

# **MILLENNIUM BULK TERMINALS—LONGVIEW NEPA ENVIRONMENTAL IMPACT STATEMENT**

## **NEPA AESTHETICS TECHNICAL REPORT**

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## Acronyms and Abbreviations

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Applicant	Millennium Bulk Terminals—Longview, LLC
BNSF	BNSF Railway Company
CFR	Code of Federal Regulations
Corps	U.S. Army Corps of Engineers
County	Cowlitz County
GIS	geographic information system
NEPA	National Environmental Policy Act
Port	Port of Longview
RCW	Revised Code of Washington
SEPA	Washington State Environmental Policy Act
US 30	U.S. Route 30
USC	United States Code
WAC	Washington Administrative Code

# Chapter 1

## Introduction

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This technical report assesses the potential aesthetic impacts of the proposed Millennium Bulk Terminals—Longview project (On-Site Alternative), Off-Site Alternative, and No-Action Alternative. For the purposes of this assessment, aesthetics refers to the overall quality of the visual resources of the project area and the surrounding area. This report describes the regulatory setting, establishes the method for assessing potential aesthetic impacts, presents the historical and current aesthetic characteristics of the study area, and assesses potential impacts.

## 1.1 Project Description

Millennium Bulk Terminals—Longview, LLC (Applicant) proposes to construct and operate an export terminal in Cowlitz County, Washington, along the Columbia River (Figure 1). The export terminal would receive coal from the Powder River Basin in Montana and Wyoming and the Uinta Basin in Utah and Colorado via rail shipment, then load and transport the coal by ocean-going ships via the Columbia River and Pacific Ocean to overseas markets in Asia. The export terminal would be capable of receiving, stockpiling, blending, and loading coal by conveyor onto ships for export. Construction of the export terminal would begin in 2018. For the purpose of this analysis, it is assumed the export terminal would operate at full capacity by 2028. The following subsections present a summary of the On-Site Alternative, Off-Site Alternative, and No-Action Alternative.

### 1.1.1 On-Site Alternative

Under the On-Site Alternative, the Applicant would develop an export terminal on 190 acres (project area). The project area is located within an existing 540-acre area currently leased by the Applicant at the former Reynolds Metals Company facility (Reynolds facility), and land currently owned by Bonneville Power Administration. The project area is adjacent to the Columbia River in unincorporated Cowlitz County, Washington near Longview city limits (Figure 2).

The Applicant currently and separately operates at the Reynolds facility, and would continue to separately operate a bulk product terminal on land leased by the Applicant. Industrial Way (State Route 432) provides vehicular access to the Applicant's leased land. The Reynolds Lead and the BNSF Spur rail lines, both operated by Longview Switching Company (LVSW),<sup>1</sup> provide rail access to the Applicant's leased area from the BNSF Railway Company (BNSF) main line (Longview Junction) located to the east in Kelso, Washington. Ships access the Applicant's leased area including the bulk product terminal via the Columbia River and berth at an existing dock (Dock 1) operated by the Applicant in the Columbia River.

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<sup>1</sup> LVSW is jointly owned by BNSF Railway Company (BNSF) and Union Pacific Railroad (UP).

Figure 1. Project Vicinity

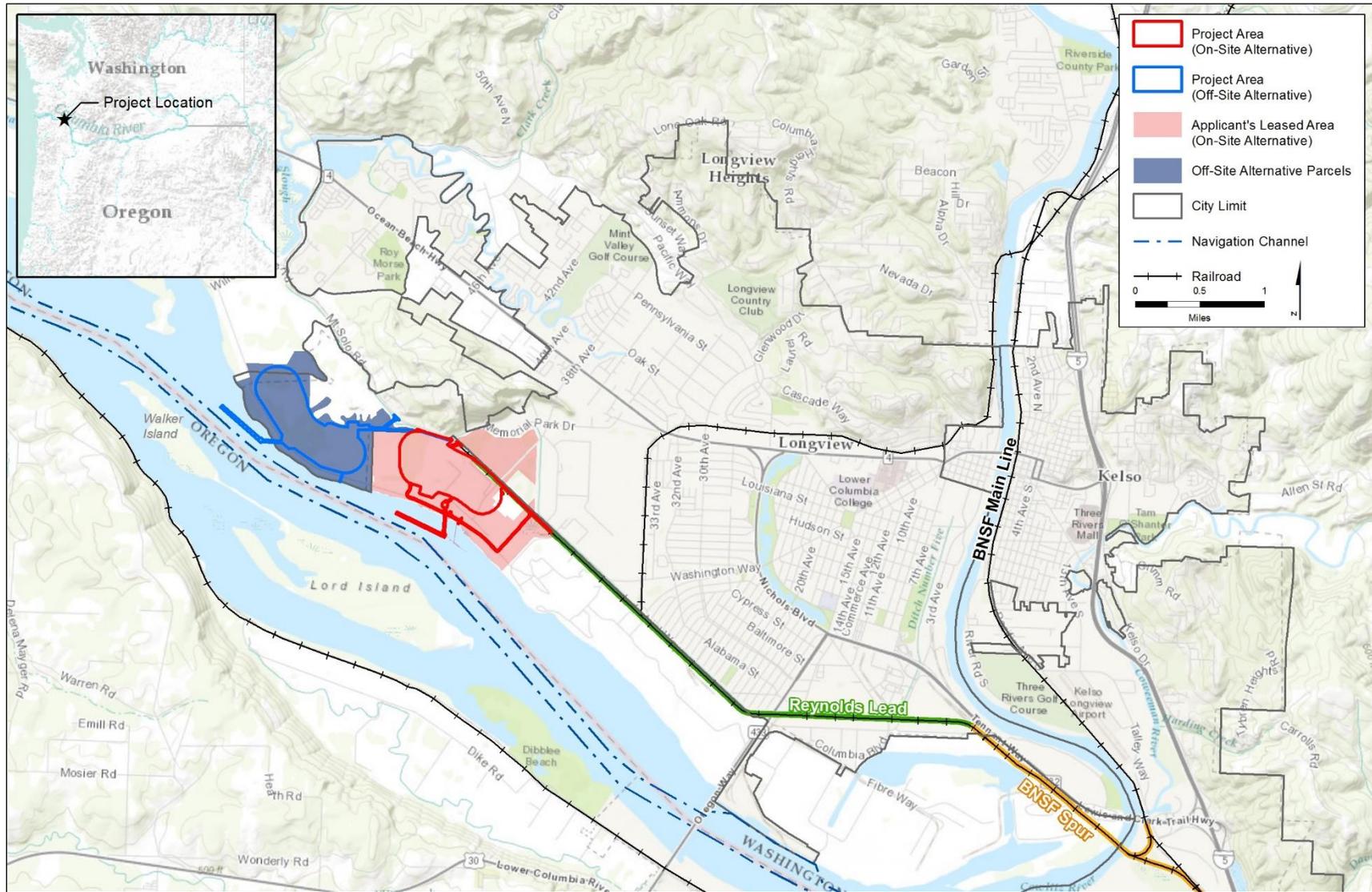
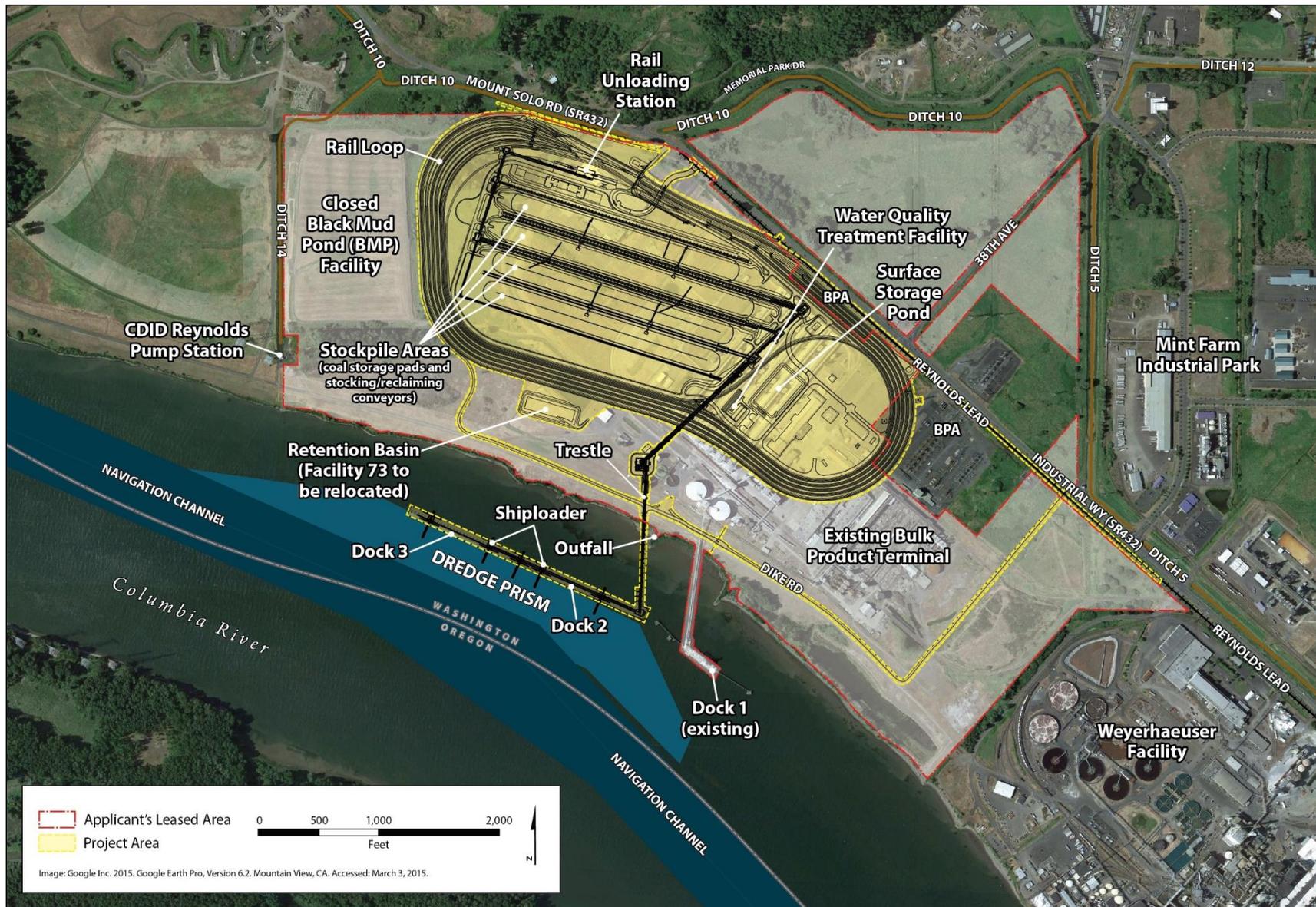


Figure 2. On-Site Alternative



Under the On-Site Alternative, BNSF or Union Pacific Railroad (UP) trains would transport coal in rail cars from the BNSF main line at Longview Junction to the project area via the BNSF Spur and Reynolds Lead. Coal would be unloaded from rail cars, stockpiled and blended, and loaded by conveyor onto ocean-going ships at two new docks (Docks 2 and 3) on the Columbia River for export to Asia.

Once construction is complete, the export terminal would have an annual throughput capacity of up to 44 million metric tons of coal.<sup>2</sup> The export terminal would consist of one operating rail track, eight rail tracks for the storage of rail cars, rail car unloading facilities, stockpile areas for coal storage, conveyor and reclaiming facilities, two new docks in the Columbia River (Docks 2 and 3), and ship-loading facilities on the two docks. Dredging of the Columbia River would be required to provide access to and from the Columbia River navigation channel and for berthing at the two new docks.

Vehicles would access the project area from Industrial Way (State Route 432). Ships would access the project area via the Columbia River and berth at one of the two new docks. Trains would access the export terminal via the BNSF Spur and the Reynolds Lead. Terminal operations would occur 24 hours per day, 7 days per week. The export terminal would be designed for a minimum 30-year period of operation.

### 1.1.2 Off-Site Alternative

Under the Off-Site Alternative, the export terminal would be developed on an approximately 220-acre site adjacent to the Columbia River, located in both Longview, Washington, and unincorporated Cowlitz County, Washington, in an area commonly referred to as Barlow Point (Figure 3). The project area for the Off-Site Alternative is west and downstream of the project area for the On-Site Alternative. Most of the project area for the Off-Site Alternative is located within Longview city limits and owned by the Port of Longview. The remainder of the project area is within unincorporated Cowlitz County and privately owned.

Under the Off-Site Alternative, BNSF or UP trains would transport coal from the BNSF main line at Longview Junction over the BNSF Spur and the Reynolds Lead, which would be extended approximately 2,500 feet to the west. Coal would be unloaded from rail cars, stockpiled and blended, and loaded by conveyor onto ocean-going ships at two new docks (Docks A and B) on the Columbia River. The Off-Site Alternative would serve the same purpose as the On-Site Alternative.

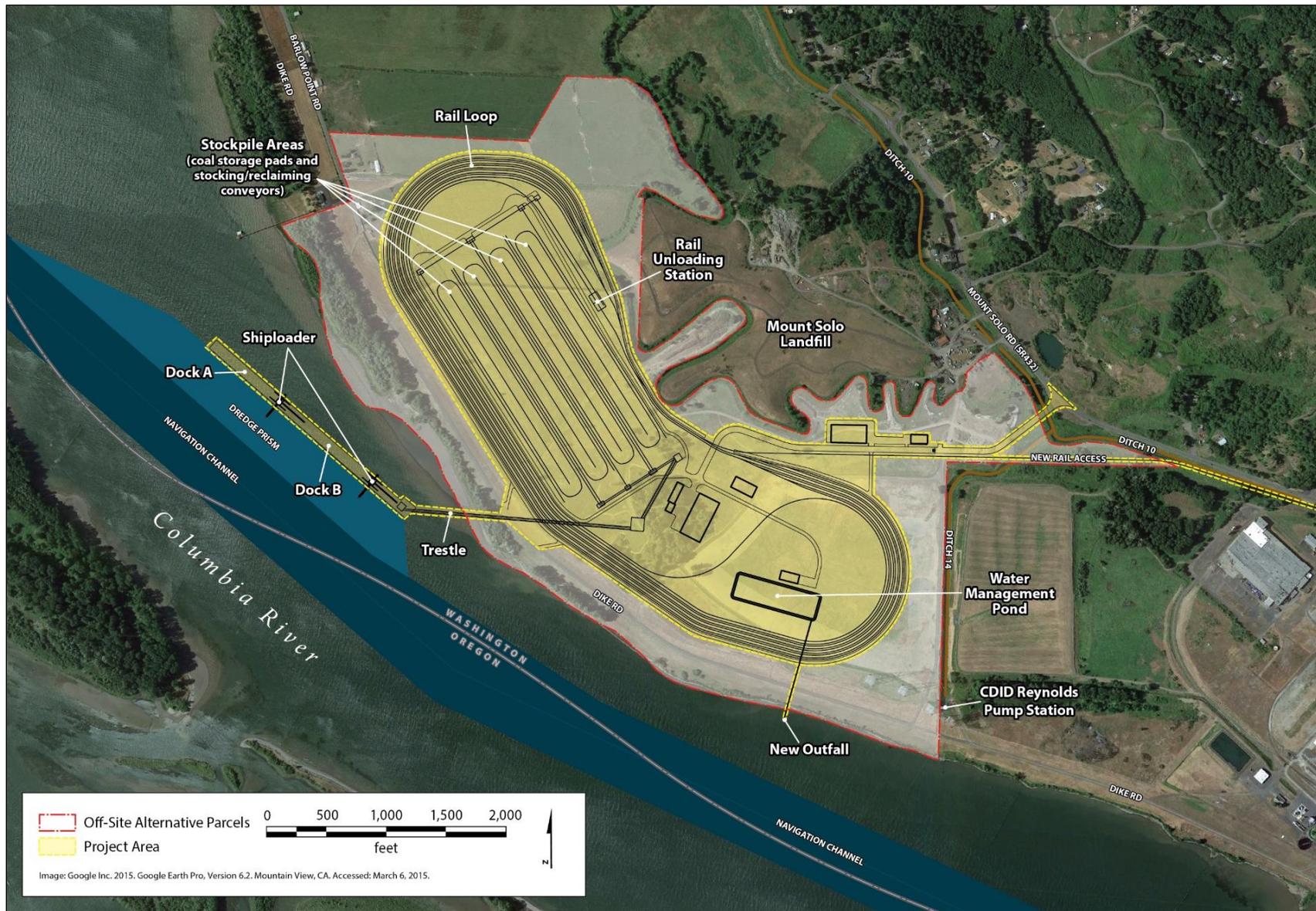
Once construction is complete, the Off-Site Alternative would have an annual throughput capacity of up to 44 million metric tons of coal. The export terminal would consist of the same elements as the On-Site Alternative: one operating rail track, eight rail tracks for the storage of rail cars, rail car unloading facilities, stockpile areas for coal storage, conveyor and reclaiming facilities, two new docks in the Columbia River (Docks A and B), and ship-loading facilities on the two docks. Dredging of the Columbia River would be required to provide access to and from the Columbia River navigation channel and for berthing at the two new docks.

Vehicles would access the project area via a new access road extending from Mount Solo Road (State Route 432) to the project area. Trains would access the terminal via the BNSF Spur and the extended

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<sup>2</sup> A metric ton is the U.S. equivalent to a tonne per the International System of Units, or 1,000 kilograms or approximately 2,204.6 pounds.

Figure 3. Off-Site Alternative



Reynolds Lead. Ships would access the project area via the Columbia River and berth at one of the two new docks. Terminal operations would occur 24 hours per day, 7 days per week. The export terminal would be designed for a minimum 30-year period of operation.

### **1.1.3 No-Action Alternative**

Under the No-Action Alternative, the Corps would not issue the requested Department of the Army permit under the Clean Water Act Section 404 and the Rivers and Harbors Act Section 10. This permit is necessary to allow the Applicant to construct and operate the proposed export terminal. The No-Action Alternative also includes the Applicant's expected future development of the On-Site Alternative project area, described below. This action is analyzed as part of the No-Action Alternative because it is a foreseeable consequence of a Department of the Army permit denial.

The Applicant plans to continue operating its existing bulk product terminal located adjacent to the On-Site Alternative project area, as well as expand this business. Ongoing operations would include storing and transporting alumina and small quantities of coal, and continued use of Dock 1. Maintenance of the existing bulk product terminal would continue, including maintenance dredging at Dock 1 every 2 to 3 years. Under the terms of an existing lease, expanded operations could include increased storage and upland transfer of bulk products utilizing new and existing buildings. The Applicant would likely undertake demolition, construction, and other related activities to develop expanded bulk product terminal facilities adjacent to the proposed export terminal.

In addition to the current and planned activities, if the requested permit is not issued, the Applicant would intend to expand its bulk product terminal business onto areas that would have been subject to construction and operation of the proposed export terminal. The Applicant has described a future expansion scenario that would involve handling bulk materials already permitted for off-loading at Dock 1. Additional bulk product transfer activities could involve products such as a calcine pet coke, coal tar pitch, cement, fly ash, and sand or gravel. While future expansion of the Applicant's bulk product terminal business might not be limited to this scenario, it was analyzed to help provide context to a No-Action Alternative evaluation.

## **1.2 Regulatory Setting**

Federal, state, and local regulations, statutes, and guidelines require the review of the possible environmental impacts of the On-Site Alternative and Off-Site Alternative, including potential impact on aesthetics. The jurisdictional authorities and corresponding regulations, statutes, and guidance for determining potential aesthetic impacts are summarized in Table 1.

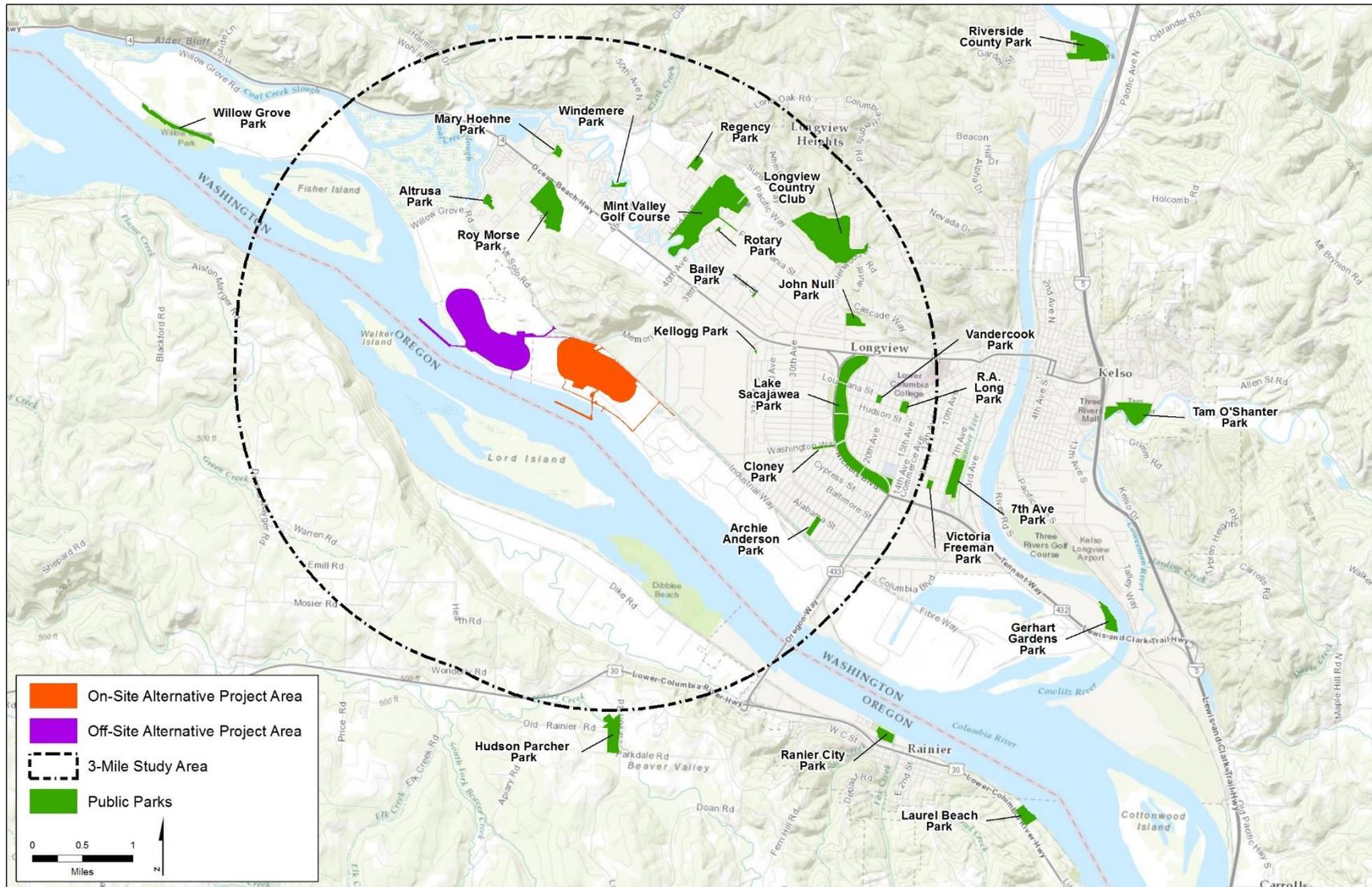
**Table 1. Regulations, Statutes, and Guidance for Aesthetics**

<b>Regulation, Statute, Guideline</b>	<b>Description</b>
<b>Federal</b>	
National Environmental Policy Act (42 USC 4321 <i>et seq.</i> )	Requires the consideration of potential environmental impacts. NEPA implementation procedures are set forth in the President's Council on Environmental Quality's Regulations for Implementing NEPA (49 CFR 1105).
U.S. Army Corps of Engineers NEPA Environmental Regulations (33 CFR 320.4)	Requires the consideration of probable impacts, including cumulative impacts, of proposed activities and their intended use on public interest. Evaluations should reflect national concern for both protection and use of important resources including the cumulative effects on aesthetics and welfare of people.
<b>State</b>	
Washington State Environmental Policy Act (WAC 197-11, RCW 43.21C)	Requires state and local agencies in Washington to identify potential environmental impacts that could result from governmental decisions.
<b>Local</b>	
Cowlitz County SEPA Regulations (CCC Code 19.11)	Provide for the implementation of SEPA in Cowlitz County.
City of Longview SEPA Regulations (Longview Municipal Code 17.20)	Sets City SEPA procedures and policies and incorporates by reference the SEPA rules at Chapter 197-11 WAC, including guidance related to aesthetics assessments. This regulation applies only to the Off-Site Alternative.
NEPA = National Environmental Policy Act; CFR = Code of Federal Regulations; USC = United States Code; CFR = Code of Federal Regulations; RCW = Revised Code of Washington; SEPA = State Environmental Policy Act; County = Cowlitz County; WAC = Washington Administrative Code	

### 1.3 Study Area

The study area for the assessment of potential visual impacts is generally defined as the area within visual range of the project areas for the On-Site Alternative and Off-Site Alternative. This area encompasses ground-based locations from which the activities and structures on the project areas could be observed in detail (Bureau of Land Management 1986). Given the regional physiography, vegetation, and built environment surrounding the project areas, it was determined that details of either action alternative would be observable for viewers at ground-based locations within approximately 3 miles of the respective project area. Beyond 3 miles, either action alternative would blend into the visual background and be obscured because of the area's topography, vegetation, and built environment. The study area is defined as the area within a 3-mile radius of the project area (Figure 4).

