Visual Discipline Report

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Washington State Department of Transportation

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Table of Contents

1.0 INTRODUCTION .......................................................................................................................... 1

2.0 DESCRIPTION OF ALTERNATIVES ................................................................................................. 1

2.1 No Build Alternative ............................................................................................................. 1

2.2 Grade-Separated Option A (GSA) Alternative .................................................................. 3

2.2.1 General Description ........................................................................................... 3

2.2.2 Visual Character ................................................................................................. 4

2.3 Partial Grade-Separated Option B (PGSB) Alternative ..................................................... 5

2.3.1 General Description ........................................................................................... 5

2.3.2 Visual Character ................................................................................................. 6

2.4 Project Construction ....................................................................................................... 7

2.4.1 Construction Duration and Phasing .................................................................... 7

2.4.2 Construction Approach ...................................................................................... 7

3.0 METHODOLOGY ....................................................................................................................... 11

4.0 AFFECTED ENVIRONMENT ........................................................................................................ 14

4.1 Local Regulatory Context .............................................................................................. 14

4.2 Visual Resources and Character .................................................................................... 15

4.2.1 Natural Environment........................................................................................ 16

4.2.2 Cultural Environment ....................................................................................... 18

4.2.3 Project Environment ........................................................................................ 21

4.2.4 Key Viewpoints ................................................................................................ 24

4.3 Affected Population...................................................................................................... 24

4.4 Existing Visual Quality................................................................................................... 26

4.4.1 Existing Visual Quality Rating ........................................................................... 28

5.0 ENVIRONMENTAL CONSEQUENCES .......................................................................................... 29

5.1 No Build Alternative ..................................................................................................... 29

5.1.1 Direct Effects ................................................................................................... 29

5.1.2 Indirect Effects ................................................................................................... 29

5.2 Grade-Separated Option A (GSA) Alternative ................................................................ 30

5.2.1 Effects during Construction .............................................................................. 30

5.2.2 Direct Effects ................................................................................................... 30

5.2.3 Indirect Effects ................................................................................................... 43

5.3 Partial Grade-Separated Option B (PGSB) Alternative ................................................... 43

5.3.1 Effects during Construction .............................................................................. 43

5.3.2 Direct Effects ................................................................................................... 44

5.3.3 Indirect Effects ................................................................................................... 55

6.0 MEASURES TO AVOID OR MINIMIZE PROJECT EFFECTS ............................................................ 55
7.0 REFERENCES

Figures
Figure 1. Rail Crossings at the Industrial Way/Oregon Way Intersection ................................................................. 3
Figure 2. GSA Alternative ........................................................................................................................................... 9
Figure 3. PGSB Alternative .................................................................................................................................... 10
Figure 4. FHWA’s Visual Impact Assessment Process ............................................................................................. 12
Figure 5. Area of Visual Effect/Urban Landscape Unit .......................................................................................... 13
Figure 6. Representative Photographs of the Natural Environment ........................................................................ 17
Figure 7. Representative Photographs of the Cultural Environment ..................................................................... 19
Figure 8. Representative Photographs of the Project Environment ...................................................................... 22
Figure 9. Visual Resource Inventory of the AVE/Urban Landscape Unit ............................................................... 23
Figure 10. GSA Alternative: Changes to Visual Resources in the AVE ................................................................. 33
Figure 11. GSA Alternative - KVP1 Existing Condition Photograph and Visual Simulation ................................ 36
Figure 12. GSA Alternative – KVP2 Existing Condition Photograph and Visual Simulation ................................ 38
Figure 13. GSA Alternative - KVP3 Existing Condition Photograph and Visual Simulation ................................ 40
Figure 14. PGSB Alternative: Changes to Visual Resources in the Area of Visual Effect ........................................ 45
Figure 15. PGSB Alternative - KVP1 Existing Condition Photograph and Visual Simulation ................................ 48
Figure 16. PGSB Alternative - KVP2 Existing Condition Photograph and Visual Simulation ................................ 50
Figure 17. PGSB Alternative - KVP3 Existing Condition Photograph and Visual Simulation ................................ 52

Tables
Table 1. Existing and Future Frequency of Rail Service ......................................................................................... 2
Table 2. Summary of Construction Activities .......................................................................................................... 7
Table 3. Key Viewpoints in the AVE/Urban Landscape Unit ..................................................................................... 24
Table 4. Types of Neighbors in the AVE/Urban Landscape Unit ................................................................................ 25
Table 5. Types of Travelers in the AVE/Urban Landscape Unit .............................................................................. 25
Table 6. Existing Visual Quality of the AVE/Urban Landscape Unit ........................................................................ 27
Table 7. Existing Visual Quality Scores for the Key Viewpoints and AVE/Urban Landscape Unit ........................ 28
Table 8. GSA Alternative: Summary of Effects to Visual Quality in the AVE .......................................................... 41
Table 9. GSA Alternative: Visual Quality Scores for KVPs and the AVE/Urban Landscape Unit .......................... 42
Table 10. PGSB Alternative: Summary of Effects to Visual Quality in the AVE ...................................................... 53
Table 11. PGSB Alternative: Visual Quality Scores for KVPs and the AVE/Urban Landscape Unit .................... 54
Attachment

Attachment A  Visual Impact Assessment Methodology Memorandum
### Acronyms and Abbreviations

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>AVE</td>
<td>Area of Visual Effect</td>
</tr>
<tr>
<td>CDID</td>
<td>Consolidated Diking Improvement District No. 1</td>
</tr>
<tr>
<td>EIS</td>
<td>Environmental Impact Statement</td>
</tr>
<tr>
<td>FHWA</td>
<td>Federal Highway Administration</td>
</tr>
<tr>
<td>GSA Alternative</td>
<td>Grade-Separated Option A Alternative</td>
</tr>
<tr>
<td>IRC</td>
<td>Industrial Rail Corridor</td>
</tr>
<tr>
<td>KVP</td>
<td>Key Viewpoint</td>
</tr>
<tr>
<td>LMC</td>
<td>Longview Municipal Code</td>
</tr>
<tr>
<td>MSE</td>
<td>Mechanically stabilized earth</td>
</tr>
<tr>
<td>NRHP</td>
<td>National Register of Historic Places</td>
</tr>
<tr>
<td>PGSB Alternative</td>
<td>Partially Grade-Separated Option B Alternative</td>
</tr>
<tr>
<td>SR</td>
<td>State Route</td>
</tr>
<tr>
<td>WSDOT</td>
<td>Washington State Department of Transportation</td>
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1.0 INTRODUCTION

The Industrial Way/Oregon Way Intersection Project is located in the industrial area of Longview, Washington at the intersection of Industrial Way (State Route (SR) 432), Oregon Way, and SR 433. This intersection provides a critical connection of two Highways of Statewide Significance that support significant passenger and freight movement. The purpose of the project is to develop an affordable long-term solution that:

- Maintains or improves emergency response
- Improves travel reliability for all vehicles
- Accommodates current and future freight truck and passenger vehicle movement through the intersection and across the region and states.

The purpose of this document is to describe the existing visual resources, discuss effects and benefits the project would have on those resources, and recommend mitigation measures to address adverse effects. The information contained in this discipline report supports the project’s Environmental Impact Statement (EIS).

The existing visual character of the project area is a result of the construction of a system of dikes and levees that opened the flat riverbank terrain of the Columbia River for development, creating areas that were planned for residential and commercial uses and shaping the character of natural environment and the built environment. The existing buildings and infrastructure are a prominent and important component of the urbanized visual character of the project area. The vegetation within the landscape is primarily grass; however, throughout the project area there are also large, mature evergreen and deciduous trees with varying heights, widths, density and form. As an area where two highways (SR 432 and SR 433) converge, the transportation network and infrastructure are also important components of the existing visual character.

2.0 DESCRIPTION OF ALTERNATIVES

Three alternatives are being evaluated to address the project’s purpose and need. Each alternative is described briefly below.

2.1 No Build Alternative

Under the No Build Alternative, no major changes would be made to the roadway network with the exception of signal timing revisions implemented at the intersection of Industrial Way and Oregon Way. The No Build Alternative also assumes that other nearby transportation-related improvements and developments identified in the City of Longview’s Comprehensive Plan and Zoning Code, Cowlitz-Wahkiakum Council of Government’s travel demand model, the Port of Longview’s Barlow Point Master Plan, and the Millennium Bulk Terminals – Longview Project Environmental Impact Statement would be constructed. Thus, future (2040) conditions associated with the No Build Alternative would include:

- **Vehicular traffic growth:** Vehicle traffic (passenger and freight truck) is anticipated to increase approximately one to two percent annually due to regional growth based on projected population and land use changes. This increase translates to an overall growth in traffic demand (volume on most major arterials in the area) of approximately 40 to 50 percent by 2040 compared to existing conditions (2015).
Increased rail service on the Reynolds Lead: The Reynolds Lead crosses Industrial Way west of the intersection and Oregon Way north of the intersection (Crossings A and B in Figure 1). Both crossings are at-grade. Rail service on the Reynolds Lead is expected to increase from up to four trains per day (two inbound, two outbound) under existing conditions to up to 20 trains per day (10 inbound, 10 outbound) prior to 2040 based on other private and public development proposals (Table 1). The types of trains operating on the Reynolds Lead are also anticipated to change over time. Currently, industry trains operate on the Reynolds Lead (4 trains per day), whereas by 2040 rail service would include 4 industry trains per day and 16 unit trains per day. An industry train, or manifest train, comprises rail cars that haul various commodities and have different origins and destinations. For this project, typical industry trains are assumed to be 2,000 feet or less in length. A unit train comprises rail cars that haul the same commodity and have a single origin and destination. For this project, typical unit trains are assumed to be 6,800 to 8,000 feet in length.

No change to rail service on the Port Lead: The Port Lead crosses Industrial Way at-grade and east of the intersection (Crossing C in Figure 1). Rail traffic on the Port Lead is anticipated to remain at current levels with up to six industry trains per week (three inbound, three outbound) through 2040 (Table 1).

Extension of the Industrial Rail Corridor (IRC) and new rail service: The Port of Longview plans to extend the IRC to provide rail service west of the existing IRC terminus to the Port’s Barlow Point property. This extension would create a new at-grade roadway/railroad crossing on State Route (SR) 433 south of Industrial Way although the exact location of the crossing has not been determined (Table 1; Crossing D in Figure 1). The IRC extension is assumed to connect to the Reynolds Lead west of the intersection. Rail service is anticipated to involve up to eight unit trains per day (four inbound, four outbound) by 2040.

Table 1. Existing and Future Frequency of Rail Service

<table>
<thead>
<tr>
<th>Rail Facility</th>
<th>Expected Frequency of Trains</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reynolds Lead</td>
<td>4 industry trains per day</td>
</tr>
<tr>
<td>Port Lead</td>
<td>6 industry trains per week</td>
</tr>
<tr>
<td>IRC Extension</td>
<td>Not in service</td>
</tr>
</tbody>
</table>

Note: The future increases in rail service are based on other private and public development proposals that are independent of the Industrial Way/Oregon Way Intersection Project.
2.2 Grade-Separated Option A (GSA) Alternative

2.2.1 General Description

The GSA Alternative would include all changes in the future conditions as described for the No Build Alternative. In addition, a fully elevated signalized intersection would be constructed southwest of the existing intersection as shown in Figure 2. Under the GSA Alternative, the Reynolds Lead rail line would be realigned to pass under the new elevated intersection. All turning and through movements for the Industrial Way/Oregon Way intersection would be accommodated on the elevated intersection that would cross over the Reynolds Lead (Figure 2, Detail 1). A new surface roundabout at the Oregon Way/Alabama Street intersection (Figure 2, Detail 2) would allow through and turning movements in all directions. In addition, a new one-way surface road for houses facing onto the west side of Oregon Way and properties on the east side of Oregon Way south of Alabama Street would be constructed and provide local access. This surface road would loop under the elevated structure and connect back to Oregon Way on the east side of the new roundabout. On-street parking along the west side of Oregon Way would be eliminated south of Alabama Street; on the east side of Oregon Way on-street parking
would be eliminated approximately 90 feet south of Alaska Street to Industrial Way. Existing driveways within 130 feet of the new roundabout would be closed or relocated.

A new local surface road would provide a northbound to eastbound connection from East Port Way to Columbia Boulevard. This surface road would serve businesses located on the north side of Industrial Way and would pass under the east leg of the elevated intersection to provide access to the properties on the south side of Industrial Way west of Columbia Boulevard (Figure 2, Detail 3). Driveways along Industrial Way between Columbia Boulevard and Oregon Way would be changed to right-in/right-out only.

West Port Way and East Port Way would be reconstructed to provide a one-way loop road with access to the Port of Longview and businesses south of the Industrial Way/Oregon Way intersection. Access to the Weyerhaeuser industrial complex would be consolidated and reconfigured: the existing access on West Port Way (Gate 3) would be converted to an emergency-only access gate; the existing access on Industrial Way just west of Oregon Way (Gate 4) would be permanently closed; and, a new gate would provide access from the north end of West Port Way, which would consolidate all traffic that currently uses Gate 3 and Gate 4. On-street parking along East Port Way would be eliminated to accommodate the shared-use path.

One at-grade roadway/railroad crossing of the Port Lead rail line would exist for the new surface roadway that connects East Port Way to Columbia Boulevard. The GSA Alternative would accommodate the planned extension of the Port of Longview’s IRC under a bridge structure for SR 433, but this extension would likely result in a second at-grade roadway/railroad crossing with East Port Way.

The GSA Alternative would include the following bicycle and pedestrian network improvements, all of which would be compliant with the standards of the United States Access Board Revised Draft Guidelines Accessible Public Rights-of-Way (2005) to meet the Americans with Disabilities Act (ADA):

- A new shared-use path along East Port Way that runs north-south, crosses under the east leg of the elevated intersection, runs east-west and crosses under the north leg of the elevated intersection, and connects to the Highlands Trail on the west side of Oregon Way
- Reuse or reconstruction of the existing Oregon Way sidewalk (west side) on the one-way surface roadway that runs along the west side of Oregon Way from Highlands Trail to the Oregon Way/Alabama Way roundabout
- New sidewalk on the new surface roadway that runs along the east side of Oregon Way from the new shared-use path to the Oregon Way/Alabama Way roundabout
- Reuse or reconstruction of the existing Industrial Way sidewalk (north side) on the north side of the new surface road along Industrial Way from the shared-use path to Columbia Boulevard
- New sidewalk on south side of Industrial Way from the point where Industrial Way touches down on the surface to Columbia Boulevard.

