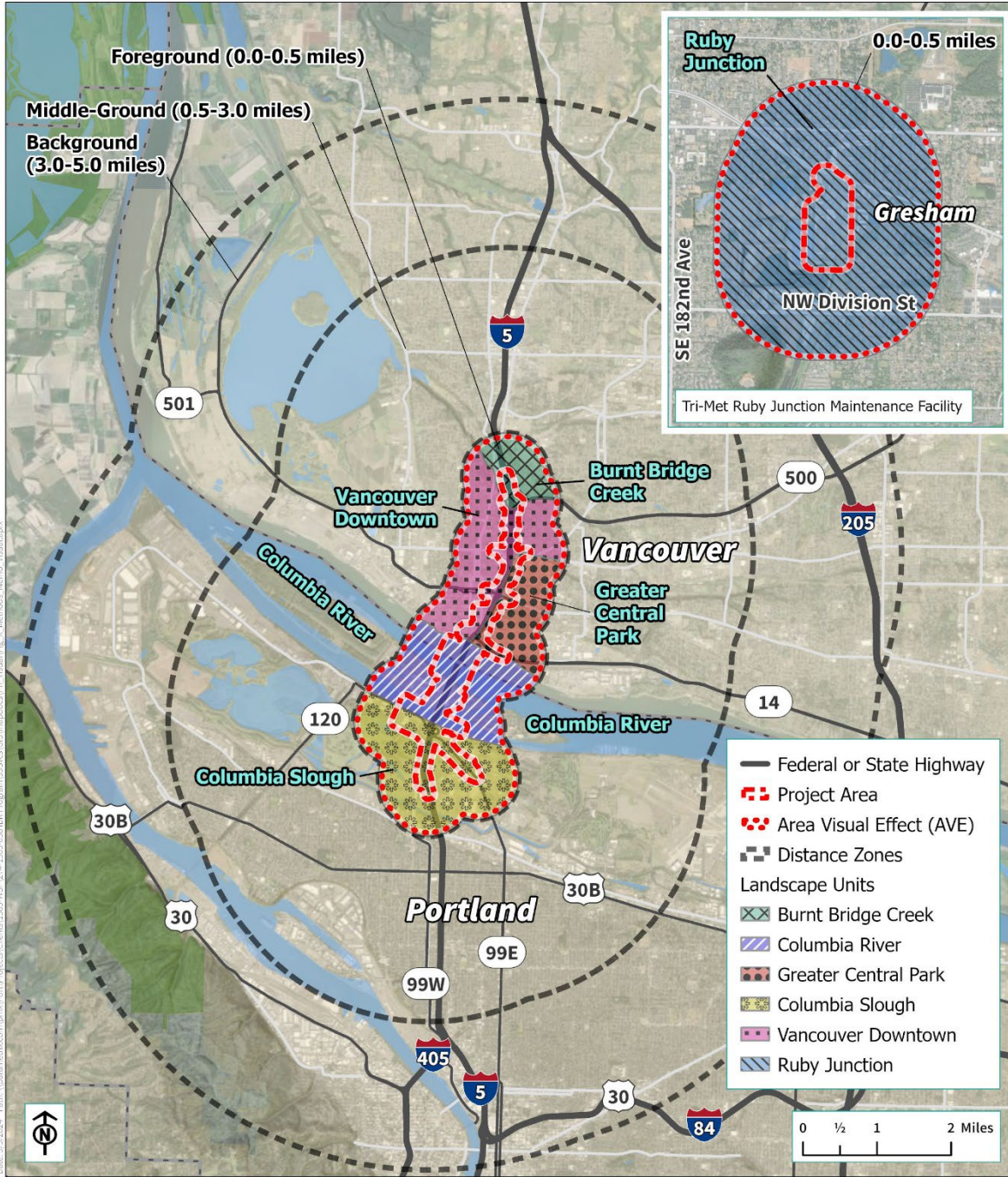
CRC = Columbia River Crossing; EIS = Environmental Impact Statement; LPA = Locally Preferred Alternative; LRT = light-rail transit; LU = Landscape unit;
 SEIS = Supplemental Environmental Impact Statement; SR = State Route

3.9.2 Existing Conditions

FHWA’s guidelines define the study area for visual quality analysis as the Area of Visual Effect (AVE) (FHWA 2015). The AVE is the area where views of the Modified LPA would be visible, determined by the physical constraints of the environment and the limits of human sight. Landforms (such as hills and mountains) and land cover (such as vegetation and buildings) limit views from large portions of the middle

and background distance zones (Figure 3.9-1). Therefore, the AVE for the Modified LPA, including the Ruby Junction Maintenance Facility, consists of areas within the foreground distance zone, which is 0 to 0.5 miles from the limits of ground disturbance. Along the I-5 corridor, background and middle ground distance zones were considered where they include scenic elements of views that could be altered or obstructed by the Modified LPA (i.e., bridges, ramps, etc.).

Figure 3.9-1. Area of Visual Effect and Landscape Units



Within the AVE, six defined LUs identify the existing visual character, viewer groups present, and current visual quality. Each LU is the geographic area used to assess changes to visual environments and character, sensitivity of viewers, and impact to visual quality. The six LUs are identified in Figure 3.9-1 and their existing resources and characteristics are described in Table 3.9-2.

It is not possible to assess every view within an LU, so key viewpoints (KVPs) were identified and used to define the existing visual character and visual quality and evaluate impacts to visual quality. The KVPs used in this analysis are shown in Figure 3.9-2. KVPs were selected because they represent a common or typical view from within an LU or because they are a view of a defining feature of the LU, such as a notable natural feature or important structure.

Table 3.9-2 Visual Character of Landscape Units

Landscape Unit	Visual Character
Columbia Slough	Views of North Portland Harbor and several sloughs, riparian areas, and large wetlands; level sports fields and recreational areas; large tracts of open space interrupted by large parking lots and industrial, retail, commercial, and transit and transportation development.
Columbia River	Riverine, industrial; flat landform; defined by near-continuous development along, and use of, the Columbia River. Open views upriver toward Mt. Hood.
Vancouver Downtown	Primarily developed residential, commercial, and retail areas. Smaller-scale urban core with higher density and taller structures, including mixed-use high-rise development along the waterfront.
Greater Central Park	Park-like campus and open fields crossed by several major roadways and elevated railroad tracks. Recreation- and education-oriented development.
Burnt Bridge Creek	Riparian valley between steep-sided slopes; residential development and open space.
Ruby Junction	Mix of industrial, commercial office, and retail development, including large-scale industrial uses such as sand and gravel mining and municipal transit maintenance and fleet services uses.

For each LU the visual analysis considers the sensitivity of the different viewer groups (people who would have views of or from the AVE) to changes in views and the visual character. The activities a viewer is engaged in, the visual context, and the values, expectations, and interests all affect viewer sensitivity. Although each viewer has individual preferences and sensitivities, there are three basic perceptions of the visual environments:

- Natural Harmony:** When viewing the natural environment, viewers evaluate the natural harmony of the existing scene, determining whether the composition is harmonious or inharmonious.
- Cultural Order:** When viewing the cultural environment, viewers evaluate cultural order, determining whether the composition is orderly or disorderly.
- Project Coherence:** When viewing a project environment, viewers evaluate how the visual character of all the elements of a project logically fit together and how the visual character of the project integrates with the visual character of the existing environment to form a complete whole. Viewers determine whether the project’s composition is coherent (forms a logical whole) or incoherent (does not form a logical whole).

Table 3.9-3 summarizes the viewer groups present in each LU, their visual sensitivity and a qualitative rating of their perception of the existing elements of visual quality.