Figure 4. Study Area



This chapter describes the methods for assessing the affected environment and determining impacts, and the affected environment in the study area as it pertains to aesthetics.

## 2.1 Methods

This section describes the methods used to characterize the affected environment and assess the potential impacts of the On-Site Alternative, Off-Site Alternative, and No-Action Alternative on aesthetics.

The methods used in this assessment were informed by guidance provided by various federal agencies in *Landscape Aesthetics, A Handbook for Scenery Management* (U.S. Forest Service 1995), *Visual Impact Assessment for Highway Projects* (Federal Highway Administration 1988), and *The Visual Resource Management System* (Bureau of Land Management 1986). These agency guides are tailored to fit the general types of projects falling within each agency's jurisdiction and are not directly applicable to the On-Site Alternative and Off-Site Alternative. However, the guides provide visual impact assessment methods that have informed the methods used this report. In particular, they address impacts based on a step-wise process that can be applied to other situations, as follows.

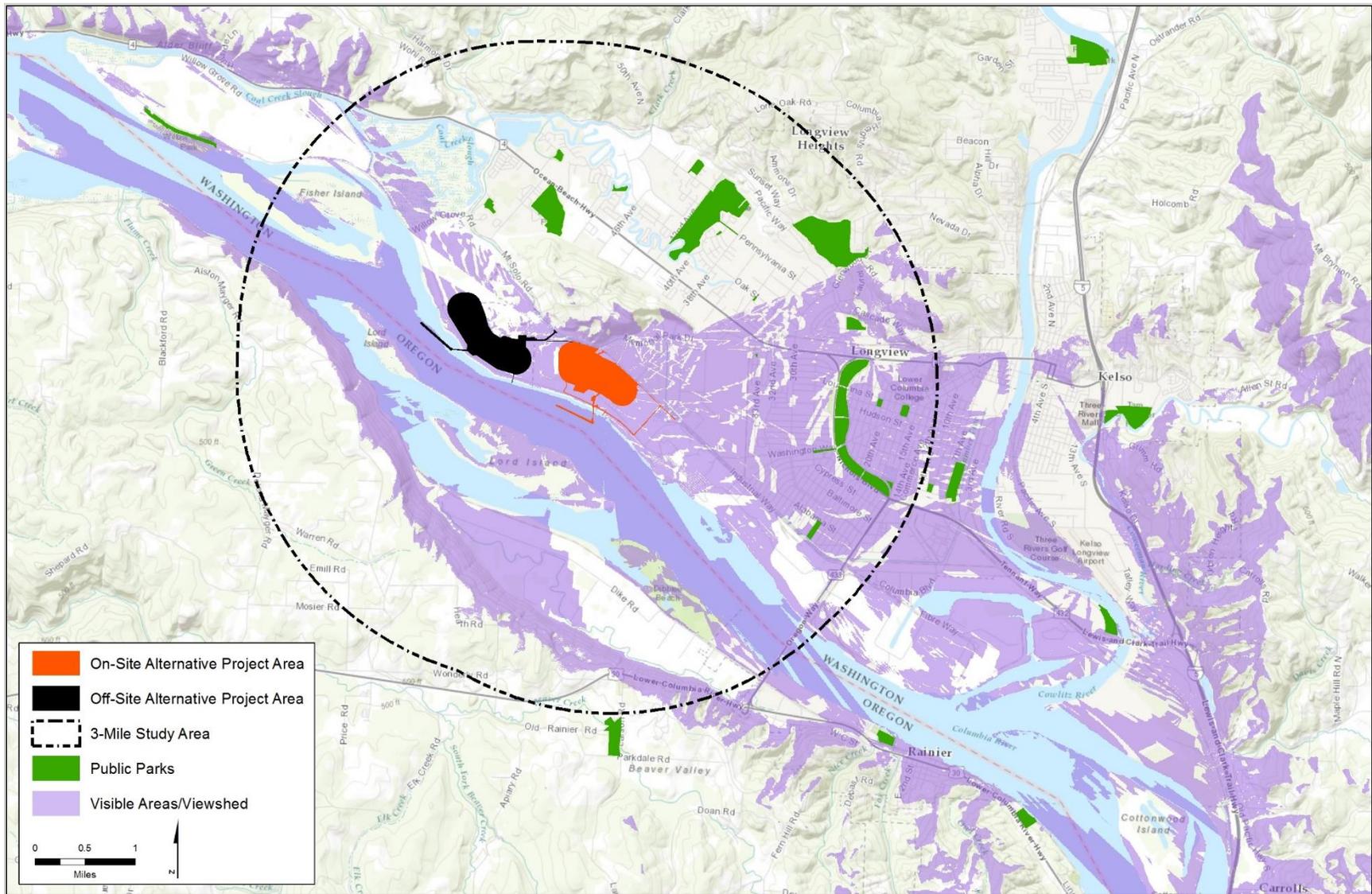
1. Defining the viewshed area.
2. Determining locations that are key viewpoints of the project area.
3. Determining the types of viewers or viewer groups with views of the project area and their relative sensitivity to the changes in aesthetic conditions.

The visual impact analysis used this three-step process. The methods for each step are described below, followed by a discussion of the data and methods used for the visual impact assessment.

### 2.1.1 Defining the Viewshed

A viewshed is the area within visual range of a given viewpoint (i.e., location of the viewer) which is defined by the regional physiography, vegetation, and built environment. In order to determine the viewshed from which aesthetic changes on the project area may be experienced, city and county maps, U.S. Geological Survey quadrangle maps, project maps, and aerial and project area photographs were consulted to determine large-scale physiographic features in the study area that influence views of the project area and define the visual environment. A digital elevation model of the area was then created using ESRI ArcGIS, a three-dimensional mapping software package. The digital model was used to identify the viewshed of the project area for the On-Site Alternative and Off-Site Alternative based on topographic screening (excluding vegetation) (Figure 5). The viewshed defines the general area within which specific viewpoints are selected. As shown in Figure 5, the viewshed encompasses most areas in the Columbia River floodplain to the west, south, and east of the project area. Views from the north are obstructed by topography (Mount Solo, described below).

Figure 5. Viewshed Determination



The general character of the viewshed is described below based on project area visits and information developed for the Land Use Technical Report (ICF International and BergerABAM 2016).

The viewshed determination is a screening-level assessment that only accounts for topography in determining which locations may have views of the project area. The selection of viewpoints then accounts for vegetation and the built environment. As discussed below, many portions of the viewshed do not have views of the project area because of intervening vegetation and buildings.

## 2.1.2 Viewpoint Selection

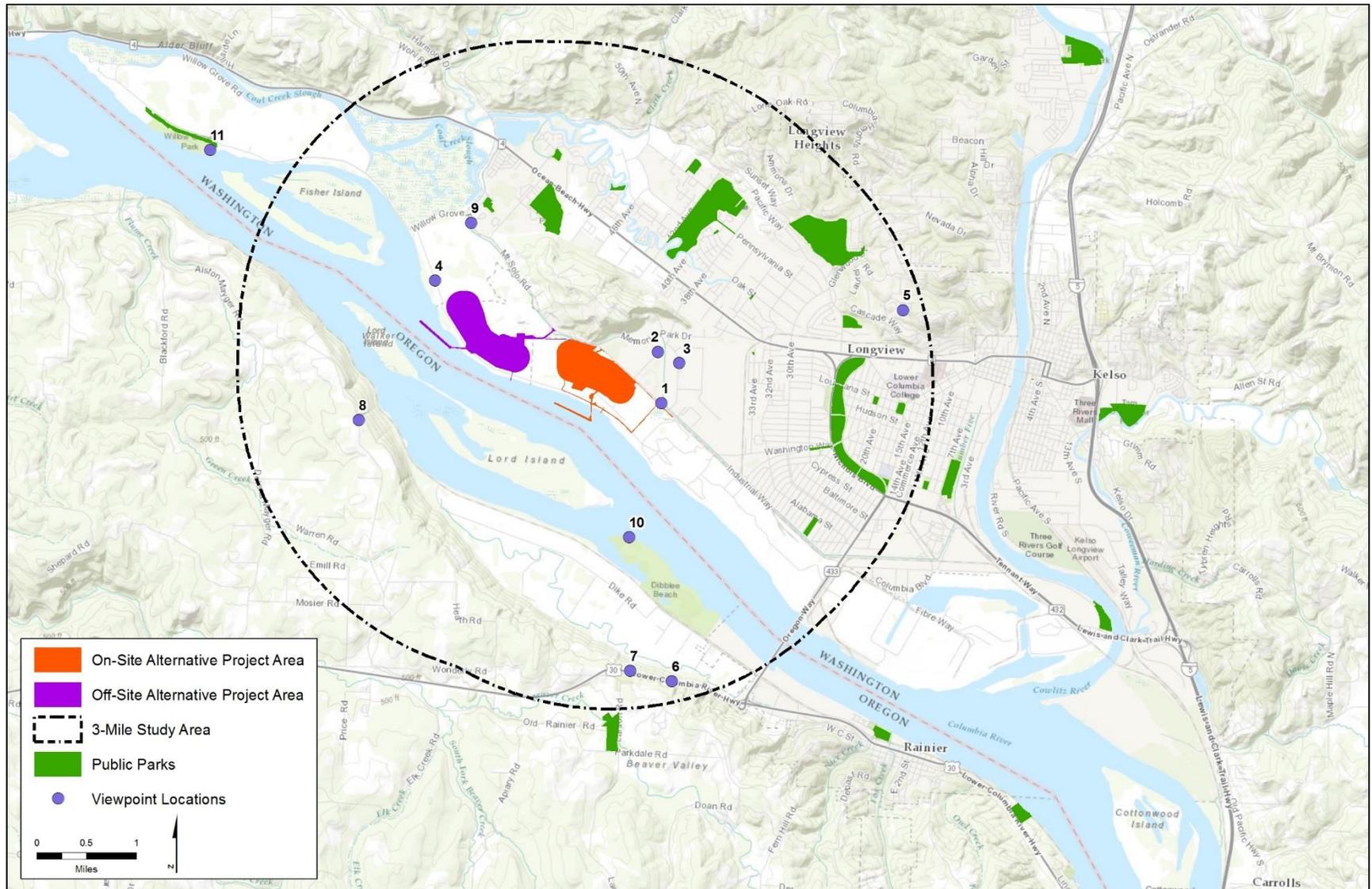
Digital mapping software (e.g., Google Earth, Google Maps, Map Quest, Bing Maps) and aerial and project area photographs were used to identify built environments, public amenities, travel routes, urban areas, residential areas, and existing vegetation in the 3-mile study area. This information, in combination with the viewshed determination, was used to select viewpoint locations for this assessment.

Natural landforms, such as Mount Solo, and human-made landforms, such as the Mount Solo landfill, block views of the project area for viewers in large portions of the study area (Figure 5). In addition, the built environment and existing vegetation obstruct views of the project area for many remaining viewers. However, 11 viewpoints were identified from which views of the project area could be altered by the On-Site Alternative or the Off-Site Alternative (Figure 6). Except for the viewpoint at the Willow Grove boat launch, all are located within the 3-mile study area. The Willow Grove boat launch is approximately 4.5 miles west of the project area on the Columbia River. Views of the project area from the boat launch are obstructed by existing vegetation and would not be affected by the On-Site Alternative or the Off-Site Alternative; however, the boat launch was included as a viewpoint because it provides public access to the river. Recreational boaters may travel upriver from the boat launch toward Longview and view the project area from the river.

At each viewpoint, views were verified and day and nighttime photographs were taken using a high-resolution digital single-lens reflex camera with a 50-millimeter lens. Daytime photos were taken on a clear, sunny day with a high sun angle to illustrate maximum viewer sensitivities and glare. Nighttime photographs were taken to document existing artificial lighting from viewpoints where nighttime conditions would be most affected by the On-Site Alternative or the Off-Site Alternative. Appendix A, *Photographic Inventory*, presents the photographs from each viewpoint.

To approximate what the human eye would see, photographs were taken at the height of an average viewer's eye (5 feet 5 inches above ground level). Because a single photograph cannot capture the field of vision of a human eye, a sequence of photographs was taken from each viewpoint. Using Adobe Photoshop, the photos were digitally grouped together to form panoramas; the photos were overlapped by approximately 30% and their edges were cropped to eliminate edge distortion and to fit print materials. No other photo manipulations were performed. Using the photographs, the extent of the view of the project area from each viewpoint was identified and its existing visual character and the types of viewers using that viewpoint was assessed.

Figure 6. Viewpoint Locations



Based on the existing land uses and environmental conditions at the viewpoints, views of the project area were classified into three categories.

- **Urban and industrial views.** Viewers in this landscape view the project area in the context of existing urban and industrial areas.
- **Rural and residential views.** Viewers in this landscape view the project area in the context of a mixture of surrounding natural and human-made features and patterns, including land used for farming, mineral extraction, or forestry.
- **Natural views.** Viewers in this landscape view the project area in the context of surrounding natural features and a largely undisturbed rural or open space setting. Few human-made developments or disturbances are present.

### 2.1.3 Viewer Sensitivity

Viewer sensitivity is the measure of concern for visual quality and the response to changes to the elements of the natural and constructed environments the viewer experiences through sight. Viewer sensitivity is related to changes in available views of the landscape, buildings, construction and demolition of structures, operational equipment, and emissions. The effects of those changes on viewers depend on the types of users, the amount of use (number of viewers and view frequency), and adjacent land uses, as described below.

- **Types of users.** Based on the viewpoint locations, the general types of viewers who see the project area can be characterized as residents, workers, travelers, and recreationalists. Visual perception and sensitivity vary with the type of user. Residential or recreational sightseers may be highly sensitive to any changes, while those in a work setting, such as industrial, manufacturing, or warehouse workers, tend to have no to low sensitivity. A working viewer's activity, awareness, and sensitivity are typically limited to the visual setting immediately outside the workplace and do not extend to surrounding views.
- **Amount of use.** The number of viewers varies depending on activity and the location, but areas used by large numbers of people are considered to have a higher exposure, or sensitivity, because more viewers could be affected. Protection of visual quality usually becomes more important as the number of viewers and the duration of views increase.
- **Adjacent land uses.** Proposed changes may or may not directly affect the visual quality or other aspects of adjacent land uses. The visual elements of adjacent landscapes and natural areas, buildings, structures, and operations define a visual character or context with which the proposed uses and facilities are compatible or in conflict.

### 2.1.4 Data Sources

The following sources of information were used to evaluate the visual characteristics of the study area.

- Cowlitz County geographic information system (GIS) data.
- *Millennium Coal Export Terminal Longview, Washington Aesthetics, Light, and Glare Resource Report.* (URS Corporation 2014a)

- Guidance documents prepared by the Bureau of Land Management, U.S. Forest Service, and Federal Highways Administration (described in the introduction to Section 2.1, *Methods*).
- 3-D Studio Max and AutoCAD files of the On-Site Alternative and the Off-Site Alternative provided by the Applicant.
- Field surveys conducted in 0105 and November 2014.

## 2.1.5 Impact Analysis

The following methods were used to evaluate the potential impacts of the On-Site Alternative, Off-Site Alternative, and No-Action Alternative on visual resources in the study area. For the purposes of this analysis, construction impacts are based on peak construction activities and operations impacts are based on maximum throughput capacity (up to 44 million metric tons per year) and completed facilities.

Visual impact assessments are based on the evaluation of the visual quality and viewer sensitivity. Viewer sensitivity is considered in the context of reasonable expectations of those experiencing views of a heavily industrialized area. As previously described, the visual impact assessment methods were informed by guidance materials from various federal agencies, including *The Visual Resource Management System* (Bureau of Land Management 1986), *Landscape Aesthetics, A Handbook for Scenery Management* (U.S. Forest Service 1995), and *Visual Impact Assessment for Highway Projects* (Federal Highways Administration 1988). These materials provided guidance to develop and define the following levels of impact to assess visual impacts associated with the On-Site Alternative, Off-Site Alternative, and No-Action Alternative.

- **High level of impact (H).** Operations, buildings, or other structures would be highly visible to a large number of sensitive viewers and would negatively affect the visual quality of the landscape.<sup>3</sup> Mitigation measures may or may not reduce this level of impact.
- **Moderate level of impact (M).** Operations, buildings, or other structures would be visible to a moderate number of sensitive viewers. Project elements may be generally consistent with adjacent land uses. Some mitigation may be required to reduce this level of impact.
- **Low level of impact (L).** Operations, buildings, or other structures would be minimally visible to a low number of viewers. Distance or visual compatibility with other existing land uses make project elements difficult to perceive.
- **No impact (N).** Operations, buildings, or other structures would not be visible or would have no impact on viewers.

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<sup>3</sup> The number of sensitive viewers is relative to the total potential viewers of the project area. In this case, the total potential viewers are the residents, workers, and travelers within the 3-mile study area. A large number of viewers applies to viewpoints where many of the total viewers would have views of the project area. A low number of viewers applies to viewpoints where very few of the total viewers would have views of the project area. A moderate number of viewers applies to viewpoints where a number of the total viewers would have views of the project area.

In order to assess the impacts of the On-Site Alternative or the Off-Site Alternative on aesthetics and visual quality, visual simulations were prepared illustrating how these alternatives would appear once constructed. The visual simulations were developed using photographs from each of the viewpoints discussed above. A combination of 3-D Studio Max and AutoCAD files (provided by the Applicant) and Google SketchUp Pro were used to create an overall 3-D model of the project area and the surrounding area. The 3-D models were then georeferenced and placed in Google Earth Pro. Views of the 3-D models were generated from the viewpoints. Images from the 3-D model were then superimposed over the high-resolution digital photographs in Adobe Photoshop to simulate the constructed condition of the project area. The digital photographs and the simulations represent before and after images and show the visual change associated each action alternative. No other photo editing or touchup work was done to the simulations. The visual simulation task and analysis provided the basis for the visual assessment.

## 2.2 Affected Environment

This section describes the aesthetics characteristics in the study area.

### 2.2.1 Project Area for the On-Site Alternative

The Applicant's leased area was originally a floodplain that supported wetland and shoreline habitats used by wildlife, birds and people. The eastern portion of the leased area was initially developed for industrial use in 1941 by Reynolds Metals Company (Reynolds facility) as a reduction plant for aluminum smelting and casting operations (Figure 7). These operations were expanded in 1967, when the western portion of the Reynolds facility was developed for additional aluminum production. In the late 1960s, a cable mill facility was also constructed in the leased area. The facility was operated as an aluminum smelter until 2001, when smelter operations ceased and portions of the former Reynolds facility have since been decommissioned.

Following the closure of the Reynolds facility, the project area and the Applicant's leased area were used to store fly ash, petroleum coke, alumina, and cement. The leased area continues to support industrial operations and is currently used as a bulk materials handling facility that includes both marine and upland facilities.

Today, the Applicant uses an area adjoining the project area (i.e., within the leased area), as a bulk products terminal to import, store, and transfer bulk alumina and coal. The project area includes upland facilities, a dock in the Columbia River capable of receiving Panamax-sized ships, and rail and road connections. Alumina is imported by ship, stored, and then transferred by rail to an Alcoa smelter near Wenatchee, Washington (Millennium Bulk Terminals—Longview 2014a). A small amount of coal is currently imported by rail, stored, and transferred by truck to the adjacent Weyerhaeuser facility. Overall, the project area is an underutilized industrial site, with industrial activities occurring at a much lower intensity than historical levels.

While most of the existing project area is developed, the undeveloped western sections consist of open grasslands, wetlands, and a small forested area in the northwest corner. There is an extensive diking system along the Columbia River maintained by the Consolidated Diking Improvement District 1.

**Figure 7. Historic Aerial Photograph (1966)**

Adjacent land uses include those in the lease area as well as various other industrial, utility, transportation, commercial, and residential uses. The 550-acre Weyerhaeuser Company lumber products manufacturing facility is located east of the project area and the 478-acre Port Industrial Marine property is located upriver of the Weyerhaeuser site. Port facilities include eight marine terminals that primarily handle commodities such as bulk goods, forest products, wind energy products, steel and heavy-lift project cargo (Port of Longview 2011). Port properties also include the recently purchased Barlow Point property, located within the city limits of Longview northwest of the project area. The Barlow Point property is currently undeveloped, but the Cowlitz County Public Utility District and Bonneville Power Administration use this and adjacent properties for high-power utility lines and a power substation. The approximately 75-foot-tall, 47-acre Mount Solo landfill is located between the project area and the Barlow Point property. The 445-acre Mint Farm Industrial Park, another prominent adjacent industrial use, is located north of Industrial Way within city limits. Two single-family residences are located across Industrial Way from the project area. These residential uses are on wooded lots set back from the street. Overall, the project area is located in a wide corridor of industrial, transportation, and utility land uses along the Columbia River.

### 2.2.1.1 Viewshed Overview

The project area and most of Longview and Kelso, along with rural areas south of the Columbia River, lie in the Columbia River floodplain. This floodplain, which affords wide views of the Columbia River and surrounding area because of its relatively flat topography and limited landform interruptions, is a defining feature of the affected viewshed. The extent of the relatively flat floodplain varies based on the proximity of hillsides north and south of the river. At the project area, the floodplain extends approximately 4 miles perpendicular to the river. With the exception of Mount Solo (elevation 610 feet) directly north of the project area, the elevation of the floodplain varies little across the Longview and Kelso area, ranging from approximately 5 feet to 30 feet. The hillsides north and south of the floodplain rise steeply and are generally heavily forested and in a natural condition. The natural vegetation of the floodplain is a complex landscape composed of riparian and lowland deciduous forest vegetation, but in most areas, depending on the level of existing development, the vegetation has been highly modified. The built environment and existing vegetation block most views of the project area across the relatively flat floodplain.