### 2.2.2 Visual Character

The number of lanes and lane striping at the Industrial Way/Oregon Way intersection, along the roadways approaching the intersection, and along the new local surface roadways is shown in Figure 2.

The GSA Alternative includes a combination of bridge structures, embankments and retaining walls (mechanically stabilized earth (MSE) walls) to grade-separate elevated travel lanes from railroad tracks and surface travel lanes. Most of the elevated structures would be constructed with retaining walls,
which would enclose the area beneath the roadway. The segment of Industrial Way west of the
intersection with Oregon Way would be constructed on an embankment, which would also enclose the
area beneath the roadway. The north, east, and south legs of the intersection would be constructed on
a combination of embankment, bridge structures and retaining wall.

As shown in Figure 2 there would be bridge structures in locations where the grade-separated travel
lanes cross over surface roads and railroad tracks. In the bridge structure locations, the area beneath
the elevated roadway would be open. The maximum height of grade-separated travel lanes is
approximately 40 feet above existing grade, to provide the required clearance over the railroad tracks.
This maximum height would occur over the Reynolds Lead, which would be realigned directly under the
elevated Industrial Way/Oregon Way intersection; over the existing Port Lead which crosses Industrial
Way on the east side of the intersection; and over the future extension of the Port of Longview’s IRC
which would cross on the south side of the intersection.

On bridge structures and embankments the required concrete traffic barriers, traffic signals, signage and
street lighting luminaires would extend above the height of the roadway surface. These roadway
attributes and roadway signage would be consistent in scale, form, and materials with Washington State
Department of Transportation (WSDOT) standards.

2.3 Partial Grade-Separated Option B (PGSB) Alternative

2.3.1 General Description

The PGSB Alternative would include all changes in the future conditions as described for the No Build
Alternative. In addition, a new grade-separated intersection would be constructed with some
movements elevated and other movements retained on the surface as shown in Figure 3. A new
elevated signalized intersection would be constructed southwest of the existing intersection. The new
elevated intersection would accommodate all northbound and southbound turning and through
movements, as well as all eastbound and westbound turning movements. All westbound and eastbound
through movements on Industrial Way would occur at the new surface roundabout that would be
constructed where the existing intersection is located. This surface roundabout would also provide
northbound and eastbound/westbound circulation from the south side of the intersection. Southbound
movements would have to use the elevated intersection to access the Port of Longview and other
locations south of the Industrial Way/Oregon Way intersection (Figure 3, Detail 1). Emergency service
providers would be able to use the elevated structure for westbound and eastbound through
movements if needed to quickly navigate through the intersection (for example, during train crossings).

The elevated north leg of the new intersection would touch down on to the surface just north of the
intersection of Oregon Way and Alabama Street, limiting turning movements along the surface roadway
and at the intersection with Alabama Street to right-in/right-out only (Figure 3, Detail 2). On-street
parking along the west side of Oregon Way would be eliminated south of Alabama Street; on the east
side of Oregon Way on-street parking would be eliminated approximately 90 feet south of Alaska Street
to Industrial Way. To improve circulation for properties located on Alabama Street east of Oregon Way,
the PGSB Alternative would include improvements to 14th Avenue between Alabama Street and Beech
Street, which would allow for one northbound and one southbound travel lane.

A new two-phase signal on Industrial Way east of the intersection with Oregon Way would
accommodate the merge of eastbound surface traffic on Industrial Way with eastbound traffic coming
off the elevated intersection, and across westbound traffic on Industrial Way (Figure 3, Detail 3).
Driveways along Industrial Way between Columbia Boulevard and Oregon Way would be changed to right-in/right-out only.

Similar to the GSA Alternative, West Port Way and East Port Way would be reconfigured to provide a one-way loop road and the access locations to the Weyerhaeuser industrial complex would be consolidated and reconfigured. On-street parking along East Port Way would be eliminated to accommodate the shared-use path.

No rail lines would be realigned under this alternative. At-grade roadway/railroad crossings of the Reynolds Lead and the Port Lead would be located on the surface roadway segments of Oregon Way and Industrial Way. The PGSB Alternative would accommodate the planned extension of the Port of Longview's IRC under a bridge structure for SR 433. This rail extension would likely create an additional at-grade roadway/railroad crossing with the northbound surface roadway connection from East Port Way to eastbound Industrial Way.

The PGSB Alternative would include the following ADA-compliant bicycle and pedestrian network improvements:

- A new shared-use path along East Port Way that runs north-south, crosses at the new surface roundabout with a crosswalk, connecting to the Highlands Trail on the west side of Oregon Way
- Reuse or reconstruction of the existing Oregon Way sidewalk (west side) on the new one-way surface roadway that runs along the west side of Oregon Way from the Highlands Trail to just north of the Oregon Way/Alabama Way intersection
- New sidewalk on the new surface roadway that runs along the east side of Oregon Way from the new shared-use path to the Oregon Way/Alabama Way roundabout
- New sidewalk on the north and south sides of Alabama Street from Oregon Way to 14th Avenue
- New sidewalk on the east and west sides of 14th Avenue from Alabama Street to Beech Street
- Reuse or reconstruction of the existing Industrial Way sidewalk (north side) on the north side of the new surface road along Industrial Way from the shared-use path to Columbia Boulevard
- New sidewalk on south side of Industrial Way from the point where Industrial Way touches down on the surface to Columbia Boulevard.

### 2.3.2 Visual Character

The number of lanes and lane striping at the Industrial Way/Oregon Way intersection, along the roadways approaching the intersection, and along the new local surface roadways is shown in Figure 3.

The PGSB Alternative includes a combination of bridge structures, embankments and retaining walls to grade-separate elevated travel lanes from railroad tracks and surface travel lanes. Most of the elevated structures would be constructed with retaining walls, which would enclose the area beneath the roadway. The north, west and east side of the intersection would be constructed on a combination of embankment, which would also enclose the area beneath the roadway, and bridge structure.

As shown in Figure 3, bridge structures would be constructed in locations where the grade-separated travel lanes cross over surface roads and railroad tracks. The area beneath these bridge structures would be open. The maximum height of grade-separated travel lanes is approximately 40 feet above existing grade, to provide the required clearance over the railroad tracks. This maximum height would occur over the Reynolds Lead at its current crossing locations to the north and west of the intersection;
over the existing Port Lead, which crosses Industrial Way on the east side of the intersection; and over the future extension of the Port of Longview’s IRC, which would cross on the south side of the intersection.

On bridge structures and embankments, the required concrete traffic barriers, traffic signals, signage and street lighting luminaires would extend above the height of the roadway surface. These roadway attributes and any roadway signage would be consistent in scale, form, and materials with WSDOT standards.

2.4 Project Construction

Both the GSA Alternative and the PGSB Alternative would involve the construction of an elevated intersection, new surface roadways, a new roundabout, and new ramps to connect to SR 433. Table 2 provides a summary and comparison of key construction activities required for the two build alternatives, which are further described below.

**Table 2. Summary of Construction Activities**

<table>
<thead>
<tr>
<th></th>
<th>GSA Alternative</th>
<th>PGSB Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Construction Duration</strong></td>
<td>5 years</td>
<td>3.5 years</td>
</tr>
<tr>
<td><strong>Detours and/or Temporary Roads</strong></td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Closure of Oregon Way</strong></td>
<td>Up to 1.5 years</td>
<td>No closure</td>
</tr>
<tr>
<td><strong>Realignment of Reynolds Lead</strong></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td><strong>Utility Relocations</strong></td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Realigned Access Points/Driveways</strong></td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Property Acquisitions</strong></td>
<td>15 full acquisitions</td>
<td>12 full acquisitions</td>
</tr>
<tr>
<td></td>
<td>26 partial acquisitions</td>
<td>21 partial acquisitions</td>
</tr>
<tr>
<td><strong>Easements</strong></td>
<td>59 temporary easements</td>
<td>71 temporary easements</td>
</tr>
<tr>
<td></td>
<td>2 permanent easements</td>
<td>2 permanent easements</td>
</tr>
</tbody>
</table>

2.4.1 Construction Duration and Phasing

The GSA Alternative would be constructed in four phases spread over 5 years. The PGSB Alternative would be constructed in three phases spread over 3.5 years.

2.4.2 Construction Approach

**GSA Alternative**

Constructing the elevated intersection would require a combination of embankment, retaining walls, and bridges to raise the structure and to accommodate the surface roadway network. Early activities would include utility relocations, constructing several of the features on the perimeter of the intersection, establishing temporary roads, and realigning access points/driveways. Once these elements are in place, construction of the elevated features would be undertaken, which would involve rerouting traffic to temporary roads or using detour routes. The final stages of construction would include finishing all the connecting ramps and remaining surface roads.
The GSA Alternative would also require relocating a segment of the Reynolds Lead, which would involve constructing the new alignment while rail service continues to use the existing track. Upon completion, rail service would start using the realigned track and the existing track would be removed.

In the vicinity of the intersection, traffic on Oregon Way would be detoured for 1 to 1.5 years to other routes, such as utilizing Tennant Way to 3rd Avenue to Industrial Way. Local access to properties on Oregon Way would be provided during construction, although no on-street parking would be available. No additional right-of-way would need to be acquired for this detour.

The GSA Alternative would acquire property from approximately 41 parcels of which 15 parcels may be fully acquired and 26 parcels may be partially acquired. In the case of partial acquisitions, a portion of the property would be acquired and the remainder would be retained by the current owner. In addition, new and expanded easements would be needed from railroad parcels and approximately 59 temporary easements would be needed during project construction.

**PGSB Alternative**

The PGSB Alternative would follow the general sequence of construction activities similar to the GSA Alternative. However, travel on Oregon Way would be retained and reduced to one lane in each direction for most of the construction duration. No realignment of the Reynolds Lead would occur.

The PGSB Alternative would require property acquisition from approximately 33 parcels of which 12 parcels may be fully acquired and 21 may be partially acquired. Expanded easements would be obtained from the railroad parcels and approximately 71 temporary easements would be needed during project construction.
Figure 2. GSA Alternative

1. Fully elevated signalized intersection
2. New roundabout at Oregon Way/Alabama Street intersection
3. East leg of intersection, including Industrial Way/Columbia Blvd intersection and local access roads
4. New one-way local access road providing access to residences on Oregon Way
5. Reynolds Lead realigned under new elevated intersection
6. Surface roadway/rail crossing
7. One-way local access road providing access to properties south of Industrial Way
8. New access to Weyerhaeuser replacing closed access on Industrial Way
9. New shared-use path providing connectivity between residential and industrial employment areas
10. Future planned extension of the Port of Longview’s Industrial Rail Corridor Line
11. Future surface roadway/rail crossing

LEGEND
- Purple: Surface Roadway
- Dark Gray: Divided Highway
- Medium Gray: Shared-use Path
- Light Gray: Sidewalk
- Green: Bridge Structure Limits
- Blue: Existing Railroad
- Red: Realigned Railroad
- Orange: Project Footprint
- Yellow: Future IRC Extension
- White: Rail Crossing
- Black: Included in this Project
- Gray: Separate Project to be Implemented by Others

This graphic is conceptual in nature and subject to change.
Figure 3. PGSB Alternative

1. New elevated roadway intersection and surface roadway roundabout
2. Oregon Way/Alabama Street intersection revised to right-in/right-out only
3. East leg of intersection, including a new signal on Industrial Way
4. New one-way local access road providing access to residences on Oregon Way
5. 14th Ave improved to local road standards
6. Surface roadway/rail crossing of existing rail lines
7. One-way local access road providing access to properties south of Industrial Way
8. New access to T.W. Weyerhaeuser replacing closed access on Industrial Way
9. New shared-use path providing connectivity between residential and industrial employment areas
10. Future planned extension of the Port of Longview’s Industrial Rail Corridor line
11. Future surface roadway/rail crossing

LEGEND
- Surface Roadway
- Ligated roadway
- Bridge Structure Limits
- Existing Railroad
- Future I-5 Extension
- Included in this Project
- Separate Project to be Implemented by Others
- Sidewalk
- Rail Crossing

This graphic is conceptual in nature and subject to change.
### 3.0 METHODOLOGY

The analysis of visual impacts follows the Federal Highway Administration’s (FHWA’s) 2015 *Guidance for the Visual Impact Assessment of Highway Projects* and WSDOT’s Environmental Manual, Chapter 459. FHWA’s visual impact assessment process is carried out in four phases (establishment, inventory, analysis and mitigation), which is illustrated in Figure 4 and briefly described below.

- **Establishment Phase**: The primary purpose of the establishment phase is to define the area of visual effect (AVE), identify areas within the AVE with similar visual character (known as landscape units), and describe the visual character of the proposed project. Figure 5 shows the AVE that has been defined for the project. One landscape unit has been identified in the AVE: the Urban Landscape Unit. The visual character of the proposed project is described in Section 2.0 of this report.

- **Inventory Phase**: During the inventory phase, existing visual resources within the AVE are described in terms of the natural, cultural and project environments. The affected population, or viewers, are identified and the existing visual quality of the AVE is defined. The project’s inventory phase is documented in Section 4.0 of this report.

- **Analysis Phase**: The purpose of the analysis phase is to evaluate impacts on visual quality. As shown in Figure 4, the degree of the effect to visual quality is the combination of changes to the environment (measured by the compatibility of the change) and the viewer’s sensitivity to the change (FHWA 2015). The project’s analysis phase is documented in Section 5.0.

- **Mitigation Phase**: The purpose of the mitigation phase is to define the mitigation and enhancement efforts to be included in project design. The project’s mitigation phase is documented in Section 6.0.
Figure 4. FHWA's Visual Impact Assessment Process

Figure 5. Area of Visual Effect/Urban Landscape Unit
The visual impact assessment includes identifying key viewpoints (KVPs) within the AVE/Urban Landscape Unit that represent existing visual conditions, viewer groups and viewer types, and proposed project features. At each KVP, FHWA’s current visual impact assessment methodology was applied as was their prior methodology from 1988, *Visual Impact Assessment for Highway Projects*. The 1988 methodology was used to establish a rating of the existing and proposed visual quality using three criteria (vividness, intactness, and unity), which are comprised of the following components:

- **Vividness**
  - Landform
  - Land cover – Water
  - Land cover – Vegetation
  - Land cover – Urban Development
- **Intactness**
  - Overall intactness
  - Level of encroachment
- **Unity**
  - Overall unity
  - Unity between built and natural environment

KVPs were rated on a scale of 1 to 7, with 1 being the lowest rating and 7 being the highest rating. For each component, the visual quality score is reported to the nearest whole number. For each criteria, the average of the component scores were reported to the nearest one-tenth of a whole number. For the AVE/Urban Landscape Unit the visual quality score was determined by averaging the ratings of the KVPs. The visual quality score for the AVE/Urban Landscape Unit was reported to the nearest one-tenth of a whole number.