Figure 3.9-2. Key Viewpoints Used in the Visual Quality Analysis

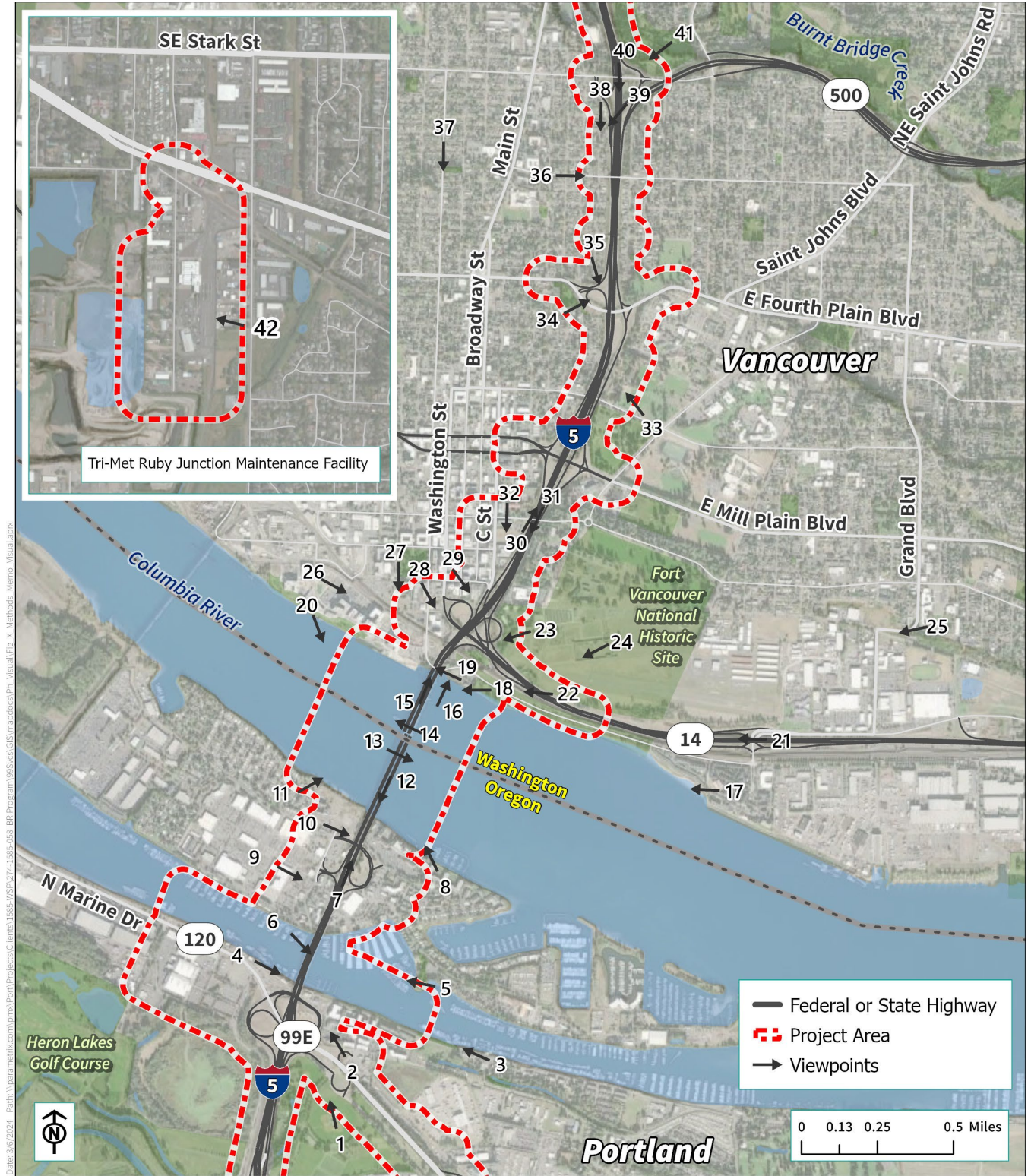


Table 3.9-3. Viewer Groups, Viewer Sensitivity, and Existing Visual Quality Ratings for Landscape Units

Landscape Unit	Viewer Groups	Viewer Sensitivity	Natural Harmony	Cultural Order	Project Coherence
Columbia Slough	Recreational, Residential, Motorist	Low (motorists) to High (recreational users)	Moderate	Low	Low
Columbia River	Recreational, Residential, Retail/Commercial, Motorist, Bicycle/Pedestrian	Low (motorists) to High (residential)	Moderate to High	Low	Low
Vancouver Downtown	Recreational, Residential, Retail/Commercial, Motorist, Bicycle/Pedestrian	Low (motorists) to High (residential)	Moderate	High	Low
Greater Central Park	Recreational, Motorist, Bicycle/Pedestrian	Low (motorists) to High (recreational users)	High	High	Low
Burnt Bridge Creek	Recreational, Residential, Motorist, Bicycle/Pedestrian	Low (all viewers)	High	Low	Moderate
Ruby Junction	Industrial, Commercial, Retail, Residential, Civic	Low (all viewers)	Low	Moderate to Low	Moderate to Low

3.9.3 Long-Term Benefits and Effects

“Long-term effects to visual quality” refers to how changes to visual resources affect the character of the physical, cultural, and project environments as perceived by viewers. The degree of impact to visual quality is determined by the compatibility of the visual change with the existing conditions and the sensitivity of viewers. The value of the effect to visual quality is identified as beneficial, adverse, or neutral.

Table 3.9-4 summarizes the effects of the No-Build Alternative, Modified LPA, and design options on visual quality. Detailed analysis of the effects is provided in the following sections.

No-Build Alternative

Under the No-Build Alternative, the constructed elements of the project environment within the AVE would not change. Existing bridges, ramps, interchanges, roadways, and other structures would remain. With regular maintenance, such as painting, views containing the bridge structures are not expected to decline in visual quality, except in the event of a major earthquake, which could visibly damage the structures.

The No-Build Alternative assumes that all highway, roadway, and transit projects within the AVE planned to be built by 2045 would be constructed. Even with completion of those projects, traffic congestion and delays are forecasted to increase within the AVE. Additionally, periodic bridge lifts to allow Columbia River traffic to pass under the existing Interstate Bridge would continue to cause stopped traffic and congestion on I-5. Additional congestion reduces the coherence of the project environment, particularly as viewed by motorists, which could reduce visual quality. Visual changes from traffic congestion may adversely affect visual quality for some viewers in all LUs except for the Ruby Junction LU. However, these conditions would likely develop over time, allowing viewers to become accustomed to the changing visual environment. The overall long-term impact on visual quality would be neutral.

Table 3.9-4. Summary of No-Build Alternative and Modified LPA Effects on Visual Quality

No-Build Alternative	Modified LPA with Double-Deck Fixed-Span Configuration, One Auxiliary Lane, C Street Ramps, Centered I-5	Modified LPA with Double-Deck Fixed-Span Configuration, Two Auxiliary Lanes, C Street Ramps, Centered I-5	Modified LPA with Double-Deck Fixed-Span Configuration, One Auxiliary Lane, C Street Ramps, I-5 Westward Shift	Modified LPA with Single-Level Fixed-Span Configuration, One Auxiliary Lane, C Street Ramps, Centered I-5	Modified LPA with Single-Level Movable-Span Configuration, One Auxiliary Lane, C Street Ramps, Centered I-5	Modified LPA with Double-Deck Fixed-Span Configuration, One Auxiliary Lane, without C Street Ramps, Centered I-5	Modified LPA Double-Deck Fixed-Span Configuration, One Auxiliary Lane, C Street Ramps, Centered I-5, all Park-and-Ride Site Options
<ul style="list-style-type: none"> Constructed elements within the Area of Visual Effect (AVE) would not change. Project environment coherence would be negatively affected by increased traffic and congestion, however, natural and cultural elements are expected to be compatible with the existing visual environment. 	<ul style="list-style-type: none"> Impacts would include new visual elements that could alter the visual character and quality in the AVE (e.g., new bridges across the Columbia River). LUs where the effect to visual quality are beneficial or neutral would have a natural, cultural, and project environment that is compatible with existing visual conditions. Adverse effects to visual quality would result from blocking views of the natural environment and changes in visual experience from elevated bridge structures, such as to viewers in the floating homes at the North Portland Harbor bridges. 	<ul style="list-style-type: none"> Additional width would contribute to a slightly increased visual mass for viewers in close proximity or beneath the structures in the Columbia River LU. 	<ul style="list-style-type: none"> Would include an improvement in perception of visual quality by shifting project elements slightly farther from sensitive viewers at Kanaka Village and other views from Fort Vancouver National Historic Site in the Greater Central Park LU. 	<ul style="list-style-type: none"> May become a beneficial feature from nearby views in the Columbia River LU depending on the chosen architectural design. 	<ul style="list-style-type: none"> In the closed position, the lower height of the bridge decks would be similar, or less visible, than the existing Interstate Bridge. Some components of a movable span could protrude higher into the skyline and be visible from Vancouver, Fort Vancouver, and Hayden Island areas. In an open position, which would be intermittent and limited, the increased visibility of the bridge deck may obstruct additional views and skylines, and likely intensify visual impacts, especially for sensitive recreational viewers. The overall bridge deck would be higher and more visible than the existing bridge deck. 	<ul style="list-style-type: none"> Would eliminate project environment elements associated with the C Street Ramps that would be visible for sensitive recreational viewers in the Greater Central Park LU. 	<ul style="list-style-type: none"> Potential changes in the cultural visual environment in the Vancouver Downtown LU.