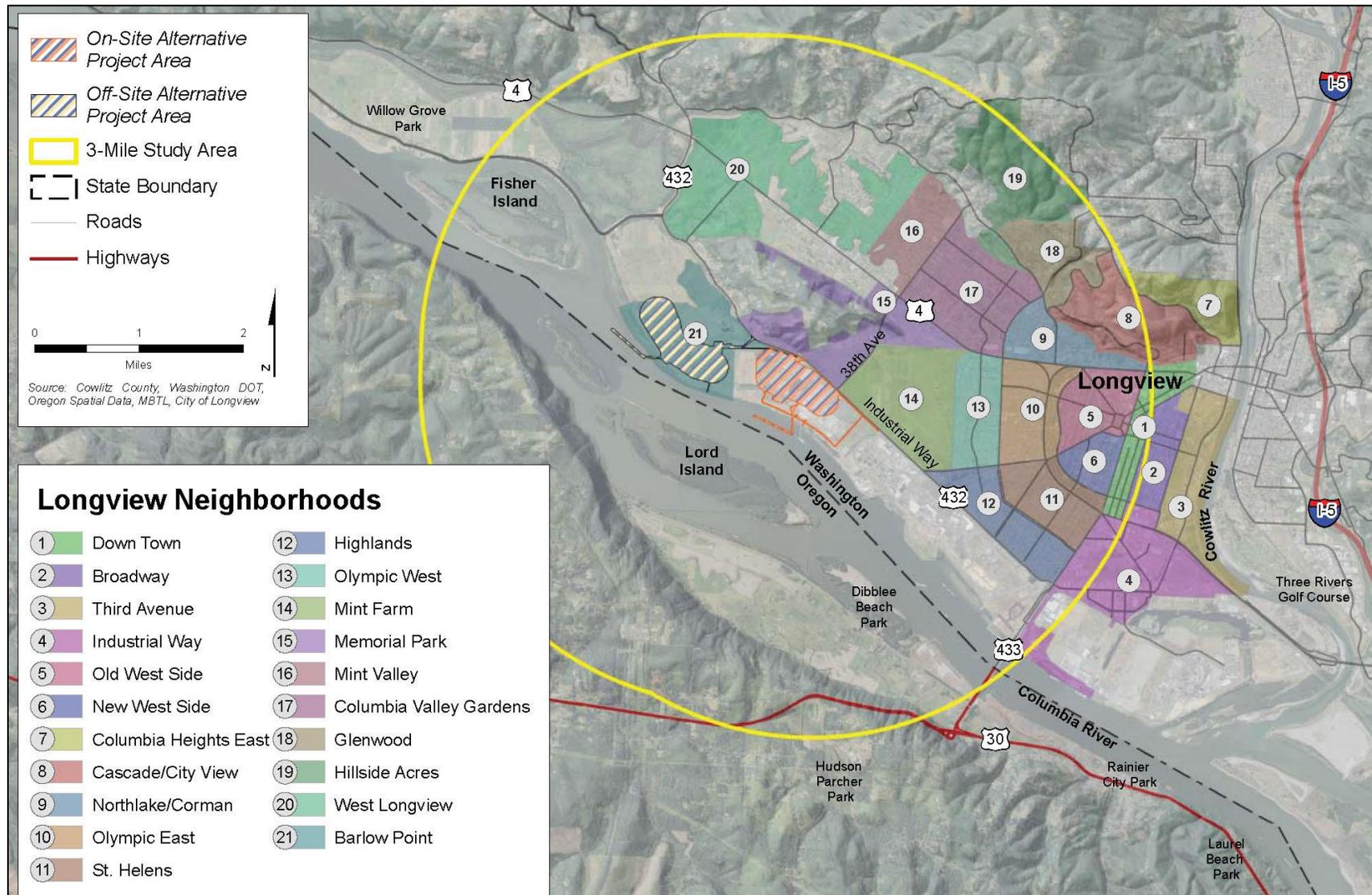
Downtown Longview is approximately 3 miles east of the project area and Kelso is approximately 5 miles east along the Cowlitz River. Rainier, Oregon, is approximately 4 miles upstream (southeast) of the project area along the south bank of the Columbia River. These cities contain a wide range of industrial, residential, commercial, recreation, and public facility land uses.

Industrial Way, which extends along the north side of the project area, is the nearest land transportation corridor. The project area includes multiple driveway access points and a short line rail connection to the mainline rail operated by BNSF Railway Company (BNSF). The Lewis and Clark Bridge (SR 433) is located approximately 3 miles upriver from the project area.

Except for the two single-family residences across Industrial Way from the project area, most residential areas are located in Longview city limits or unincorporated Cowlitz County and are at least 1 mile away from the project area. Nearby residential neighborhoods and their proximity to the project area are identified below. The distances listed are approximate and are measured from nearest project-area boundary to nearest neighborhood boundary. Figure 8 shows the location of these neighborhoods.

- Downtown (2.7 miles east)
- Broadway (2.9 miles east)
- Third Ave (3.3 miles east)
- Industrial Way (2.7 miles southeast)
- Old West Side (2.1 miles east)
- New West Side (2.2 miles east)
- Columbia Heights East (2.9 miles northeast)
- Cascade/City View (2.2 miles northeast)
- Northlake/Corman (1.6 miles northeast)
- Olympic East (1.6 miles east)
- St. Helens (1.7 miles southeast)
- Highlands (1.0 miles southeast)

**Figure 8. Neighborhoods**



- Olympic West (1.1 miles east)
- Mint Farm (0.1 miles east)
- Memorial Park (adjacent to the north/northeast)
- Mint Valley (1.1 mile north/northeast)
- Columbia Valley Gardens (1.1 miles northeast)
- Glenwood (2.1 miles northeast)
- Hillside Acres (1.9 miles northeast)
- West Longview (1.1 miles north/northwest)
- Barlow Point residential/agricultural area (0.2 miles west)

There are numerous recreational opportunities and sites within the broader Longview, Kelso, and Rainier urban area. The Columbia River is a prominent recreational resource and supports boating, fishing, and other forms of water recreation. In addition, the Columbia River is part of two recreational trails that pass through the study area: 1) the 146-mile Lower Columbia River Water Trail, which extends from Bonneville Dam to the mouth of the Columbia River; and 2) the Lewis and Clark National Historic Trail. Dibblee Beach, an undeveloped recreational area, is located on the south shore of the Columbia River, directly southeast of the project area. Cowlitz County owns 21 parks and boat launches within 10 miles of the project area. The City of Longview, which adjoins the project area, administers 33 recreational facilities, including 17 public parks (URS Corporation 2014b). The 16 parks and recreation areas listed below are in the study area. These parks and recreation areas are identified in Figure 4.

- Altrusa Park
- Archie Anderson Park
- Bailey Park
- Cloney Park
- Dibblee Beach
- John Null Park
- Kellogg Park
- Lake Sacajawea Park
- Mark Hoehne Park
- Mint Valley Golf Course
- R.A. Long Park
- Regency Park
- Rotary Park
- Roy Morse Park
- Vandercook Park
- Windemere Park

Because of existing topography, vegetation, and urban development, none of the parks within the county and the city portions of the study area has a view of the project area. However, users of the Columbia River and Dibblee Beach in Oregon do have views of the project area.

Lord and Walker Islands are located in Oregon directly south across the Columbia River. The islands are undeveloped and have no land access, but are part of the water trail network, and are used for primitive camping (i.e., a campsite with no support facilities). Other areas in the Columbia River floodplain on the south side of the river in Oregon are primarily composed of undeveloped rural or agriculture land. In addition, users of Rainier City Park, which is located along the Columbia River in Rainier, Oregon, outside the study area, have limited views of the project area.

### 2.2.1.2 Viewer Groups and Associated Key Viewpoints

The following sections describe the viewer sensitivity and associated key viewpoints for the views identified in Section 2.1.2, *Viewpoint Selection*: urban and industrial views, rural and residential views, and natural views. Eleven key viewpoints from which views of the project area could be affected were identified. Viewpoints are described individually below and are grouped by view type.

### 2.2.1.3 Urban and Industrial Views

The typical viewers in this area are assumed to be industrial workers and commuters traveling on Industrial Way. Visual sensitivity in the industrial use area along the Columbia River is expected to be low because of the existing industrial character of the landscape. Existing industrial facilities appear large in scale and clearly dominate the landscape character. Major visual lines are defined by buildings and structures, and thus are vertical, horizontal, and diagonal. The colors of the existing structures vary but are primarily neutral, including brown, grey, and white surfaces. Movement is an integral part of views of this area, resulting from vehicular traffic, personnel, and industrial emissions (plumes). Artificial lighting is common throughout the industrial area and clearly defines the extent of the heavy industrial area at night. Although most facilities lack extensive windows or other highly reflective surfaces, glare from light-colored building surfaces can be common on bright days. The concentration of similar facilities and land uses can make changes in nighttime lighting difficult to discern.

#### Key Urban and Industrial Viewpoints

- **Viewpoint 1, Industrial Way (1,620 feet southeast of the project area).** This viewpoint represents views of the project area from nearby industrial areas. Views are from approximately the same elevation and are dominated by the numerous large-scale industrial facilities, transmission lines, and substations that occupy most of the land in this area. Industrial Way parallels the project area, limiting views to those obtained on approach to the project area, or at an approximate 90-degree angle as the viewer passes the project area (Figure A-1 in Appendix A).
- **Viewpoint 2, 38th Avenue (2,050 feet northeast of the project area).** From 38th Avenue, the project area is directly in front of the viewer on the approach to Industrial Way (Figure A-2 in Appendix A). Industrial facilities, transmission lines, and substations—all in the immediate foreground (within 1 mile) of the view—dominate the existing views.
- **Viewpoint 3, Mint Farm Industrial Area (2,680 feet northeast of the project area).** This viewpoint provides another view of the project area from a nearby industrial area. Existing facilities on the project area and transmission lines are partially visible through vegetation. The

visual sensitivity of viewers at this location is low. The industrial character of the area is consistent with the historical industrial use of the Port and this area of Longview (Figure A-3 in Appendix A).

#### 2.2.1.4 Rural and Residential Views

The typical viewers in this area are presumed to be residents of the city neighborhoods or of surrounding low-density unincorporated residential properties, including areas south of the river in Oregon. Some travelers on local and state transportation corridors, such as U.S. Route 30 (US 30) from the rural south side of the Columbia River, also have views of the project area.

The general landscape of the rural and residential area consists of natural and human-made features and patterns, often the result of an altered landscape that now supports rural farming or forestry development. The more intensely developed large-scale industrial facilities, high-voltage electrical transmission lines, electrical substations, and plumes of industrial emissions may or may not be clearly discernible.

As with similar land uses, longer distances make individual sites and uses difficult to discern within the surrounding industrial landscape. For example, a viewer at the Hillside Residential viewpoint (Viewpoint 5) is located approximately 3 miles northeast of the project site, making it difficult to identify specific changes to the existing area. Industrial emission plumes and artificial lighting are common throughout the industrial area along the Columbia River. Moreover, the concentration of emissions and light sources at similar facilities and land uses in this industrial area reduces the visual distinction of any single site or facility.

#### Key Rural and Residential Viewpoints

- **Viewpoint 4, Barlow Point Neighborhood (7,500 feet northwest of the project area).** This viewpoint represents the views of the project area from the Barlow Point neighborhood, located adjacent to the northwest terminus of the project area. The general character of the area is agricultural. Large tracts of flat farm and open space, with dispersed housing (including a row of houses on Barlow Point Road) are accessed by narrow rural roads approximately 20 to 30 feet in width. The view of the project area is obscured from most of the Barlow Point neighborhood by the approximately 75-foot-tall, 47-acre Mount Solo landfill (EMCON Northwest 1992), a broad row of trees, and the levee along the Columbia River. Residents would not have direct views of the project area (Figure A-4 in Appendix A). Most foreground views feature open space but large utility transmission towers and emission plumes are visible in distant views. Although no direct sources of light from the project area or industrial facilities can be seen, ambient light originating from industrial uses, including the project area, is visible.
- **Viewpoint 5, Hillside Residential (14,875 feet northeast of the project area).** This residential area is situated in the hills north of the floodplain and has sweeping views of the floodplain and river, which may include the industrial area. Residents of dispersed locations on the eastern hillsides may have views of the project area. Although private lots could not be accessed, viewpoint photographs were available from an undeveloped lot on Alexia Court (Figure A-5 in Appendix A). These areas are generally characterized by contiguous neighborhoods on winding hillside streets. Views from western residential areas are blocked partially or completely by Mount Solo (elevation 610 feet), which lies between the residential areas and the project area. Views of industrial areas are further obstructed by existing vegetation.

Views from this area vary depending on location, but residential viewers could have high sensitivity to changes to the project area. Nighttime views from residential areas include the residential and commercial lighting of Longview and beyond. Lighting associated with the industrial facilities south of Industrial Way is also visible; however, no single facility dominates the existing views.

- **Viewpoints 6 and 7, US 30 Viewpoints (13,390 to 14,980 feet south of the project area).** The US 30 corridor on the south side of the Columbia River extends 2 miles west from the Lewis and Clark Bridge. The corridor includes two scenic pullouts, both with scenic views of Mount St. Helens, Mount Rainier, the Columbia River, and surrounding hillsides. The prominent natural features are the primary focal points but views include rural farmland on both sides of the Columbia River and the Longview/Kelso urban and industrial areas (1 to 5 miles away). Although individual facilities can be discerned from both viewpoints, these facilities are located in an industrial context. Furthermore, most viewers do not linger at road pullouts, and views are presumed to be short in duration (Figure A-6 and Figure A-7 in Appendix A).

Sources of light and glare at the viewpoints include moving vehicles. The ambient glow of the industrial use area along the Columbia River, including Port and Weyerhaeuser facilities, is also visible in the distance. Lighting from the individual facilities can be discerned; however, no facility or light source dominates views and light sources blend into the visual context of the industrial area's nighttime condition.

Viewer sensitivity to changes in the study area is assumed to be moderate from Viewpoints 6 and 7 due to the scenic nature of the views; however, views are transient and already include an existing industrial landscape along the Columbia River.

- **Viewpoint 8, Alston-Mayger Road (10,930 feet southwest of the project area).** The road is located on a high bluff south of the Columbia River in Oregon. Views of the project area from this area occur primarily from single-family residences situated on the northern edge of the bluff. Views of the project area are extremely limited from the roadway because of topography and vegetation. Access constraints precluded observation and evaluation from residential lots. Views were available only from the edge of the road along private property (Figure A-8 in Appendix A). Views vary depending on their exact location, but residential viewers could have high sensitivity to changes to the project area. Scenic views of Mount St. Helens, Mount Rainier, the Columbia River, Lord Island, and Walker Island are the primary focal points, but views also include the Longview urban and industrial areas (approximately 2.5 to 5 miles away). Although individual industrial facilities can be discerned, the considerable distance to the project area reduces viewer sensitivity to individual developments within the larger industrial landscape.

Viewer sensitivity from this viewpoint is moderate to high due to the residential viewing location; however, elements of the project area and the larger agglomeration of industrial facilities blend into a relatively contiguous industrial landscape. The ambient glow of the industrial area along the Columbia River, including Port and Weyerhaeuser facilities, is visible but no single facility dominates views.

- **Viewpoint 9, West Longview Neighborhood (8,000 feet northwest of the project area).** This viewpoint is located along Willow Grove Connection Road (SR 432) just south of the residential neighborhood along Schneiter Drive. The general character of the area is single-family residential homes bordered by extensive wetlands associated with the Coal Creek Slough. The area between the neighborhood and the project area contains large tracts of agricultural land with dispersed single-family residences. The view of the project area is obscured by the approximately 75-foot-tall, 47-acre Mount Solo landfill (EMCON Northwest 1992) and a broad row of trees. Residents would not have direct views of the project area (Figure A-9 in Appendix A). Although no direct sources of lighting from the project area or industrial facilities can be seen, ambient light originating from industrial uses, including the project area, is visible.

### 2.2.1.5 Natural Views

The typical viewers in natural areas are assumed to be recreationalists using the Columbia River or public parks. As noted above, the Columbia River offers a variety of recreational opportunities such as boating, fishing, and other forms of water recreation, and the Lower Columbia River Water Trail passes through the study area. Dibblee Beach offers public beach and water access, fishing, swimming, picnicking, sunbathing, and other passive recreation opportunities such as hiking and bird watching. The landscape character of natural areas is formed by distinctive and memorable natural features (e.g., landforms, rock, outcrops) and patterns (vegetation and open space) with few human-made features. Visual texture consists of rough natural surfaces and colors, including browns, yellows, and greens, and the smooth waters of the Columbia River. Views for a typical recreationalist are assumed to be infrequent and of short to moderate duration; however, viewer sensitivity tends to be high due to interest in natural areas and the inconsistency of natural and industrial lands.

In addition to use by recreationalists, the Columbia River is also navigable by commercial boat operators. Viewers from commercial boats are expected to have a low sensitivity to visual changes because of the infrequent and transitory nature of their views, making it unlikely that they would focus on changes to the project area.

#### Key Natural Viewpoints

- **Viewpoint 10, Dibblee Beach (6,500 feet south of the project area).** This waterfront area extends along the Columbia River from the confluence of the Cowlitz and Columbia Rivers northwest to the project area. This section of the river is characterized as a wide channel of flat water, with Lord Island and Walker Island visible in the northwest portion. The viewshed includes the river channel and shoreline areas on both the Washington and Oregon sides. The Washington shoreline includes heavy industrial and shipping uses with no public access. Dibblee Beach offers public recreational access to the Oregon shoreline south/southeast of the project area (Figure A-10 in Appendix A). Viewers from Dibblee Beach and on-water river recreationalists (e.g., anglers, water trail users, cruisers) are expected to have high viewer sensitivity to changes in the existing area. Light along the Columbia River mainly originates from industrial facilities along the river. Water surfaces also reflect light and glare during low light conditions.
- **Viewpoint 11, Willow Grove Park and Boat Launch (21,375 feet northwest of the project area).** The park offers 0.75 mile of public beach, picnic areas, pedestrian trails, and open spaces. The park shares paved parking lots and restroom facilities with the large paved boat launch,

which is an important public access for boating and water activities on the Columbia River. The boat launch is located outside the study area, approximately 4.5 miles west of Longview, but was included as a viewpoint because it offers public access to the river and allows a viewer to travel upriver from the boat launch and into the study area. Views may then be affected as discussed in Viewpoint 10.

Views of the project area are obstructed by vegetation on Fisher Island and Hump Island (Figure A-11 in Appendix A). Transmission lines and emission plumes adjacent to the project area are visible in background views (four to 10 miles). Because of the existing vegetation, no individual lighting source is discernible from this location, but the ambient glow of the industrial area along the Columbia River and city lights from Longview and Kelso are detectable. Based on the screened views and distance from the project area, viewers would not be sensitive to changes in the project area.

Table 2 summarizes the viewer sensitivity levels and the existing visual quality of each viewpoint as it relates to the On-Site Alternative.

**Table 2. Viewpoints, Viewer Sensitivity, and Existing Visual Quality—On-Site Alternative**

<b>Viewpoint</b>	<b>View</b>	<b>Viewer Sensitivity</b>	<b>Viewer Description</b>	<b>Type</b>
1	Looking west on Industrial Way	Low	Industrial workers and commuters travelling on Industrial Way and other local roads. Would experience frequent views of the project area from nearby industrial areas.	Urban/ Industrial
2	Looking south along 38th Avenue	Low	Industrial workers and commuters traveling on 38th Avenue and other local roads. Would experience frequent views of the project area from nearby industrial areas.	Urban/ Industrial/ Rural
3	Looking southwest from Mint Farm Industrial Area (from Prudential Boulevard)	Low	Industrial workers and commuters traveling Prudential Boulevard and other local roads. Would likely experience frequent views of the project area from nearby industrial areas.	Urban/ Industrial/ Commercial
4	Looking east from Barlow Point Road	High	Residents and agricultural workers looking east toward the project area. Would likely experience frequent views of the project area from rural areas located within the City of Longview and unincorporated Cowlitz County. Views may be of long duration and viewers may have a high sensitivity to change.	Rural/ Residential
5	Looking southwest from Hillside Residential (from Alexia Court)	High	Residents and travelers of local roads. Viewers would experience frequent dispersed views of the project area at various times of day and for long durations.	Rural/ Residential

<b>View-point</b>	<b>View</b>	<b>Viewer Sensitivity</b>	<b>Viewer Description</b>	<b>Type</b>
6,7	Looking north/northwest from US 30 viewpoints	Moderate	Highway travelers looking northwest from US 30 and scenic pullouts. Viewers would experience views of the project area for short durations. Frequency may range from infrequent for visitors to daily for commuters.	Rural
8	Looking northeast from Alston-Mayger Road	Moderate/High	Residents and travelers looking northeast from rural residential areas along this road and to experience frequent dispersed views of the project area at various times and for long durations.	Rural/Residential
9	Looking southeast from West Longview Neighborhood	None	Residents looking southeast toward the project area. Views of the project area are obstructed by Mount Solo landfill and existing vegetation.	Rural/Residential
10	Looking north from Dibblee Beach	High	Public beach and on-water recreationalists looking north toward the project area. Infrequent views of the project area of short duration but viewers may be highly aware of change. Few night viewers.	Natural
11	Looking east from Willow Grove Park and Boat Launch	None	Boaters and recreationalists looking east toward project area. Views would be obstructed by vegetation on Fisher and Hump Islands in Columbia River. Boaters traveling upriver may experience varying views of the project area.	Natural

## 2.2.2 Project Area for the Off-Site Alternative

The project area of the Off-Site Alternative is an approximately 220-acre area at Barlow Point owned primarily by the Port. Most of the project area is located in the City of Longview limits, although a small portion of the project area extends onto privately owned property in unincorporated Cowlitz County. The project area, which is undeveloped and contains open land and vegetated areas, is located between the closed Mount Solo landfill and the levee road along the north bank of the Columbia River.

### 2.2.2.1 Viewshed Overview

The project area for the Off-Site Alternative is approximately 1 mile downstream of the project area for the On-Site Alternative. The general viewshed characteristics of both project areas are largely the same; however, the visual quality of the Off-Site Alternative project area is different. As noted above, this project area is undeveloped and contains open land and vegetation. A row of mature trees lies along the river levee and Barlow Point Road and a small grove of trees stands in the middle of the project area.

There is no access by paved roadway to the project area. Dike Road runs parallel to the project area along the Columbia River, and Barlow Point Road serves the adjacent low-density residential areas

to the west. The only direct sources of nighttime light are residential homes to the north. High levels of indirect light emanate from the Longview and Kelso urban areas and the heavy industrial areas along the Columbia River to the east, including the existing activities in the project area and at the Weyerhaeuser facility and other Port facilities.

### 2.2.2.2 Viewer Groups and Associated Key Viewpoints

The existing dominant visual character of the project area is open space with stands of mature trees. Mount Solo and the Mount Solo landfill limit direct views of the project area from the north and east. Some of the viewpoints from the east have no, or very limited, views of the project area (Viewpoints 1, 2, 3, and 5). The project area has low sensitivity to these viewers.

Conversely, this project area is more visible from the west than the project area of the On-Site Alternative. Views from the west would not be blocked by the Mount Solo landfill. There would be direct views of the project area from the adjacent Barlow Point and West Longview residential neighborhoods (Viewpoints 4 and 9). Residential viewers of the project area have a high sensitivity to changes in visual conditions.

Existing views from US 30 (Viewpoints 6 and 7) are of trees and open space that tend to blend with other rural and natural areas. The project area is clearly discernible from these viewpoints. Due to distance, the typical viewer at Viewpoints 6 and 7 is presumed to have moderate sensitivity to changes at the project area.

The landform and vegetation on Lord Island and Fisher Island lie between the project area and Dibblee Beach (Viewpoint 10) and the Willow Grove Boat Launch (Viewpoint 11). Views are limited or completely blocked. There is no to low viewer sensitivity from these locations; however, there is high sensitivity for on-water viewers.

Table 3 summarizes the potential viewer sensitivity levels and existing visual quality of each viewpoint as it relates to the Off-Site Alternative.

**Table 3. Viewpoints, Viewer Sensitivity, and Existing Visual Quality—Off-Site Alternative**

View-Point	View	Viewer Sensitivity	Viewer Description	Type
1	Looking west on Industrial Way	Low	Industrial workers and commuters travelling on Industrial Way and other local roads. Views of the project area are obstructed by existing industrial facilities and vegetation.	Urban/ Industrial
2	Looking south along 38th Avenue	Low	Industrial workers and commuters traveling on 38th Avenue and other local roads. Views of project area are obstructed by existing industrial facilities and vegetation.	Urban/ Industrial/ Rural
3	Looking southwest from Mint Farm Industrial Area (from Prudential Boulevard)	Low	Industrial workers and commuters traveling Prudential Boulevard and other local roads. Views of project area are obstructed by existing industrial facilities and vegetation.	Urban/ Industrial/ Commercial

<b>View-Point</b>	<b>View</b>	<b>Viewer Sensitivity</b>	<b>Viewer Description</b>	<b>Type</b>
4	Looking east from Barlow Point Road	High	Residents and agricultural workers looking east toward project area. Viewers would likely experience frequent views of area from rural areas located in unincorporated Cowlitz County. Views may be in close proximity and of long duration. Viewers will have high sensitivity to change.	Rural/ Residential
5	Looking southwest from Hillside Residential (from Alexia Court)	Low	Residents and travelers of local roads. Views of project area are obstructed by vegetation and Mount Solo.	Rural/ Residential
6,7	Looking north/northwest from US 30 viewpoints	Moderate	Highway travelers looking northwest from US 30 and scenic pullouts. Viewers would experience views of project area for short durations. Frequency may range from infrequent for visitors to daily for commuters.	Rural
8	Looking northeast from Alston-Mayger Road	High	Residents looking northeast from rural areas along this road. Viewers would experience frequent dispersed views of project area at various times and for long durations.	Rural/ Residential
9	Looking southeast from West Longview Neighborhood	High	Residents looking southeast toward project area. Viewers assumed to experience frequent views of project area at various times and for long durations.	Rural/ Residential
10	Looking north from Dibblee Beach	Low	Public beach or on-water recreationalists looking north toward project area. Primary views of project area are blocked by vegetation on Lord Island.	Natural
11	Looking east from Willow Grove Park and Boat Launch	None	Boaters and recreationalists looking east toward project area. Views are obstructed by vegetation on Fisher and Hump Islands in Columbia River. Boaters traveling upriver may experience varying views of the project area.	Natural

This chapter describes the impacts on aesthetics that would result from construction and operation of the On-Site Alternative or the Off-Site Alternative or the activities of the No-Action Alternative.