Additional information on the methodology used in this assessment is described in the *Visual Impact Assessment Methodology Memorandum*, which is included as Attachment A.

### 4.0 AFFECTED ENVIRONMENT

This section identifies:

- Relevant local plans and policies that provide a regulatory context related to visual quality
- Visual resources and character within the AVE/Urban Landscape Unit
- The affected population (or viewers) and their viewing experience and preferences
- The existing visual quality and visual quality rating of the AVE

#### 4.1 Local Regulatory Context

The City of Longview’s current Comprehensive Plan (2006) consists of goals and policies to guide the city’s development. Chapter 2, Land Use Element, of the Longview Comprehensive Plan identifies the following urban design goal:

*Goal LU-C: To ensure that development in the City is of high quality of design, and is serviced by a safe and convenient pedestrian, bicycle, and vehicular circulation system with adequate parking, landscaping, screening and signs that are in scale and complement a district’s character.*
To support Goal LU-C, the Longview Comprehensive Plan includes an objective to develop gateway plans and a policy designating gateways at major intersections that are entry points into the city. As shown in Figure 9, one of the designated gateways is located at the Industrial Way/Oregon Way intersection. These gateways have been identified:

“because they provide some of the most enduring visual impressions of Longview. Visual impressions of Longview by visitors and residents are usually formed as one enters the City and experiences a series of ‘views from the road.’” (City of Longview 2006)

The Longview Comprehensive Plan identifies the following design elements that gateways should incorporate:

- Identity and welcome signage to reinforce Longview’s identify and promote its unique qualities
- Unified graphic and architectural treatment of logos, color, and construction materials
- Distinctive landscape treatments to reinforce the image of a superior design quality at each gateway (Longview 2006).

From a review of the City of Longview’s Zoning Code (Longview Municipal Code (LMC) Title 19) and Streets and Sidewalks Code (LMC Title 12), it appears that the City of Longview has not yet adopted specific gateway design standards. Even without specific design standards for gateways, the gateway goal (Goal LU-C), its objective, and the list of gateway design elements still provides direction for the design of the Industrial Way/Oregon Way Intersection Project.

Since the AVE is located mostly within the City of Longview, the city's land use and street standards apply. The Cowlitz County Comprehensive Plan (2015 [Draft]) also provides an overall vision and guiding principles for the future development of Cowlitz County. Cowlitz County’s vision for the future includes valuing their historic rural and small town character and natural environment, and conserving these features to contribute to their “economic well-being, sense of place and relationship with nature.” Guiding principles to achieve this vision relevant to the project’s visual analysis include:

- Maintain and strengthen Cowlitz County unique qualities
- Support a diverse and strong economy
- Make public safety a priority
- Promote a multi-modal transportation network

### 4.2 Visual Resources and Character

The following is an inventory of the existing visual resources and character within the natural, cultural, and project environments of the AVE/Urban Landscape Unit. Visual fieldwork to observe and document existing visual resources and character was conducted on December 3, 2015 and March 2, 2017. Representative photographs of the AVE/Urban Landscape Unit taken during the project’s visual fieldwork are included in Figure 6 through Figure 8. Figure 9 shows the locations of these visual resources.
4.2.1 Natural Environment

The landform of the AVE is flat ground, part of a valley that is adjacent to the banks of the Columbia River and Cowlitz River. Due to the flat terrain, the area or distance that is visible within the foreground of a view can be obstructed by existing buildings and/or vegetation. As shown in Figure 6, Photos 1 and 2, even with obstructions in the foreground of a view the background of views can extend to the surrounding hills. As shown in Figure 6, Photo 6, in the southern portion of the AVE, from the elevated vantage point on the Lewis and Clark Bridge (SR 433), the view can extend for a greater distance including a more comprehensive view of the valley and the hills in the background. Land cover is primarily pavement for urban development. Vegetative land cover is primarily grass, weeds, planted trees and other landscaped vegetation.

The AVE includes three water features. The very southern portion of the AVE includes a small portion of the Columbia River. In this location, the Columbia River is used for shipping by Port of Longview tenants, Weyerhaeuser, and other private industries, giving it an industrial visual character. To address the area’s high water table and make the land suitable for building, a system of ditches and dikes was constructed. Within the AVE, Consolidated Diking Improvement District No. 1 (CDID) Ditch No. 3 flows parallel to and just north of Industrial Way (see Figure 6, Photo 2). CDID Ditch No. 3 has a manmade, engineered visual character with a narrow channel within the center of mirrored embankments – equal in their slope and height. The final water feature within the AVE is a small, manmade pond with wetland areas (delineated as “Wetland D” in the 2017 Wetland Delineation Report, WSDOT 2017) around the perimeter of the open water just south of Industrial Way on the adjacent industrial property. This water feature is not publicly accessible and is only partially visible from Industrial Way through mature, deciduous trees.

As previously noted, much of the land cover in the AVE is paved for existing urban development. Grass is the primary vegetation within the AVE - located on undeveloped property, along both sides of CDID Ditch No. 3, adjacent to roadways within public rights-of-way, and throughout private yards in the Highlands Neighborhood. As shown in the photos in Figure 6, spread throughout the AVE there are also large, mature evergreen and deciduous trees with varying heights, widths, density and form. These trees have been cultivated for different purposes, such as to serve as a visual screen along the perimeter of the industrial property, as street trees between the curb and sidewalk, and as the landscape within residential properties.

During the December 3, 2015 and March 2, 2017 fieldwork, the only animals observed within the AVE were birds. However, typical domesticated animals (such as dogs and cats) would be expected within the residential neighborhood, and wildlife common to urban areas (such as raccoons and squirrels) would be expected throughout the AVE.

According to the Western Regional Climate Center, Longview has an average of 177 days of precipitation (Wikipedia 2015). In the fall, the valley area can also be foggy. As shown throughout the photos in Figure 6, when the weather is overcast and raining the surrounding landscape is not as bright or visually vivid as would be expected on a clear day. Within the valley, the overcast sky does not necessarily limit views within the foreground; however, dense clouds or fog could limit views of the background.
Figure 6. Representative Photographs of the Natural Environment

Photo 1: View of the Industrial Way/Oregon Way Intersection from the north, looking southwest

Photo 2: View of CDID Ditch No. 3 on the east side of Oregon Way, looking east

Photo 3: Residential homes and landscape within the Highlands Neighborhood, looking southeast

Photo 4: Grove of trees on the industrial property at the southwest corner of the Industrial Way/Oregon Way intersection, looking northeast

Photo 5: Oregon Way at Beech Street looking southwest, Industrial Way and the Lewis and Clark bridge in the background. Willow trees planted along the western side of the street, bordering the Highlands neighborhood.

Photo 6: View from the Lewis and Clark Bridge (SR 433) traveling north toward the intersection with Industrial Way, looking north
4.2.2 Cultural Environment

The cultural environment is a prominent and important component of the AVE/Urban Landscape Unit’s existing visual character. This section describes the existing visual character of the buildings, infrastructure, and structures within the AVE. To date, no artifacts or public art have been identified within the AVE.

Along both sides of Industrial Way and east of SR 433, the buildings are large, single-story industrial buildings that are oriented toward adjacent streets. Figure 7, Photo 1 shows a typical industrial building in this area. Although these industrial buildings generally include only one story, they are often a tall single-story to accommodate the building’s use. Due to their size and the flat topography, these buildings typically obstruct views to the south and north; views from Industrial Way toward the Industrial Way/Oregon Way intersection are not obstructed. The exterior building materials typically have an industrial aesthetic, such as aluminum siding or concrete. These buildings typically have a main door and a few windows on the front façade and no windows along the other elevations; limiting views of the outside from within the building.

In the northeast quadrant of the Industrial Way/Oregon Way intersection, the area is primarily a commercial, retail area with buildings oriented toward Oregon Way (Figure 7, Photo 2). The Columbia Trailer Court mobile home park is also located on Oregon Way, between Alaska Street and Alabama Street, with buildings oriented toward the property’s internal access (Figure 7, Photo 3). Buildings in this area are smaller in scale (length, width and height) than the industrial buildings. Therefore, while these buildings can obstruct some views in the foreground, overall the foreground of a view is more open than in the industrial portion of the AVE. The exterior material of the commercial buildings is primarily concrete and the exterior material of the mobile homes is primarily aluminum siding. Both the commercial and mobile home park buildings typically include windows along the front and side elevations, providing more opportunities for views of the outside from within the buildings.

The residential Highlands Neighborhood is in the northwest quadrant of the Industrial Way/Oregon Way intersection. This neighborhood is moderately dense, with homes constructed close together. Figure 7, Photo 4 shows some typical residential homes within this neighborhood. The buildings in this area are typically smaller, single-family homes that are one story, wood frame buildings. A few homes in this area are two stories in height and a few are multi-family structures. The homes are oriented toward the residential streets through the neighborhood, such as 15th and 16th Avenues. Homes along the west side of Oregon Way are oriented toward Oregon Way (Figure 7, Photo 6). Due to the close spacing of these homes, views to the east and west from the street and sidewalk are generally limited or obstructed to the immediate foreground. Within open roadway corridors, views to the north and south extend beyond the immediate foreground (Figure 7, Photo 5). Since most of these homes are of similar heights, the extent or limits of views from yards or within the houses would also be expected to be limited. Two-story homes, homes located along Oregon Way, or homes adjacent to the Highlands Trail would be expected to have views beyond the neighborhood; including views of the Industrial Way/Oregon Way intersection.

A portion of the Weyerhaeuser property is located in the southwest quadrant of the Industrial Way/Oregon Way intersection. Within the AVE, the Weyerhaeuser site includes two access gates, internal roads for trucks, and areas where the logs are stored; no buildings are present.
Figure 7. Representative Photographs of the Cultural Environment

Photo 1: Typical industrial building along Industrial Way east of the intersection with Oregon Way, looking south

Photo 2: Commercial area along Oregon Way north of Alabama Street, looking north

Photo 3: Columbia Trailer Court residential area along Oregon Way, looking southeast

Photo 4: Residential homes along 18th Avenue within the Highlands Neighborhood, looking southeast

Photo 5: Train on the Reynolds Lead rail line as viewed from 17th Avenue in the Highlands Neighborhood, looking south

Photo 6: Residential homes along Oregon Way in the Highlands Neighborhood, looking northwest
Figure 7. Representative Photographs of the Cultural Environment

Photo 7: Highlands Trail along CDID Ditch No. 3 and the southern border of the Highlands Neighborhood, near 16th Avenue, looking southeast.

Photo 8: Historic Lewis and Clark Bridge over the Columbia River, with the Port of Longview in the background. View from Highway 30 in Oregon, looking northeast.

Photo 9: Southern portion of Archie Anderson Park from 22nd Avenue, looking southeast.

Source: Google Earth, April 14, 2017

Existing and planned infrastructure and public facilities within the AVE/Urban Landscape Unit includes:

- Two state highway corridors: Industrial Way (SR 432) in the east-west direction and SR 433 that connects SR 432 to US 30. Local streets connect to these highways, providing access to adjacent properties.
- CDID Ditch No. 3, which was determined to be eligible for listing on the National Register of Historic Properties (NRHP), extends east-west through the AVE.
- Highlands Trail: Bicycle and pedestrian trail with benches for resting and viewing that extends from Oregon Way west through and beyond the AVE, with a planned future extension east of Oregon Way (Figure 7, Photo 7)
• The southern portion of Archie Anderson Park, which consists of a baseball field and a connection to the Highlands Trail (Figure 7, Photo 9)

• Rail facilities:
  o Reynolds Lead and Port Lead that are jointly owned and operated by the BNSF Railway and Union Pacific Railroad. The Reynolds Lead was determined to be eligible for listing on the NRHP.
  o Future extension of the Port of Longview’s IRC that is planned to extend west to the Port’s Barlow Point property outside of the AVE

• Bonneville Power Administration (BPA) electrical transmission line (see Figure 7, Photo 7)

• Lewis and Clark Bridge, located in the southern portion of the AVE (see Figure 7, Photo 8). Built in 1927, this bridge is a two-lane steel cantilever bridge that is part of SR 433, connecting Washington State to Oregon. The steel structure is a total of 3,892 feet in length, with two piers in the Columbia River. The Lewis and Clark Bridge was listed on the NRHP in 1982.

4.2.3 Project Environment

East of Oregon Way, Industrial Way is a level surface highway consisting of four travel lanes (two eastbound and two westbound) and a center left turn lane. There is no on-street parking on either side of Industrial Way. On the north side, there is a curb-tight sidewalk approximately 5 feet in width. On the south side, there is no sidewalk but there is some grass, mature deciduous trees, and recently planted trees. Within the right-of-way, there are also street lighting, electrical lines and poles, and highway signage. East of the Industrial Way/Oregon Way intersection, the view from the roadway corridor ends at the stand of tall mature deciduous trees on the southwest corner of the intersection and along West Port Way (Figure 8, Photo 1).

As Industrial Way approaches Oregon Way from the east, the roadway begins to curve north. In addition, just east of the intersection the Port Lead crosses Industrial Way. The visual elements of this railroad crossing include tracks in the pavement, crossing gates, and overhead warning lights. As illustrated in Figure 9, the four approaches to the Industrial Way/Oregon Way intersection appear to be constructed out of concrete, which has a lighter color and different texture from the asphalt material on Industrial Way, Oregon Way, and SR 433.

West of the Industrial Way/Oregon Way intersection the alignment of Industrial Way continues slightly north and then curves back slightly south around the corner of the Weyerhaeuser property. Continuing west, Industrial Way extends northwest in a linear manner. West of Oregon Way, the Industrial Way cross section continues for a short while with two lanes in the westbound direction, two lanes in the eastbound direction and one eastbound left turn lane. Farther west, toward the western edge of the AVE, Industrial Way narrows to a two-lane roadway with a paved shoulder on the north side.
Figure 8. Representative Photographs of the Project Environment

Photo 1: Industrial Way east of the intersection with Oregon Way, looking west

Photo 2: View from SR 433 traveling north toward the intersection with Industrial Way, looking north

Photo 3: Oregon Way north of Industrial Way, looking south

As shown in Figure 8, Photo 3, Oregon Way is a level surface local street consisting of four travel lanes (two northbound and two southbound), a raised, paved center median with left turn pockets at intersections and on-street parking on both sides north of the Highlands Trail. In this section both sides of Oregon Way also include a wide landscape strip, primarily planted with grass and evenly spaced mature willow trees, and a paved sidewalk. Within the raised, paved center median, there are light poles with an overhead light on either side and poles for roadway signage.