AVE = area of visual effect; I-5 = Interstate 5; LPA = Locally Preferred Alternative; LU = landscape unit

Modified LPA

The primary elements of the Modified LPA that could alter visual character and quality are the new bridges across the Columbia River and North Portland Harbor; reconfiguration of roadways and interchanges; and construction of new light-rail transit facilities and park-and-ride sites. Within the AVE, the Modified LPA, with any of the design options, would have perceptible changes in scale, form, and materials from:

- The greater heights and widths of the new Columbia River bridges.
- Reconfiguration or modification of interchanges at N Marine Drive, Hayden Island, SR 14, Mill Plain Boulevard, Fourth Plain Boulevard, and SR 500.
- The introduction of light-rail transit guideway and stations.
- Removal of the existing Interstate Bridge.

For each LU, the following provides an assessment of the visual compatibility of, and viewer sensitivity to, the Modified LPA, including an assessment of the design options in the applicable LU, and its overall degree of impact on visual quality.

Columbia Slough Landscape Unit

Within the Columbia Slough LU, the Modified LPA includes changes to the Marine Drive and Victory Boulevard interchanges, the extension of light-rail transit from the existing terminus at the Expo Center, and a facility on the Expo Center property that would provide a small number of storage tracks, one small maintenance building for light maintenance, an operator break facility, and a parking lot for operators. This facility would necessitate reconstruction of the Expo Road entrance to the Expo Center and the parking lot gates and booths, but it would not alter the existing Expo Center buildings. As an example of changes to the visual environment within the Columbia Slough LU, Figure 3.9-3 shows the existing conditions from KVP 2 (along Marine Drive looking northwest toward pedestrian trails) and a photographic simulation of the Marine Drive Interchange with the Modified LPA.

While the Modified LPA would remove some existing trees and vegetation, the natural environment would continue to include views of distant shorelines, rolling hills, and mountain profiles from both northbound and southbound I-5. The cultural environment would generally remain unchanged, and the project environment of roadways and bridges would be compatible with the existing visual conditions.

The compatibility of the Modified LPA with the project environment would be the same with either the one or two auxiliary lane design option; there is not a change in the assessment of visual quality. In the Columbia Slough LU, there would be no change in the assessment of visual quality with the Modified LPA between the different bridge configurations (double-deck fixed-span, single-level fixed-span, or single-level movable-span). The Modified LPA with the single-level fixed-span configuration would provide more options for bridge architecture, such as the potential to use a finback or extradosed design. These bridge architecture designs would have additional associated visual mass and height above the bridge deck that may be visible from the Columbia Slough LU. They would also provide greater opportunity for a bridge design that meets the communities' design goals and could become a beneficial feature from nearby views.

Figure 3.9-3. Existing Conditions Photograph and Conceptual Photographic Simulation (N Marine Drive Looking Northwest at Pedestrian Trails)



Existing Marine Drive Interchange

Existing Conditions



Modified LPA Marine Drive Interchange

Photographic simulation of Modified LPA

Note: The simulation illustrates the general layout and massing. Visual elements of the Modified LPA may change as the design progresses. Roadways, intersections, signage, markings, and other simulated elements reflect early conceptual design and are shown for illustration purposes only.

Four KVPs were identified to assess the visual quality in the Columbia Slough LU. For each KVP within the Columbia Slough LU, Table 3.9-5 provides a quantitative assessment of the existing visual quality, the visual quality with the Modified LPA, and the overall visual quality score for the LU. Natural harmony, cultural order, and project coherence were rated on a scale of 1 to 7, with 1 being very low, 4 being moderate, and 7 being very high. As shown in Table 3.9-5, the Modified LPA was found to have a neutral degree of impact on one KVP (KVP 3), an adverse degree of impact on one KVP (KVP 1), and a beneficial degree of impact on two KVPs (KVP 2 and 4). For the Columbia Slough LU overall, the change in visual quality from the Modified LPA would be expected to be beneficial.

Table 3.9-5. Columbia Slough Landscape Unit Degree of Impact on Visual Quality

KVP	Visual Quality – Existing ^a				Visual Quality – with Modified LPA ^b				Change	Degree of Impact on Visual Quality
	Natural Harmony	Cultural Order	Project Coherence	Overall	Natural Harmony	Cultural Order	Project Coherence	Overall		
1	5	3	3	3.7	3	3	3	3	-0.7	Adverse
2	3	2	2	2.3	3	2	3	2.7	0.4	Beneficial
3	5	3	3	3.7	5	3	3	3.7	0	Neutral
4	2	1	2	1.7	2	2	3	2.3	0.6	Beneficial
Overall Landscape Unit Change									0.3	Beneficial

Note: Visual quality score definitions: 1 = very low, 2 = low, 3 = moderately low, 4 = moderate, 5 = moderately high, 6 = high, 7 = very high
 a The visual quality ratings for the No-Build Alternative are the same as the existing conditions.
 b The visual quality ratings for the Modified LPA are the same for each design option.
 KVP = key viewpoint; LPA = Locally Preferred Alternative; LRT = light-rail transit

Columbia River Landscape Unit

Within the Columbia River LU, the Modified LPA, with any of the design options, would include two new parallel Columbia River bridges North Portland Harbor bridges, the extension of LRT, including transit facilities on the Columbia River bridges, a new interchange on Hayden Island, , a modified SR 14 interchange, shared-use paths along the new bridge structures providing an active transportation connection across the Columbia River, and the removal of the existing Interstate Bridge.

Within the Columbia River LU trees, vegetation, shorelines (both on the Columbia River and North Portland Harbor), and other natural elements would be relatively unchanged. The bridge decks for all the Modified LPA’s Columbia River bridge configurations would be higher than the existing bridge decks, which may increase a visual sense of openness along the Columbia River shoreline and increase natural harmony. The cultural environment would be altered with elevated lanes, ramps, and retaining walls, but land cover would block most direct views and the cultural environment overall would be orderly. The project environment would experience

Visual mass refers to the perceived weight or prominence of an object or element. Visual mass is not directly related to the actual physical weight of an object, but rather its visual appearance. It is determined by various factors such as size, shape, color, texture, contrast, and placement. Objects or elements that are larger, darker, more detailed, or placed in a prominent position tend to have more visual mass and attract greater attention from the viewer.

updated highway and active transportation facilities that meet current design standards and would improve movements and speeds, which would be beneficial to project coherence.

With the Modified LPA, the location and layout of the North Portland Harbor bridges and transit structure would involve relocating some of the floating homes on the Columbia Slough, resulting in the Columbia River bridges and transit structures being closer to the floating homes that remain. The scale of the North Portland Harbor bridge structures, ramps, and roadways would increase the existing footprint, modifying the visual environment from the floating home community. While the existing bridge over the North Portland Harbor provides a visual precedent, the expanded footprint of the North Portland Harbor bridge and new transit bridge under the Modified LPA would be new visual elements for adjacent residential viewers. These residential viewers would experience a high degree of visual change, and the new North Portland Harbor bridges would not be compatible with the existing visual conditions.

The new Columbia River bridge decks and ramps would be higher in elevation than the existing Interstate Bridge but would not be as high as the existing lift towers. These higher structures would be much more visible and would be likely to block views of neighbors in surrounding areas. As currently conceptualized, the Modified LPA with the double-deck fixed-span configuration would not have substantial structural elements extending above the bridge deck, which would maximize views of the surrounding landscape from the top bridge deck and improve views of the surrounding landscape from the Columbia River bridges for travelers.