### 3.1 On-Site Alternative

The On-Site Alternative would introduce new light sources to the project area. The new artificial light would be partially offset by removing some outdoor lighting during the demolition of existing buildings and facilities. Lighting plans are preliminary and it is expected that the On-Site Alternative would require three levels of lighting, as described below.

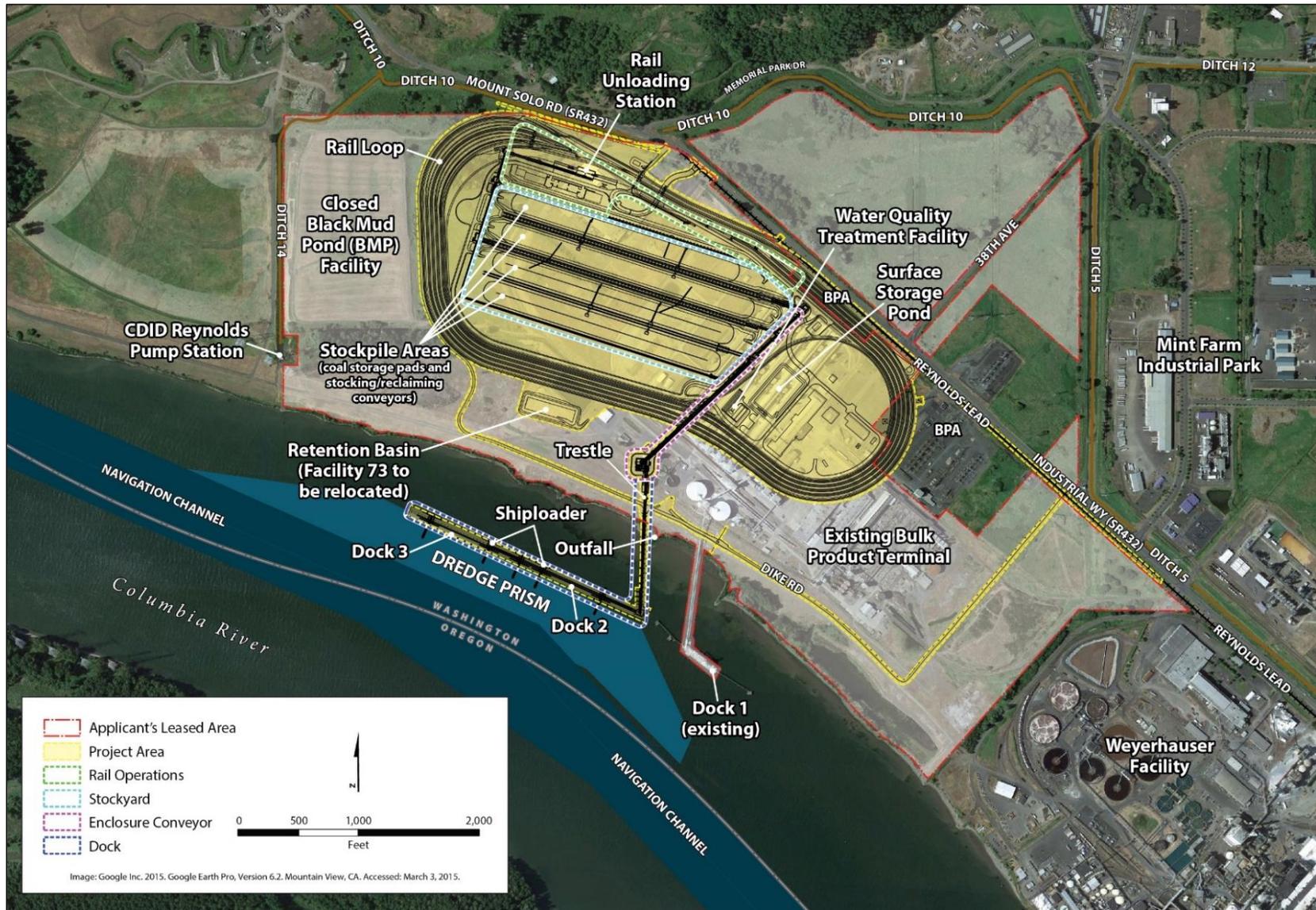
- **Low-level lighting.** Low-level ambient light would be required for general area lighting. This level of lighting would be used along pedestrian and vehicular access roads, in the maintenance and storage areas, and at the water treatment and pump stations. Most ambient lights would be standard pole-mounted streetlights (approximately 30 feet in height) or structure-mounted lights. Typical access lighting in some areas, such as stairways and walkways on the stackers and reclaimers or conveyor transfer points, would be turned on with light and motion sensors as needed for operator safety. In addition, most conveyor lighting would be contained within the structures enclosing the conveyors and light spill would be limited.
- **Moderate-level lighting.** Moderate-level lighting would provide safety and operation lighting at key points such as the head or tail end of the conveyor system or indexers. Colored navigational lights on the docks and clearance lights at the top of tall structures are also considered a moderate-level light. In most instances, moderate-level lights would be directed sources.
- **High-intensity, spot-level lighting.** High-intensity, spot-level lighting would be required for vessel arrival and departure and for accessing equipment on the docks during nighttime operation. One or two ships would be moored at the terminal at a time and would be lit with suitable working and safety lighting. Stockpiles would not be lit except for some high-intensity, directed lighting to illuminate areas where stackers and reclaimers are working during periods of low light. Stackers and reclaimers would be unmanned but monitored with cameras; this lighting would be necessary for camera visibility. It is anticipated that only one stacker and one or two reclaimers and the associated lighting would operate at any given time.

Table 4 summarizes the proposed operational areas and light conditions. Figure 9 identifies the operational areas discussed in Table 4.

**Table 4. Proposed Operational Areas and Lighting—On-Site Alternative**

Area	Function	Level of Lighting	Type of Lighting <sup>a</sup>
<b>Rail Operations</b>			
Train arrivals and departures	Lighting for areas for crew changes, switching points, etc.	Low	Area. Mounted on 30-foot poles.
Indexer	Lighting for placement and operation of indexer and sufficient for camera to monitor safety of work and equipment use	Moderate	Directed.
<b>Stockyard</b>			
Berm conveyors	Lighting for personnel access along length of conveyor; more lighting at tail and head ends of conveyors	Low/ Moderate	Area.
Conveyor transfer points	Pedestrian-level lighting; higher levels around head and tail ends of conveyors	Low	Directed. Mostly within enclosed structures.
Stackers and reclaimers	Pedestrian-level stair and walkway lighting; higher levels for work areas, operational equipment, and clearance lights at top of equipment masts	Low/ Moderate/ High	Directed. Illuminates stacking and reclaiming operation for camera visibility. Access lights would be motion/light-sensor controlled.
<b>Enclosure Conveyor</b>			
Receiving and shipping	Lighting for pedestrian access along conveyor and through gallery	Low	Directed. Access lights would be motion/light-sensor controlled.
<b>Dock</b>			
Conveyors	Pedestrian-level lighting along length of conveyors	Low	Area.
Conveyor transfer points	Pedestrian-level lighting; higher levels around head and tail ends of conveyors	Moderate	Directed.
Mooring, deck	Lighting for vessel arrival/departure and for dock plant and equipment	High	Directed. As required to illuminate operations and to ensure edge of dock is clearly visible.
Navigation	Colored warning and clearance lighting	Moderate	Point. Shows extent and height of facilities.
<b>General Area</b>			
Access road	Lighting for clear identification of roadways	Low	Area. Lighting for roadways. Mounted on 30-foot poles.
Maintenance area and storage	Maintenance/services/repair lighting for work and safety	Low	Area. Lighting for roadways. Mounted on 30-foot poles.
Water treatment and pump stations	Plant and equipment lighting for operation and maintenance	Low	Area. Lighting walkway and work areas.
Structures, towers, and docks	Colored navigational and air clearance lighting to warn of equipment proximity and potential interference	Moderate	Point. Shows extent and height of facilities.
Notes:			
Source: Millennium Bulk Terminals—Longview 2014b			
<sup>a</sup> . Area Lighting: General illumination for pedestrian and vehicle travel, general task lighting, or security. Directed Lighting: Illumination for function purposes such as inspections, safe equipment operation and maintenance, and work areas. Point Lighting: Light sources identifying direction or navigational extents, height, or direction			

Figure 9. Proposed Operations Areas and Lighting



Overall, the visual quality of the On-Site Alternative would be similar to the existing surrounding industrial development. The forms, lines, colors, and scale of existing and proposed buildings and elements also would be similar to nearby heavy industrial developments and the facility would be visually compatible with the surrounding industrial uses. Prominent new visual features and structures would include the coal stockpiles (approximately 85 feet high), eight transfer towers and two ship loaders (80 to 90 feet high), a surge bin (approximately 146 feet high), and vessels at the docks (approximately 190 feet high for Panamax vessels).

The following sections describe the potential aesthetic impacts attributable to the construction and operation of the On-Site Alternative. The levels of impact for each viewpoint are identified as high, moderate, low, and no impact, as defined above in Section 2.1.5, *Impact Analysis*.

### 3.1.1 Construction: Direct Impacts

The construction of the On-Site Alternative would begin with the demolition of the existing cable plant (approximately 270,000 square feet) and potline buildings (approximately 600,000 square feet) and ancillary structures and facilities (URS Corporation 2013). Demolition activities also would include the removal of approximately 6 acres of forested wetland in the northwest corner of the project area. The existing trees are directly south of Mount Solo and east of the Mount Solo landfill along Industrial Way; their removal would mainly affect travelers along Industrial Way.

Following demolition and general area preparation, the project area would be preloaded to increase the strength of the underlying project area soils to accommodate the four future coal stockpiles. This activity would involve placing preloading material (soils from the project area and elsewhere) in piles up to 35 feet high in the location of each future coal stockpile pad. This material would remain in place until soil consolidation below is achieved, which may take up to 7 years. Two stockpile areas would be preloaded during Stage 1 of construction and up to 3 years could be required for the consolidation of the underlying soils. The remaining two stockpile areas would be preloaded during Stage 2 of construction. As with the Stage 1 preloading, up to 3 years could be required for the consolidation of the underlying soils. The preloading activities would be the longest phase of construction.

During construction, activities would include the use of heavy machinery such as cranes, wheel loaders, dozers, dump trucks, excavators, graders, rollers, compactors, drill rigs, pile driving equipment, portable ready-mix batch plant, ready-mix trucks, concrete pumps, elevated work platforms, forklifts, rail track laying equipment, welders, water pumps, river dredging barges, and other related equipment (URS Corporation 2013). Construction would also involve construction lighting and project area safety lighting or warning flashers as well as shoreline and in-water construction activities for the proposed docks.

Overall, construction of the On-Site Alternative would result in the following direct impact.

#### **Change Visual Features of Project Area**

Construction activities on the project area would be visible to residents, workers, commuters, recreationalists, and boat operators, but these activities would be temporary and consistent with the general industrial context of the surrounding area. Although preloading berms may remain in place for up to 7 years, these would not be a prominent visual feature in the larger industrial waterfront. Furthermore, in this industrial context, it would be difficult for more distant viewers, particularly

rural and residential viewers at Viewpoints 6, 7 and 8 (Figures A-6, A-7, and A-8 in Appendix A), to perceive noticeable changes during construction. Construction of the On-Site Alternative would result in a low level of impact on aesthetics and visual quality.

### **3.1.2 Construction: Indirect Impacts**

Construction of the On-Site Alternative would not result in indirect impacts on aesthetics and visual quality.

### **3.1.3 Operations: Direct Impacts**

Operations associated with the On-Site Alternative would result in the following direct impacts.

#### **3.1.3.1 Urban and Industrial Views**

##### **Change Visual Features of the Project Area**

Operation of the On-Site Alternative would introduce new visual features to the project area and accompanying new sources of light and glare. The new visual features would include new structures and equipment, additional workers, and increased vehicle, train, and ship movements on and adjacent to the project area. It is also anticipated that at least one Panamax-sized vessel would be moored at the proposed dock facilities at any given time. These features would alter the aesthetics of the project area. The new activities would result in new sources of light and glare. However, these changes would be consistent with the existing industrial aesthetics of the project area and the surrounding area.

Viewpoints from urban and industrial areas are generally near the project area. Views are dominated by existing industrial facilities, operations, and activities. Large-scale buildings, heavy utility transmission lines, industrial plumes, and ancillary facilities and equipment define the existing visual character of the project area. The coal stockpiles and conveyor systems, rail lines, and other equipment and structures would be consistent with the overall visual character of the urban and industrial viewpoints. With the On-Site Alternative, the existing, rectangular, geometric potline buildings and cable plant buildings would be replaced by coal stockpiles. The sizes and long, straight lines of the coal piles would be similar to the concrete and metal buildings, and the horizontal ground-level rail lines would be less visually dominant than the existing buildings. Vessels moored at the proposed docks are not expected to be visible from most urban and industrial viewpoints. Figures A-12 and A-13 in Appendix A present the photo simulations for Viewpoints 1 and 2. Overall, because the On-Site Alternative would be visually compatible with surrounding industrial uses and would affect a low number of sensitive viewers, the On-Site Alternative would have a low level of impact on views from urban and industrial viewpoints.

##### **Introduce New Sources of Light and Glare to the Project Area**

Artificial light is common throughout the Longview industrial area and along the Columbia River adjacent to the Port of Longview. It clearly defines the extent of the heavy industrial operations but the concentration of similar facilities and land uses would make changes in nighttime lighting on a particular area difficult to discern. The new artificial light produced by the On-Site Alternative would be partially offset by the removal of some outdoor ambient lighting during demolition of existing buildings and facilities. Similarly, the On-Site Alternative would have considerably fewer reflective

surfaces than the existing buildings. Glare impacts for urban and industrial viewers would be reduced because metal, concrete, and other reflective materials (including windows) would be demolished under the On-Site Alternative. Overall, the On-Site Alternative would result in no new light and glare impacts on views from urban and areas.

### Change Visual Perception by Viewers

The viewers in this area would be industrial workers and commuters traveling on Industrial Way. The visual perception of these viewers is limited because their attention is focused on work, construction, or commuting activities. Project area operations would occur 24 hours per day, similar to adjacent industrial areas. The sensitivity of workers at adjacent facilities is generally considered to be low. The On-Site Alternative would result in a low level of impacts on viewers' visual perception from urban and industrial Viewpoints 1, 2, and 3.

Table 5 is a summary of visual, light, glare, and viewer impacts from Viewpoints 1, 2, and 3 (see Figures A-12 and A-13 in Appendix A for photo simulations of viewpoints 1 and 2).

**Table 5. Visual, Light and Glare, and Viewer Impacts (Viewpoints 1, 2, and 3)—On-Site Alternative**

View-point	View	Distance (feet) <sup>a</sup>	Visual Impact	Light & Glare Impact	Viewer Impact
1	Looking west on Industrial Way. Primary view would be of rail lines and stockpile areas. Demolition of existing buildings and lighting and reduction of manmade materials would reduce visual impacts. Visual impact also would be reduced because views would be partially obscured by utility transmission lines and structures.	1,620	L	N	L
2	Looking south along 38th Street. Main views would be almost perpendicular to project area. Demolition of existing buildings and lighting and reduction of manmade materials would reduce visual impacts and resulting colors and textures would partially blend into background and natural environments.	2,050	L	N	L
3	Looking southwest from Mint Farm Industrial Area (from Prudential Boulevard). Most views of would be screened by vegetation. Some structures and facilities may be seen more easily during winter months when vegetation is dormant.	2,680	L	N	L

Notes:

<sup>a</sup> Distance from project area

L = low level of impact; N = no impact.

### 3.1.3.2 Rural and Residential Views

#### Change Visual Features of Project Area

Prominent views from the rural and residential viewpoints include the existing industrial area along the Columbia River and a broader context that includes Mount St. Helens, Mount Rainier, the Columbia River, surrounding hillsides, rural farmland, and fairly continuous stands of native vegetation and other features that bring natural characteristics into the visual character.

Views from the upland viewpoints would change as the large, rectangular potline and cable plant buildings are demolished and replaced by large coal piles with the On-Site Alternative. The demolition of approximately 6 acres of forested wetland would change the visual character of the northwest corner of the project area. However, due to the proximity to Mount Solo and the Mount Solo landfill, which obstruct views from many rural and residential areas, this part of the project area is seen by a limited number of viewers and commuters traveling along US 30 in Oregon. Overall, the project area would continue to appear in a larger context of existing vegetated and undeveloped areas. The On-Site Alternative would not obstruct views of Mount St. Helens, Mount Rainier, or the Columbia River from rural and residential viewpoints. Figures A-14, A-15, A-16 in Appendix A present the photo simulations for Viewpoints 5, 6, and 8.

The scale of the proposed dock, vessels, ship loaders, coal piles, and related conveyors would be discernible from the more distant rural and residential viewpoints. However, these facilities would appear in the context of the existing upland industrial facilities and adjacent heavy industrial areas as a relatively continuous visual resource for viewers. Views of the shoreline would be obstructed by the proposed docks, which would be up to 2,300 feet long. Overall, visual impacts on rural and residential views due to the On-Site Alternative would be difficult to perceive because of the distance between the viewpoints and the project area, as well as the On-Site Alternative's visual compatibility with adjacent industrial uses. Therefore, the On-Site Alternative would result in a low level of impact on rural and residential views from Viewpoints 5, 6, 7, and 8. The On-Site Alternative would not be visible from Viewpoints 4 and 9 and would result in no impact on views from these viewpoints.

#### Introduce New Sources of Light and Glare to Project Area

New artificial light produced by the On-Site Alternative would be partially offset by the removal of some outdoor ambient lighting during demolition of existing buildings and facilities. In addition, glare would be reduced because most demolished facilities include extensive metal, concrete, or other reflective surfaces (including windows). In distant views from hillsides in Longview (Viewpoint 5), the On-Site Alternative's artificial lighting would likely be difficult to discern given the distance between the viewpoint and the project area and the existing context of lighted industrial uses along the Columbia River. Furthermore, the On-Site Alternative would not be visible from Viewpoint 4 on Barlow Point and Viewpoint 9 in West Longview because of the Mount Solo landfill and existing vegetation. Therefore, the On-Site Alternative would result in a low level of impact on rural and residential views from Viewpoint 5 and no impact on rural and residential views from Viewpoints 4 and 9.

The proposed dock facilities would require prolonged moderate to high levels of light for operation at night while vessels are arriving, departing, or being loaded. Proposed lighting associated with the dock facilities would be reflected in the waters of the Columbia River and may be visible from some

rural and residential viewpoints (Viewpoints 6, 7, and 8). However, the distance to these viewpoints and the existing concentration of similar facilities and land uses along the waterfront would make changes in nighttime lighting difficult to discern. Therefore, the On-Site Alternative would have a low level of impact on light and glare at these viewpoints. Overall, light and glare impacts for rural and residential views would range from no impact to low impact.

### Change Visual Perception by Viewers

Viewers in the rural and residential area are presumed to be residents within the City of Longview neighborhoods or of surrounding low-density residential areas, including areas south of the Columbia River in Oregon. Some travelers on local and state transportation corridors such as US 30 south of the Columbia River would also have dispersed views of the project area. Visual sensitivity in the rural and residential area is assumed to be high because views are often prolonged and stationary and residential viewers are sensitive to change. However, most residents would not have direct views of the project area and the On-Site Alternative would be in keeping with the existing industrial character of the surrounding area. Therefore, the On-Site Alternative would result in a low level of impact on viewers' visual perceptions from Viewpoints 5, 6, 7, and 8, and no impact on views from Viewpoints 4 and 9.

Table 6 provides a summary of visual, light, glare, and viewer impacts from Viewpoints 4 through 8 (see Figures A-14, A-15, and A-16 in Appendix A for photo simulations of viewpoints 5, 6, and 8).

**Table 6. Visual, Light and Glare, and Viewer Impacts (Viewpoints 4 through 8)—On-Site Alternative**

View-point	View	Distance (feet) <sup>a</sup>	Visual Impact	Light & Glare Impact	Viewer Impact
4	Looking east from Barlow Point Road. General visual character is agricultural with large tracts of farmland and dispersed housing. Views obstructed by small hill, broad row of trees, and Columbia River levee. Project area would not be visible from this location. Direct sources of light would not be seen.	7,500	N	N	N
5	Looking southwest from hillside residential areas (from Alexia Court). Views are elevated above the project area. Small portion of proposed facility would be visible in this view; other locations on hillside are expected to have views of project area. Areas are characterized by contiguous residential neighborhoods on winding hillsides. Most views partially/completely blocked by vegetation and Mount Solo. Light sources may be discerned but no single facility expected to dominate views.	14,875	L	L	L

View-point	View	Distance (feet) <sup>a</sup>	Light & Glare		
			Visual Impact	Glare Impact	Viewer Impact
6 & 7	Looking north/northwest from US 30. Views are from vehicles traveling along highway and from two scenic viewpoints. Views of Mount St. Helens, Mount Rainier, the Columbia River, rural farmland, and surrounding hillsides are prominent scenic focal points. Individual facilities and vessels can be discerned but no single facility expected to dominate views. Lighting for dock facilities may be visible and reflected by Columbia River while vessels are arriving, departing, or being loaded.	13,390–14,980	L	L	L
8	Looking northeast from Alston-Mayger Road. Views of project area occur primarily from single-family residences. Viewpoint dominated by scenic views of Mount St. Helens, Columbia River, and Lord and Walker Islands. Individual facilities and vessels can be discerned but no single facility expected to dominate views. Lighting for dock facilities may be visible and reflected by Columbia River while vessels are arriving, departing, or being loaded.	10,930	L	L	L
9	Looking south from West Longview residential neighborhood. Project area would not be visible from this location.	8,000	N	N	N

Notes:

<sup>a</sup> Distance from project area

L = low level of impact; N = no impact.

### 3.1.3.3 Natural Views

#### Change Visual Features of Project Area

The proposed docks, ship loaders, coal stock piles, trestles and ancillary equipment associated with the On-Site Alternative would introduce new large-scale industrial uses along the Columbia River. The On-Site Alternative would introduce straight lines, geometric forms, hard visual textures, and human-made materials to the project area. It is also anticipated that at least one vessel would be moored at the proposed docks at any given time. Panamax-sized vessels that would use the proposed docks would be approximately 950 feet in length, 106 feet wide (beam), and 190 feet high. These changes would be visible to on-water recreational users and viewers from Dibblee Beach on the south shore of the river (Viewpoint 10). However, the new facilities would be contiguous and visually consistent with existing industrial facilities, and vessels are commonly traveling up river, anchored, or moored along the Port of Longview shoreline. Therefore, the On-Site Alternative would have a moderate level of impact on views from Viewpoint 10 because it would introduce operations, buildings, and structures that would be visible to sensitive viewers, but the On-Site Alternative also would be consistent with adjacent land uses. Figure A-17 in Appendix A presents the photo simulation for Viewpoint 10. The On-Site Alternative would not be visible from Viewpoint 11 and would not result in impacts on views from Viewpoint 11.

### Introduce New Sources of Light and Glare to Project Area

New lighting associated with the dock facilities would result in a moderate level of light impacts on views from Dibblee Beach (Viewpoint 10) where the On-Site Alternative's lighting would be visible and would be reflected in the waters of the Columbia River. For distant viewers, artificial lighting is common throughout the Port of Longview industrial area on the Columbia River, and the concentration of similar facilities and land uses would make changes in nighttime lighting difficult to discern for distant viewers. The On-Site Alternative would result in moderate impacts related to light and glare because most recreational viewers in natural areas view the project area during daylight conditions. MM ALG-1 would minimize the moderate level of impacts on viewers from Viewpoint 10.

### Change Visual Perception by Viewers

The views from natural areas are presumed to be from on-water recreational viewers (e.g., anglers, water trail users, cruisers) and viewers from Dibblee Beach on the south bank of the Columbia River. For a typical recreationalist, views would be infrequent and of short to moderate duration. However, viewer sensitivity tends to be high because of viewers' expectation of natural views, the public nature of and interest in some natural areas, and the contrast between natural and industrial lands. Moreover, the movement of ships, trains, and equipment introduces additional visual impacts on viewers from natural areas.