South of Industrial Way, SR 433 narrows to two lanes (one in each direction) and gently curves to the west to align with the Lewis and Clark Bridge structure over the Columbia River. There are wide areas landscaped with grass between the highway and West Port Way and East Port Way. From the intersection, SR 433 begins to climb in elevation along an embankment to connect with the bridge structure. The sides of the embankment consist of placed structural rock, grass, and some trees and shrubs. From the elevated vantage point on the Lewis and Clark Bridge, views extend for a greater distance (Figure 6, Photo 6).
Figure 9. Visual Resource Inventory of the AVE/Urban Landscape Unit

LEGEND
- AVE/Urbam Landscape Unit
- CDID Ditch No. 3
- Highlands Trail - Existing
- Highlands Trail - Planned
- Transmission Line
- Existing Railroad
- Key View Point (KVP) and direction of view
- City of Longview designated gateway
4.2.4 Key Viewpoints

Within the AVE/Urban Landscape Unit, three KVPs were identified to represent existing visual conditions and viewer groups/viewer types. Table 3 provides the KVP number, viewer group/viewer type that the KVP represents, location, and direction of view. The location of the KVPs, the direction of the view, and photographs of the existing conditions from the KVP are shown in Figure 9.

Table 3. Key Viewpoints in the AVE/Urban Landscape Unit

<table>
<thead>
<tr>
<th>Key Viewpoint Number</th>
<th>Representative Viewer Group/Viewer Type</th>
<th>Location</th>
<th>Direction of View</th>
</tr>
</thead>
<tbody>
<tr>
<td>KVP1</td>
<td>Traveler</td>
<td>Heading north on SR 433, just south of the intersection</td>
<td>North</td>
</tr>
<tr>
<td>KVP2</td>
<td>Recreational and residential neighbor</td>
<td>Along the Highlands Trail at 17th Avenue Southeast</td>
<td>Southeast</td>
</tr>
<tr>
<td>KVP3</td>
<td>Residential neighbor</td>
<td>Along Oregon Way, north of Alabama Street</td>
<td>South</td>
</tr>
</tbody>
</table>

4.3 Affected Population

In accordance with FHWA’s Guidelines for the Visual Impact Assessment of Highway Projects (2015), there are two distinct groups of viewers: neighbors and travelers. Neighbors are people who are adjacent to the highway and have “views of the road.” Travelers are people who are using the highway and have “views from the road.” FHWA’s guidance further subdivides these two viewer groups into types, based on their activity, and establishes viewer preferences and desire for natural harmony, cultural order, and project coherence. Using FHWA’s definitions, Table 4 identifies the types of neighbors that would be expected within the project’s AVE/Urban Landscape Unit and describes their location, activity and duration, and their typical visual preferences.

Using FHWA’s definitions, Table 5 identifies the types of travelers that would be expected within the project’s AVE/Urban Landscape Unit and describes their locations; activity and duration, and typical visual preferences.

Natural harmony: What a viewer likes and dislikes about the natural environment. The viewer labels the visual resources of the natural environment as being either harmonious or inharmonious. Harmony is considered desirable; disharmony is undesirable.

Cultural order: What a viewer likes and dislikes about the cultural environment. The viewer labels the visual resources of the cultural environment as being either orderly or disorderly. Order is considered desirable; disorder is undesirable.

Project coherence: What a viewer likes and dislikes about the project environment. The viewer labels the visual resources of the project environment as being either coherent or incoherent. Coherent is considered desirable; incoherent is undesirable.
### Table 4. Types of Neighbors in the AVE/Urban Landscape Unit

<table>
<thead>
<tr>
<th>Neighbor Type</th>
<th>Location(s)</th>
<th>Activity &amp; Duration</th>
<th>Typical Visual Preferences</th>
</tr>
</thead>
</table>
| Residential   | • Highlands Neighborhood  
                  • Columbia Trailer Court                                                      | Home owners or renters that live within viewing distance of the highway.  
                  Long-term or permanent.                                                        | Maintain the existing landscape; not interested in change. More interested in cultural order and natural harmony, less emphasis on project coherence. |
| Recreational  | • Highlands Trail  
                  • Archie Anderson Park                                                           | Outdoor bicycling, walking, viewing the scenery at benches along the Highlands Trail.  
                  Organized baseball games in the southern portion of Archie Anderson Park.  
                  Limited time (temporary) within the AVE.                                        | Focused on their recreational activity. Prefer status quo but willing to entertain improvements that enhance their experience. More interested in cultural order and natural harmony, some emphasis on project coherence. |
| Retail        | • East side of Oregon Way, north of Industrial Way.  
                  • Northwest corner of the Industrial Way/Oregon Way intersection.  
                  • Interspersed along both sides of Industrial Way east of Oregon Way.         | Merchants (owners and employees) are within the AVE frequently and for a longer duration.  
                  Shoppers may patronize locations within the AVE, frequently or occasionally, for a shorter duration. | Merchants prefer heightened visibility, free of competing visual intrusions. Shoppers prefer visual clarity in their wayfinding to guide them to their destination. Merchants are dependent on good project coherence and interest in cultural order. Some use natural harmony to attract shoppers. |
| Industrial    | • Both sides of Industrial Way east of Oregon Way.  
                  • Weyerhaeuser property and Port of Longview.                                  | Processing, manufacturing and transporting goods or services.  
                  Primarily workers who are within the AVE frequently and for a longer duration.  
                  Few visitors.                                                                 | Limit the extent their activities are visible to the public. Benefit from good cultural order, natural harmony and project coherence, but may not depend on these attributes. |

Source: FHWA 2015

### Table 5. Types of Travelers in the AVE/Urban Landscape Unit

<table>
<thead>
<tr>
<th>Traveler Type</th>
<th>Location(s)</th>
<th>Activity &amp; Duration</th>
<th>Typical Visual Preferences</th>
</tr>
</thead>
</table>
| Commuting     | Industrial Way, Oregon Way, or SR 433                                       | Regular travelers of the same route, typically to and from home and work.  
                  Tend to be single drivers. Frequent and repeated trips to the AVE.       | Trips tend to become routine. Particularly interested in project coherence. Interested in cultural order and natural harmony as it contributes to wayfinding. |
| Touring       |                                                                           | Traveling primarily for enjoyment to a destination. Often traveling in groups.  
                  Infrequent trips to the AVE.                                                | Trips are more adventurous. Equally interested in project coherence, cultural order, and natural harmony. |
| Shipping      |                                                                           | Routinely use the highway to move goods. Tend to be single drivers.             | Primarily interested in project coherence. Use cultural order and natural harmony elements for wayfinding. |

Source: FHWA 2015
4.4 Existing Visual Quality

FHWA defines visual quality as what viewers like and dislike about the visual character of the AVE (FHWA 2015). When viewing visual resources in the natural environment, viewers determine if the composition is harmonious or inharmonious. When viewing visual resources in the cultural environment, viewers evaluate whether the composition is orderly or disorderly. When viewing the project environment viewers determine whether the project’s composition is coherent or incoherent. The perception of natural harmony, cultural order, and project coherence can be determined by viewing the character through the lens of the viewer preferences. The more the composition meets their visual preferences, the more viewers like the visual quality. The more they like the visual quality the more memorable, or vivid, it becomes (FHWA, 2015).

For each viewer type, Table 6 provides an assessment of how viewers would be expected to perceive the AVE’s visual resources by visual environment. Overall, all viewer types would be expected to perceive the AVE’s existing landscape composition as somewhat vivid.

<table>
<thead>
<tr>
<th>Natural Environment</th>
<th>Harmonious: Visual resources create a pleasing combination, such as in form, pattern and color.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Inharmonious: Visual resources do not form a pleasing combination, such as in form, pattern and color.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cultural Environment</th>
<th>Orderly: Visual resources are logically arranged and grouped.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Disorderly: Visual resources are not logically arranged and grouped.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project Environment</th>
<th>Coherent: Visual resources are logically arranged, orderly and have an aesthetically consistent relationship of parts.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Incoherent: Visual resources are not logically arranged, are not orderly and do not have an aesthetically consistent relationship of parts.</td>
</tr>
</tbody>
</table>
### Table 6: Existing Visual Quality of the AVE/Urban Landscape Unit

<table>
<thead>
<tr>
<th>Viewer Type</th>
<th>Natural Environment</th>
<th>Cultural Environment</th>
<th>Project Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential and recreational neighbors</td>
<td>Inharmonious</td>
<td>Disorderly</td>
<td>Coherent</td>
</tr>
<tr>
<td></td>
<td>These viewers are interested in natural harmony. They would be expected to view the elements of the natural environment, such as CDID Ditch No 3 and mature trees, as adding a pleasing form and color to the AVE; however, they would be aware that elements of the natural environment are limited and interspersed between developed areas.</td>
<td>These viewers are interested in cultural order and would be aware that infrastructure elements clutter views and that land uses within each quadrant of the AVE are contrasting. The form of the roadways and rail lines are not visually dominant; however, train operations and roadway traffic would be a visual intrusion.</td>
<td>In their perception of visual quality these viewers place less emphasis on the project environment. The existing surface highway alignment and features, which do not dominate views, would be seen as logical and aesthetically consistent with the AVE.</td>
</tr>
<tr>
<td>Retail and industrial neighbors</td>
<td>Harmonious</td>
<td>Disorderly</td>
<td>Incoherent</td>
</tr>
<tr>
<td></td>
<td>Retail neighbors would perceive the natural environment, particularly the landscape of commercial areas, as helping to attract shoppers. Industrial neighbors would perceive the visual screening that is provided by elements of the natural environment as a benefit.</td>
<td>These viewers would be expected to perceive the cultural environment similar to residential and recreational neighbors.</td>
<td>Retail neighbors would be expected to prefer the visibility that the project environment provides, while industrial neighbors would want to limit their visibility. Both retail and industrial neighbors would be expected to perceive the traffic congestion and delays as reflecting incoherence in the project environment.</td>
</tr>
<tr>
<td>Commuting and shipping travelers</td>
<td>Harmonious</td>
<td>Orderly</td>
<td>Incoherent</td>
</tr>
<tr>
<td></td>
<td>These viewers are accustomed to the existing view and have less emphasis on the natural environment in their perception of visual quality. Elements of the natural environment, such as the mature trees in the southwest quadrant of the Industrial Way/Oregon Way intersection, would be expected to be seen as contributing to wayfinding.</td>
<td>These viewers are accustomed to the existing view and have less emphasis on the cultural environment in their perception of visual quality. Elements of the cultural environment, such as the Lewis and Clark Bridge, would be expected to be seen as contributing to wayfinding.</td>
<td>In their perception of visual quality these viewers emphasize project coherence. Existing at-grade roadway/rail crossings would be expected to be seen as aesthetically inconsistent with the project environment.</td>
</tr>
<tr>
<td>Touring travelers</td>
<td>Inharmonious</td>
<td>Disorderly</td>
<td>Incoherent</td>
</tr>
<tr>
<td></td>
<td>These viewers would be expected to perceive the natural environment similar to residential and recreational neighbors.</td>
<td>These viewers would be expected to perceive the cultural environment similar to residential and recreational neighbors.</td>
<td>In their perception of visual quality these viewers would be expected to see the existing at-grade roadway/rail crossings as aesthetically inconsistent with the project environment.</td>
</tr>
</tbody>
</table>
4.4.1 Existing Visual Quality Rating

Using FHWA’s 1988 visual impact assessment methodology, Table 7 shows the existing visual quality scores of the KVP’s in terms of the criteria of vividness, intactness and unity. Scores are provided for:

- Each criteria component
- The average for each criteria
- Each KVP
- The AVE/Urban Landscape Unit, which is an average of the three KVPs

KVP1 has an overall visual quality score of 2.9, moderately low, which reflects that the contrasting pattern between the natural and built elements and a high level of visual encroachments in this view affects the existing intactness and unity. KVP2 also has an overall visual quality score of 2.9, moderately low. KVP2 is adjacent to the Highlands Trail, the CDID Ditch No. 3 water feature, and has a view of the hills in the background; however, the nearby industrial development in this view and the high level of visual encroachments from utilities detract from the intactness and unity of these features. KVP3 has an overall visual quality score of 3, moderately low, which reflects the lack of a visual pattern and inter-compatibility between the built environment and encroachments into the view from utilities. Overall, the AVE/Urban Landscape Unit has an existing visual quality score of 2.9, moderately low.

Table 7. Existing Visual Quality Scores for the Key Viewpoints and AVE/Urban Landscape Unit

<table>
<thead>
<tr>
<th>View</th>
<th>Vividness</th>
<th>Intactness</th>
<th>Unity</th>
<th>Visual Quality Score</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Landform</td>
<td>Land Cover - Vegetation</td>
<td>Land Cover - Water</td>
<td>Land Cover - Urban Development</td>
</tr>
<tr>
<td>1</td>
<td>N</td>
<td>N</td>
<td>N/A</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>N</td>
<td>SE</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>N</td>
<td>S</td>
<td>3</td>
<td>N/A</td>
</tr>
</tbody>
</table>

1 Viewer position: Normal (N) = Viewer is on ground

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 upon the December 3, 2015 and March 2, 2017 site visits.
5.0 ENVIRONMENTAL CONSEQUENCES

This section describes and documents the potential adverse, beneficial or neutral effects to visual quality associated with the two build alternatives and the No Build Alternative. Effects are discussed in terms of temporary effects during construction, direct effects resulting from project implementation and associated with the operation and maintenance of the facility, and indirect effects which are caused by the action at a later time or farther removed in distance but still reasonably foreseeable. Cumulative effects of the project with other past, present and reasonably foreseeable future activities are documented in a separate report.

5.1 No Build Alternative

5.1.1 Direct Effects

With the No Build Alternative, there would be no changes to the visual character of the project environment because of project improvements. In addition, the existing at-grade rail/roadway crossings within the AVE/Urban Landscape Unit would remain.

