Chapter 9  Land Use and Shoreline Use, Housing, and Employment

9.1  Introduction

This chapter addresses the potential impacts of the proposed Kalama Manufacturing and Marine Export Facility (the proposed project) on land and shoreline uses, zoning, public policy and land use plans, and the population and housing characteristics of the area. The proposed project would redevelop a currently undeveloped site with a new waterfront industrial use and, therefore, would directly affect land use on the project site. The sections below describe the regulatory setting of the proposed project and the existing conditions within the affected environment, and assess whether the proposed project would result in significant adverse impacts on land and shoreline use or population and housing characteristics. This chapter also addresses the consistency of the proposed project with zoning and other adopted land use plans and policies.

This chapter evaluates the proposed project’s Technology and Marine Terminal Alternatives and a No-Action Alternative, in which the proposed project would not be constructed on the project site. The Technology Alternatives include a Combined Reformer (CR) Alternative and an Ultra-Low Emissions (ULE) Alternative. The primary differences between the CR and ULE Alternatives are energy efficiency, energy source, and the technology used for the natural gas reforming step in the methanol production process. The Marine Terminal Alternatives include Marine Terminal Alternative 1, in which the proposed marine terminal would be separate from the existing North Port dock, and Marine Terminal Alternative 2, in which the existing North Port dock would be extended. These alternatives are described in greater detail in Chapter 2, Proposed Project and Alternatives. This chapter also addresses the Kalama Lateral Project (the proposed pipeline) and new power lines to the project site as related actions.

The assessment concludes that the proposed project, with either Technology Alternative and either Marine Terminal Alternative, would be consistent with surrounding land and shoreline uses, applicable zoning regulations, and public policies, and would not result in significant adverse impacts to land and shoreline use or population and housing. It is also expected that activities under the No-Action Alternative would be consistent with land and shoreline uses and public policy and land use plans.

9.2  Methodology

9.2.1  Study Areas

The study areas for this assessment have been defined to encompass the areas where the proposed project, with either Technology Alternative and either Marine Terminal Alternative, and the No-Action Alternative would have the potential to affect land and shoreline use, zoning and land use public policy, and population and housing characteristics. Different study areas were defined to represent the areas where the proposed project and No-Action Alternative may have the potential to affect land and shoreline use, zoning and land use public policies, and population and housing characteristics.

The study area for land and shoreline use is the project site and the area within a 1-mile radius of it. The 1-mile radius for the project site includes properties in Cowlitz County, Washington,
and Columbia County, Oregon, including the City of Kalama, Washington, and the City of Prescott, Oregon (see Figure 9-1).

The study area for consistency with zoning regulations and other public plans and policies is the project site and the immediately adjacent area, as those are the areas where these plans and policies would most directly apply to the proposed project.

The study area for potential impacts related to population and housing characteristics is based on the area where employees of the proposed project and their families would be likely to reside based on typical commute characteristics. Workers at the proposed facility are expected to live in Southwest Washington and the Portland-Vancouver-Hillsboro metropolitan statistical area according to the Economic Impact Analysis of the Proposed Kalama Manufacturing and Marine Export Facility (ECONorthwest 2015). This area covers the major towns and cities within a less than 90-minute driving radius of the project site and includes seven counties in Washington (Cowlitz, Clark, Lewis, Pacific, Skamania, Thurston, and Wahkiakum) and five counties in Oregon (Clackamas, Columbia, Multnomah, Washington, and Yamhill).

9.2.2 Land Use and Shoreline Use, Zoning Analysis

Baseline data for the discussion in the affected environment section of current land and shoreline uses, current comprehensive plan and shoreline designations, current zoning information, and other public land use policies that apply to the project site were developed based on a review of aerial photography, site reconnaissance, and land use data obtained from the states of Washington and Oregon. The analyses also drew on a review of applicable zoning ordinances, comprehensive plans, and Port policy documents.

This assessment describes potential changes to land use conditions for the proposed project and the No-Action Alternative during construction and operation. The analysis assesses whether the changes to land and shoreline use would be compatible with surrounding land and shoreline uses and whether the changes would be consistent with applicable comprehensive plans and land use policies, zoning ordinances, and shoreline regulations. The assessment of land and shoreline use compatibility is based on the types of uses, their intensities, and their proximity to one another. The analysis of the proposed pipeline related action relies on the land use assessment provided in the Kalama Lateral Project Environmental Assessment issued by the Federal Energy Regulatory Commission (FERC) in July 2015 in connection with the Northwest Pipeline LLC (Northwest) Section 7(c) application.