The Columbia River is also navigated by commercial boat operators. Viewers from commercial boats are expected to have a low sensitivity to changes in aesthetics. Because of low sensitivity, infrequent views, and the transitory nature of boat operator views, it is unlikely that viewers would experience negative visual impacts based on changes to the existing project area. Overall, the On-Site Alternative would not result in impacts on viewers' visual perceptions from Viewpoint 11 and a moderate level of impact on viewers' visual perceptions from Viewpoint 10. MM ALG-1 would minimize moderate level of impacts on viewers from Viewpoint 10.

Table 7 is a summary of visual, light, glare, and viewer impacts from Viewpoints 10 and 11 (see Figure A-17 in Appendix A for a photo simulation of Viewpoint 10).

**Table 7. Visual, Light and Glare, and Viewer Impacts (Viewpoints 10 and 11)—On-Site Alternative**

View-point	View	Distance (feet) <sup>a</sup>	Visual Impact	Light & Glare Impact	Viewer Impact
10 <sup>b</sup>	Looking north/northwest from Dibblee Beach. Views are of wide flat-water channel with Lord and Walker Islands to west. Heavy industrial uses and facilities characterize north riverbank. Light sources may be discerned and glare impacts are increased by water; however, no single facility expected to dominate views and recreational viewers are limited at night. Lighting for dock facilities may be visible and reflected by Columbia River while vessels are arriving, departing, or being loaded.	6,500	M	M	M

View-point	View	Distance (feet) <sup>a</sup>	Visual Impact	Light & Glare Impact	Viewer Impact
11	Looking east from Willow Point Boat Launch. Views of project area are obstructed by vegetation on two islands in Columbia River and light sources would have no impact. Located outside the study area, approximately 4.5 miles northwest of Longview on Columbia River, but allows river access from which public could travel upriver and into study area, where views of project area may be affected as for Viewpoint 9.	21,375	N	N	N

Notes:

<sup>a</sup> Distance from project area

<sup>b</sup> This viewpoint also represents the potential impacts of the On-Site Alternative for on-water viewers. Views would be comparable from Dibblee Beach and an on-water location.

L = low level of impact; N = no impact

### 3.1.4 Operations: Indirect Impacts

Operation of the On-Site Alternative would not result in indirect impacts on aesthetics and visual quality.

### 3.1.5 On-Site Alternative Impact Summary

Construction and operation of the On-Site Alternative would introduce new visual, aesthetic, and light and glare elements that would be visible from viewpoints in the study area. These elements would result in varying levels of aesthetic impacts depending on the type of viewer, the use of the view, and the context of the view.

Viewers from urban and industrial viewpoints would view the On-Site Alternative from similar heavy industrial areas. The On-Site Alternative would be visually compatible with surrounding industrial uses and would affect a low number of sensitive viewers, and thus would have no visual impact to low visual impacts on views from urban and industrial viewpoints.

For viewers at rural and residential viewpoints, the On-Site Alternative would appear in the context of the existing upland industrial facilities and adjacent heavy industrial areas as a relatively continuous visual resource. Visual impacts on rural and residential views would be difficult to perceive because of the distance between the viewpoints and the project area, as well as the On-Site Alternative's visual compatibility with adjacent industrial uses. Therefore, the On-Site Alternative would result in no visual impact to low visual impacts on views from rural and residential viewpoints.

For viewers at natural viewpoints, the On-Site Alternative would introduce operations, buildings, and structures that would be visible to sensitive viewers from the Columbia River and Dibblee Beach. The On-Site Alternative would also introduce moderate to high levels of light for operation at night. This light would be visible from the natural viewpoints and would be reflected in the waters of the Columbia River. Although the On-Site Alternative would appear in the context of similar industrial uses along the Columbia, it would result in moderate visual impacts on views from natural

viewpoints due to the sensitivity of viewers, its proximity to certain viewpoints (notably Dibblee Beach), and the potential for new sources of nighttime light and glare from dock lighting.

Overall, the On-Site Alternative would result in no visual impact to low visual impacts on views from all viewpoints except the natural viewpoint at Dibblee Beach (Viewpoint 10), where it would result in moderate impacts. Moderate level impacts from Viewpoint 10 would be minimized with the implementation of MM ALG-1.

## 3.2 Off-Site Alternative

The Off-Site Alternative would transform an undeveloped area into an intensive-use industrial area with the same facilities as the On-Site Alternative.

Overall, the Off-Site Alternative would introduce visual qualities that would contrast with the existing rural character of the surrounding area. The following sections describe the potential aesthetic impacts attributable to the construction and operation of the Off-Site Alternative.

### 3.2.1 Construction: Direct Impacts

With the exception of the clearing and demolition activities, the construction of the Off-Site Alternative would be similar to the On-Site Alternative. Demolition activities would involve clearing the existing trees and vegetation directly south of Mount Solo and the Mount Solo landfill and grading the project area. Following clearing and general preparation of the project area, construction activities under the Off-Site Alternative would be the same as those under the On-Site Alternative but would include the construction of an additional rail line spur and a new access road. The Off-Site Alternative would also include the same soil preloading activities as the On-Site Alternative.

Overall, construction of the Off-Site Alternative would result in the following direct impact.

#### **Change Visual Features of Project Area**

For most industrial workers, commuters, recreationalists, and boat operators, construction activities would be temporary and consistent with the general industrial context to the east. For residents of Barlow Point and West Longview (Viewpoints 4 and 9), the construction activities would be visible and would displace the project area's existing rural visual context (Figures A-4 and A-9 in Appendix A). However, there would only be a low number of viewers at each of these viewpoints. The change in the project area's visual context is also expected to be discernible for more distant viewers, including rural and residential viewers at Viewpoints 6, 7, and 8 (Figures A-6, A-7, and A-8 in Appendix A). Nonetheless, construction activities would be temporary and consistent with the industrial character of the Columbia River waterfront to the east, and viewers at the rural and residential viewpoints would be located approximately 1 to 3 miles from the project area.

Overall, construction of the Off-Site Alternative would change the visual character of the project area from an undeveloped area to a construction area, and this change would be visible to sensitive viewers. However, there would generally be a low number of viewers and for more distant viewpoints the change to the project area's visual character would be consistent with the industrial

character of the Columbia River waterfront. Therefore, construction of the Off-Site Alternative would result in a moderate level of visual impact.

### **3.2.2 Construction: Indirect Impacts**

Construction of the Off-Site Alternative would not result in indirect impacts on aesthetics and visual quality.

### **3.2.3 Operations: Direct Impacts**

Operations associated with the Off-Site Alternative would result in the following direct impacts.

#### **3.2.3.1 Urban and Industrial Views**

##### **Change Visual Features of Project Area**

The operation of the Off-Site Alternative would introduce new visual features to the project area and accompanying new sources of light and glare. The new visual features would include new structures and equipment on the project area, additional workers, and increased vehicle, train, and ship movements on and adjacent to the project area. It is also anticipated that at least one Panamax-sized vessel would be moored at the proposed docks at any given time. These features would substantially alter the aesthetics of the project area from an undeveloped area to a heavily used industrial facility. The new activities on the project area would also introduce new sources of light and glare. These changes would be generally consistent with the existing industrial visual characteristics to the east, but would not be consistent with the existing visual character of the project area or the residential and agricultural area to the west and north.

For the Off-Site Alternative, the general visual characteristics and views from the urban and industrial viewpoints would remain similar to current conditions. Existing large-scale buildings, heavy utility transmission lines, industrial plumes, and ancillary facilities and equipment as well as existing vegetation would screen most views of the Off-Site Alternative facilities and operations from the urban and industrial viewpoints. Some intermittent views of the coal piles, conveyors, and structures may exist but the bold lines, colors, and textures would be visually compatible with surrounding industrial uses. Vessels moored at the proposed docks are not expected to be visible from most urban and industrial viewpoints. Overall, the Off-Site Alternative would have a low level of impact on views from urban and industrial viewpoints.

##### **Introduce New Sources of Light and Glare**

Artificial lighting would be introduced into the project area but would be similar to other heavy industrial facilities and consistent with the nighttime lighting context for urban and industrial viewers. Changes in light conditions would be difficult to discern for viewers at these viewpoints. Because only limited views of the Off-Site Alternative facilities would exist, no photo simulations were produced for the urban and industrial viewpoints. Overall, the Off-Site Alternative would have a low level of light and glare impacts on views from Viewpoints 1, 2, and 3.

### Change Visual Perception by Viewers

The viewers in this area would be industrial workers and commuters traveling on Industrial Way. The visual perception of these viewers is limited because their attention is focused on work, construction, or commuting activities. Project area operations would occur 24 hours per day, similar to the operating hours of adjacent industrial areas. The sensitivity of workers at adjacent facilities is generally considered to be low. The Off-Site Alternative would result in a low level of impacts on viewers' visual perception of urban and industrial viewpoints.

Table 8 is a summary of the visual, light, glare, and viewer impacts of the Off-Site Alternative from Viewpoints 1, 2, and 3.

**Table 8. Visual, Light and Glare, and Viewer Impacts (Viewpoints 1, 2, and 3)—Off-Site Alternative**

View-point	View	Distance (feet) <sup>a</sup>	Visual Impact	Light & Glare Impact	Viewer Impact
1	Looking west on Industrial Way. Primary view would be screened by existing heavy industrial facilities, utility transmission lines, and existing vegetation.	7,350	L	L	L
2	Looking south along 38th Street. Primary view would be screened by existing heavy industrial facilities, utility transmission lines, and existing vegetation.	6,810	L	L	L
3	Looking southwest from Mint Farm Industrial Area (from Prudential Boulevard). Most views would be screened by vegetation.	7,950	L	L	L

Notes:  
<sup>a</sup> Distance from project area  
 L = low level of impact; N = no impact.

### 3.2.3.2 Rural and Residential Views

#### Change Visual Features of Project Area

Prominent views from the rural and residential viewpoints include the existing industrial area along the Columbia River and a broader context that includes Mount St. Helens, Mount Rainier, the Columbia River, surrounding hillsides, rural farmland, and fairly continuous stands of native vegetation and other features that bring natural characteristics into the visual landscape character. The existing dominant character of the project area is open space with stands of mature trees.

The displacement of open space and mature trees and the conversion of the project area to large-scale, heavily used industrial facilities, moored vessels, and operations would introduce a high level of visual contrast to the project area, particularly for nearby viewers with direct views of the project area (Viewpoints 4 and 9). The proposed industrial facilities and operations would also introduce new direct and indirect sources of light and glare. However, there would be a low number of sensitive viewers at Viewpoints 4 and 9. Therefore, the Off-Site Alternative would result in a moderate level of visual impacts on views from Viewpoints 4, 6, 7, 8, and 9 and no impact on views from Viewpoint 5. Moderate level impacts on views from Viewpoints 4, 6, 7, 8, and 9 are addressed under MM ALG-2.

### **Introduce New Sources of Light and Glare**

The displacement of the rural visual character and introduction of new light and glare sources would also be discernible from distant rural and residential viewpoints (Viewpoints 6, 7, and 8). Because these viewpoints are approximately 1 to 3 miles from the project area, no individual industrial facility would be dominant from these viewpoints and the Off-Site Alternative would blend into the overall industrial context of the Columbia River waterfront. However, the Off-Site Alternative would expand industrial development west and downriver from the project area. Therefore, the Off-Site Alternative would result in moderate level of light and glare impacts on views from Viewpoints 4, 6, 7, 8, and 9, and a low level of impact on views from Viewpoint 5. Moderate level impacts on views from Viewpoints 4, 6, 7, 8, and 9 are addressed under MM ALG-2.

Figures A-18, A-19, and A-20 in Appendix A present the photo simulations of the Off-Site Alternative from Viewpoints 4, 8, and 9.

### **Change Visual Perception by Viewers**

Viewers in the rural and residential area are presumed to be residents within the City of Longview neighborhoods or of surrounding low-density residential areas, including areas south of the Columbia River in Oregon. Some travelers on local and state transportation corridors such as US 30 south of the Columbia River would also have dispersed views of the project area. Visual sensitivity in the rural and residential area is assumed to be high because views are often prolonged and stationary and residential viewers are sensitive to visual change. However, viewers would be limited and views would be distant from the project area. Therefore, the Off-Site Alternative would result in a moderate level of impact on viewers' visual perceptions from Viewpoints 4, 6, 7, 8, and 9, and no impact on views from Viewpoint 5. Moderate level impacts on views from Viewpoints 4 and 9 are addressed under MM ALG-2.

Table 9 is a summary of the visual, light and glare, and viewer impacts of the Off-Site Alternative from Viewpoints 4 through 9.

**Table 9. Visual, Light and Glare, and Viewer Impacts (Viewpoints 4 through 9)—Off-Site Alternative**

<b>View-point</b>	<b>View</b>	<b>Distance (feet)<sup>a</sup></b>	<b>Visual Impact</b>	<b>Light &amp; Glare Impact</b>	<b>Viewer Impact</b>
4	Looking east from Barlow Point Road. Off-Site Alternative facilities and operations would be less than 1 mile distant but would be visible to a low number of viewers.	1,150	M	M	M
5	Looking southwest from hillside residential area (from Alexia Court). Views are elevated above Barlow Point. Most views of Off-Site Alternative would be blocked by existing vegetation and Mount Solo. Some ambient night time light may be discernible.	20,000	N	L	N
6 & 7	Looking north/northwest from US 30. Views are from vehicles traveling along highway and from two scenic pullouts. Views of Mount St. Helens, Mount Rainier, Columbia River, rural farmland, and surrounding hillsides are prominent scenic focal points. No individual facilities and light sources are expected to be visually dominant but displacement of rural open space and existing vegetation can be discerned. Lighting for dock facilities may be visible and reflected by Columbia River while vessels are moored.	16,900 – 18,200	M	M	M
8	Looking northeast from Alston-Mayger Road. Views of the project site occur primarily from single-family residences. Viewpoint dominated by scenic views of Mount St. Helens, Columbia River, and Lord/Walker islands. No individual facilities and light sources are expected to be visually dominant but displacement of rural open space and existing vegetation can be discerned. Lighting for dock facilities may be visible and reflected by Columbia River while vessels are arriving, departing, or being loaded.	6,100	M	M	M
9	Looking south from West Longview residential neighborhood. General visual character is agricultural with large tracts of farmland and dispersed single-family housing. Off-Site Alternative would introduce high visual contrast but would be visible to a low number of viewers.	3,500	M	M	M

## Notes:

<sup>a</sup> Distance measured from viewpoint to nearest project limit boundary.

L = low level of impact; M = moderate level of impact; H = high level of impact.

### 3.2.3.3 Natural Views

#### Change Visual Features of Project Area

Existing landforms and vegetation on Lord and Fisher Islands block most views of the project area from Viewpoints 10 and 11. Some ambient lighting associated with the Off-Site Alternative may be visible from these viewpoints but would have a negligible effect on viewers who tend to use the viewpoints primarily during daytime hours. Therefore, the Off-Site Alternative would result in no new visual impact and a low light and glare impacts on views from Viewpoints 10 and 11.

For the Off-Site Alternative, on-water views from Viewpoint 10 are considered separately, because the project area would not be visible from Viewpoint 10. For recreational viewers on the Columbia River, a strong visual contrast would be introduced by proposed docks, ship loaders, trestles, ancillary equipment, and large berthed ships associated with the Off-Site Alternative. Straight lines, geometric forms, hard visual textures, and human-made materials would displace views of mature trees, riparian vegetation, and the existing riverbank. Therefore, the overall visual impacts on on-water views would be moderate, as the Off-Site Alternative would introduce operations, buildings, and structures that would be visible to sensitive on-water viewers. Implementing MM ALG-1 would minimize moderate level impacts on viewers from the water.

#### Introduce New Sources of Light and Glare

New lighting associated with the dock facilities would result in moderate light impacts for on-water viewers. Glare conditions from light reflected in the waters of the Columbia River would also affect on-water viewers. However, artificial lighting is common throughout the Longview industrial area on the Columbia River and light and glare impacts would be limited because most recreational viewers in natural areas view the project area during daylight conditions. The Off-Site Alternative would result in low light and glare impacts on views at Viewpoints 10 and 11 and moderate impacts from the water. Implementing MM ALG-1 would minimize moderate level impacts on viewers from the water.

#### Change Visual Perception by Viewers

The views from natural areas are presumed to be from on-water recreational viewers (e.g., anglers, cruisers). For a typical recreationalist, views are assumed to be infrequent and of short to moderate duration. However, viewer sensitivity tends to be high because of viewers' expectation of natural views, the public nature of and public interest in some natural areas, and the contrast between natural and industrial lands. Moreover, the movement of ships, trains, and equipment introduces additional visual impact on viewers from natural areas.

The Columbia River is also navigated by commercial boat operators. Viewers from commercial boats are expected to have a low sensitivity to changes in aesthetics. Because of low sensitivity, infrequent views, and the transitory nature of boat operator views, it is unlikely that viewers would experience negative visual impacts based on changes to the project area. The Off-Site Alternative would result in low impacts on viewers' visual perceptions at Viewpoints 10 and 11 and moderate impacts from the water. Implementing MM ALG-1 would minimize moderate level impacts on viewers from the water.

Table 10 is a summary of visual, light and glare, and viewer impacts from Viewpoints 10 and 11 as well as from an on-water viewpoint. Because the Off-Site Alternative would not be directly visible from viewpoints 10 and 11, no photo simulations were produced for these viewpoints.

**Table 10. Visual, Light and Glare, and Viewer Impacts (Viewpoints 10 and 11 and Water)—Off-Site Alternative**

Viewpoint	View	Distance (feet) <sup>a</sup>	Visual Impact	Light & Glare Impact	Viewer Impact
10	Looking north/northwest from Dibblee Beach. Views are of wide flat-water channel with Lord/Walker islands to west. Heavy industrial uses and facilities characterize north riverbank. Indirect light sources may be discerned but recreational viewers are limited at night. Barlow Point is not directly visible from this viewpoint.	10,550	N	L	L
11	Looking east from Willow Point Boat Launch. Views of Barlow Point are obstructed by vegetation on two islands in Columbia River and would have no impact. Indirect light sources may be discerned but recreational viewers are limited at night. Located outside study area, approximately 4.5 miles northwest of Longview on Columbia River, but allows river access from which public could travel upriver and into study area, where views of the project area may be affected.	15,100	N	L	L
On-Water	On-water views from the Columbia River. Views of Barlow Point would change from undeveloped land to an industrial area with straight lines, geometric forms, hard visual textures, and manmade materials that would be visible to on-water viewers. At least one Panamax-sized vessel may be moored at the proposed docks at any given time.	Varies	M	M	M

Notes:

<sup>a</sup> Distance measured from viewpoint to nearest project limit boundary.

L = low level of impact; N = no impact.

### 3.2.4 Operations: Indirect Impacts

Operation of the Off-Site Alternative would not result in indirect impacts on aesthetics and visual quality.

### 3.2.5 Off-Site Alternative Impact Summary

As discussed above, the construction and operation of the proposed Off-Site Alternative would displace open space and natural vegetation and introduce new visual, aesthetic, and light and glare elements that would be visible from viewpoints within the study area. These elements would contrast with the existing character of Barlow Point and would result in varying levels of aesthetic

impacts depending on the type and location of the viewer, the amount of use within the view, and the context of the view.

As discussed above, the views of the Off-Site Alternative would be obstructed for viewers at the Urban/Industrial viewpoints. Changes to visual conditions would be viewed by a low number of Urban/Industrial viewers from within similar heavy industrial areas and would be visually compatible with surrounding industrial uses. Therefore, the Off-Site Alternative would have a low level of visual impact on viewpoints within Urban/Industrial areas.

Similarly, the Off-Site Alternative would not be directly visible to viewers at Dibblee Beach or the Willow Point Boat Launch (viewpoints 10 and 11). The Off-Site Alternative would result in no visual impact and a low light and glare impact to these locations. However, for recreational viewers on the Columbia River, there would be a strong visual contrast introduced by the Off-Site Alternative. The character of the existing open space would be displaced by heavy industrial operations, buildings, and structures seen by these viewers. Therefore, the Off-Site Alternative would result in moderate visual impacts to on-water viewers.

For viewers at Rural/Residential viewpoints, the displacement of undeveloped land with heavy industrial uses under the Off-Site Alternative would introduce a high level of visual change in both day and nighttime conditions. Rural/Residential viewers have a high sensitivity to change, particularly those who are in close proximity of the project area or who have prolonged and/or stationary views. However, in most cases, the Rural/Residential views would be distant from the project area (i.e., viewpoints 6, 7, and 8) or would be visible to a low number of viewers (i.e., viewpoints 4 and 9). The Off-Site Alternative would result in moderate visual impacts on Rural/Residential viewpoints.

Overall, the Off-Site Alternative would result in moderate visual impacts on viewers on the Columbia River and at Rural/Residential viewpoints (see Figures A-18, A-19, and A-20 in Appendix A for photo simulations of the Off-Site Alternative from Rural/Residential viewpoints 4, 8, and 9), and low to no visual impacts on viewers at all other viewpoints. Implementing MM ALG-1 and MM ALG-2 would minimize the moderate visual impacts on viewers.

### 3.3 No-Action Alternative

As allowed under existing zoning, the No-Action Alternative could result in new buildings or structures in the project area, an expanded bulk product terminal, and increased bulk product transfer activities. Changes to aesthetic and visual conditions would occur as a result of these new structures and changes to operations, which would include the increased movements of people, equipment, vehicles, trains and ships as bulk product transfer activities increase. These activities would alter the aesthetics of the project area. However, the changes would be consistent with the existing industrial aesthetics of the project area and the surrounding area, and would therefore result in a low level of impact.

Construction of the No-Action Alternative may involve the demolition and replacement of some existing buildings on the project area to facilitate the expansion of current operations and the development of an expanded bulk products terminal. As with the On-Site Alternative, construction activities under the No-Action Alternative would be visible to residents, workers, commuters, recreationalists, and boat operators, but these activities would be temporary and consistent with the

general industrial context of the surrounding area. Furthermore, given the more limited physical changes to the project area under the No-Action Alternative compared to the On-Site Alternative, construction activities would be expected to be of shorter duration and intensity. Like the On-Site Alternative, it would be difficult for more distant viewers to perceive noticeable changes during construction under the No-Action Alternative.

## Chapter 4 Required Permits

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No permits related to aesthetics and visual quality would be required for either the On-Site Alternative or the Off-Site Alternative.

## Chapter 5 References

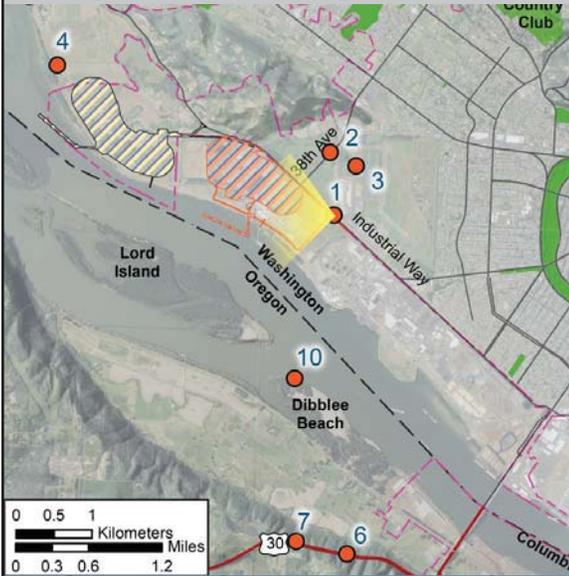
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Appendix A  
**Photographic Inventory**

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### Viewpoint Location Map



### Existing Nighttime Conditions



### Existing Conditions Photograph - Viewpoint 1

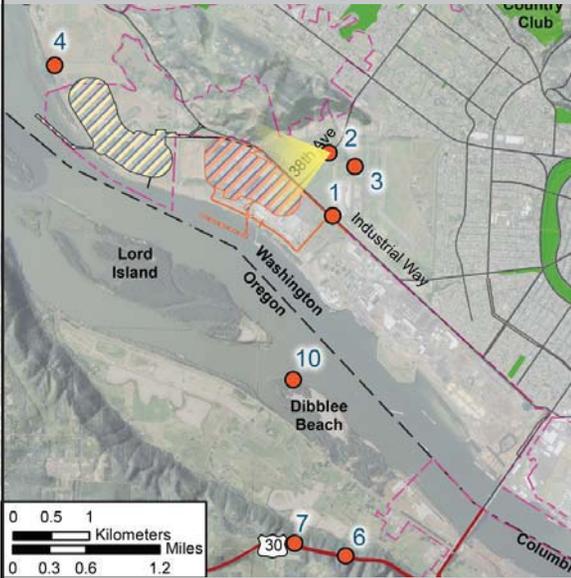


Industrial Way

Approximate Location of project area for On-Site Alternative  
-Existing facilities on project area are visible in background behind electrical substation and utility lines

**Figure A-1**  
Existing Conditions Photograph - Viewpoint 1  
(View from Industrial Way)  
Millennium Bulk Terminals—Longview

### Viewpoint Location Map



### Existing Nighttime Conditions



### Existing Conditions Photograph - Viewpoint 2



**Figure A-2**  
Existing Conditions Photograph - Viewpoint 2  
(View from 38th Ave)  
Millennium Bulk Terminals—Longview



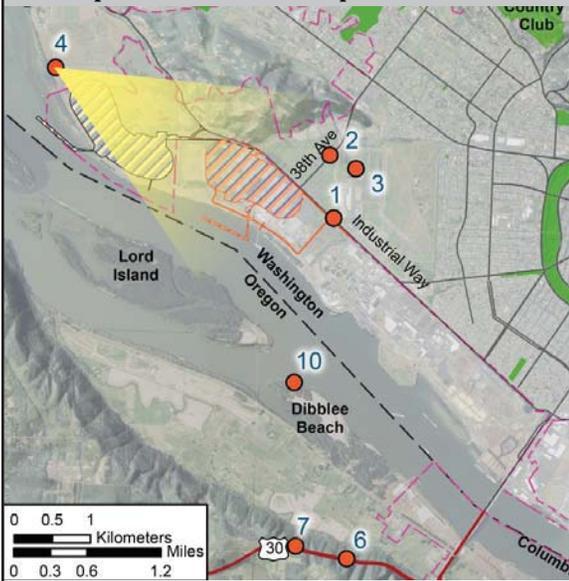
Existing Conditions Photograph - Viewpoint 3

Approximate Location of project area for On-Site Alternative  
-Roof line of existing facilities on project area can be seen behind vegetation.