For viewers at the water level of the Columbia River or from the shorelines, transit, pedestrian, and utility facilities on the lower decks would contribute to the visual height and mass of the Modified LPA's Columbia River bridges, but fewer piers and the higher deck height would allow greater view of the corridors between piers and under the bridge. Therefore, the scale and magnitude for on-water viewers and viewers at lower elevations would be similar to those of the existing Interstate Bridge.

Compared to the existing shared-use path on the existing Interstate Bridge, the shared-use path associated with the Modified LPA would be moved to the lower-level bridge deck. Views for pedestrians and bicyclists would be nearly enclosed and exposed to the underside of the bridge deck above. However, generously sized bicycle and pedestrian facilities with overlooks and rest points would replace the existing narrow pedestrian path adjacent to vehicular traffic, and views would be improved as viewers would be higher than the existing bridge. Features such as safety railing and bicycle lane striping would improve the project coherence for bicyclists and pedestrians. Safe facilities would allow more focus and attention on beneficial elements in the cultural and natural visual environment. The overall experience would be beneficial for bicyclists and pedestrians.

The design option to shift the I-5 mainline westward would have the same visual compatibility as the design option where the I-5 mainline remains centered. In addition, the design option at the SR 14 interchange to have or not have C Street Ramps would not change the visual environment for viewers within the Columbia River LU and the optional park-and-ride sites would either be not visible or barely visible from views.

The Modified LPA with the design option of two auxiliary lanes would expand the roadway width of I-5 by an additional 16 feet, which would be slightly closer to viewers and would contribute to a slightly increased visual mass. Motorists inside enclosed vehicles (including light-rail cars on the lower deck) would likely not discern the slight expansion associated with the second auxiliary lane. Similarly, the additional 16-foot width would likely have minimal visual change to viewers somewhat farther from the bridge.

In comparison to the Modified LPA with the double-deck fixed-span configuration, the Modified LPA with the single-level fixed-span configuration would be slightly wider and somewhat closer to nearby viewers. However, the single-level fixed-span configurations would have a slimmer vertical profile and would grant viewers in proximity or beneath the Columbia River bridges along the Vancouver waterfront with more expansive and unobstructed views below bridge decks and between piers. In addition, the Modified LPA with the single-level fixed-span configuration would provide more options for bridge architecture, such as the

potential to use a finback or extradosed design. While those architectural designs would have additional associated visual mass and height above the bridge deck, they would also provide greater opportunity for a bridge design that meets the communities' design goals and could become a beneficial feature from nearby views.

The Modified LPA with the single-level movable-span configuration would have bridge decks somewhat higher than the existing Interstate Bridge, which would slightly open up views from underneath. With the single-level movable-span configuration, the overall visual character and massing would be similar to the existing conditions or No-Build Alternative as there would be lift towers that would protrude higher into the skyline for areas in Vancouver, Fort Vancouver, and toward and from Hayden Island.

Overall, at the current level of design used in this analysis, the options for the bridge configurations would have a similar effect on visual quality. Figure 3.9-4 provides an existing condition photograph of the Interstate Bridge, a photographic simulation of the Modified LPA with the double-deck fixed-span configuration, and the Modified LPA with the single-level movable-span configuration. Figure 3.9-5 shows KVP 15 with an existing condition photograph of the Interstate Bridge, a photographic simulation of the Modified LPA with the double-deck fixed-span configuration, and a photographic simulation of the Modified LPA with the single-level movable-span configuration, both from the top deck looking north toward downtown Vancouver.

Figure 3.9-4. Existing Conditions Photograph and Conceptual Photographic Simulations (Columbia River Bridges)



Existing Condition



Photographic simulation of Modified LPA Columbia River bridges with a double-deck fixed-span configuration



Photographic simulation of Modified LPA with single-level movable-span configuration

Note: The simulations illustrate the general layout and massing of the Modified LPA double-deck fixed-span and single-level movable-span configurations. The movable-span configuration is shown in the closed position only because the open position would be intermittent and limited. Visual elements of the Modified LPA may change as the design progresses. Roadways, intersections, signage, markings, and other simulated elements reflect early conceptual design and are shown for illustration purposes only.

Figure 3.9-5. KVP 15: Existing Conditions Photograph and Conceptual Photographic Simulation (Columbia River Bridge northbound lane looking north to Vancouver)



Existing I-5 Bridge northbound looking north toward Vancouver

Existing Conditions



I-5 Northbound looking to Vancouver from Modified LPA Columbia River bridge with double-deck fixed-span configuration

Photographic Simulation of the Modified LPA with double-deck fixed-span bridge configuration



I-5 Northbound looking to Vancouver from Modified LPA Columbia River bridge with single-level movable-span (closed position)

Photographic simulation of Modified LPA Columbia River bridge with single-level movable-span configuration

Note: The simulation illustrates the general layout and massing of the Modified LPA double-deck fixed-span and single-level movable-span configurations. Visual elements of the configurations may change as the design progresses. Conceptual photographic simulations are intended to illustrate general layout and massing of the Modified LPA. Roadways, intersections, signage, markings, and other simulated elements are conceptual and shown for illustration only. The early conceptual design may change as the design progresses.

Sixteen KVPs were identified to assess the visual quality in the Columbia River LU. For each KVP within the Columbia River LU, Table 3.9-6 provides a quantitative assessment of the existing visual quality and the visual quality with the Modified LPA. As shown in Table 3.9-6, five KVPs could have an adverse degree of impact to visual quality, six would have a neutral impact, and the remaining five would have a beneficial degree of impact. The overall LU change is a numeric average of the change of all KVPs combined. Based on this assessment, the Modified LPA would be expected to have a combined positive numeric change in the visual quality of KVPs and, therefore, an overall beneficial degree of impact to the visual quality of the Columbia River LU.

Table 3.9-6. Columbia River Landscape Unit Degree of Impact on Visual Quality

KVP	Visual Quality – Existing ^a				Visual Quality – with Modified LPA ^b				Change	Degree of Impact on Visual Quality
	Natural Harmony	Cultural Order	Project Coherence	Overall	Natural Harmony	Cultural Order	Project Coherence	Overall		
5	6	4	4	4.7	6	4	4	4.7	0.0	Neutral
6	6	3	2	3.7	4	2	1	2.3	-1.4	Adverse
7	2	2	2	2.0	2	4	4	3.3	+1.3	Beneficial
8	6	4	4	4.7	6	4	4	4.7	0.0	Neutral
9	2	2	3	2.3	2	2	3	2.3	0.0	Neutral
10	2	2	3	2.3	2	2	2	2.0	-0.3	Adverse
11	5	4	3	4.0	5	4	2	3.7	-0.3	Adverse
12	2	1	2	1.7	3	2	4	3.0	+1.3	Beneficial
13	4	2	1	2.3	4	3	3	3.3	+1.0	Beneficial
14	4	2	1	2.3	1	3	3	3.3	+1.0	Beneficial
15	2	1	2	1.7	3	2	4	3.0	+1.3	Beneficial
16	2	1	2	1.7	3	2	4	3.0	+1.3	Beneficial
17	6	4	4	4.7	6	4	3	4.3	-0.4	Adverse
18	4	4	2	3.3	4	4	2	3.3	0.0	Neutral
19	4	4	2	3.3	4	4	2	3.3	0.0	Neutral
20	6	5	3	4.7	6	5	2	4.3	-0.4	Adverse
Overall Landscape Unit Change									+4.4	Beneficial

Note: Visual quality score definitions: 1 = very low, 2 = low, 3 = moderately low, 4 = moderate, 5 = moderately high, 6 = high, 7 = very high
a The visual quality ratings for the No-Build Alternative are the same as the existing conditions.
b The visual quality ratings for the Modified LPA are the same for each design option.
KVP = key viewpoint; LPA = Locally Preferred Alternative

Vancouver Downtown Landscape Unit

In the Vancouver Downtown LU, views in the south include those toward the new Columbia River bridges. The Modified LPA also includes changes to the I-5 mainline, such as the design option for one or two auxiliary lanes, updates to interchanges, and the Evergreen Community Connector. In the Vancouver Downtown LU, the Modified LPA with either one or two auxiliary lanes would have similar visual changes as described in the Columbia River LU. In addition, the visual changes with the different options of bridge configurations would be the same as described in the Columbia River LU. Figure 3.9-6 provides an existing conditions photograph, a photographic simulation of the Modified LPA with the double-deck fixed-span configuration, and a photographic simulation of the Modified LPA with the single-level movable-span configuration, as seen from KVP 28 in downtown Vancouver.