9.2.3 Population and Housing Analysis

The affected environment section describes the existing population and housing characteristics within the study area using data from the U.S. Census Bureau’s 2013 American Community Survey (ACS) five-year estimates (2009-2013), including total population, housing units, and vacancy. Employment within the study area is based on the analysis included in the Economic Impact Analysis of the Proposed Kalama Manufacturing and Marine Export Facility.

The population and housing impact analysis considers potential changes in population as a result of the employees of the proposed project, as well as the number of expected construction jobs. The analysis then assesses whether the change in population would impact housing characteristics and population projections for the study area. This assessment is based primarily on the size of the new population introduced by the proposed project relative to the size of the residential and employment population within the study area.
9.3 Affected Environment

This section describes existing conditions in the study areas as they pertain to land and shoreline uses (including park and recreation uses), existing zoning ordinances, and applicable land and shoreline master plans, policies, and regulations. This section also describes the population and housing characteristics of the study areas. The existing conditions are described for the project site and the related action.

9.3.1 Project Site

9.3.1.1 Land Use

The proposed project would be located on the Port’s North Port site in unincorporated Cowlitz County, Washington. The project site is largely unvegetated. A large portion of the project site has been used for approximately 37 years as a dredge material disposal site and has been graded in anticipation of future industrial development. The project site also includes two rows of existing treated timber piles now located in the freshwater intertidal backwater channel north of the majority of the project site. These piles are proposed for removal as part of the proposed project’s mitigation activities.

Immediately adjacent land uses include the Columbia River and a mix of industrial, transportation, utility, open space and recreation uses (see Figure 9-2). The project site is bounded on the east by Tradewinds Road, the Air Liquide industrial facility, and the Port’s industrial wastewater treatment plant. BNSF tracks and Interstate 5 (I-5) lie just beyond Tradewinds Road. The area north of the project site contains undeveloped Port property primarily used for open space, recreation, and wetland mitigation. The Steelscape manufacturing facility is located south of the project site and uses the existing North Port dock. The Columbia River flows along the western boundary of the project site, and the confluence of the Kalama and Columbia rivers is located approximately 3,600 feet south of the project site. The project site and surrounding properties are owned by the Port and some are leased to tenants.

Land uses at the three potential temporary construction parking locations consist of vacant land cleared in anticipation of future industrial development. Adjacent land uses to all three areas are industrial and open space.

Land uses within the surrounding 1-mile study area include a mix of industrial uses along the Columbia River waterfront, forest and agricultural uses, residential uses, and some recreational facilities (see Figure 9-2). The nearest residential type activities in Washington are located approximately 1,800 feet south of the site along Sportsmen’s Club Road near the confluence of the Columbia and Kalama rivers.¹ The Sportsmen’s Club is seasonally occupied for recreational activities, such as camping, but for the purposes of this analysis are considered residential activities. Other nearby residential uses include scattered single-family dwellings on the hillsides approximately 2,700 feet northeast of the project site and southeast of the project site along Meeker Drive and Kalama River Road. These residential uses are separated from the project site by I-5. The residential uses along Meeker Drive and Kalama River Road begin approximately 3,100 feet southeast from the project site and extend to the edge of the study

¹ All distances are measured from the nearest project site boundary, unless otherwise noted.
Figure 9-2

Land Use Map

Land Use Categories
- Vacant, Undeveloped, and Miscellaneous
- Hotels and Motels
- Public Facilities and Institutional Uses
- Industrial, Manufacturing, Storage, and Auto-Related
- Transportation and Utility
- Commercial
- Parks, Recreation, and Open Space
- Forestland, Timberland, Agricultural, Fishing, and Tidelands
- Residential

Approximate Project Site
1-Mile Study Area

Cowlitz County, WA
Kress Lake
Kalama Fairgrounds
RV Park/Campground

Sportsman Loop
Lower Kalama & Loop E

Kalama Beach Park
Trojan Park

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area. Residential uses in the Oregon portion of the study area include single-family residences located approximately 2,500 feet west of the shoreline of the project site, across the Columbia River. Industrial uses within the surrounding 1-mile study area include the Kalama River Industrial Park, operated by the Port, located approximately 2,500 feet south of the project site. Interim agricultural uses occur on the Port’s East Port site, directly east of I-5 and approximately 1,100 feet from the project site. Forest uses are located along the eastern edge of the study area and a sand and gravel quarry is located just outside the study area.