By 2020, the number of daily trains on the Reynolds Lead is expected to increase from four to eight (Table 1) due to other development that is independent from the Industrial Way/Oregon Way Intersection project. As a result, the vehicular traffic would experience four more daily roadway blockage events in 2020 compared to the existing 2015 conditions. Without any improvements to the Industrial Way/Oregon Way intersection, vehicles traveling through the intersection would be blocked more frequently each day and form longer queues due to higher traffic volumes in 2020, making roadway traffic more visually prominent. All types of travelers and neighbors would be expected to perceive the increased vehicular traffic and queuing under the No Build Alternative, which in turn would decrease the project coherence.

Rail service on the Port Lead is not anticipated to change from today’s service. The resulting roadway blockage events from train crossings would continue at a frequency of six times per week. Compared to the existing conditions, by 2020 the intersection delay at the Industrial Way/SR 433/Oregon Way intersection would increase as a result of increased growth in traffic volumes. This increased intersection delay would be expected to result in increased traffic queueing.

Viewer sensitivity to changes within the AVE would be the same as described in Section 5.2.2.

The growth in vehicular traffic volumes, more frequent roadway blockage events by trains traveling on the Reynolds Lead, and increased vehicular traffic queuing at the at-grade Reynolds Lead crossings would be perceived as decreasing project coherence. Therefore, all types of travelers would be expected to perceive the No Build Alternative as having an adverse effect on the visual quality of the AVE/Urban Landscape Unit. Since neighbors place less emphasis on project coherence in their perception of visual quality all types of neighbors would be expected to perceive the No Build Alternative as having a neutral effect on the visual quality of the AVE/Urban Landscape Unit.

5.1.2 Indirect Effects

Indirect effects are reasonably foreseeable effects that are caused by the project, occur later in time, and occur farther removed in distance. Indirect effects may include growth-inducing effects and other effects related to induced changes (WSDOT 2015b).
**Induced Growth**

The No Build Alternative would not have growth-inducing effects that would result in changes to the natural, cultural, or project environments and the visual quality within the AVE.

**Roadway Blockage and Vehicular Traffic Growth**

Over time, rail service frequency and vehicular traffic volumes are expected to increase within the AVE/Urban Landscape Unit. Rail service on the Reynolds Lead is anticipated to increase to 20 trains per day before 2040. Moreover, up to eight trains per day could operate on the planned extension of the IRC, an independent project proposed by the Port of Longview. Vehicular traffic volumes would also continue to increase yearly.

The more frequent roadway blockages by trains and overall vehicular traffic volume growth would be expected to be perceived as decreasing project coherence. Therefore, all types of travelers would be expected to perceive the No Build Alternative as having an adverse indirect effect to visual quality. Neighbors would be expected to perceive the No Build Alternative as having a neutral indirect effect on visual quality.

**5.2 Grade-Separated Option A (GSA) Alternative**

**5.2.1 Effects during Construction**

In general, visual quality effects during construction of the GSA Alternative would be limited to areas where roadway improvements are proposed (Figure 2). This includes improvements along Industrial Way between Columbia Boulevard on the east and 19th Avenue on the west, the surface road along Columbia Boulevard and south of Industrial Way, Oregon Way to just north of Alabama Street, SR 433 to West Port Way, and along West Port Way and East Port Way.

Visual quality effects during construction of the GSA Alternative would be associated with the presence of equipment and workers, material stockpiles, debris, signage, and demolition activities. Construction staging areas would also have a temporary visual effect by introducing new elements into the visual environment that would increase the sense of cultural disorder. Grading and vegetation removal specific to construction staging areas would create a temporary visual effect, provided that staging areas are remediated once construction is complete. Dust from construction activities, such as grading, could affect visibility and views. Light and glare emanating from the lighting of construction areas or machinery or reflections from signage or machinery could also affect visibility and views. Adherence to best management practices to control construction dust emissions and to minimize and shield lighting would reduce potential visibility effects. The movement of large, typically bright yellow construction vehicles would add potentially visually distracting elements to views. Potential traffic congestion associated with work areas also could intrude upon views. These effects during construction could result in a temporary sense of increased cultural disorder and project incoherence, which would temporarily have a moderate adverse effect on visual quality.

**5.2.2 Direct Effects**

To determine the direct effects of the GSA Alternative to visual quality, this section first describes the changes to the visual environment and the compatibility of those changes with the existing visual character. Next, the sensitivity of viewers to the visual changes are identified. The degree of the effect to visual quality is the combination of changes to the environment and the viewer’s sensitivity (FHWA 2015).
Changes to the Visual Environment

Figure 10 identifies and lists where the GSA Alternative would result in changes to the natural, cultural, and project environments. The visual character of the GSA Alternative, in terms of its scale and form, would be incompatible with the existing visual character of the natural, cultural and project environments.

The primary visual change from the GSA Alternative would be the grade-separation of the Industrial Way/Oregon Way intersection that would result in a new and visually dominant structure. As this area is comprised of flat terrain, the new structure would block and alter existing views, particularly from locations adjacent to the elevated roadway. Industrial Way would start to be elevated just west of 17th Avenue and would come back down to grade approximately 1,000-feet east of Oregon Way. Oregon Way/SR 433 would start to be elevated just south of Alabama Street, and would continue to be elevated south of Industrial Way. The types of views that the elevated structure would block include foreground views of adjacent buildings and infrastructure and background views of surrounding hills.

Viewer Sensitivity

Viewer sensitivity is evaluated in terms of the viewer's exposure and awareness. Viewer exposure is measured in terms of proximity, extent and duration. Viewer sensitivity is measured in terms of attention, focus and protection. For each viewer group and viewer type discussed in Section 4.3, and using those typical viewer preferences, the following is an assessment of their sensitivity to changes in the visual environment.

**Neighbors**

- **Residential neighbors:** Within the AVE there are many residential neighbors in the Highlands Neighborhood and the Columbia Trailer Court that would be in close proximity to changes from the GSA Alternative. Most homes in these neighborhoods are single-story structures where the existing view is blocked by other homes of similar height and vegetation, which limits views to the immediate foreground. However, the roadways through the neighborhood, such as Alabama Street and 15th Avenue, create view corridors where residents have views further out in the foreground. In addition, due to the potential height of the proposed elevated intersection (up to 40 feet) some residents throughout the Highlands Neighborhood and the Columbia Trailer Court would be expected to have views of elements of the project. Therefore, while residential neighbors along Oregon Way and Industrial Way would have the greatest exposure to features of the GSA Alternative, additional residential neighbors would also be expected to have some exposure. These residential neighbors would have a high exposure and awareness to visual changes because of the long duration of their views and because they have an expected preference for maintaining the existing landscape. Residential neighbors would be expected to have a high viewer sensitivity.

- **Recreational neighbors:** Recreational neighbors, who would be close to the project along the Highlands Trail and within Archie Anderson Park, are also aware of their surrounding environment and have an expected preference to maintain the existing landscape. However, since their exposure to the features of the GSA Alternative would be for a limited duration as
they are biking or walking along the trail or playing sports within the park, they would be expected to have a moderate sensitivity.

- **Retail neighbors:** There are few retail neighbors that are in close proximity to project features. With their low exposure and focus on finding or providing services, retail neighbors would be expected to have a moderate awareness and moderate sensitivity to changes from the GSA Alternative.

- **Industrial neighbors:** Industrial neighbors would be within the AVE for their work, which would be a longer duration. However, they would be expected to be focused on their activities and expected to have a low awareness and low sensitivity to changes from the GSA Alternative.

**Travelers**

- **Commuting and shipping travelers:** There are many commuting and shipping travelers, who would be frequently exposed to features of the GSA Alternative. These travelers would be expected to have a preference for project coherence and a focus on traveling to their destination. Therefore, community and shipping travelers would be expected to have a moderate sensitivity to changes from the GSA Alternative.

- **Touring travelers:** Fewer touring travelers are expected in the AVE. Since they would be infrequently in the AVE, the views would be less routine and more unique making them more aware of the landscape. Therefore, touring travelers would be expected to have a moderate sensitivity to changes from the GSA Alternative.
**Figure 10. GSA Alternative: Changes to Visual Resources in the AVE**

### Natural Environment
1. Remove tall, mature trees in the southwest corner of intersection and along West Port Way
2. Remove vegetation between SK 433 and West Port Way
3. Fill a portion of the pond (Wetland D) for the realigned Reynolds Lead
4. Widen crossing of CDID Ditch No. 3 for new surface, one-way local access road
5. Remove trees along Oregon Way and one near Alabama Street
6. Remove trees along the south side of Industrial Way, east of Oregon Way

### Cultural Environment
7. Remove four existing commercial structures and five industrial structures
8. Realign the Reynolds Lead to pass under the Industrial Way/Oregon Way intersection, increasing the distance between the Reynolds Lead and the Highlands Neighborhood and Highlands Trail
9. Highlands Trail would remain, planned future extension would be accommodated
10. Portion of Industrial Way, west of Oregon Way, would visually separate the Highlands Neighborhood from the industrial area along the south side of Industrial Way

### Project Environment
11. Elevate all four legs of Industrial Way/Oregon Way Intersection
12. Elevate intersection and structures 40 feet above Reynolds Lead, Port Lead and future extension of IRC line
13. New surface roundabout at Oregon Way/Alabama Street intersection would improve channelization and connectivity between the east and west sides of Oregon Way
14. Improve surface local roads in industrial area along the intersection’s east leg
15. Elevated roadways on embankment may widen the roadway footprint and enclose the area beneath the roadway, blocking views and light and air. Embankment areas would be vegetated in compliance with WSDOT’s Roadside Policy Manual (WSDOT 2015).
16. Elevated roadways on bridge structure would minimize the roadway footprint and be open to below, allowing for partial views beneath the roadway and some light and air
17. Elevated roadways supported by MSE walls would minimize the roadway footprint and enclose the area beneath the roadway, blocking views and light and air
Effect to Visual Quality

As previously stated, the effect to visual quality is based on evaluating the visual change combined with viewer sensitivity. For each viewer group and viewer type, the following provides an evaluation of the GSA Alternative’s effect to visual quality.

Travelers

From the traveler’s perspective, even though the GSA Alternative would contrast with the existing natural, cultural and project environments, project coherence would be improved by reducing the visual distraction of rail infrastructure within the roadway at at-grade roadway/rail crossings. The elevated intersection could offer travelers new views of the surroundings hills in the background. From the new elevated roadway and intersection there would also be new views down into the adjacent industrial properties, which could attract travelers’ attention to these industrial elements and activities. In addition, the removal of the tall trees along West Port Way and at the southwest corner of the intersection, would reduce the natural harmony of the existing landscape.

At the Oregon Way/Alabama Street intersection the new roundabout would improve project coherence by providing more visual channelization that would improve wayfinding, particularly for travelers wanting to turn onto Alabama Street. In the southeast quadrant of the Industrial Way/Oregon Way improvements to surface roads would benefit wayfinding and project coherence, particularly for shipping travelers.

As noted in Section 4.2.4, KVP1 was selected to be representative of the traveler viewer group driving north along SR 433. Figure 11 includes an existing conditions photograph and a photo-simulation of the GSA Alternative from KVP1. This photo-simulation shows that from KVP1 the large trees currently at the southwest corner of the intersection and along West Port Way would be removed and some of the commercial structures and signage along Oregon Way would be obscured. Compared to the existing conditions photograph, this does not change the overall existing urban visual character of the AVE. From the traveler’s perspective at KVP1, the GSA Alternative would focus the project environment on the visual elements of the roadway, which would enhance project coherence.

For commuting and shipping travelers, who would be expected to have a moderate sensitivity to visual changes from the project and an emphasis on project coherence in their perspective of visual quality, the GSA Alternative would have a beneficial effect to visual quality. For touring travelers, who are also interested in the natural harmony of a view, the GSA Alternative would have a neutral effect to visual quality due to the removal of the mature trees at the intersection.
Figure 11. GSA Alternative - KVP1 Existing Condition Photograph and Visual Simulation
Neighbors

Residential Neighbors

From the perspective of residential neighbors that are located along the Highlands Trail and the southern perimeter of the Highlands Neighborhood, represented by KVP2 (who would have a high exposure, awareness and sensitivity to visual changes), the new elevated intersection and the elevated Industrial Way roadway with the GSA Alternative would contrast with the existing project environment. However, the GSA Alternative could also increase the cultural order of the AVE/Urban Landscape Unit from the perspective of the southern perimeter of the Highlands Neighborhood.

Industrial Way, west of Oregon Way until approximately 17th Avenue, would be on a landscaped embankment that would block some of the distant views of the Oregon hills to the south. This embankment would be visible and partially block views in the immediate foreground of homes adjacent to the Highlands Trail, from north-south roadway corridors and sidewalks and, likely, from some residential yards. However, it would also enhance cultural order by visually separating the Highlands Neighborhood from the industrial areas on the south side of Industrial Way. In addition, the GSA Alternative would realign a segment of the Reynolds Lead to the south side of Industrial Way. The solid embankment would also shield residential neighbors from views of trains, which could also enhance the residential neighbor’s experience of cultural order in the AVE. As noted in Section 6.0 of this report, the project would have an environmental commitment to implement roadside restoration in accordance with WSDOT’s Roadside Policy Manual. This would include planting a combination of trees, low-growing native shrubs, and grasses along the landscaped embankment to further screen and separate residential neighbors from the elevated roadway and contrasting land uses, thereby minimizing the effects to visual quality.

Street lighting and illuminated signs would extend above the roadway height of the elevated section of Industrial Way, west of Oregon Way. These additional utility poles would add an infrastructure element into the view of residential neighbors, which could be perceived as decreasing cultural order. The additional lighting could be visible from the Highlands Neighborhood, particularly at night. As noted in Section 6.0 of this report, the project would have an environmental commitment to provide street lighting that would focus light toward the roadway and minimize the spillover of light into the residential area. Some vehicle headlights may be partially obstructed by the barrier that would be constructed along the elevated portion of the roadway, which could reduce nighttime light and glare from vehicles to the neighborhood.