While the changes to the I-5 roadway and interchanges may remove some vegetation that would change the natural environment, the Community Connector would provide opportunities to add natural elements and enhance natural harmony.

The Modified LPA, with any of the design options, would change the cultural environment. While the Modified LPA's visual changes would be similar with the design option of with or without the I-5 C Street ramps, the design option of the westward shift of the I-5 mainline would result in changes to existing buildings between C Street and the I-5 mainline. Building renovation or reconstruction as a result of the design option of the westward shift of I-5 would be expected to be compatible with the existing visual character.

The transit stations and park-and-ride site options also have the potential to change the cultural visual environment. While the architectural design of the transit stations and park-and-ride facilities would be determined as the design progresses; both stations and the park-and-ride facilities would be developed through public workshops and interested party group meetings and would use compatible massing, materials, and landscaping. Further, at any of the site options, the park-and-ride facilities would be developed in compliance with Vancouver regulations and guidelines, including building design and materials, lighting and signage, art elements, landscaping, and street trees, which would ensure the compatibility with the existing visual character. Other urban design elements such as plazas and light-rail stations may be considered enhancements to the visual environment.

Twelve KVPs were identified to assess visual quality in the Vancouver Downtown LU. For each KVP within the Vancouver Downtown LU, Table 3.9-7 provides a quantitative assessment of the existing visual quality and the visual quality with the Modified LPA. As shown in Table 3.9-7, six of the KVPs would have a neutral degree of impact to visual quality, two would have a beneficial degree of impact, and four would have an adverse degree of impact. Based on this assessment, the Modified LPA would be expected to have a combined positive numeric change in the visual quality of KVPs and, therefore, an overall slightly beneficial degree of impact on the visual quality of the Vancouver Downtown LU.

Figure 3.9-6. Existing Conditions Photograph and Conceptual Photographic Simulation (6th Street)



Existing Conditions



Photographic simulation of Modified LPA Columbia River bridges with a double-deck fixed-span configuration



Photographic simulation of Modified LPA Columbia River bridges with single-level movable-span configuration

Note: The simulation illustrates the general layout and massing of the Modified LPA double-deck fixed-span and single-level movable-span configurations. Visual elements of the configurations may change as the design progresses. Roadways, intersections, signage, markings, and other simulated elements reflect early conceptual design and are shown for illustration purposes only.

Table 3.9-7. Vancouver Downtown Landscape Unit Degree of Impact on Visual Quality

KVP	Visual Quality – Existing ^a				Visual Quality – with Modified LPA ^b				Change	Degree of Impact on Visual Quality
	Natural Harmony	Cultural Order	Project Coherence	Overall	Natural Harmony	Cultural Order	Project Coherence	Overall		
26	3	3	3	3.0	3	3	2	2.7	-0.3	Adverse
27	3	3	3	3.0	3	3	3	3.0	0.0	Neutral
28	4	4	4	4.0	4	4	3	3.7	-0.3	Adverse
29	4	2	2	2.7	2	2	2	2.0	-0.7	Adverse
30	3	2	2	2.3	2	2	2	2.0	-0.3	Adverse
31	3	2	2	2.3	4	4	4	4.0	1.7	Beneficial
32	2	3	2	2.3	2	3	2	2.3	0.0	Neutral
34	5	4	4	4.3	5	4	4	4.3	0.0	Neutral
35	4	3	3	3.3	4	4	3	3.6	0.3	Beneficial
36	4	4	4	4.0	4	4	4	4.0	0.0	Neutral
37	4	4	4	4.0	4	4	4	4.0	0.0	Neutral
38	4	4	4	4.0	4	4	4	4.0	0.0	Neutral
Overall Landscape Unit Change									0.4	Beneficial

Note: Visual quality score definitions: 1 = very low, 2 = low, 3 = moderately low, 4 = moderate, 5 = moderately high, 6 = high, 7 = very high.

a The visual quality ratings for the No-Build Alternative are the same as the existing conditions.

b The visual quality ratings for the Modified LPA are the same for each design option.

KVP = key viewpoint; LPA = Locally Preferred Alternative

Greater Central Park Landscape Unit

In the Greater Central Park LU, most views toward the Modified LPA would be blocked by existing vegetation and land cover. However, views in the southern part of the Greater Central Park LU would include the new Columbia River bridges and the modified SR 14 interchange. Other elements of the Modified LPA include changes to I-5 mainline, such as design options for one or two auxiliary lanes and the westward shift or centered mainline, updates to interchanges, and the Evergreen Community Connector. In the Greater Central Park LU, the Modified LPA with the design options for one auxiliary lane or two auxiliary lanes would have similar visual changes as described in the Columbia River LU.

In the natural environment, compared to the existing Interstate Bridge, the Modified LPA and all of the design options could block views of distant hills to the southwest from adjacent ground-level viewpoints to a slightly greater degree, but would not interfere with views from a greater distance or elevation, such as Grand Boulevard to the east (KVP 25). Compared to the existing Interstate Bridge, the Modified LPA and all of the design options would open views under the bridge as a result of the increased bridge height and the wider spacing between piers. The majority of natural visual elements would remain. For the cultural environment, while the bridge type and architecture are yet to be determined, a new bridge structure and the revised SR 14 interchange would noticeably change the visual experience as elevated structures such as piers, bridge decks, railings, and barriers would shift slightly closer to viewers.

The Modified LPA's design of the SR 14 interchange would result in a significantly different view from the Kanaka Village area (KVP 23). Figure 3.9-7 provides an existing condition photograph of KVP 23, a photographic simulation of the Modified LPA with double-deck fixed-span configuration without C Street Ramp, a photographic simulation of the Modified LPA with single-level movable-span configuration without C Street ramp, and a photographic simulation of the Modified LPA with single-level movable-span configuration in the open position with C Street Ramp. The Modified LPA with the design option that would eliminate the C Street ramps would eliminate project environment elements that would be visible for sensitive recreational viewers at Kanaka Village (KVP 23) and other views from the Fort Vancouver National Historic Site (see Figure 3.9-7). The Modified LPA with the design option that would shift the I-5 mainline west would shift project environment elements slightly farther from sensitive viewers. This shift would improve viewers' perception of the visual quality (see Figure 3.9-7 and Figure 3.9-8). For most viewers within the Greater Central Park LU, the park-and-ride options would be behind or under the I-5 mainline or Columbia River bridges and would not be visible.

The Modified LPA with the single-level movable-span configuration would have bridge decks somewhat higher than the existing Interstate Bridge. However, compared to the double-deck fixed-span and single-level fixed-span configurations, the deck height would be lower, resulting in less visibility from the Greater Central Park LU. The single-level movable-span bridge configuration would have a slimmer profile than the double-deck fixed-span bridge configuration, but the increased height of the lift towers would add to its visual weight, meaning the size, color, and shape would draw more attention to this configuration. In the normal (closed) condition, the lower bridge deck and higher towers would likely balance the visual effects compared to the double-deck fixed-span configuration; however, impacts would change when the bridge is open. The bridge deck between the lift towers would be higher and more visible when in an open configuration. This increased visibility of the bridge deck may obstruct additional views and skylines, and likely intensify visual impacts, especially for sensitive recreational viewers. The overall bridge deck would be higher and more visible than the existing bridge deck. Because bridge lifts would not be lengthy or frequent, the exposure of these visual effects to sensitive and non-sensitive viewers would be limited.