**Parks and Recreation**

There are several parks and recreational uses within the 1-mile study area (see Figure 9-2). Most notably, there is an informal recreation area adjacent to the project site to the north and pedestrian trails and beach access at the Port’s Industrial Park south of the project site. The informal recreation area adjacent to the project site to the north is managed by the Port, which issues permits for access, and includes informal trails and water access but no built recreation facilities. This informal recreation area is accessed by passing through and along the project site. Other park and recreation uses include the Kalama Fair Grounds (approximately 3,200 feet southeast of the project site), which is used annually for the Kalama Community Fair. The grounds include permanent warehouse and pavilion structures. The Washington State Department of Fish and Wildlife (WDFW) operates three recreation areas within the study area, including Kress Lake (a manmade lake approximately 2,800 feet east of the project site), Sportman Loop Lower Kalama (a water access site with a concrete boat launch located approximately 1,900 feet south of the project site), and Sportman Loop E (a water access site also located south of the project site that lacks a formal boat launch) (WDFW 2015). Camp Kalama, a private campground and RV park, is located approximately 3,500 feet southeast of the project site. Trails within the study area include a constructed pedestrian trail at the Port’s Industrial Park (approximately 2,500 feet south of the project site), a trail around Kress Lake, a trail adjacent to and south of the Kalama River to the west of I-5, and an informal trail at the eastern extent of the study area, southeast of the project site and adjacent to Haydu Park.² The Columbia River, immediately west of the project site, is also used for recreation.

Recreation uses in the Oregon portion of the study area include Prescott Beach Park located approximately 3,500 feet northwest of the shoreline of the project site and Trojan Park located approximately 4,000 feet southwest of the shoreline of the project site. Prescott Beach Park is a day-use park that provides access to the Columbia River and features a covered picnic shelter, playground equipment, a gazebo, a horse shoe pit, and sand volleyball courts (Columbia County 2015). The 75-acre Trojan Park is located adjacent to the now-demolished Trojan Nuclear Power Plant and includes a 29-acre lake that can be used for fishing. Park facilities include trails for hiking and biking, a disc golf course, restrooms, picnic tables and shelters (Portland General Electric 2015).

**9.3.1.2 Zoning**

The project site is located in an unincorporated portion of the County. The project site, temporary off-site parking areas, and the parcels immediately adjacent to the project site are unzoned and, therefore, are not subject to the County zoning regulations established in the Land Use and Development Code, Chapter 18.10 of the Cowlitz County Code (CCC). Dimensional standards and use restrictions are not established for unzoned property.

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² Haydu Park is located outside the 1-mile study area.
9.3.1.3 Land Use Plans

Development within the project site and surrounding study area is guided by a variety of land use plans and public policies. These plans and policies, which are discussed below, include comprehensive plans, shoreline management master programs (SMMPs), critical area regulations, and the Port of Kalama Comprehensive Plan and Scheme of Harbor Improvements.

Cowlitz County Comprehensive Plan

According to Washington’s Growth Management Act (GMA), counties and cities meeting specific population and growth criteria are required to fully plan under GMA, which includes the duty to prepare comprehensive plans in accordance with the goals of the GMA as identified in Chapter 36.70A RCW. As confirmed by the Washington State Department of Commerce, Cowlitz County is not required to fully plan under the GMA, but the County is required to designate and protect critical areas (Washington State Department of Commerce 2013). Counties that do not fully plan under GMA are required to prepare comprehensive plans in accordance with the Planning Enabling Act (RCW 36.70). The County adopted a comprehensive plan in 1976, updated it in 1981, and is preparing another update. The update is in draft form and is expected to be completed in 2016.

The County’s current comprehensive plan designates the majority of the project site and the three potential temporary construction parking areas as Heavy Industrial. A small area in the northwest portion of the project site is (Parcel No. 63305 see Figure 2-2) designated as Forestry – Open Space (Cowlitz County 1976) (see Figure 9-3). The plan states that the purpose of the industrial classification is to “assure the presence of adequate amounts of land for industrial growth in the County.” Appropriate uses in the Heavy Industrial designation are identified as “heavy industrial uses, for example lumber and plywood mills, metal manufacturing, sand and gravel operations, foundry or iron works, quarries” (Cowlitz County 1976). For the Forestry – Open Space classification the plan states that the purpose of the classification is for “the growing and harvesting of trees” with the open space portion is for “to conserve unique wildlife habitats, natural features, and recreation areas.” Appropriate uses in the Forestry – Open Space classification are identified as timber management, agriculture, residential and outdoor recreation complimentary to other encouraged uses (Cowlitz County 1976).