As noted in Section 4.2.4, KVP2 was selected as one of two points to represent the residential neighbor viewer type. Figure 12 includes an existing conditions photograph and a photo-simulation of the GSA Alternative from KVP2. From KVP2, one can see that with the western leg of Industrial Way would be on a raised, landscaped embankment, which from the perspective of a residential neighbor would serve as a visual screen from the industrial uses and activities to the south. KVP2 also shows that the large trees currently at the southwest corner of the intersection and along West Port Way that would be removed and that some of the views of the hills in the background of the view would be blocked. Compared to the existing conditions photograph, this would not change the overall existing urban visual character of the AVE. As shown in the photo-simulation, from the residential neighbor’s perspective at KVP2 the GSA Alternative would enhance cultural order, which would be a beneficial effect to visual quality.
Figure 12. GSA Alternative – KVP2 Existing Condition Photograph and Visual Simulation
Overall, from the perspective of residential neighbors along the southern perimeter of the Highlands Neighborhood until 17th Avenue, the changes from the GSA Alternative would have a neutral effect to visual quality. Northwest of 17th Avenue, the GSA Alternative would have little to no change to the existing visual environment and character and would also have a neutral effect to visual quality for residential neighbors.

Residential neighbors, who would be immediately adjacent to the elevated portion of Oregon Way, would have their existing view obstructed in the immediate foreground by a large retaining wall. Immediately in front of the residences, the wall would reach a maximum height of approximately 30-feet above the existing grade level. New luminaires, traffic signals, and illuminated signs would extend above the roadway height, and be visible, particularly at night, from the neighborhood. The tall retaining wall would block the sun, change wind patterns, and significantly encroach visually on the neighborhood and change the overall landscape character. Depending on the viewing angle, season, and time of day the glare off the retaining walls, which would be colored in one of two WSDOT approved gray colors, could drastically alter lighting conditions in the residential areas, such as by reflecting light through nearby residences windows. For these residential neighbors, with a high viewer sensitivity to changes in the visual environment, the changes from the GSA Alternative would be expected to adversely affect their experience of the natural, cultural and project environments. An overall adverse effect to visual quality would likely result.

North of Alabama Street, the GSA Alternative would have only minor visual changes. The roundabout at the intersection of Oregon Way and Alabama Street would increase project coherence by providing visual cues that would benefit wayfinding. Since residential neighbors typically deemphasize project coherence in their perception of visual quality, the GSA Alternative would be expected to have a neutral effect to visual quality for residential neighbors in the Highlands Neighborhood north of Alabama Street and in the Columbia Trailer Court.

As noted in Section 4.2.4, KVP3 was selected as one of two points to represent the residential neighbor viewer type. Figure 13 includes an existing conditions photograph and a photo-simulation of the GSA Alternative from KVP3. From the perspective of a residential neighbor along Oregon Way north of Alabama Street, this photo-simulation shows the new roundabout at Alabama Street and the start of the elevation of Oregon Way. Since residential neighbors have less emphasis on project coherence in their perception of visual quality, this would be expected to have a neutral effect. From KVP3, the large street trees currently in the view at the northwest corner of Oregon Way and Alabama Street and along the east side of Oregon Way would be removed (note: removal of these trees is not reflected in the photo simulation presented in Figure 13). This would reduce the natural harmony within the area; however, compared to the existing conditions photograph, it would not change the overall urban visual character of the AVE. As shown in the photo-simulation, from the residential neighbor’s perspective at KVP3 the GSA Alternative would have a neutral effect to visual quality.
Figure 13. GSA Alternative - KVP3 Existing Condition Photograph and Visual Simulation
Recreational Neighbors
From the perspective of recreational neighbors along the Highlands Trail, the GSA Alternative’s effect to visual quality would be similar to the visual effect to residential neighbors adjacent to the Highlands Trail. The portion of Industrial Way west of Oregon Way would be on embankment and would visually separate the Highlands Trail from the industrial areas on the south side of Industrial Way, resulting in a beneficial effect to visual quality. The GSA Alternative would have little to no change to the existing landscape and visual character near Archie Anderson Park, therefore, recreational viewers within the park and northwest of 17th Avenue would experience a neutral effect to visual quality.

As noted in Section 4.2.4, KVP2 was selected as a point to represent the recreational neighbor viewer type. Figure 12 includes an existing conditions photograph and a photo-simulation of the GSA Alternative from KVP2. As shown in the photo-simulation, from the recreational neighbor’s perspective at KVP2, the GSA Alternative would enhance cultural order, which would be an overall beneficial effect to visual quality.

Retail Neighbors
Retail neighbors in the commercial area along Oregon Way north of Alabama Street, who typically prefer visual clarity in wayfinding, would be expected to experience a beneficial effect in their experience of project coherence and would see the GSA Alternative as having a beneficial effect to visual quality.

Industrial Neighbors
For industrial neighbors along Industrial Way west of Oregon Way, who typically prefer to limit the extent of their activities that are visible to the public, the embankment along Industrial Way with the GSA Alternative would also be seen as enhancing the cultural order and having a beneficial effect to visual quality; however, the elevated roadway and intersection would also provide new views down into the adjacent industrial properties. Industrial neighbors along the eastern leg of the intersection would be expected to experience a beneficial effect from local surface road improvements that would have a beneficial effect in their experience of project coherence and a beneficial effect to visual quality.

Summary
For each viewer group and type, Table 8 provides a summary of the GSA Alternative’s overall effect to visual quality. Overall, the GSA Alternative would be expected to have beneficial effects to visual quality for most neighbors and travelers. The primary exception would be for residential neighbors adjacent to the elevated portion of Oregon Way; these viewers would experience an adverse effect to visual quality because their existing, more open view would become limited to the retaining wall in the immediate foreground.

Table 8. GSA Alternative: Summary of Effects to Visual Quality in the AVE

<table>
<thead>
<tr>
<th>Viewer Group</th>
<th>Viewer Type</th>
<th>Visual Quality Effect to Viewer Type</th>
<th>Visual Quality Effect to Viewer Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neighbor</td>
<td>Residential</td>
<td>Neutral – Along Industrial Way and along Oregon Way (north of Alabama) Adverse – Along Oregon Way (south of Alabama Street) and interior in the Highlands Neighborhood</td>
<td>Adverse</td>
</tr>
<tr>
<td>Neighbor</td>
<td>Recreational</td>
<td>Beneficial</td>
<td></td>
</tr>
<tr>
<td>Neighbor</td>
<td>Retail</td>
<td>Beneficial</td>
<td></td>
</tr>
<tr>
<td>Neighbor</td>
<td>Industrial</td>
<td>Beneficial</td>
<td></td>
</tr>
<tr>
<td>Travelers</td>
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<td>Travelers</td>
<td>Shipping</td>
<td>Beneficial</td>
<td></td>
</tr>
<tr>
<td>Travelers</td>
<td>Touring</td>
<td>Neutral</td>
<td></td>
</tr>
</tbody>
</table>
GSA Alternative – Proposed Visual Quality Rating

For each of the three KVPs, Table 9 provides the GSA Alternative’s ratings of the criteria for vividness, intactness and unity compared to the existing conditions. At KVP1 the visual quality score would slightly increase from 2.9 to 3.2, reflecting that intactness would increase in part because of the separation of the rail infrastructure. At KVP2 the visual quality score would increase from 2.9 to 3.7, which reflects the improvements to the vividness, intactness and unity at this location as a result of the embankment shielding the view of industrial activities and infrastructure to the south. At KVP3 the visual quality score would remain at 3, which reflects the encroachment of the retaining wall on the views from residences along Oregon Way and the loss of some mature street trees and increased intactness from this view. Based on these three KVPs, the overall visual quality score of the Urban Landscape Unit/AVE would slightly increase from 2.9 to 3.3.

Table 9. GSA Alternative: Visual Quality Scores for KVPs and the AVE/Urban Landscape Unit

<table>
<thead>
<tr>
<th>Key Viewpoint (KVP)</th>
<th>E = Existing View</th>
<th>P = Proposed View¹</th>
<th>Viewer Position²</th>
<th>Direction of View</th>
<th>Landform</th>
<th>Land Cover – Vegetation</th>
<th>Land Cover – Water</th>
<th>Land Cover – Urban Development</th>
<th>Vividness</th>
<th>Intactness Average</th>
<th>Overall Intactness (Integrity)</th>
<th>Intactness Average</th>
<th>Between Built and Natural Environment</th>
<th>Overall Unity</th>
<th>Unity Average</th>
<th>Key Viewpoints Visual Quality Score</th>
<th>AVE/Urban Landscape Unit</th>
<th>Existing Visual Quality Score</th>
<th>Proposed Visual Quality Score</th>
</tr>
</thead>
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<tr>
<td>1</td>
<td>E</td>
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<td>N</td>
<td>3</td>
<td>3</td>
<td>N/A</td>
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</tr>
</tbody>
</table>

¹ Proposed view is based upon project completion without mitigation.
² Viewer position: Normal (N) = Viewer is on ground

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 upon the visual simulations prepared for the project.

Regulatory Compliance

As stated in Section 4.1, the City of Longview’s Comprehensive Plan Goal LU-C is to ensure that development in the City is served by a circulation system with adequate “landscaping, screening and signs that are in scale and complement a district’s character.” While the form of the GSA Alternative would be expected to be viewed as incompatible with the existing project environment, roadway
attributes such as the landscape development and signs would be consistent in scale and form with WSDOT’s standards, which would be in scale with the existing district character.

In addition, the Industrial Way/Oregon Way intersection is designated by the City of Longview as a gateway, which provides an “enduring visual impression of Longview.” The elevated intersection in the GSA Alternative may provide new views of the surrounding hills that would enhance the visual experience as one enters the City of Longview from SR 433. However, from the new elevated roadway and intersection there would also be new views down into the adjacent industrial properties, which could attract travelers’ attention to these industrial elements and activities. In addition, the removal of the tall trees along West Port Way and at the southwest corner of the intersection, would reduce the natural harmony of the existing landscape. Overall, there would be no effect to the designated gateway.

Finally, the Cowlitz County Comprehensive Plan has an overall vision to value and conserve their sense of place, to strengthen the County’s unique qualities, support a diverse economy, make public safety a priority, and promote a multi-modal transportation network. The GSA Alternative would maintain the existing urban visual character of the AVE and would improve the regional and local transportation system in compliance with this vision.

5.2.3 Indirect Effects

Induced Growth

The GSA Alternative is not expected to have growth-inducing effects, which are changes in the location, magnitude, or pace of future development as a result of changes in accessibility caused by the project. Within the AVE, local planning decisions are made by the City of Longview and Cowlitz County. No development or land use changes are expected to result from constructing the GSA Alternative. Therefore, the GSA Alternative is not expected to have growth-inducing effects that would result in changes to the natural, cultural or project environments and the visual quality within the AVE.

Roadway Blockage and Vehicular Traffic Growth

Over time, rail service frequency and vehicular traffic volumes are expected to increase within the AVE/Urban Landscape Unit. Improvements with the GSA Alternative comprise grade-separating nearly all of the roadway facilities associated with the intersection from the railroads. Unlike the No Build Alternative, future roadway blockages associated with train crossings would be avoided with the GSA Alternative. One exception is when vehicles travel on the surface road that connects East Port Way to Columbia Boulevard. Vehicular traffic delay (measure for congestion) at the Industrial Way/Oregon Way intersection would be reduced by approximately 40 percent in 2040 compared to the No Build Alternative.

All types of travelers and all types of neighbors would be expected to perceive the reduced roadway congestion as improving project coherence compared to the No Build Alternative. Therefore, the GSA Alternative would have a beneficial indirect effect to visual quality.

5.3 Partial Grade-Separated Option B (PGSB) Alternative

5.3.1 Effects during Construction

In general, visual quality effects during construction of the PGSB Alternative would be limited to areas within the AVE where roadway improvements are proposed, as shown in Figure 3. This includes improvements on Industrial Way between Columbia Boulevard on the east and 21st Avenue on the west; Oregon Way to approximately Alabama Street; SR 433 to the Lewis and Clark Bridge; West Port Way and East Port Way; and 14th Avenue between Alabama Street and Beech Street.
The types of effects to visual quality during construction of the PGSB Alternative would be the same as described in Section 5.2.1 for the GSA Alternative.

5.3.2 Direct Effects
The evaluation of the direct effects of the PGSB Alternative to visual quality follows the same steps applied in Section 5.2.2 for the GSA Alternative.

Changes to the Visual Environment
Figure 14 identifies and lists where the PGSB Alternative would result in changes to the natural, cultural and project environments. The visual character of the PGSB Alternative, in terms of its scale and form, would be incompatible with the existing visual character of the natural, cultural and project environments.

Similar to the GSA Alternative, the primary visual change from the PGSB Alternative would be the grade-separation of the Industrial Way/Oregon Way intersection that would result in a new and visually dominant structure. With the AVE’s flat terrain, the new structure would block and alter existing views, particularly from locations adjacent to the elevated roadway. The types of views that would be blocked include foreground views of adjacent buildings and infrastructure and background views of surrounding hills. Compared to the GSA Alternative, some notable differences in the form and visual character of the PGSB Alternative include:

- Shifting the location of the elevated intersection further to the southwest and constructing a surface roundabout in the existing intersection location, which would increase the footprint of the project environment
- Maintaining Industrial Way eastbound and westbound through a new surface roundabout
- Extending the elevated portion of Industrial Way, west of Oregon Way, an additional 1,000 feet in length to just west of 21st Avenue
- Extending the elevated portion of Oregon Way an additional 400 feet in length to just north of Alabama Street
- Constructing additional bridge structures for grade-separations along:
  - Industrial Way between approximately 16th Avenue and 18th Avenue, for a length of approximately 600 feet over the Reynolds Lead. This segment would be on an embankment with the GSA Alternative.
  - Oregon Way over the Reynolds Lead for a length of approximately 300 feet. This segment would be supported by a retaining wall with the GSA Alternative.
- Maintaining the existing Reynolds Lead alignment

Viewer Sensitivity
With the PGSB Alternative, viewer sensitivity would be the same as described for the GSA Alternative in Section 5.2.2.
Figure 14. PGSB Alternative: Changes to Visual Resources in the Area of Visual Effect

Natural Environment
1. Remove tall, mature trees in the southwest corner of intersection and along West Port Way
2. Remove vegetation between SR 433 and West Port Way
3. Widen crossing of CDID Ditch No. 3 for new surface, one-way local access road
4. Remove trees along the east side of Oregon Way
5. Remove trees along the south side of Industrial Way, east of Oregon Way

Cultural Environment
6. Remove three existing commercial structures and four existing industrial structures
7. Reynolds Lead would remain in its current alignment
8. Highlands Trail would remain, planned future extension would be accommodated

Project Environment
9. Elevate all four legs of Industrial Way/Oregon Way intersection, southwest of the existing intersection
10. Modify surface intersection to a roundabout which accommodates eastbound and westbound through movements
11. Elevate intersection and structures 40 feet above Reynolds Lead, Port Lead and future extension of IRC line
12. Modify Oregon Way/Alabama Street intersection to right-in/right-out movements only
13. Improve 14th Avenue to City of Longview local road standards

Elevated roadways on embankment may widen the roadway footprint and enclose the area beneath the roadway, blocking views and light and air. Embankment areas would be vegetated in compliance with WSDOT’s Roadside Policy Manual (WSDOT 2015). Elevated roadways on bridge structure would minimize the roadway footprint and be open to below, allowing for partial views beneath the roadway and some light and air. Elevated roadways supported by MSE walls would minimize the roadway footprint and enclose the area beneath the roadway, blocking views and light and air.
Effect to Visual Quality

As previously stated, the effect to visual quality is based on evaluating the visual change combined with viewer sensitivity. For each viewer group and viewer type, the following provides an evaluation of the PGSB Alternative's effect to visual quality.