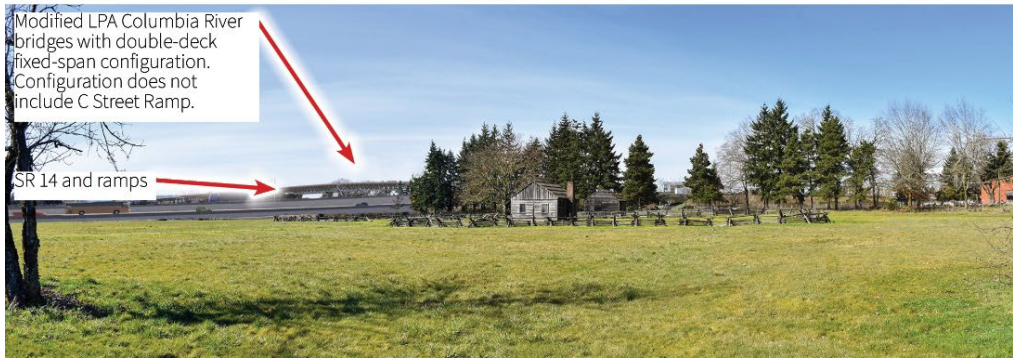
Visual changes associated with the different bridge configuration options would be the same as described in the Columbia River LU. For KVP 23, Figure 3.9-8 shows the existing conditions photograph, a photographic simulation of the Modified LPA with the double-deck fixed-span configuration with C Street ramp, the Modified LPA with the single-level movable-span configuration with C Street ramp, and a photographic simulation of Modified LPA with single-level movable-span configuration in the open position with C Street ramp. With both of these configurations, I-5 and the Columbia River bridges would likely still be at least partially visible beyond existing vegetation.

Interstate Bridge Replacement Program

Figure 3.9-7. KVP 23: Existing Conditions Photograph and Conceptual Photographic Simulation – SR 14 without I-5 C Street Ramps (Fort Vancouver National Historic Site)



Existing Conditions



Photographic simulation of Modified LPA with double-deck fixed-span configuration without C Street Ramp



Photographic simulation of Modified LPA with single-level movable-span configuration without C Street ramp



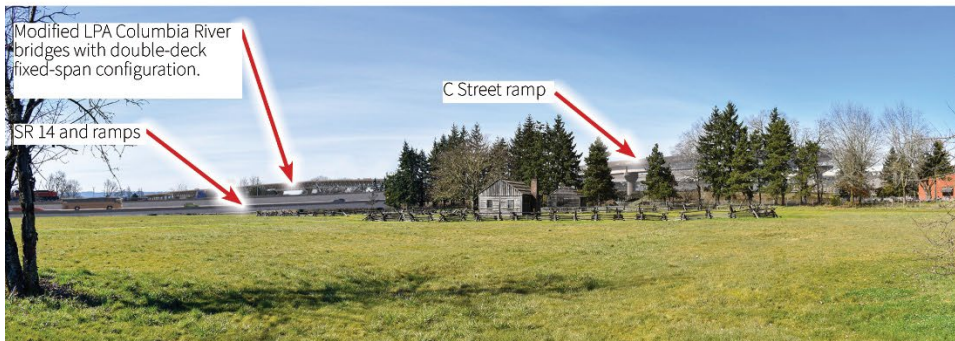
Photographic simulation of Modified LPA with single-level movable-span open configuration with C Street ramp

Note: The simulation illustrates the general layout and massing of the Modified LPA double-deck fixed-span and single-level movable-span configurations. Visual elements of the configurations may change as the design progresses. Roadways, intersections, signage, markings, and other simulated elements are conceptual and shown for illustration purposes only. The early conceptual design may change as the design progresses.

Figure 3.9-8. Existing Conditions Photograph and Conceptual Photographic Simulations (Fort Vancouver National Historic Site, Southwest Corner)



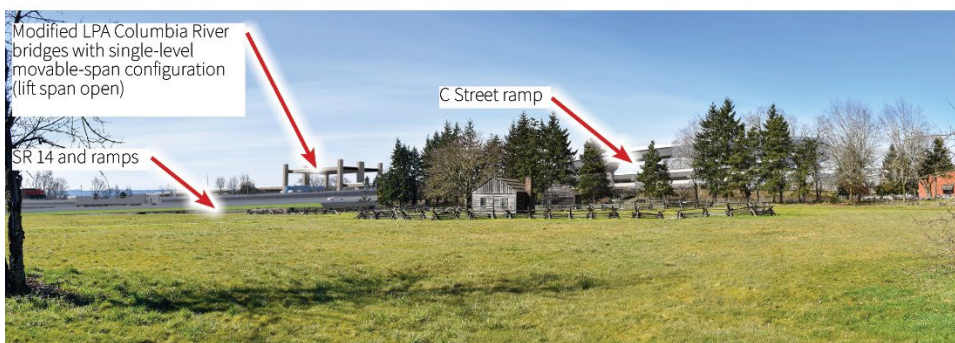
Existing Conditions



Photographic simulation of Modified LPA with double-deck fixed-span configuration with C Street Ramp



Photographic simulation of Modified LPA with single-level movable-span closed configuration with C Street ramp



Photographic simulation of Modified LPA with single-level movable-span open configuration with C Street ramp

Note: The simulation illustrates the general layout and massing of the Modified LPA double-deck fixed-span and single-level movable-span configurations. Visual elements of the configurations may change as the design progresses. Roadways, intersections, signage, markings, and other simulated elements reflect early conceptual design and are shown for illustration purposes only.

Six KVPs were identified to assess visual quality in the Greater Central Park LU. For each KVP within the Greater Central Park LU, Table 3.9-8 provides a quantitative assessment of the existing visual quality and the visual quality with the Modified LPA. As shown in Table 3.9-8, four of the KVPs would have a neutral degree of impact to visual quality and two would have an adverse degree of impact. Based on this assessment, the overall degree of impact of the Modified LPA on the visual quality of the Greater Central Park LU would be expected to be adverse.

Table 3.9-8. Greater Central Park Landscape Unit Degree of Impact on Visual Quality

KVP	Visual Quality – Existing ^a				Visual Quality – with Modified LPA ^b				Change	Degree of Impact to Visual Quality
	Natural Harmony	Cultural Order	Project Coherence	Overall	Natural Harmony	Cultural Order	Project Coherence	Overall		
21	4	3	4	3.7	4	3	4	3.7	0.0	Neutral
22	5	5	3	4.3	5	5	3	4.3	0.0	Neutral
23	6	6	2	4.7	3	6	2	3.7	-1.0	Adverse
24	6	6	2	4.7	6	6	2	4.7	0.0	Neutral
25	4	3	3	3.3	4	3	3	3.3	0.0	Neutral
33	6	4	4	4.7	5	4	4	4.3	-0.4	Adverse
Overall Landscape Unit Change									-1.4	Adverse

Note: Visual quality score definitions: 1 = very low, 2 = low, 3 = moderately low, 4 = moderate, 5 = moderately high, 6 = high; 7 = very high.

¹ The visual quality ratings for the No-Build Alternative are the same as the existing conditions.

² The visual quality ratings for the Modified LPA are the same for each design option.

KVP = key viewpoint; LPA = Locally Preferred Alternative Burnt Bridge Creek Landscape Unit

Burnt Bridge Creek Landscape Unit

In the Burnt Bridge Creek LU, the elements of the Modified LPA would be similar to and compatible with the existing visual character. Figure 3.9-9 shows a photograph of the existing conditions from KVP 40 and a photographic simulation of the Modified LPA. There would be no change in visual character from the Modified LPA with one auxiliary lane or two auxiliary lanes. In addition, the Columbia River bridges would not be visible from most locations in the Burnt Bridge Creek LU; therefore, the different bridge configuration options do not result in changes in visual character or quality.

While the Modified LPA may result in the removal of some trees and vegetation, it is not expected to change the character of the natural environment, which is that of a suburban greenway. The overall cultural environment would be orderly and compatible with the existing environment and would be a neutral visual impact. Minor changes, cohesive with the existing environment, would be made to the project environment.

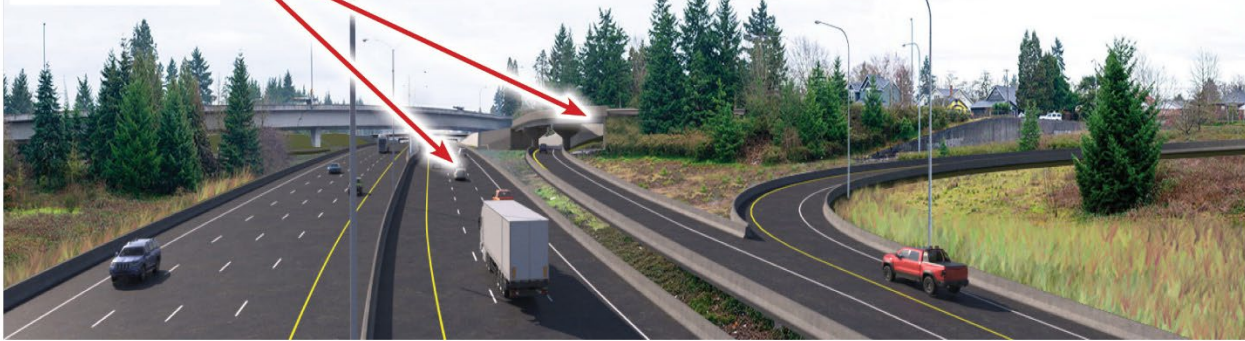
Figure 3.9-9. Existing Conditions and Conceptual Photographic Simulation (39th Street Overpass Looking South)

Existing I-5 from the 39th Street overpass



Existing Conditions

Modified LPA with revised I-5 ramps



Photographic simulation of Modified LPA

Note: The simulation illustrates the general layout and massing of the Modified LPA. Visual elements of the Modified LPA may change as the design progresses. Roadways, intersections, signage, markings, and other simulated elements reflect early conceptual design and are shown for illustration purposes only.