Prudential Blvd

**Figure A-3**  
Existing Conditions Photograph - Viewpoint 3  
(View From Mint Farm Industrial Park)  
Millennium Bulk Terminals—Longview

### Viewpoint Location Map



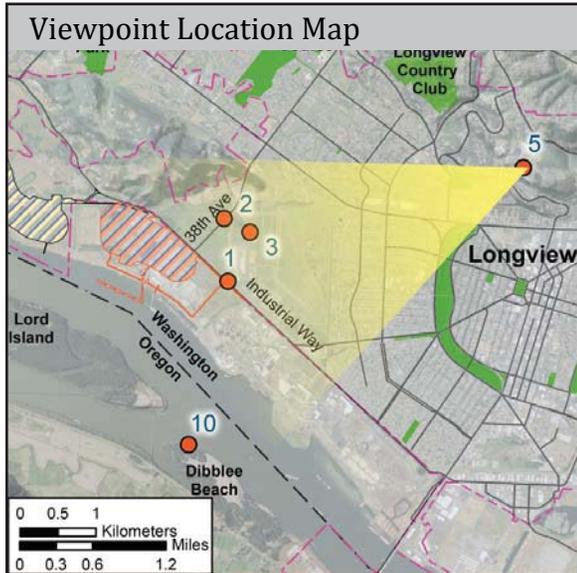
### Existing Nighttime Conditions



### Existing Conditions Photograph - Viewpoint 4



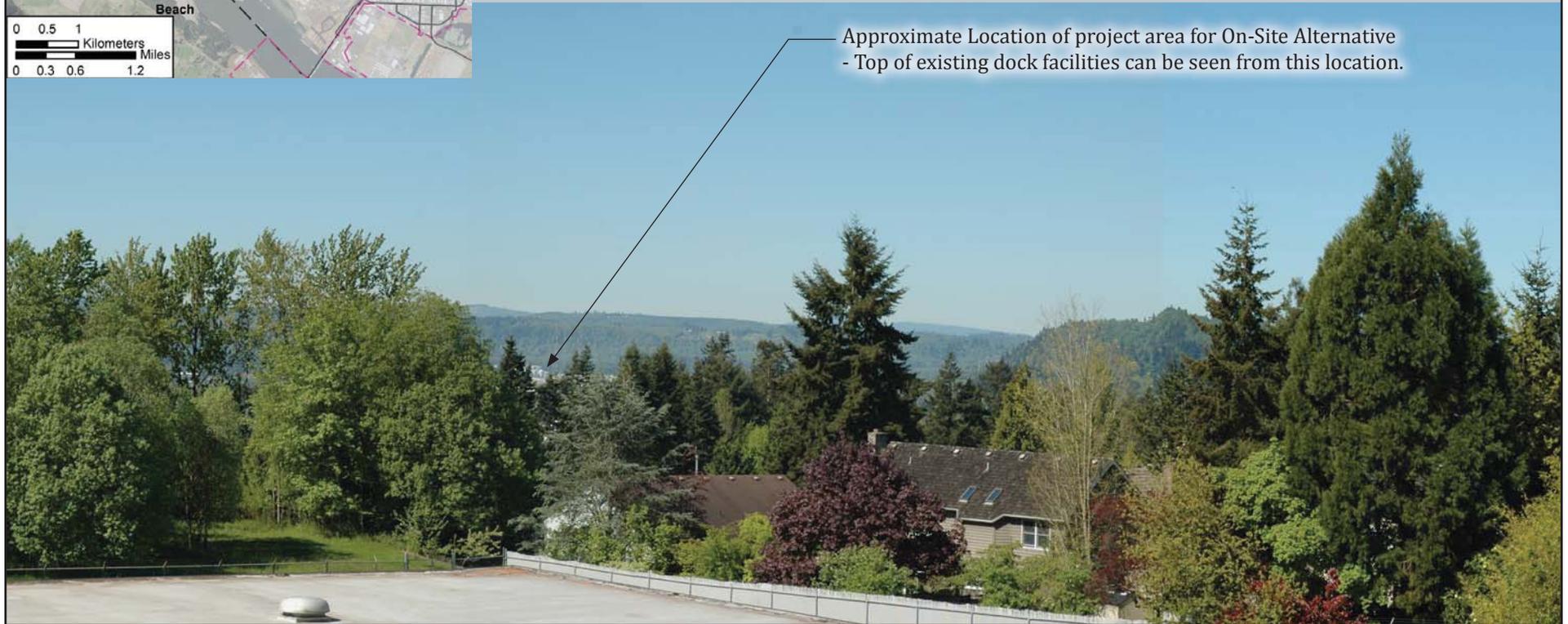
**Figure A-4**  
Existing Conditions Photograph - Viewpoint 4  
(View from Barlow Point Road)  
Millennium Bulk Terminals—Longview



### Existing Nighttime Conditions



### Existing Conditions Photograph - Viewpoint 5



Approximate Location of project area for On-Site Alternative  
- Top of existing dock facilities can be seen from this location.

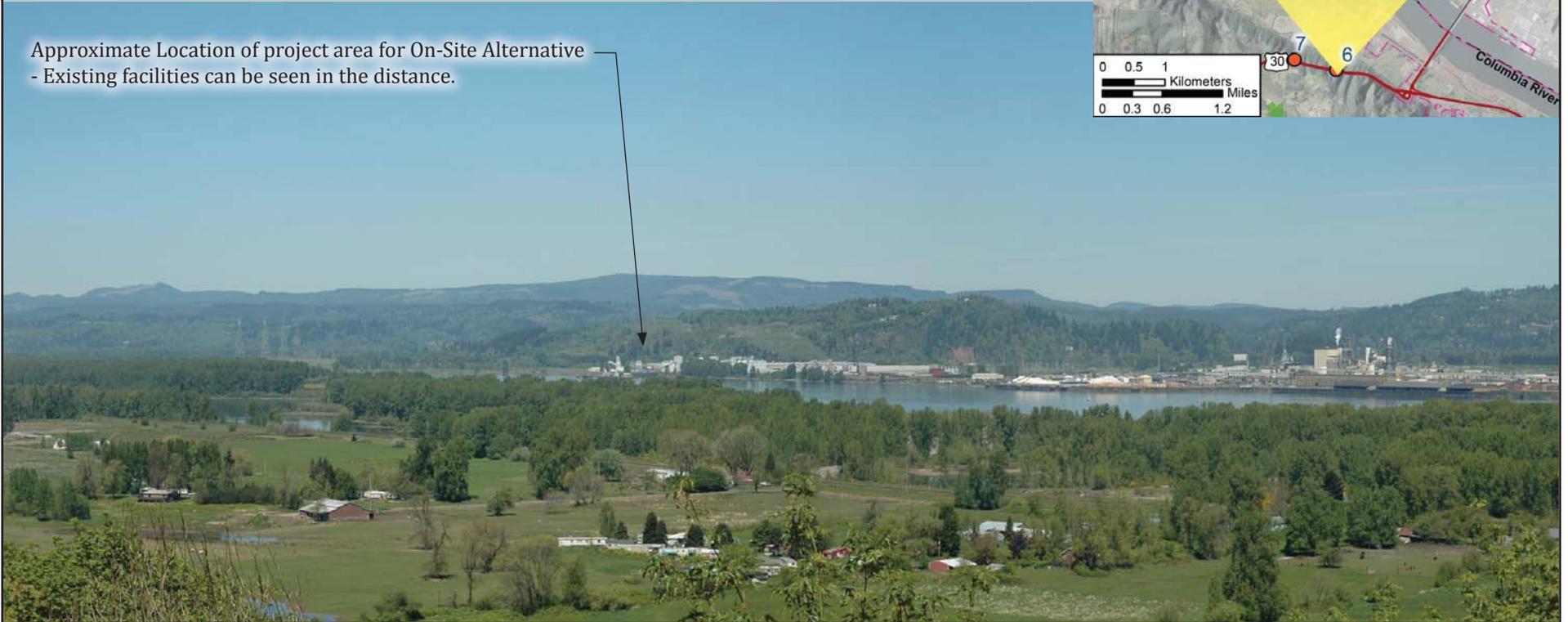
**Figure A-5**  
Existing Conditions Photograph - Viewpoint 5  
(View from Hillside Residences)  
Millennium Bulk Terminals—Longview

## Existing Nighttime Conditions

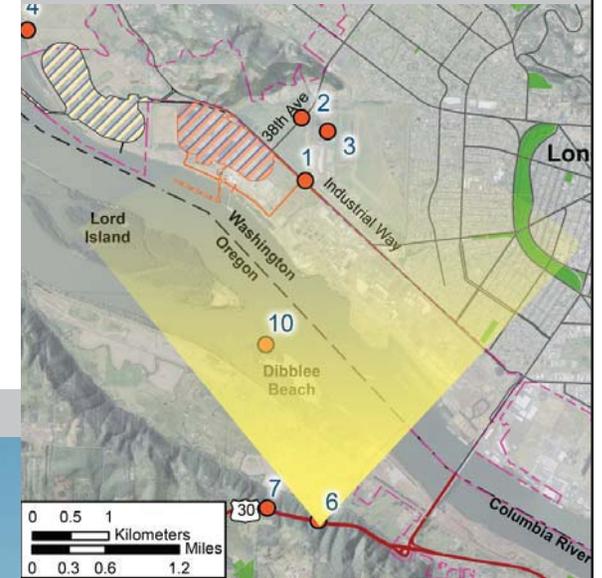


## Existing Conditions Photograph - Viewpoint 6

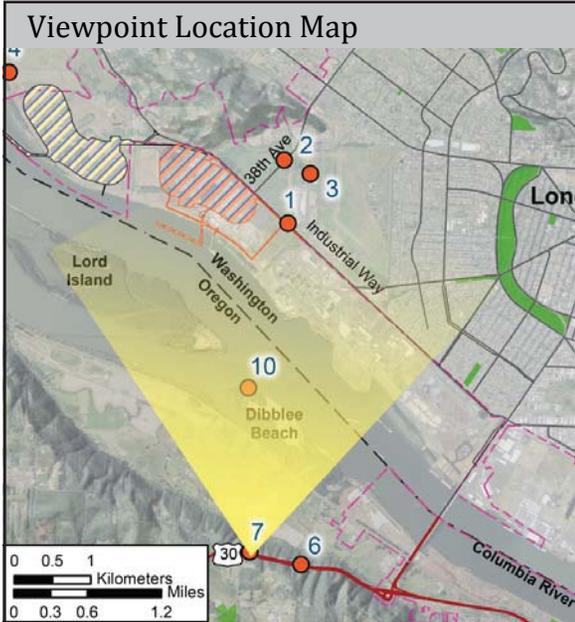
Approximate Location of project area for On-Site Alternative  
- Existing facilities can be seen in the distance.



## Viewpoint Location Map



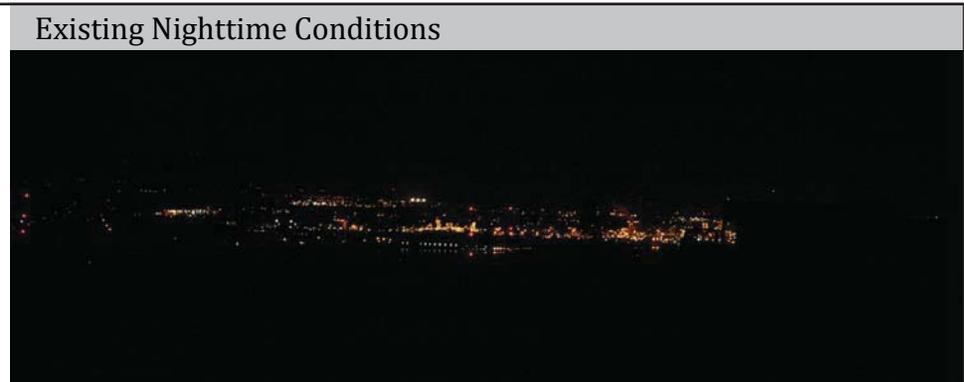
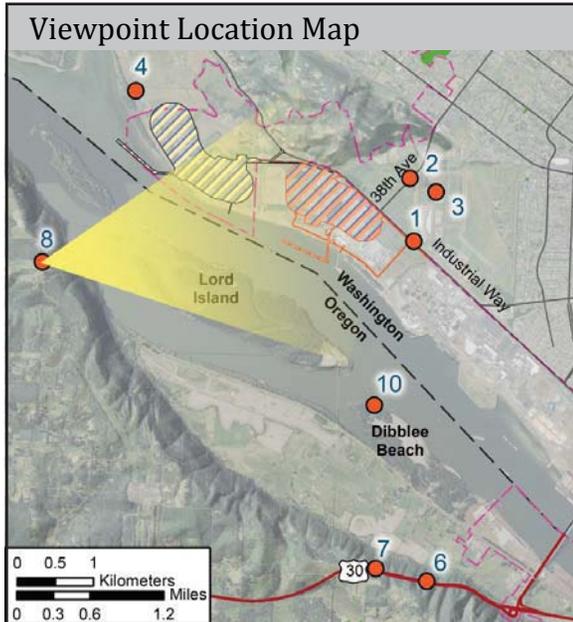
**Figure A-6**  
Existing Conditions Photograph - Viewpoint 6  
(View from US Route 30, Upper Pull-off)  
Millennium Bulk Terminals—Longview



**Existing Conditions Photograph - Viewpoint 7**



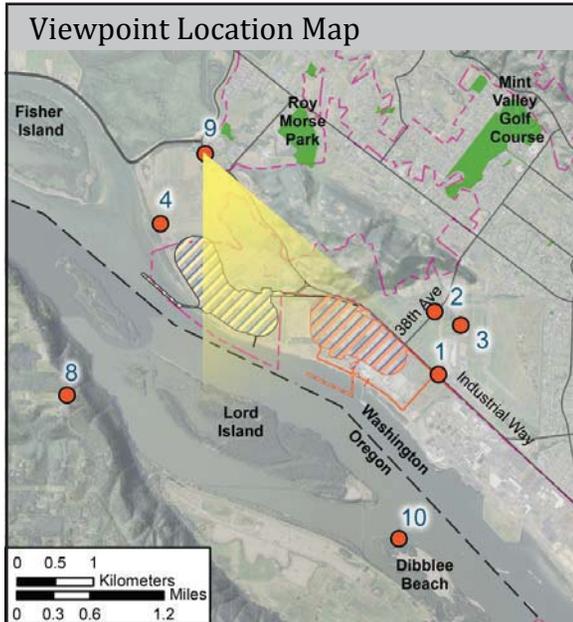
**Figure A-7**  
 Existing Conditions Photograph - Viewpoint 7  
 (View from US Route 30, Lower Pull-off)  
 Millennium Bulk Terminals—Longview



Existing Conditions Photograph - Viewpoint 8



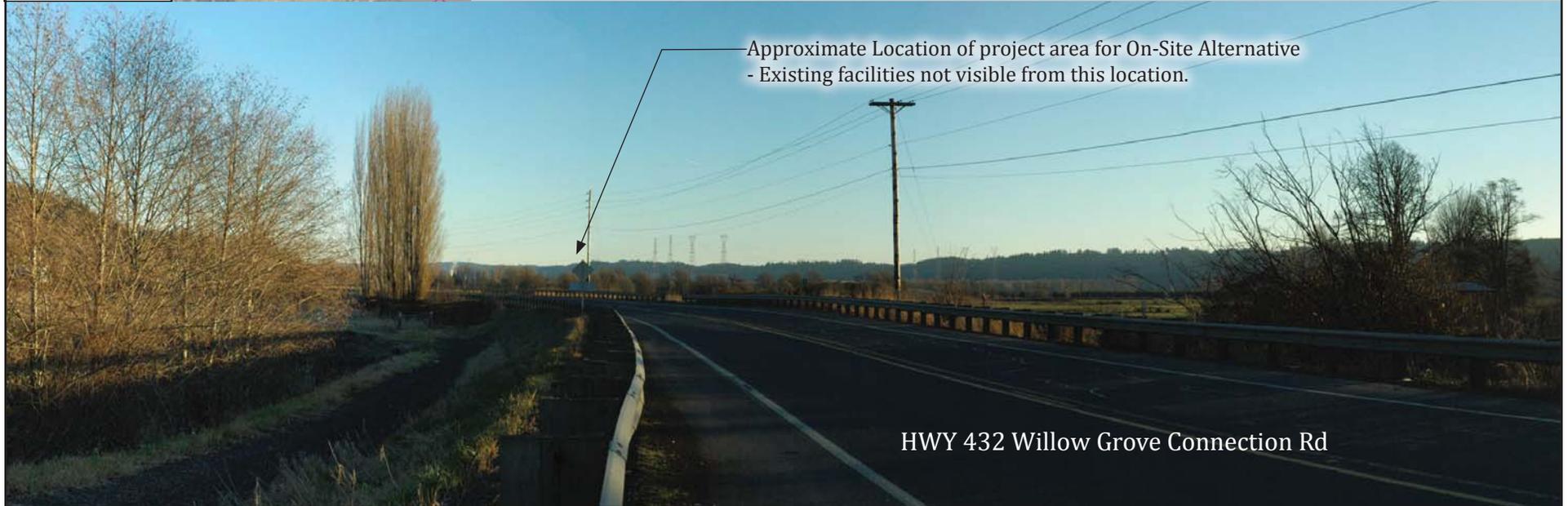
**Figure A-8**  
Existing Conditions Photograph - Viewpoint 8  
(View from Alston-Mayger Road)  
Millennium Bulk Terminals—Longview



### Existing Nighttime Conditions



Existing Conditions Photograph - Viewpoint 9



**Figure A-9**  
Existing Conditions Photograph - Viewpoint 9  
(View from West Longview Neighborhood)  
Millennium Bulk Terminals—Longview

## Existing Nighttime Conditions

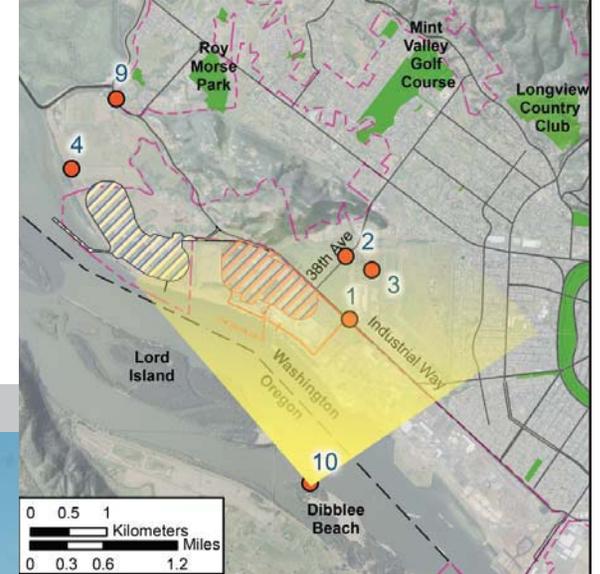


## Existing Conditions Photograph - Viewpoint 10

Approximate Location of project area for On-Site Alternative  
- Existing facilities can be seen in the distance.