Travelers

From the perspective of travelers who are on the elevated Industrial Way/Oregon Way intersection, the PGSB Alternative would have a neutral effect on their experience of project coherence. On the elevated intersection, project coherence would be improved by reducing the visual distraction of rail infrastructure within the roadways. In addition, the elevated intersection could offer travelers new views of the surroundings hills in the background of the view but could also create new views down into the adjacent industrial properties. Travelers using the surface part of the intersection would still view the infrastructure related to multiple rail crossings, which would have a neutral effect to project coherence. At the surface portion of the Industrial Way/Oregon Way intersection, the roundabout would provide visual channelization to define wayfinding for travelers. However, compared to the signal at the existing surface Industrial Way/Oregon Way intersection this would be a neutral effect to project coherence.

Touring travelers, who infrequently travel through the AVE and the Industrial Way/Oregon Way intersection, may experience visual uncertainty in their wayfinding regarding whether to travel along the surface or elevated portions of the Industrial Way/Oregon Way intersection. Similarly, touring travelers may also visually experience some uncertainty in their wayfinding at the Oregon Way/Alabama Street intersection, which would be modified to right-in/right-out only. Touring travelers would perceive this visual uncertainty as contributing to project incoherence. Commuting and shipping travelers, who pass through the AVE on a frequent basis, would become accustomed to the visual elements of the project environment.

Improving 14th Avenue from a gravel road to city standards would increase the project coherence of that roadway section. The surface portions of Industrial Way, east and west of Oregon Way, and West Port Way and East Port Way would have a neutral visual effect on project coherence.

KVP1 was selected to be representative of the traveler viewer group driving north along SR 433. Figure 15 includes an existing conditions photograph and a photo-simulation of the PGSB Alternative from KVP1. This photo-simulation shows that the large trees at the southwest corner of the intersection and along West Port Way would be removed and that some of the commercial structures and signage along Oregon Way would be obscured. This does not change the overall existing urban visual character of the AVE. Compared to the GSA Alternative, there would be more surface roads present and visible from KVP1. However, from the traveler's perspective at KVP1, the PGSB Alternative would still focus the project environment on the visual elements of the roadway, which would enhance project coherence.

For all types of travelers, who would be expected to have a moderate sensitivity to visual changes from the project and an emphasis on project coherence in their perspective of visual quality, the PGSB Alternative would have a neutral effect to visual quality.
Figure 15. PGSB Alternative - KVP1 Existing Condition Photograph and Visual Simulation
**Neighbors**

**Residential Neighbors**

From the perspective of residential neighbors that are located along the Highlands Trail and the southern perimeter of the Highlands Neighborhood, represented by KVP2, the new elevated intersection with the PGSB Alternative would contrast with the existing project environment. Compared to the GSA Alternative, there would be more residential neighbors exposed to the visual changes of the PGSB Alternative because the elevated portion of Industrial Way would extend west four additional blocks (approximately 1000 feet), until approximately 21st Avenue. This would result in approximately eight additional residences along the Highlands Trail that would be have views of the elevated portion of Industrial Way. Some of the western leg of Industrial Way would be constructed on an embankment that would block some views of hills in the distance but also shield views of the highly industrial area along the south side of Industrial Way, increasing cultural order. Compared to the GSA Alternative, this benefit to cultural order would be less with the PGSB Alternative because between approximately 16th Avenue and 18th Avenue Industrial Way would be elevated on a bridge structure that would be open below to allow the Reynolds Lead and eastbound through traffic on Industrial Way to pass underneath. While the bridge structure would allow for some views of the hills in the distance and would allow for light and air below the roadway, it would also add a structural element to the existing view of the industrial area, which would decrease cultural order.

Along the western leg of Industrial Way, there would be both an elevated portion and a surface portion (for eastbound and westbound through traffic). From the perspective of residential neighbors, this combination of elevated and surface facility would be viewed as increasing the project environment to two vertical levels. Since the PGSB Alternative would not realign the Reynolds Lead, the tracks and train operations would remain in their current location on the north side of Industrial Way, and thus, closer to residences between Oregon Way and 17th Avenue.

Lighting with the PGSB Alternative would be the same as with the GSA Alternative. Street lighting and illuminated signs would extend above the roadway height of the along this elevated section of Industrial Way, west of Oregon Way. These additional utility poles would add an infrastructure element into the view of residential neighbors, which could be perceived as decreasing cultural order. The additional lighting could be visible from the Highlands Neighborhood, particularly at night. As noted in Section 6.0 of this report, the project would have an environmental commitment to provide street lighting that would focus light toward the roadway and minimize the spillover of light into the residential area.

KVP2 was selected as one of two points to represent the residential neighbor viewer type. Figure 16 includes an existing conditions photograph and a photo-simulation of the PGSB Alternative from KVP2. From KVP2, one can see that the elevated portion of Industrial Way would be on a combination of raised, landscaped embankment and on a bridge structure. As noted in Section 6.0 of this report, the project would have an environmental commitment to implement roadside restoration in accordance with WSDOT’s Roadside Policy Manual. While the raised embankment would visually screen a residential neighbor from the industrial uses, the bridge structure is an added element in the view. KVP2 shows that the large trees currently at the southwest corner of the intersection and along West Port Way would be removed and that some views of the hills in the background would be blocked. The removal of trees and limiting of background views does not change the overall existing urban visual character of the AVE. This is because the existing visual character is primarily defined by the existing development, which can obstruct background views. However, from the residential neighbor’s perspective at KVP2, the PGSB Alternative would decrease cultural order as shown in the photo-simulation because the proposed bridge adds a structural element to the existing view of the industrial area, which would be an adverse effect to visual quality.
Figure 16. PGSB Alternative - KVP2 Existing Condition Photograph and Visual Simulation
From the perspective of residential neighbors along the southern perimeter of the Highlands Neighborhood until 21st Avenue, the changes resulting from the PGSB Alternative would decrease cultural order and have an adverse effect on visual quality. Northwest of 21st Avenue, Industrial Way would be a surface road and similar to the existing project environment. Therefore, the PGSB Alternative would have little change to the existing visual environment and character and would have a neutral effect to visual quality for these residential neighbors.

Residential neighbors who would be immediately adjacent to the elevated portion of Oregon Way would have their existing view obstructed in the immediate foreground by a large retaining wall. Compared to the GSA Alternative, the PGSB Alternative would result in more residential neighbors along Oregon Way having their view changed by the grade-separation of Oregon Way because it would extend further north to just north of Alabama Street. For these residential neighbors, who typically have a high viewer sensitivity to changes in the visual environment, this change from the PGSB Alternative would be expected to adversely affect their experience of the natural, cultural and project environments, adversely effecting visual quality.

North of where Oregon Way would be elevated, the PGSB Alternative would have only a little change to existing views from residences. Since residential neighbors typically deemphasize project coherence in their perception of visual quality, the PGSB Alternative would have a neutral effect to visual quality for residential neighbors north of Alabama Street in both the Highlands Neighborhood and the Columbia Trailer Court.

KVP3 was selected as one of two points to represent the residential neighbor viewer type. Figure 17 includes an existing conditions photograph and a photo-simulation of the PGSB Alternative from KVP3. This photo-simulation shows the start of the elevated portion of Oregon Way from the perspective of a residential neighbor along Oregon Way just north of Alabama Street. At this location, the elevated roadway/retaining wall would not block existing views and so it would be expected to have a neutral effect on visual quality. From KVP3, the large trees currently along the east side of Oregon Way would be removed (note: removal of these trees is not reflected in the photo simulation presented in Figure 17). This would reduce the natural harmony within the area; however, compared to the existing conditions photograph, it would not change the overall urban visual character of the AVE. This is because the existing visual character is primarily defined by the existing development, not by mature trees. However, due to the reduction in natural harmony, as shown in the photo-simulation, the PGSB Alternative could be seen as having an adverse effect to visual quality from the residential neighbors’ perspective at the location of KVP3.

**Recreational Neighbors**

From the perspective of recreational neighbors along the Highlands Trail, the PGSB Alternative’s effect to visual quality would be similar to the visual effect to residential neighbors adjacent to the Highlands Trail. With the PGSB Alternative, recreational neighbors along the Highlands Trail would be exposed to the visual changes for a longer duration, because the grade-separation of Industrial Way would extend farther west to approximately 21st Avenue. The portion of Industrial Way that would be on a bridge structure would add a structural element to the existing view of the industrial area. In addition, there would be both an elevated portion and surface portion of Industrial Way, which would be viewed as two roads at two vertical levels and an increase in the project environment from the perspective of recreational neighbors. Similarly, along the Highlands Trail until 21st Avenue, the changes from the PGSB Alternative would decrease cultural order and have an adverse effect on visual quality.
Figure 17. PGSR Alternative - KVP3 Existing Condition Photograph and Visual Simulation
For recreational neighbors within Archie Anderson Park, northwest of 21st Avenue, Industrial Way would be a surface road and similar to the existing project environment. Therefore, the PGSB Alternative would have little change to the existing visual environment and character and would have a neutral effect to visual quality for these recreational neighbors.

KVP2 was selected as a point to represent the recreational neighbor viewer type. Figure 16 includes an existing conditions photograph and a photo-simulation of the PGSB Alternative from KVP2. As shown in the photo-simulation, from the recreational neighbor’s perspective at KVP2 the PGSB Alternative would decrease cultural order, which would be an adverse effect to visual quality.

**Retail Neighbors**

In the commercial area along the east side Oregon Way, the PGSB Alternative would restrict some turning movements or increase the travel distance to some businesses. Therefore, retail neighbors who prefer visual clarity in wayfinding would see the PGSB Alternative as slightly decreasing the project coherence and having an adverse effect to visual quality.

**Industrial Neighbors**

For industrial neighbors along Industrial Way west of Oregon Way, the PGSB Alternative would be expected to have a neutral effect to visual quality. Industrial neighbors typically prefer to limit the extent of their activities that are visible to the public; however, they generally place less emphasis on cultural order in their perception of visual quality. Therefore, the grade-separation of Industrial Way that would be partly on an embankment and partly on a bridge structure would be seen as having a neutral effect to visual quality. Similarly, the PGSB Alternative would grade-separate a portion of Industrial Way east of Oregon Way which would limit the public visibility for industrial neighbors but could also affect wayfinding in the project environment. Therefore, from the perspective of industrial neighbors, the PGSB Alternative would be expected to have a neutral effect to visual quality.

For each viewer group and type, Table 10 provides a summary of the PGSB Alternative’s effect to visual quality. Overall, the PGSB Alternative would be expected to have adverse effects to visual quality for neighbors and neutral effects for travelers.

**Table 10. PGSB Alternative: Summary of Effects to Visual Quality in the AVE**

<table>
<thead>
<tr>
<th>Viewer Group</th>
<th>Viewer Type</th>
<th>Visual Quality Effect to Viewer Type</th>
<th>Visual Quality Effect to Viewer Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neighbor</td>
<td>Residential</td>
<td>Adverse – Along Industrial Way (Oregon Way to 21st Avenue); along Oregon Way (elevated portion); and interior in the Highlands Neighborhood</td>
<td>Adverse</td>
</tr>
<tr>
<td></td>
<td>Recreational</td>
<td>Adverse – Along Industrial Way (Oregon Way to 21st Avenue)</td>
<td>Adverse</td>
</tr>
<tr>
<td></td>
<td>Retail</td>
<td>Adverse</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Industrial</td>
<td>Neutral</td>
<td></td>
</tr>
<tr>
<td>Travelers</td>
<td>Commuting</td>
<td>Neutral</td>
<td>Neutral</td>
</tr>
<tr>
<td></td>
<td>Touring</td>
<td>Neutral</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Shipping</td>
<td>Neutral</td>
<td></td>
</tr>
</tbody>
</table>
**PGSB Alternative – Proposed Visual Quality Rating**

For each of the three KVPs, Table 11 provides the PGSB Alternative’s ratings of the criteria for vividness, intactness and unity compared to the existing conditions. At KVP1, the visual quality score would slightly increase from 2.9 to 3.2, reflecting that intactness would increase in part because of the separation of the rail infrastructure. At KVP2, the visual quality score would slightly decrease from 2.9 to 2.8. The lower ratings for KVP2 reflect the decrease in the vividness of the view that would occur from the addition of the bridge structure along Industrial Way that would block some views of hills in the background and remove mature trees. At KVP3, the visual quality score would slightly decrease to from 2.9 to 2.8, which reflects the reduction in intactness from the tall retaining wall in the view of residences along Oregon Way and in vividness with the loss of some mature street trees and with the blocking of hills in the background of views as a result of the elevated section of Oregon Way. Using these three KVPs, the overall visual quality score of the Urban Landscape Unit/AVE would remain the same at 2.9.