Three KVPs were identified to assess the degree of impact on viewers and the overall visual quality in the Burnt Bridge Creek LU. For each KVP within the Burnt Bridge Creek LU, Table 3.9-9 provides a quantitative assessment of the existing visual quality of the Burnt Bridge Creek LU and the visual quality with the Modified LPA. The overall visual quality score would remain the same under the Modified LPA; therefore, the degree of visual quality impact for the Burnt Bridge Creek LU would be neutral.

Table 3.9-9. Burnt Bridge Creek Landscape Unit Degree of Impact on Visual Quality

KVP	Visual Quality – Existing ^a				Visual Quality – with Modified LPA ^b				Change	Degree of Impact on Visual Quality
	Natural Harmony	Cultural Order	Project Coherence	Overall	Natural Harmony	Cultural Order	Project Coherence	Overall		
39	5	4	4	4.3	5	4	4	4.3	0.0	Neutral
40	4	3	4	3.7	3	3	5	3.7	0.0	Neutral
41	6	5	3	4.7	6	5	3	4.7	0.0	Neutral
Overall Landscape Unit Change									0.0	Neutral

Note: Visual quality score definitions: 1 = very low, 2 = low, 3 = moderately low, 4 = moderate, 5 = moderately high, 6 = high, 7 = very high. Scores are based on the visual simulations prepared for the project.

a The visual quality ratings for the No-Build Alternative are the same as the existing conditions.

b The visual quality ratings for the Modified LPA are the same for each design option.

LPA = Locally Preferred Alternative; KVP = key viewpoint

Ruby Junction Landscape Unit

The Ruby Junction Maintenance Facility would be expanded to accommodate the additional light-rail vehicles associated with the extension of light-rail with the Modified LPA. The expansion would include several parcels and existing buildings, structures, vegetation, and other elements on the purchased properties would be removed. However, the expansion of the Ruby Junction Maintenance Facility would be visually compatible with the existing facility and would not change the natural, cultural and project visual character in the Ruby Junction LU.

Table 3.9-10 provides a quantitative assessment of the existing visual quality and the visual quality with the Modified LPA from KVP 42 in the Ruby Junction LU. As shown in Table 3.9-10, the Modified LPA was determined to have a neutral degree of impact to the visual quality at KVP 42. Based on this assessment, the overall impact of the Modified LPA on the visual quality of the Ruby Junction LU would be expected to be neutral.

Table 3.9-10. Ruby Junction Landscape Unit Degree of Impact on Visual Quality

KVP	Visual Quality – Existing ^a				Visual Quality - with Modified LPA ^b				Change	Degree of Impact on Visual Quality
	Natural Harmony	Cultural Order	Project Coherence	Overall	Natural Harmony	Cultural Order	Project Coherence	Overall		
42	3	2	3	2.7	3	2	3	2.7	0.0	Neutral
Overall Landscape Unit Change									0.0	Neutral

Note: Visual quality score definitions: 1 = very low, 2 = low, 3 = moderately low, 4 = moderate, 5 = moderately high, 6 = high, 7 = very high.

a The visual quality ratings for the No-Build Alternative are the same as the existing conditions.

b The visual quality ratings for the Modified LPA are the same for each design option.

KVP = key viewpoint; LPA = Locally Preferred Alternative

3.9.4 Temporary Effects

Temporary visual effects would be related to the construction of the Modified LPA, which includes the construction of the new bridges and the removal of the existing bridge. Visible construction elements would be removed upon completion of construction work.

No-Build Alternative

The No-Build Alternative includes planned transportation projects in the AVE through 2045. Construction of these projects, as well as ongoing repair and maintenance activities for I-5 in the AVE (e.g., painting, repaving, and repairing pavement), would take place under the No-Build Alternative. Ongoing maintenance, repair, and construction would result in repeated temporary visual impacts introducing visual clutter that would have a slight adverse degree of impact to visual quality.

Although difficult to predict, if a future seismic event were to occur under the No-Build Alternative, it could result in cracks, damaged surfaces and finishes, structural deformations, or collapses of structures and the Interstate Bridge, depending on severity. Bridge closures could affect regional vehicular and river traffic for extended periods of time. Viewers may be exposed to heavy traffic on detour routes for long durations and visual clutter from construction activities to repair or replace bridge and roadway elements. The degree of impact to visual quality would be major and adverse.

Modified LPA

During construction of the Modified LPA, the quality of views to and from the construction area would be temporarily altered. Construction-related signage and heavy equipment would be visible in the vicinity of construction sites. Vegetation may be removed from some areas to accommodate the construction of the bridges, new ramps, and the light-rail transit guideway. This would degrade or partially obstruct views or vistas. Nighttime construction would be necessary to minimize disruption to daytime traffic. Temporary lighting may be necessary for nighttime construction of certain project elements. This temporary lighting would affect residential areas by exposing residents to glare from unshielded light sources and by increasing ambient nighttime light levels.

Staging of equipment and materials would occur in areas of the AVE throughout the construction period, generally within existing or newly purchased right of way or on nearby vacant parcels. At least one large site would be required for construction offices, to stage the larger equipment such as cranes, and to store materials such as rebar and aggregate. Work in staging areas would entail vegetation removal, construction vehicle movement, fencing, material storage, bright colors, flashing lights, nighttime lighting, dust, and other visual elements.

Construction activities would be visible to both neighbors and travelers in the AVE, primarily within the visual context of the existing roadway. Lighting, human-made structures and materials, bright colors, and vehicle movement would be visible within the AVE. While these visual changes are typical of construction activities, they would contribute to a perception of a disorderly cultural environment and incoherent project environment. Therefore, during construction, both neighbors and travelers would perceive a temporary degradation and adverse degree of impact to visual quality. In particular, residential neighbors (who prefer maintaining natural harmony and cultural order) adjacent to construction activities would perceive construction activities as degrading the existing visual quality.

Temporary visual effects from the Modified LPA with the single-level movable-span configuration would be similar in character to those described above; however, taller cranes would be needed to construct the lift towers. In addition, construction of the Modified LPA and the temporary visual effects could last up to two additional years. For all other bridge configurations, tall cranes would be required for a shorter duration during the demolition of the existing lift towers.

Visual impacts due to construction activities are, by nature, temporary, and visible detractions related to construction would be removed upon completion. Therefore, the Modified LPA would have a high degree of adverse impact on the visual quality of the AVE but would be limited by the duration of the construction of each item, and impacts would be temporary.

3.9.5 Indirect Effects

The Modified LPA would have indirect effects on visual character and visual quality. These effects could result from potential changes in land use within the AVE that may occur over time as a result of the Modified LPA and are anticipated to occur primarily in the Columbia River LU and the Vancouver Downtown LU.

Columbia Slough Landscape Unit

This LU is already a highly developed urban area, but improved vehicular access and reduced congestion may support denser development in areas currently planned for such development (see Section 3.4.4). Development would occur in compliance with the City of Portland land use plans and regulations. This would likely have a positive effect on the visual character, depending on the quality of design and materials used, compared with what is being replaced (primarily existing buildings and parking lots). Indirect impacts to visual quality as a result of the Modified LPA for this LU are not anticipated.