A section of the County’s current comprehensive plan lists policies and goals related to shoreline management. These are the same goals articulated in the Cowlitz County SMMP, and are discussed in the section below.

Cowlitz County Shorelines Management Master Program

The Shoreline Management Act (SMA) applies to all counties and cities that have “shorelines of the state,” as defined in the Revised Code of Washington (RCW) 90.58.030. The SMA requires that these jurisdictions prepare and adopt shoreline master programs that protect natural resources along regulated shorelines and give priority and preference to public access and water-oriented uses within shoreline environments. Each jurisdiction with shorelines of the state must develop a master program that establishes shoreline “environment designations” based on physical, biological, and development characteristics (Washington State Department of Ecology [Ecology] 2014a). The current SMMP for Cowlitz County (referred to in this
Cowlitz County Comprehensive Plan Map

Figure 9-3

Approximate Project Site

LEGEND
- INTERSTATE HIGHWAY
- STATE HIGHWAY
- PRIMARY ARTERIAL
- SECONDARY ARTERIAL
- COLLECTOR ARTERIAL
- MINOR ROAD
- STATE BOUNDARY
- COUNTY BOUNDARY
- NATIONAL FOREST BOUNDARY
- CREEK
- MOUNT ST. HELENS NATIONAL VOLCANIC MONUMENT BOUNDARY
- RURAL RESIDENTIAL-1
- RURAL RESIDENTIAL-2
- SUBURBAN RESIDENTIAL
- URBAN RESIDENTIAL
- HIGH DENSITY
- AGRICULTURE
- AGRICULTURE-INDUSTRIAL
- INDUSTRIAL-HEAVY
- COMMERCIAL
- FORESTRY-OPEN SPACE
- RURAL RESIDENTIAL-S
- WOODLANDS UGC
- ZONING BOUNDARIES

State of Oregon

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document as Cowlitz County SMMP) was approved in 1977 and includes four basic shoreline
designations (Natural, Conservancy, Rural, and Urban).

The Columbia River, which borders the project site to the west, is a shoreline of statewide
significance. The areas of the site under shoreline jurisdiction include the Columbia River and
all areas within 200 feet of the ordinary high water mark.

The County SMMP designates the shoreline environment at the project site as Urban and
Conservancy (Cowlitz County 1977) (see Figure 9-4). The project site is designated as Urban;
and Conservancy. The SMMP states that the Urban designation is suitable for intensive
recreation, residential, industrial, and commercial development. The objective of the Urban
designation is to identify defined areas, which are currently in such uses and potentially capable
of such uses to satisfy the socioeconomic needs of the present and future population of the
county.

The Conservancy district designates those areas endowed with resources, which may be
harvested and naturally replenished. The Conservancy district also designates areas that,
because of flooding, slide prone soils, or other natural conditions, are not suitable for intensive
agriculture or high-density human activity. The objective of the Conservancy designation is to
maintain those defined areas for a sustained yield philosophy of resource management and to
establish suitable areas for non-intensive agriculture uses, non-intensive recreation uses, and
limited intensive public access.

The County SMMP establishes use regulations for 21 shoreline use activities. These use
regulations supplement other land use regulations and speak to the shoreline management
issues that must be addressed to implement the goals of the SMMP. According to the shoreline
use activity regulations of the County’s SMMP, ports and water-related industries are permitted
uses on urban shorelines and conditional uses on conservancy shorelines.

The County SMMP also outlines a series of specific goals related to circulation, conservation,
economic development, historical/cultural, recreation, residential, public access, and shoreline
uses to achieve the overall goals of the SMA. Policies related to ports and water-related
industries are identified under the economic development goal of the County SMMP and
include the following:

a. Port facilities shall be designed to permit viewing of harbor areas from viewpoints,
waterfront restaurants and similar public facilities which would not interfere with
port operations or endanger public health and safety.

b. Sewage treatment, water reclamation, desalinization and power plants shall be
located where they do not interfere with, and are compatible with recreational,
residential, or other public uses of the water and shorelands. Waste treatment ponds
for water-related industry shall occupy as little shoreline as possible.

c. The cooperative use of dock parking, cargo handling, and storage facilities shall be
strongly encouraged in waterfront industrial areas.