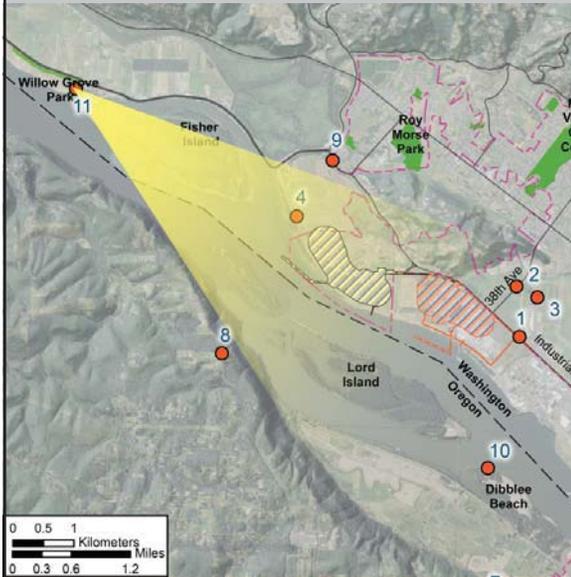


## Viewpoint Location Map

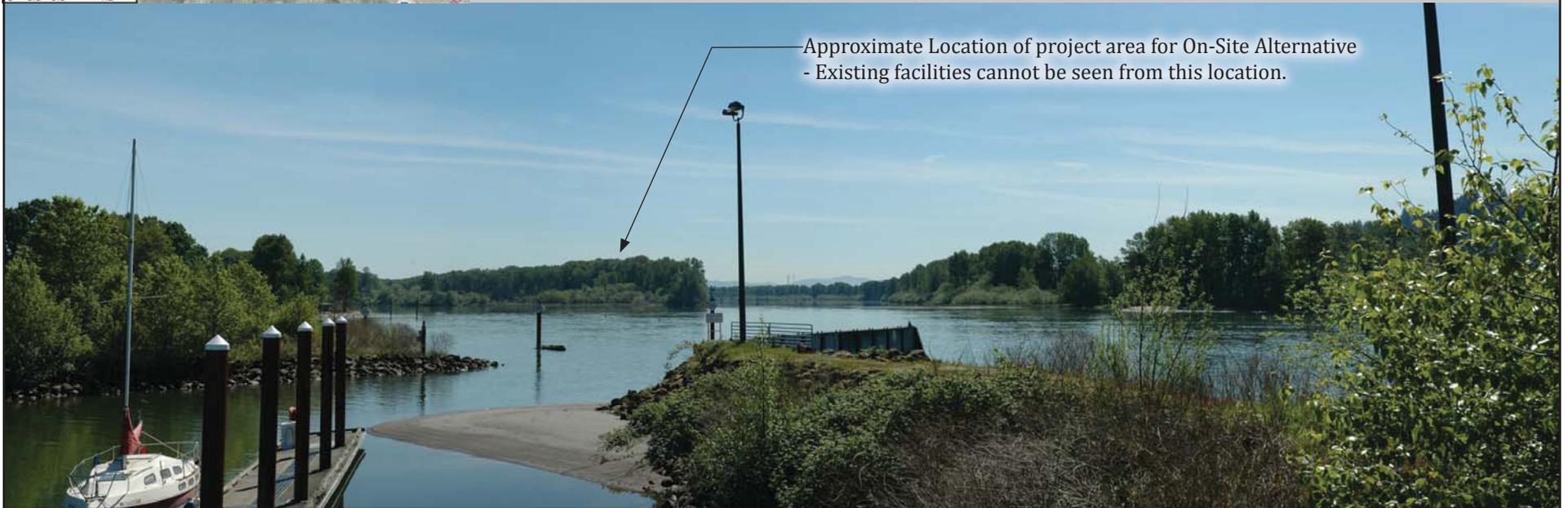


**Figure A-10**  
Existing Conditions Photograph - Viewpoint 10  
(View from Dibblee Beach)  
Millennium Bulk Terminals—Longview

### Viewpoint Location Map



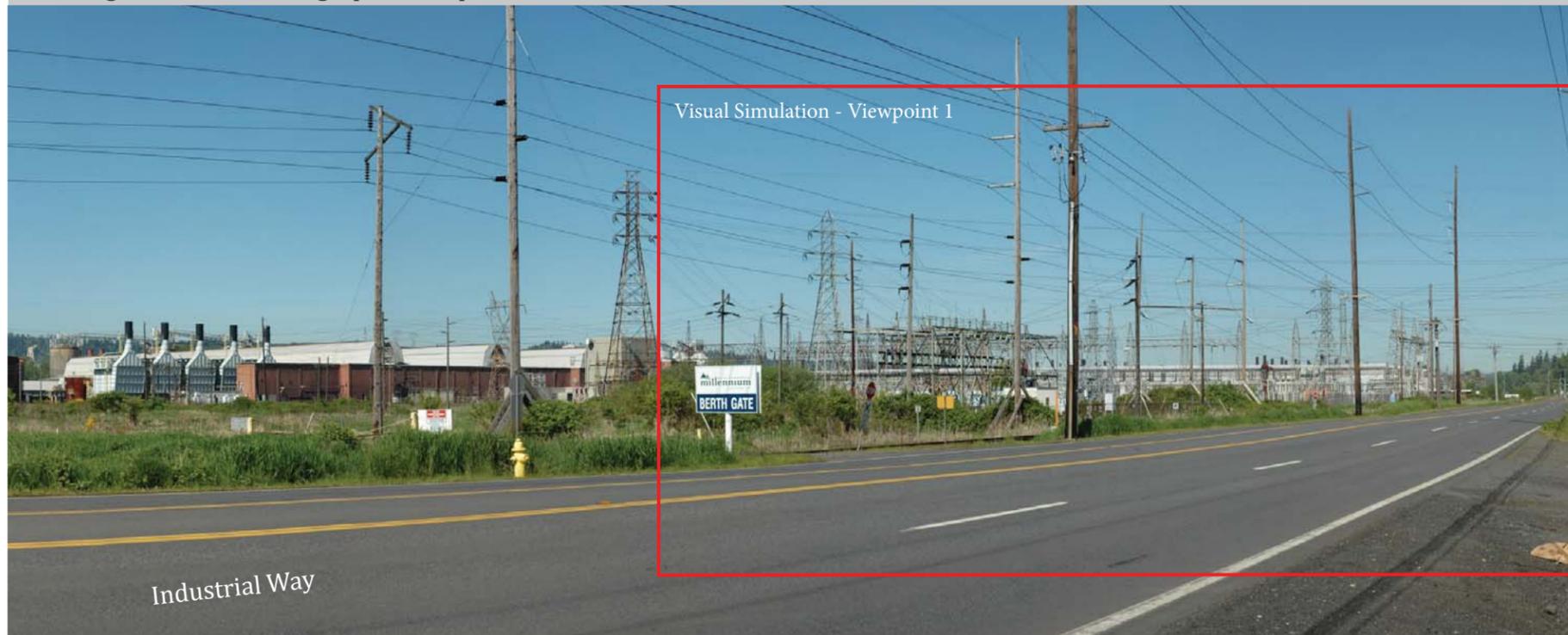
### Existing Conditions Photograph - Viewpoint 11



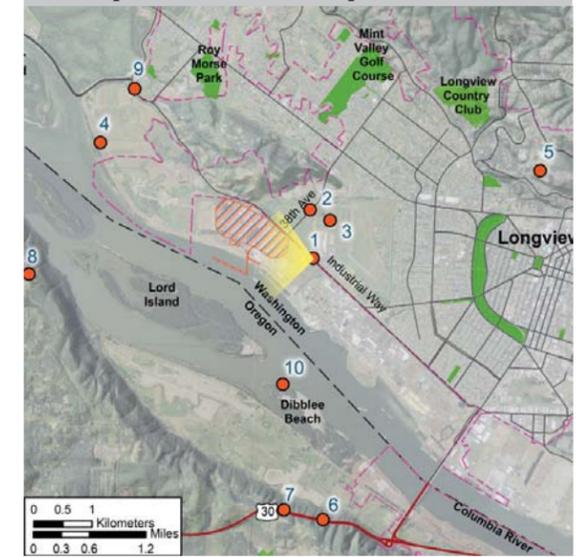
**Figure A-11**  
Existing Conditions Photograph - Viewpoint 11  
(View from Willow Grove Park and Boat Launch)  
Millennium Bulk Terminals—Longview



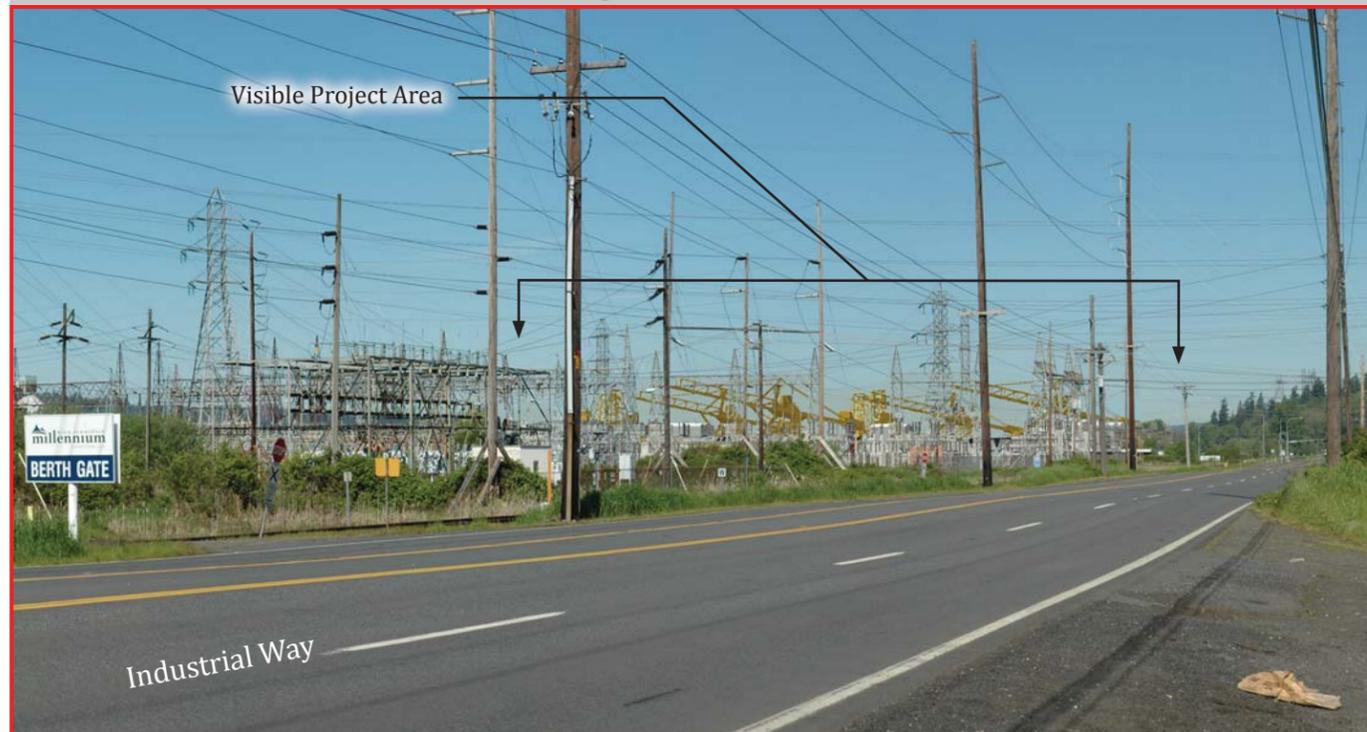
Existing Conditions Photograph - Viewpoint 1



Viewpoint Location Map



On-Site Alternative Visual Simulation - Viewpoint 1



Visual Simulation Viewpoint 1  
 Field of View = 46 degrees  
 Image Width = 7.5 inches  
 Zoom = 50%  
 True View Distance = 17.7" inches

Notes:

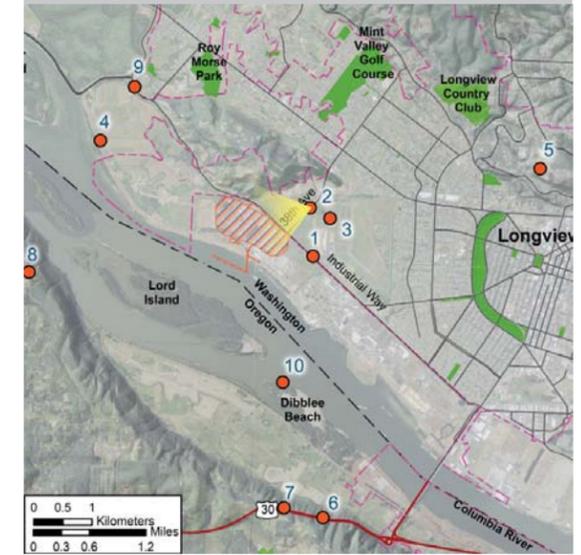
1. Existing Conditions photographs taken with Nikon D-70 (50mm lens) and panorama photomerged using Photoshop CSS.
2. Visual Simulation is based on 3D model and AutoCAD files provided by MBLT.
3. Visual Simulation created with AutoCAD, Sketchup Pro, Google Earth and Photoshop CSS.

**Figure A-12**  
 On-Site Alternative Visual Simulation - Viewpoint 1  
 (View from Industrial Way)  
 Millennium Bulk Terminals—Longview

Existing Conditions Photograph - Viewpoint 2



Viewpoint Location Map



On-Site Alternative Visual Simulation - Viewpoint 2



Visual Simulation Viewpoint 2  
 Field of View = 53 degrees  
 Image Width = 13.5 inches  
 Zoom = 50%  
 True View Distance = 27.2" inches

Notes:  
 1. Existing Conditions photographs taken with Nikon D-70 (50mm lens) and panorama photomerged using Photoshop CSS.  
 2. Visual Simulation is based on 3D model and AutoCAD files provided by MBLT.  
 3. Visual Simulation created with AutoCAD, Sketchup Pro, Google Earth and Photoshop CSS.

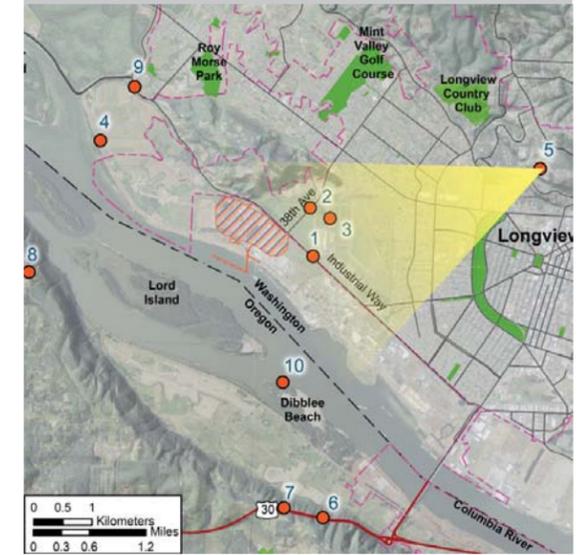
**Figure A-13**  
 On-Site Alternative Visual Simulation - Viewpoint 2  
 (View from 38th Ave)  
 Millennium Bulk Terminals—Longview

Existing Conditions Photograph - Viewpoint 5

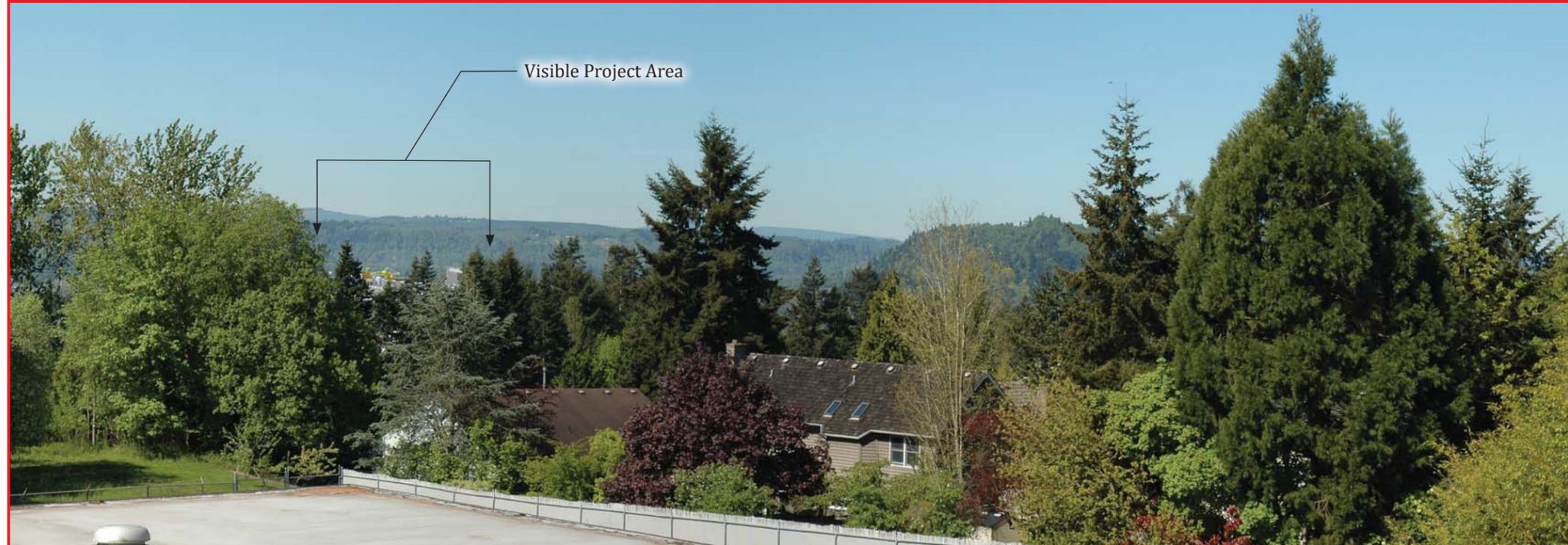


Visual Simulation- Viewpoint 5

Viewpoint Location Map



On-Site Alternative Visual Simulation - Viewpoint 5



Visible Project Area

Visual Simulation Viewpoint 5  
 Field of View = 27 degrees  
 Image Width = 11.5 inches  
 Zoom = 50%  
 True View Distance = 48.5" inches

Notes:

1. Existing Conditions photographs taken with Nikon D-70 (50mm lens) and panorama photomerged using Photoshop CSS.
2. Visual Simulation is based on 3D model and AutoCAD files provided by MBLT.
3. Visual Simulation created with AutoCAD, Sketchup Pro, Google Earth and Photoshop CSS.

**Figure A-14**  
 On-Site Alternative Visual Simulation - Viewpoint 5  
 (View from Hillside Residences)  
 Millennium Bulk Terminals—Longview

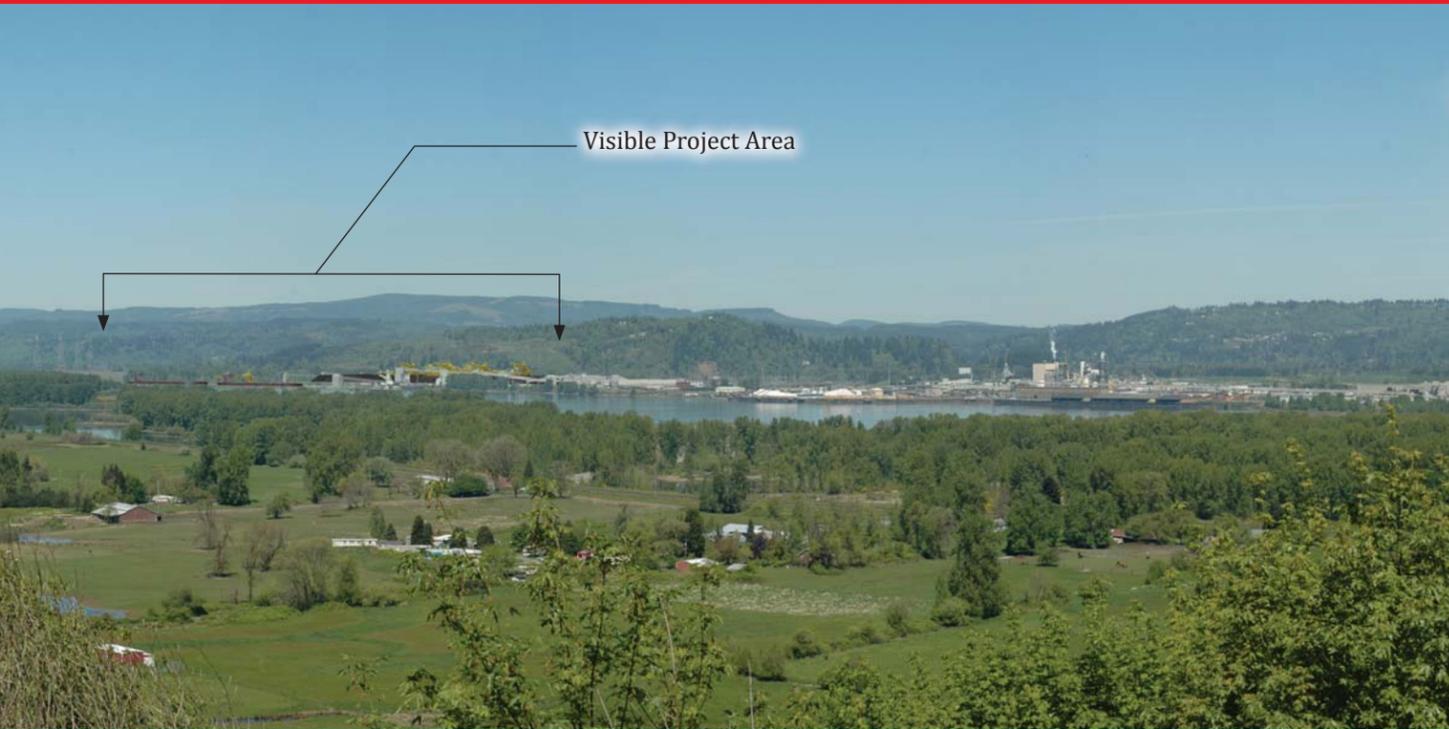
Existing Conditions Photograph - Viewpoint 6



Visual Simulation - Viewpoint 6



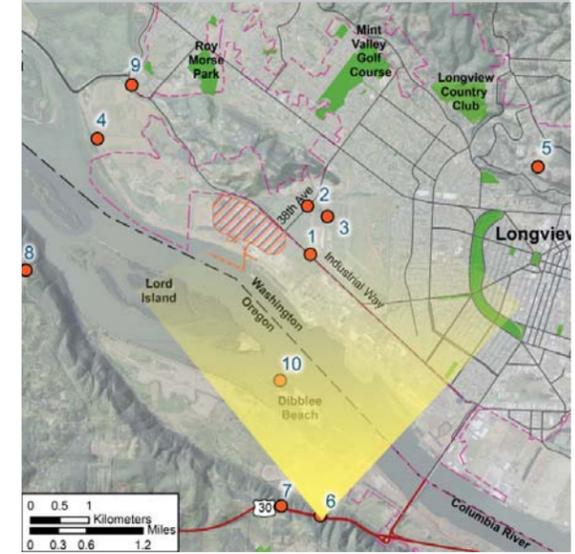
On-Site Alternative Visual Simulation - Viewpoint 6



Visual Simulation Viewpoint 6  
 Field of View = 32 degrees  
 Image Width = 8.0 inches  
 Zoom = 50%  
 True View Distance = 13.0" inches

- Notes:
1. Existing Conditions photographs taken with Nikon D-70 (50mm lens) and panorama photomerged using Photoshop CSS.
  2. Visual Simulation is based on 3D model and AutoCAD files provided by MBLT.
  3. Visual Simulation created with AutoCAD, Sketchup Pro, Google Earth and Photoshop CSS.

Viewpoint Location Map

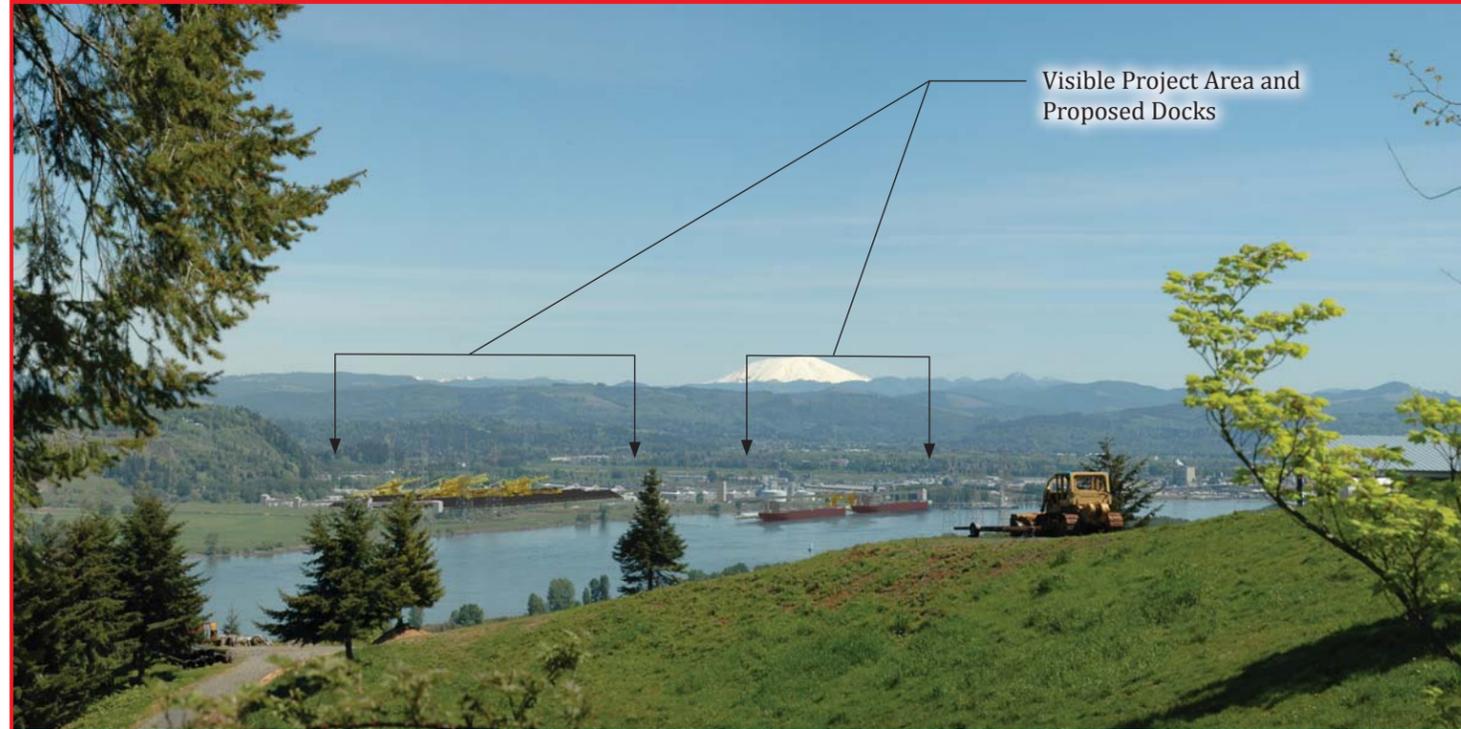


**Figure A-15**  
 On-Site Alternative Visual Simulation - Viewpoint 6  
 (View from US Route 30, Lower Pull-off)  
 Millennium Bulk Terminals—Longview

Existing Conditions Photograph - Viewpoint 8



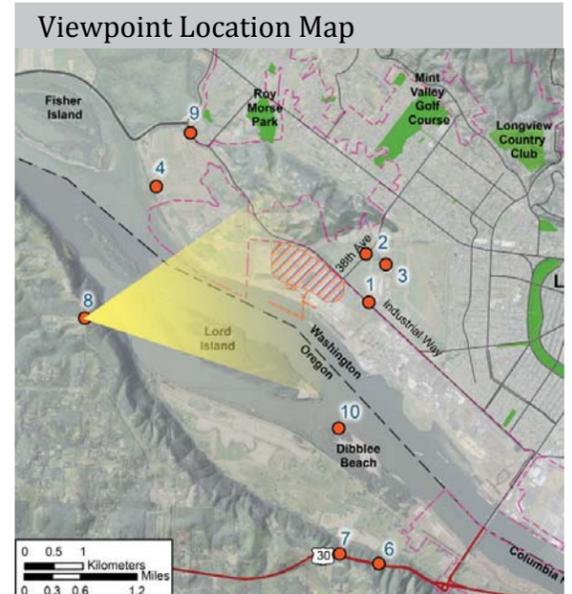
On-Site Alternative Visual Simulation - Viewpoint 8



Visible Project Area and Proposed Docks

Visual Simulation Viewpoint 8  
 Field of View = 34 degrees  
 Image Width = 8.0 inches  
 Zoom = 50%  
 True View Distance = 13.0" inches

- Notes:
1. Existing Conditions photographs taken with Nikon D-70 (50mm lens) and panorama photomerged using Photoshop CSS.
  2. Visual Simulation is based on 3D model and AutoCAD files provided by MBLT.
  3. Visual Simulation created with AutoCAD, Sketchup Pro, Google Earth and Photoshop CSS.