Columbia River Landscape Unit

Under the Modified LPA, potential indirect land use changes in this LU would primarily involve redevelopment around the proposed transit station on Hayden Island. These areas are already highly developed and new development would occur in compliance with the City of Portland's land use plans and regulations. Views for boaters, air passengers, and pedestrians are unlikely to change significantly because views of new development are likely to be blocked by existing structures or would be in character with existing development. In some instances, existing views of the Columbia River, distant hills, and Mount Hood may be obstructed by new development. However, as most transit-oriented development is anticipated to occur west of I-5, the impacts on views of Mount Hood from I-5 should be relatively minor. Therefore, the indirect effect to visual quality from the Modified LPA for this LU is anticipated to be neutral.

Vancouver Downtown Landscape Unit

The Modified LPA may have an indirect effect of encouraging redevelopment in the more urban areas of this LU, particularly in areas near new LRT stations consistent with Vancouver's plans to accommodate growth by increasing land use density in areas served by high-capacity transit. Such development would be in compliance with the City of Vancouver's land use plans and regulations. New development could obstruct views of the project environment, as well as the Columbia River, distant hills in Portland, and Mount Hood. Indirect land use changes may occur primarily around the proposed transit stations in downtown Vancouver and near Evergreen Boulevard (including the Community Connector), as new areas are opened or removed due to the SR 14 interchange and adjustments to the Mill Plain intersection. Because these areas are already highly developed, potential new transit-oriented development is anticipated to have either no effect or a positive effect on the visual character, depending on the quality of design and materials used compared to the structures being replaced. The visual quality experienced by neighbors on local streets is unlikely to be noticeably changed, as new buildings would become part of the existing urban view. Travelers on I-5 are also unlikely to experience changes in views as views are largely limited to highway infrastructure. Therefore, the indirect effect on visual quality from the Modified LPA is anticipated to be neutral.

Greater Central Park Landscape Unit

The Greater Central Park LU includes the Fort Vancouver National Historic Site, Clark College, Officers Row, Pearson Field, Marshall Park, and Hudson's Bay High School. Most areas within the LU are either protected or developed. Therefore, indirect impacts to visual quality as a result of changed land use or substantially increased development density are not anticipated for this LU. Potential changes in the visual setting of historic properties are discussed in Section 3.8, Historic and Archaeological Resources.

Burnt Bridge Creek Landscape Unit

Riparian areas and steep slopes that define the visual character in this LU would not change, and improving local and regional traffic congestion is not likely to change land uses. Therefore, indirect impacts to visual quality from the Modified LPA are not anticipated for this LU.

Ruby Junction Landscape Unit

Indirect impacts to visual quality as a result of changed land use or substantially increased development density are not anticipated for this LU.

3.9.6 Potential Avoidance, Minimization, and Mitigation Measures

Long-Term Effects

The following section identifies potential mitigation measures to address the long-term effects of the Modified LPA to visual quality.

Regulatory Requirements

- Meet the design standards of the Cities of Vancouver and Portland and the Tri-County Metropolitan Transportation District and the Clark County Public Transit Benefit Area Authority for visual quality, including street furniture and transit stations.
- Restore impacted roadsides in interchange and corridor areas in accordance with applicable vegetation and tree mitigation requirements.

Program-Specific Mitigation

The following Program-specific mitigation is recommended for the Modified LPA, as feasible.

Mitigation Common to All Landscape Units

- For local streets and transit stations, restore damaged landscapes, replant street trees, and provide enhanced landscapes to integrate the facilities into the community.
- Shield station and facility lighting.
- Minimize structural bulk, such as for ramps and columns.
- Design architectural features to blend with the surrounding community.
- Design gateways in coordination with applicable local plans including designs for landscaping, wall treatments, and other Program improvements.

Mitigation for Transit Stops and Stations

- Design transit structural and architectural elements to be context-sensitive, and system-related signage and transit patron cues to be consistent with other transit system elements within respective systems.

Interstate Bridge Replacement Program

- Design the signal pole color, location, and style in accordance with the lighting district standards of the jurisdiction where the poles will be located (Portland or Vancouver).
- Integrate transit facilities into the design of the Community Connector.

Place-Specific Mitigation

Transit Stations and Park and Rides

- Conduct public design charrettes during the final design phases to refine the plans for each station area and park and ride.

Columbia River Landscape Unit

North Portland Harbor Crossings

- Preserve views of Mount Hood, to the extent practicable, for all users.

Hayden Island

- Integrate transit stations with the ground level, such as with landscaping.
- Evaluate surrounding views from the transit platform.
- Consult with the federally recognized tribes in the design process and provide opportunities to include cultural features such as public art, historic education, plazas, or indigenous canoe watercraft landing and taking off locations.

Hayden Island Bridgehead

- Separate structures to admit daylight, if feasible. Maintain the separation between bridge structures across the island to ensure daylight and viable landscape at ground level, if feasible.
- Explore the incorporation of preserved bridgehead character into final design.
- Consult with the federally recognized tribes in the design process and provide opportunities to include public art, historic education, plazas, water access, or other cultural features.
- Explore public art opportunities on Hayden Island to announce arrival in Oregon, including pylons, piers, and other structures.

Columbia River Spans

- Design the active transportation on the Columbia River bridges for as low-stress an environment as possible.
- Use art and landscaping to build anticipation of the river crossing in those approaching the main span, as feasible.
- Include lighting that would give expression to the architecture after dark, as feasible.

North Bank

- Incorporate a destination public open space under the bridge area, as feasible.
- Consult with the federally recognized tribes in the design process and provide opportunities to include cultural features such as public art, historic education, plazas, or water access.
- Encourage creating or enhancing spaces, events, or initiatives that activate open spaces and urban environments along the Main Street extension to the river. Enhancements may include public art, street furniture, bike and pedestrian facilities, popup markets and public events, or other measures.
- Activate open spaces and screen structures with landscaping.

- Use architecture or public art to mark entry and departure from each bridge.

Vancouver Downtown Landscape Unit

Transit Structure “Landing” in Vancouver

- Provide landscaping, public art, or other façade treatments for the walls of the light-rail landing structure, as feasible.
- Coordinate and design transit structures and facilities in conjunction with the Community Connector.

Park-and-Ride Facilities

- Incorporate design guidelines and consider input from Central Park and downtown interested parties and the general public.
- Buffer the park and ride from adjacent uses, mainly with landscaping but potentially with public art, fencing, or other elements, as feasible.
- Comply with City of Vancouver Design Standards and have plans reviewed by the Vancouver Design Review Committee.
- To the extent feasible, eliminate potential glare from the park-and-ride structure components.
- Incorporate public art reflective of the unique context at each park-and-ride facility.

McLoughlin Boulevard Crossing

- Coordinate lighting under structures with city and I-5 lighting.
- Keep the spaces beneath freeway structures clear of unauthorized uses to the extent possible.

Greater Central Park Landscape Unit

SR 14 Interchange

- Maintain existing vegetation wherever possible, particularly between the Kanaka Village and SR 14 ramps. Landscape plans should include plantings as visual screens. Replacement trees should be as large caliper trees as practical to replace screening value as quickly as possible.
- Provide visual and physical connections between under-bridge structures. Connect the Vancouver Land Bridge and Old Apple Tree Park with downtown Vancouver by combining improved sight lines, improved access, and integrated landscape design.
- Use Vancouver Land Bridge landscaping in new landscaped areas as feasible.
- Activate open spaces and screen structures with landscaping. Use landscape to organize the diversity and extent of open spaces associated with the interchanges and to screen the railroad berm.

Burnt Bridge Creek Landscape Unit

- Ensure compatibility of overpass approaches with neighborhoods with input from the neighborhood facing each end of the bridges, as feasible.
- Identify a local design theme for overpasses.

Ruby Junction Landscape Unit

No mitigation for construction impacts would be warranted in the Ruby Junction LU.

Mitigation for Temporary Effects

Regulatory Requirements

There are no regulatory requirements for temporary effects to visual quality, specifically. The Program would meet federal, state, and local design standards for light and glare.

Program-Specific Mitigation

- Follow standard construction specifications regarding the reduction of light and glare.
- Shield construction site lighting to reduce spillover light onto nearby residences and businesses, as feasible.
- Minimize visual obtrusiveness by locating construction equipment and stockpiling materials in less visually sensitive areas, when feasible, and in areas not visible from the road or to residents and businesses.
- Provide, as feasible, public areas to observe the construction and demolition processes, using them as an opportunity for public education.