**Table 11. PGSB Alternative: Visual Quality Scores for KVPs and the AVE/Urban Landscape Unit**

<table>
<thead>
<tr>
<th>Key Viewpoint (KVP)</th>
<th>View</th>
<th>Vividness</th>
<th>Intactness</th>
<th>Unity</th>
<th>AVE/Urban Landscape Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Landform</td>
<td>Land Cover - Vegetation</td>
<td>Land Cover - Water</td>
<td>Land Cover - Urban Development</td>
</tr>
<tr>
<td>1</td>
<td>E</td>
<td>N N N/A 2 3 2.7 3 3 3 3 3 3.2</td>
<td>2.9</td>
<td>2.9</td>
<td>2.9</td>
</tr>
<tr>
<td>P</td>
<td>N</td>
<td>N N N/A 2 3 2.7 4 4 4 3 3 3</td>
<td>2.9</td>
<td>2.9</td>
<td>2.9</td>
</tr>
<tr>
<td>2</td>
<td>E</td>
<td>N SE SE</td>
<td>N/A 3 3 3 2 3 3 3 3 3 3</td>
<td>2.9</td>
<td>2.9</td>
</tr>
<tr>
<td>P</td>
<td>N</td>
<td>N SE SE</td>
<td>N/A 3 3 3 2 3 3 3 3 3 3</td>
<td>2.9</td>
<td>2.9</td>
</tr>
<tr>
<td>3</td>
<td>E</td>
<td>N S S 3 3 N/A 3 3 3 3 3 3 3 3 3</td>
<td>2.8</td>
<td>2.8</td>
<td>2.8</td>
</tr>
<tr>
<td>P</td>
<td>N</td>
<td>N S S 3 3 N/A 3 3 3 3 3 3 3 3 3</td>
<td>2.8</td>
<td>2.8</td>
<td>2.8</td>
</tr>
</tbody>
</table>

1. Proposed view is upon project completion without mitigation.
2. Viewer position: Normal (N) = Viewer is on ground

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 upon the visual simulations prepared for the project.

**Regulatory Compliance**

The regulatory compliance for the PGSB Alternative is the same as with the GSA Alternative in Section 5.2.2.
5.3.3 Indirect Effects

Induced Growth

As described in Section 5.2.3 with the GSA Alternative, the PGSB Alternative is not expected to have growth-inducing effects that would result in changes to the natural, cultural or project environments and the visual quality within the AVE.

Roadway Blockage and Vehicular Traffic Growth

Similar to the GSA Alternative, the PGSB Alternative would grade-separate the intersection from the railroads; however, the grade-separation would occur for some of the vehicular movements rather than all movements. For those movements that would be elevated over the railroads, roadway blockages due to train crossings would be avoided. Vehicular movements remaining on surface roads would be subject to blockages by train crossings. The PGSB Alternative would reduce vehicular delay (measure for congestion) by approximately 60 percent in 2040 compared to the No Build Alternative.

All types of travelers and all types of neighbors would be expected to perceive the reduced roadway congestion as improving project coherence compared to the No Build Alternative. Therefore, the PGSB Alternative would have a beneficial indirect effect to visual quality.

6.0 MEASURES TO AVOID OR MINIMIZE PROJECT EFFECTS

Avoidance and minimization measures have been identified to lessen temporary construction visual effects and long-term visual effects caused by either the GSA Alternative or the PGSB Alternative. The following measures could be taken to the extent practicable to avoid or minimize visual impacts.

Measures to Avoid or Minimize Temporary Construction Effects

- During construction, retain as much of the existing vegetation as possible, particularly mature trees located between roadways and adjacent land uses.
- Where feasible, set up construction staging areas in locations that are out of sight from a majority of viewers.
- Shield construction lighting and/or focus lighting on work areas to minimize ambient spillover of light into adjacent areas.
- Survey and document the existing visual character of construction of staging areas prior to construction and restore construction staging areas to pre-project conditions once construction is complete.

Measures to Avoid or Minimize Long-Term Effects

- Consider contouring cuts and fills to visually blend with the surrounding landscape.
- Develop a range of options for wall textures consistent with local projects to reflect landscape context and to blend with the local environment. Textures may include fractured fin, random board finish, smooth coping strips along the top of wall or incorporated into wall surfaces. Provide an opportunity for community members to review and provide input on these options.
- Install street lights that focus light toward the roadway and minimize the spillover of light into residential areas.
- Implement roadside restoration in accordance with WSDOT’s Roadside Policy Manual, utilizing a combination of trees, low growing native shrubs, and grasses to screen and separate various
conflicting land uses, blend large structures into the landscape, provide positive driver guidance, and reduce the negative effects of light and glare from reflective surfaces, new luminaires, and signals.

- During final design, retain as much existing vegetation as possible, particularly mature trees between residences and roadways.

7.0 REFERENCES


Attachment A. Visual Impact Assessment Methodology Memorandum
1. Methodology Introduction

Visual perception is an important component of environmental quality that can be impacted through changes created by transportation projects. Visual impacts occur as a result of the relationship between people and the physical environment. Public concern over adverse visual impacts can be a source of project opposition. Because of the public nature and visual importance of transportation projects, both adverse and beneficial visual impacts must be adequately assessed and considered during project development.

This memorandum presents the methodology used to analyze the potential effects of the proposed Industrial Way/Oregon Way Intersection Project on visual resources and visual quality. The project’s visual impact assessment (VIA) is reported in the Visual Discipline Report and summarized in the project’s environmental impact statement (EIS).

2. Study Area

When assessing the project’s visual impacts, two categories of views must be considered: the view from the road/project and the view toward the road/project. The area of project visibility is referred to as the Area of Visual Effect (AVE), which is determined by the physical constraints of the environment and the limits of human sight. The AVE encompasses the area anticipated for direct and indirect visual impacts resulting from the project. For the project’s VIA the AVE is shown in Figure A-1. Within the AVE the geographic unit on which impacts on visual character, viewers, and visual quality are assessed is called a landscape unit. The project’s AVE consists of one (1) landscape unit, an urban landscape unit, which is also shown in Figure A-1.
Figure A-1. Area of Visual Effects (AVE) and Urban Landscape Unit
3. **Regulations, Standards, or Guidelines**

The federal, state, and local regulations, standards, and guidelines that are applicable to the project's VIA are:

**Federal**

- National Environmental Policy Act (NEPA) (1969)
- Federal-aid Highway Act (1970) (FHWA satisfies the requirements of this act through their NEPA procedures)
- Highway Beautification Act (1965)
- National Historic Preservation Act (1966)
- Department of Transportation Act, Section 4(f)

See Section 8, Limitations and Constraints, of this memorandum for a list of other federal laws that address areas throughout the country that have been recognized for their scenic values but that do not apply to the Industrial Way/Oregon Way Intersection project.

**State**

- Washington Administrative Code (WAC) 1998 State Environmental Policy Act (SEPA) WAC 197-11
- Washington Highway Beautification Act (Revised Code of Washington (RCW) 47.40.010) (1961)
- Open Space Land Preservation Act (RCW 84.34)
- WSDOT Roadside Policy Manual, M311.02 (Updated 2015)

**Local**

- City of Longview Comprehensive Plan (Updated 2006)
- Cowlitz County Comprehensive Plan (1976; Update 1981)
- Cowlitz County Code, Title 18 Land Use and Development
4. **Sources of Existing Data**

Existing data sources used for the visual impact assessment include:

- Aerial photography
- Google Earth
- Cowlitz-Wahkiakum Council of Governments (CWCOG) GIS data (including topographic data)
- Longview Online Maps

5. **Data Gathering or Development**

In addition to the regulations listed in Section 3 and the existing data sources listed in Section 4, a site visit was conducted to:

- Further identify visual features of the natural and cultural environments within the AVE. As defined by FHWA in the glossary of their 2015 *Guidelines for the Visual Impact Assessment of Highway Projects*, the cultural environment includes cultural visual resources which are resources that were constructed by people, including buildings, structures and artifacts.
- Take digital photographs from a representative set of key viewpoints towards the project and from the project.
- Further identify potential viewer groups within the AVE.

The VIA also used project documents, including:

- Purpose and need statement
- Descriptive narrative of each alternative
- Maps and figures of the temporary construction footprint and information on construction phasing
- Maps and figures of the permanent design and landscaping and operations and maintenance considerations
- Cultural Resources Discipline Report

6. **Analytical Techniques and Models**

6.1 Construction Impacts

Construction impacts on visual quality could include the temporary stockpiling of materials, equipment staging, lighting and signing. Construction impacts on visual quality were assessed through coordination with WSDOT and Cowlitz County to establish the limits of the area that could be disturbed during project construction and the estimated construction phasing and duration.

6.2 Direct Impacts

In compliance with FHWA’s 2015 Guidance for the Visual Impact Assessment of Highway Projects, WSDOT determined that an Abbreviated VIA is the appropriate level of analysis and documentation for the project. The guidelines for preparing an Abbreviated VIA in Appendix D of FHWA’s Visual Impact Assessment of Highway Projects were followed.

FHWA’s VIA process is carried out in four phases: establishment, inventory, analysis and mitigation. Figure A-2 illustrates FHWA’s VIA process, which is followed by a brief description of how the methodology for each phase is applied to the project.
Establishment Phase

The primary purpose of the establishment phase is to define the AVE and build an understanding of the visual character of the proposed project.

The establishment phase includes considering the limits to views and determining viewsheds to define the project’s AVE. For the Industrial Way/Oregon Way project the AVE that has been defined is shown in Figure A-1. Within the AVE the geographic unit on which impacts on visual character, viewers, and visual quality are assessed is called a landscape unit. The project’s AVE consists of one (1) landscape unit, an urban landscape unit, which is also shown in Figure A-1.

The establishment phase also includes identifying and describing the visual character and design features of the project’s build alternative; including the proposed scale, form, and materials. Project information used to establish the project’s visual character include a descriptive narrative, maps, and figures.
Using the documents listed in Section 3, the project’s regulatory context was determined, including whether there are restrictions to what can be constructed. The regulatory context was also used as evidence of the public’s visual preferences. Public input, relative to visual resources and visual preferences, received through the project’s public involvement process is also considered.

**Inventory Phase**

The purpose of the inventory phase is to examine the visual quality, or what people like or dislike seeing.

During the inventory phase the natural, cultural and project environments in the AVE and the urban landscape unit were described. The natural environment consists of the land, water, vegetation, animals and atmospheric conditions. The cultural environment includes buildings, infrastructure, structures, artifacts and art. The project environment includes the existing roadway geometrics, grading, constructed elements (pavement and structures), vegetative cover, and ancillary visual elements.

During the inventory phase the affected population, or viewers, were identified. There are two distinct groups of viewers within the project’s AVE: neighbors and travelers. Neighbors have views of the project and travelers have views from the project. Within the neighbor viewer group the potential types of neighbors will be identified. Potential types of neighbors include: residential neighbors, recreational neighbors, institutional neighbors, civic neighbors, retail neighbors, commercial neighbors, and industrial neighbors. Within the traveler viewer group the potential types of travelers will be identified. Potential types of travelers include: commuting travelers, touring travelers, and shipping travelers. Travelers may also be subdivided by mode of travel (pedestrian, bicycling, and motoring).

Finally, during the inventory phase the existing visual quality of the AVE was defined. FHWA considers visual quality to be a result of the interactive experience between viewers and their environment. Standard viewer preferences of the project’s viewer groups were identified and the existing visual quality (considering natural harmony, cultural order, and project coherence) was be synthesized to describe the landscape composition and vividness of the AVE. A set of key representative views were established to help document the baseline visual quality.

For two of the key representative views, one viewpoint from the residential neighborhood to the northwest of the intersection and one viewpoint along SR 433 just south of the intersection area, the existing visual quality was numerically rated. The numerical rating was established following the guidance outlined in FHWA’s previous methodology in the 1988 *Visual Impact Assessment for Highway Projects*. The viewpoints were rated on a scale of 1 to 7, with 1 being the lowest rating and 7 being the highest rating, for three criteria: vividness, intactness, and unity, which are comprised of eight different components.

**Analysis Phase**

The purpose of the analysis phase is to evaluate impacts on visual quality.

Impacts to visual quality were assessed upon the compatibility of the proposed project with the existing visual character of the AVE, the sensitivity of viewers to the change (including viewer exposure, awareness and distance from the project), and the degree of the impact (beneficial, adverse or neutral). Project plans, including the alignment and structural profiles, were used to evaluate impacts on visual quality. In addition, visual simulations of the project provide a graphic representation of the alternatives being evaluated.

For the two key representative views, described in the Inventory Phase above, the proposed visual quality with the project was evaluated. The numerical rating of the proposed visual quality was
established following the guidance outlined in FHWA’s previous methodology in the 1988 Visual Impact Assessment for Highway Projects. The Analysis Phase includes a discussion of the changes in visual quality, from the existing view to the proposed view, including a table comparing the numerical ratings.

**Mitigation Phase**

The purpose of the mitigation phase is to define the mitigation and enhancement efforts to be included in project design. See Section 7 below for information on the types of potential benefits, impacts, and mitigation measures that could be applied to the project.

### 6.3 Indirect Impacts

Indirect impacts to visual quality would include potential changes to the natural, cultural and project environments within the AVE, such as growth and development, which occur later in time but as a result of the project.

### 7. Summary of Potential Impacts and Mitigation

The following is a brief summary of the types of benefits and adverse impacts that may result from the project. This section also includes mitigation measures that could be considered to reduce or eliminate adverse impacts.

#### 7.1 Potential Benefits

Potential benefits to visual quality could include:

- Improved traffic flow through the AVE, improving the cultural order of the AVE and reducing light and glare from traffic
- Enhanced landscape development alongside the roadway
- Cohesive materials in the pavement and striping design

#### 7.2 Potential Adverse Impacts

Potential adverse impacts to visual quality could include:

- Obstructing existing views with the proposed elevated structure
- Removing existing vegetation, particularly mature trees, that could reduce the natural harmony of the AVE
- Additional nighttime light and glare from lights on the elevated structure, affecting the cultural order of the AVE

#### 7.3 Potential Mitigation

Mitigation measures and opportunities to avoid or minimize visual impacts were considered. In accordance with Chapter 459 of WSDOT’s Environmental Manual, during design Context Sensitive Design principles is used. Restoration in accordance with the Roadside Policy Manual M 3110 is the baseline that is assumed for addressing the project’s visual impacts within the roadside. Local agency
plans or regulations, such as street tree planting requirements, was also used to determine potential visual mitigation measures.

8. Limitations and Constraints

The following is a list of other federal laws that deal with areas throughout the country that have been recognized for their scenic values. These laws do not apply to the Industrial Way/Oregon Way Intersection project because no such designated areas are present within the project’s AVE.

- National Scenic Byways Program (1991)
- National Scenic Areas
- Wild and Scenic Rivers Act (1968)
- National Trails System Act (1968)
- National Monuments (1906)
- Land and Water Conservation Fund, Section 6(f) (1965)

The analysis to recreational lands was limited to an assessment of the potential visual impacts. Visual and other impacts to recreational lands are addressed in the Section 4(f) section of the EIS.