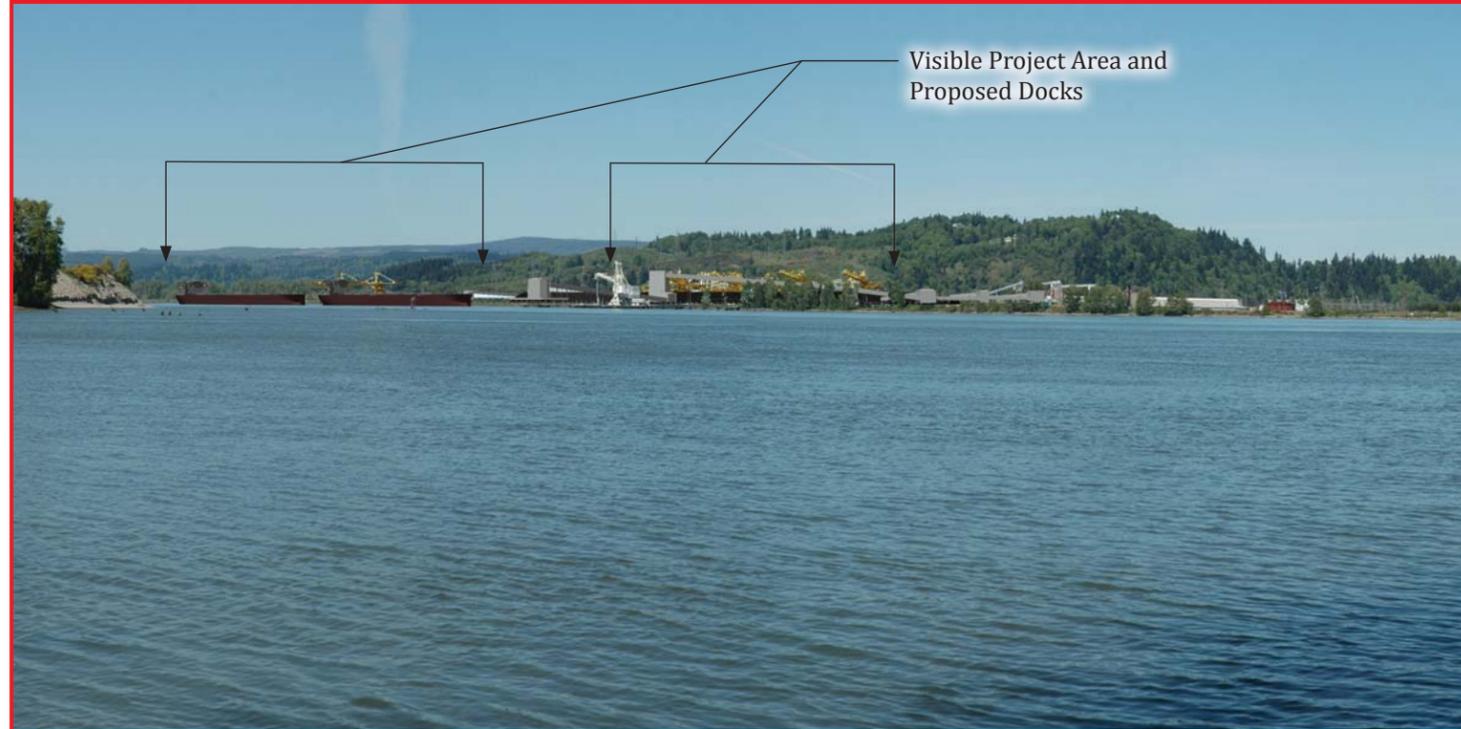


**Figure A-16**  
 On-Site Alternative Visual Simulation - Viewpoint 8  
 (View from Alston-Mayger Road)  
 Millennium Bulk Terminals—Longview

Existing Conditions Photograph - Viewpoint 10



On-Site Alternative Visual Simulation - Viewpoint 10

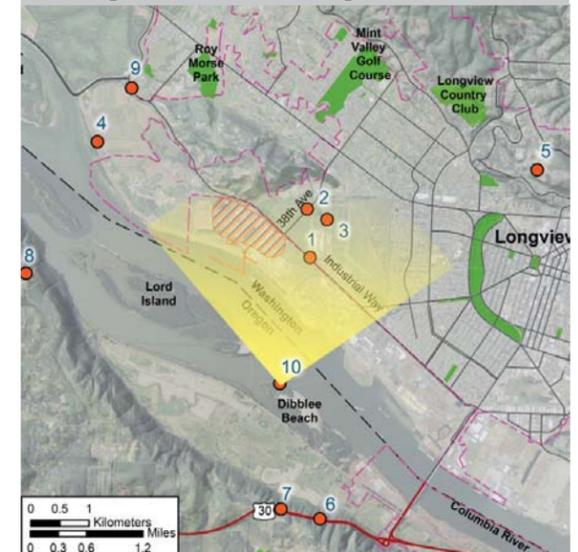


Visible Project Area and Proposed Docks

Visual Simulation Viewpoint 10  
 Field of View = 54 degrees  
 Image Width = 8 inches  
 Zoom = 50%  
 True View Distance = 15.8" inches

- Notes:
1. Existing Conditions photographs taken with Nikon D-70 (50mm lens) and panorama photomerged using Photoshop CSS.
  2. Visual Simulation is based on 3D model and AutoCAD files provided by MBLT.
  3. Visual Simulation created with AutoCAD, Sketchup Pro, Google Earth and Photoshop CSS.

Viewpoint Location Map



**Figure A-17**  
 On-Site Alternative Visual Simulation - Viewpoint 10  
 (View from Dibblee Beach)  
 Millennium Bulk Terminals—Longview

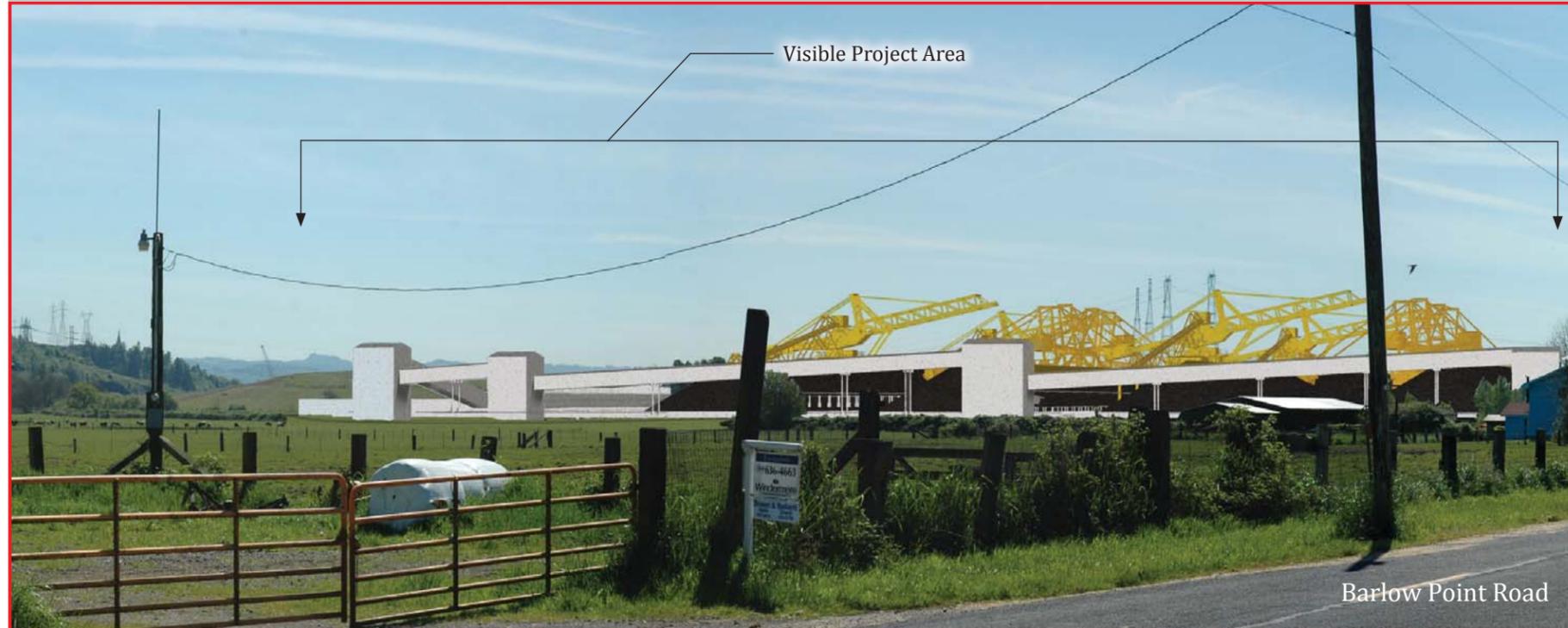
Existing Conditions Photograph - Viewpoint 4



Visual Simulation - Viewpoint 4

Barlow Point Road

Off-Site Alternative Visual Simulation - Viewpoint 4



Visible Project Area

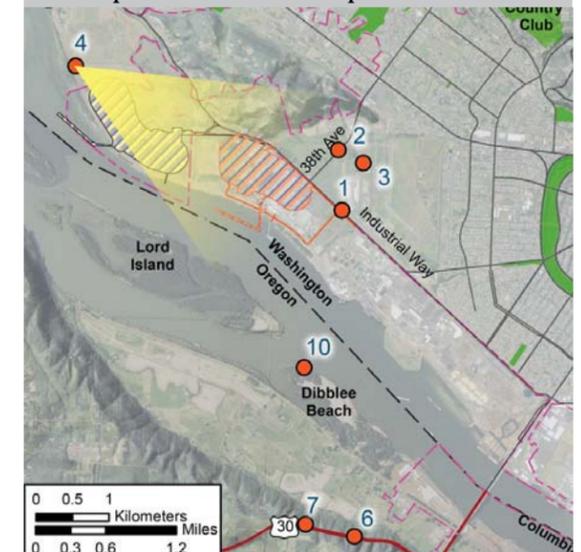
Barlow Point Road

Off-Site Visual Simulation Viewpoint 4  
 Field of View = 48 degrees  
 Image Width = 10 inches  
 Zoom = 60%  
 True View Distance = 18.7" inches

Notes:

1. Existing Conditions photographs taken with Nikon D-70 (50mm lens) and panorama photomerged using Photoshop CSS.
2. Visual Simulation is based on 3D model and AutoCAD files provided by MBLT.
3. Visual Simulation created with AutoCAD, Sketchup Pro, Google Earth and Photoshop CSS.

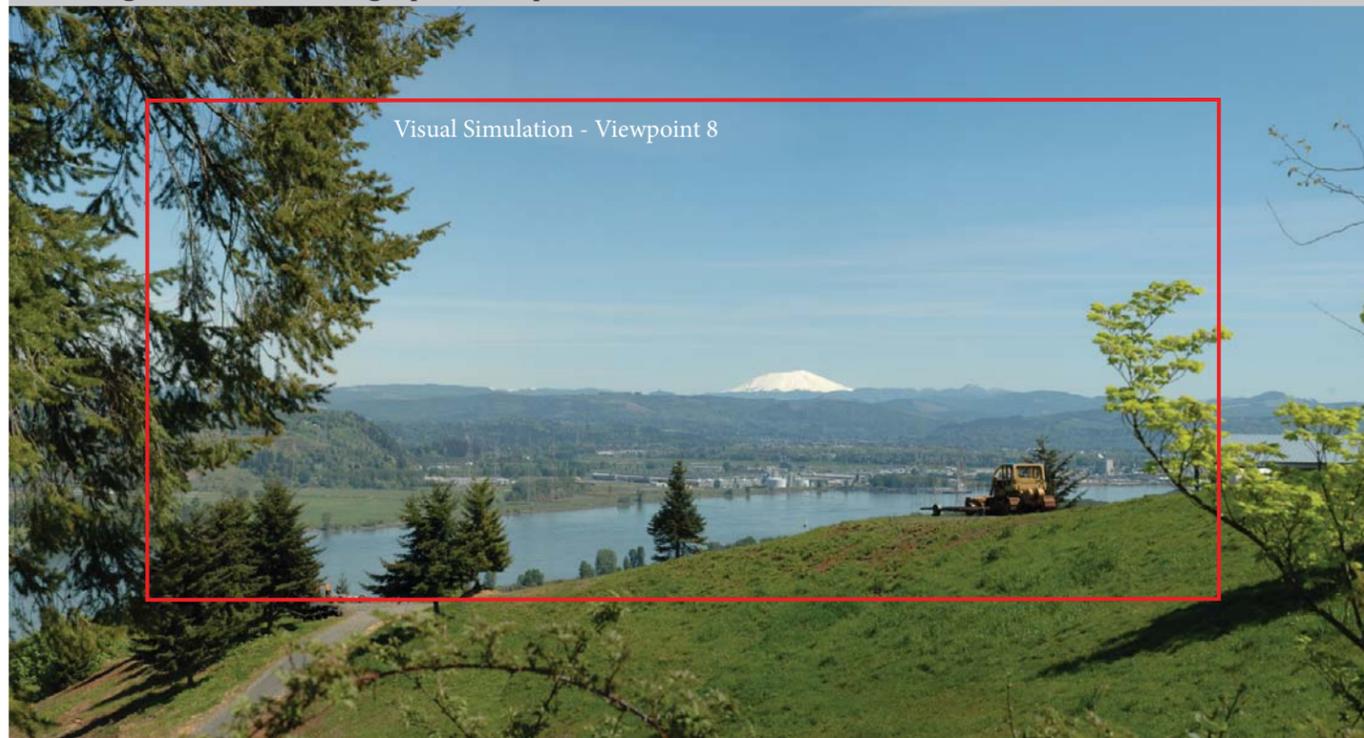
Viewpoint Location Map



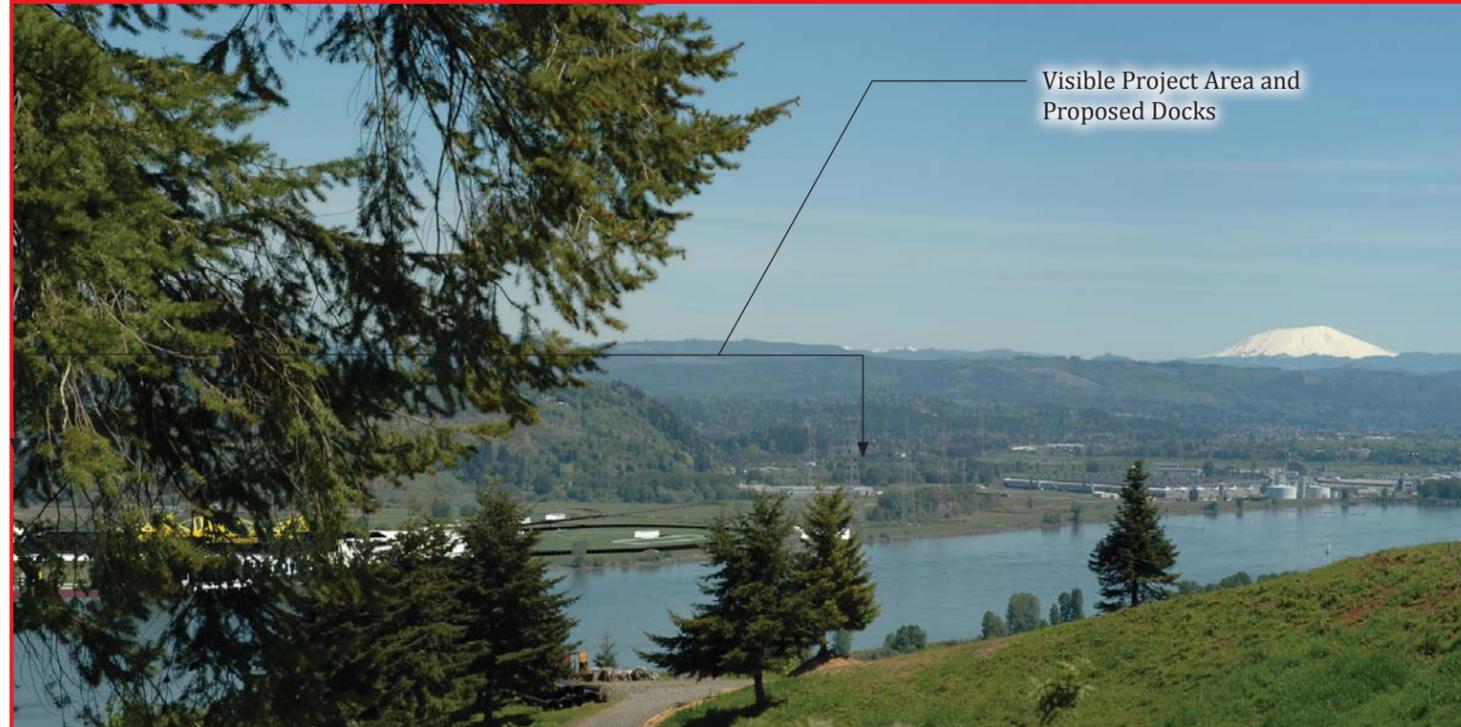
0 0.5 1 Kilometers  
 0 0.3 0.6 1.2 Miles

**Figure A-18**  
 Off-Site Alternative Visual Simulation - Viewpoint 4  
 (View from Barlow Point Road)  
 Millennium Bulk Terminals—Longview

Existing Conditions Photograph - Viewpoint 8

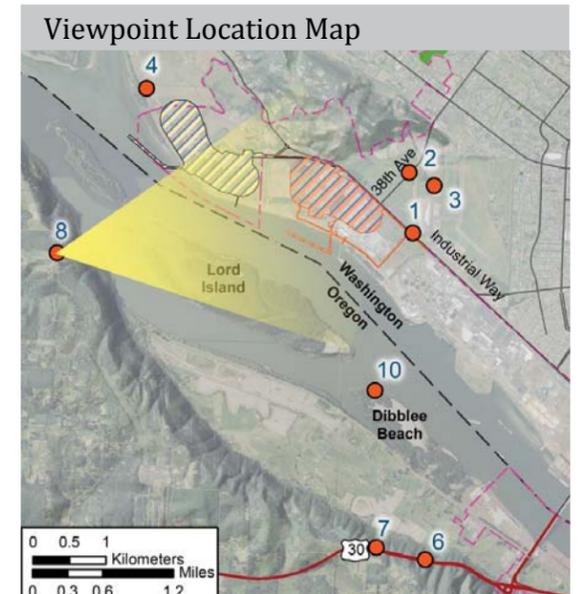


Off-Site Alternative Visual Simulation - Viewpoint 8



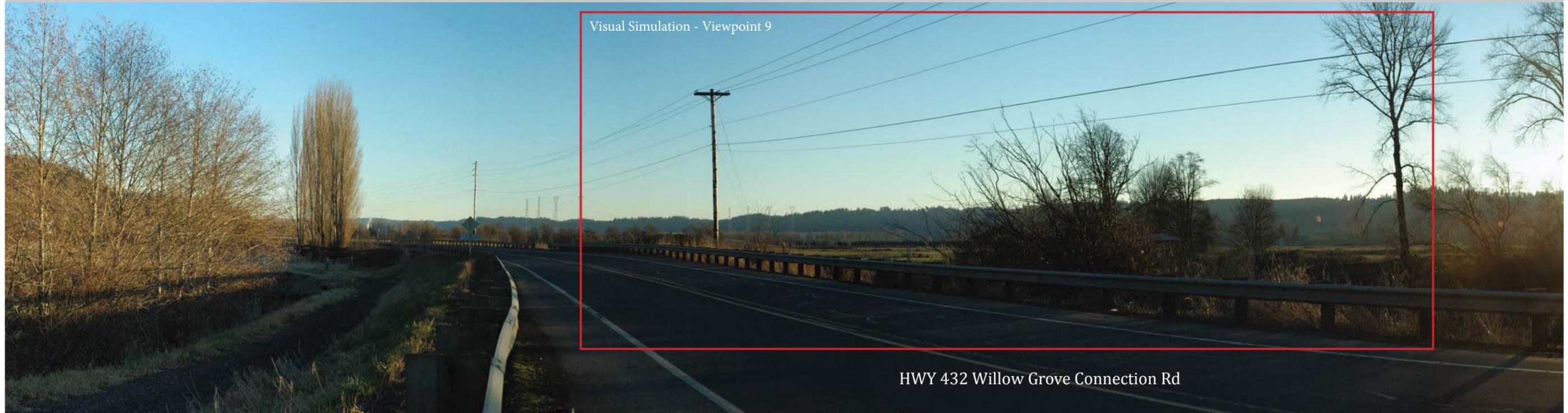
Off-Site Visual Simulation Viewpoint 8  
 Field of View = 34 degrees  
 Image Width = 8.0 inches  
 Zoom = 60%  
 True View Distance = 21.5" inches

- Notes:
1. Existing Conditions photographs taken with Nikon D-70 (50mm lens) and panorama photomerged using Photoshop CSS.
  2. Visual Simulation is based on 3D model and AutoCAD files provided by MBLT.
  3. Visual Simulation created with AutoCAD, Sketchup Pro, Google Earth and Photoshop CSS.



**Figure A-19**  
 Off-Site Alternative Visual Simulation - Viewpoint 8  
 (View from Alston-Mayger Road)  
 Millennium Bulk Terminals—Longview

Existing Conditions Photograph - Viewpoint 9



HWY 432 Willow Grove Connection Rd

Off-Site Alternative Visual Simulation - Viewpoint 9



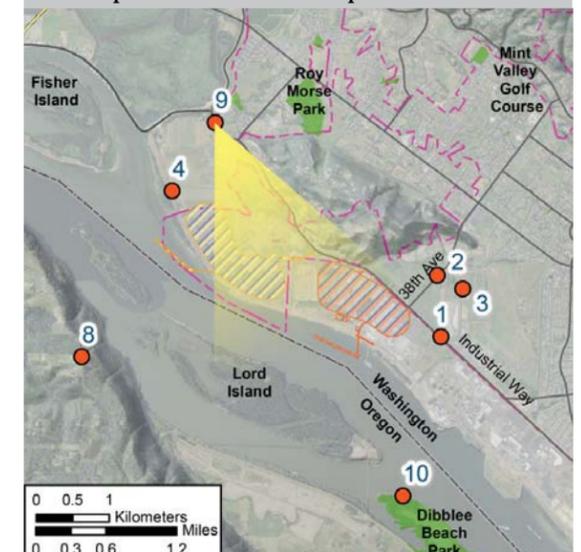
HWY 432 Willow Grove Connection Rd

Off-Site Visual Simulation Viewpoint 9  
 Field of View = 54 degrees  
 Image Width = 10 inches  
 Zoom = 50%  
 True View Distance = 19.6" inches

Notes:

1. Existing Conditions photographs taken with Nikon D-70 (50mm lens) and panorama photomerged using Photoshop CSS.
2. Visual Simulation is based on 3D model and AutoCAD files provided by MBLT.
3. Visual Simulation created with AutoCAD, Sketchup Pro, Google Earth and Photoshop CSS.

Viewpoint Location Map



**Figure A-20**  
 Off-Site Alternative Visual Simulation - Viewpoint 9  
 (View from West Longview Neighborhood)  
 Millennium Bulk Terminals—Longview