d. Land transportation and utility corridors serving ports and water-related industry in
the shoreline area shall follow the guidelines provided under the sections dealing
with utilities and road and railroad design and construction. Where feasible,
transportation and utility corridors shall be located upland to reduce pressures for
the use of waterfront sites.
Figure 9-4: Cowlitz County Shorelines Designation Map

Approximate boundary between urban and conservancy designations
e. Prior to allocating shorelines for port uses, local government shall consider statewide needs and coordinate planning with other jurisdictions to avoid wasteful duplication of port services within port-service regions.

f. Since industrial docks and piers are often longer and greater in bulk than recreational or residential piers, careful planning must be undertaken to reduce the adverse impact of such facilities on other water-dependent uses, aesthetics, and shoreline resources. Because heavy industrial activities are associated with industrial piers and docks, the location of these facilities must be considered a major factor in determining the environmental and aesthetic compatibility of such facilities.

g. Because a large impact cannot be avoided due to ports and port-related uses, preference will be given to develop and redevelopment of existing port areas.

h. Ports and water-related industries are encouraged to locate in urban environments, but in exceptional cases may locate under natural, conservancy, and rural environments, subject to conditional use and specific performance standards. An exception is log storage and rafting which may be permitted in conservancy, rural, urban, and is considered as a conditional use on natural shorelines.

The County SMMP also outlines specific use regulations for each of the shoreline districts. Ports and water-related industries are specifically addressed for both the Urban and Conservancy Shoreline Districts as follows:

**Conservancy District**

1. Deep-draft ports or water-related industries other than those activities covered in other sections of this program shall be considered as conditional uses on conservancy shorelines.

**Urban District**

1. Port facilities and water-related industries shall be permitted on urban shorelines.

The Cowlitz County SMMP is implemented by the regulations of CCC 19.20. This section of the CCC identifies the submittal requirements and the approval process for development activities in a designated shoreline.

The SMA requires each county and city to update its SMMP periodically. Cowlitz County is currently preparing an updated SMMP with local adoption anticipated in summer 2016.

Historic shoreline permitting at the project site includes a shoreline conditional use permit and a shoreline substantial development permit issued for dredging activities at the project site in 1996 and extended in 2001. The permits allowed for the placement, redistribution, grading, or mining of approximately 500,000 cubic yards of dredge material (Ecology 2001). Cowlitz County also approved a shoreline substantial development permit, shoreline conditional use permit, and a shoreline variance for the construction of an aggregate distribution facility and a concrete ready-mix batch plant with associated structures and infrastructure at the project site in 2009 (Cowlitz County 2009). The aggregate plant was not constructed. In addition, a shoreline substantial development permit was approved for the North Port Dock Extension (a project similar to Marine Terminal Alternative 2) in 2004.
Cowlitz County Critical Areas Protection

As mandated by the GMA (RCW 36.70A.060), the County is required to develop and adopt a critical areas protection ordinance that designates critical areas in the County and sets out development regulations to ensure their conservation. CCC Chapter 19.15 provides protection for five designated critical areas: critical aquifer recharge areas (CARAs), frequently flooded areas, geologic hazard areas, wetland areas, and fish and wildlife habitat conservation areas. Development within or adjacent to designated critical areas require compliance with CCC 19.15 in order to ensure no net loss of the functions or value of the impacted critical area(s). A critical areas permit is required for development following a County determination that critical areas are present on a project site.

The five types of critical areas identified on the upland portions of the project site include geologic hazard areas, frequently flooded areas, fish and wildlife habitat conservation areas, CARAs, and wetland buffers, which extend onto a portion of the project site. Although the project site is within a CARA, the County has published a critical areas determination documenting several Port parcels, including the project site, that are not subject to CARA permitting requirements (Cowlitz County 2012).

Port of Kalama Comprehensive Plan and Scheme of Harbor Improvements

Ports in Washington are required to adopt a comprehensive scheme of harbor improvements under RCW 53.20.010. Land holdings and properties owned by the Port are subject to the Port of Kalama Comprehensive Plan and Scheme of Harbor Improvements. This comprehensive scheme sets goals, objectives, and strategies to fulfill the Port’s mission and identifies opportunities to attract economic development, provide capital facilities, and manage properties and leases (Port of Kalama 2015).

The comprehensive scheme identifies the highest and best use of the North Port site as an expansion of marine terminal and water-dependent industry. The comprehensive scheme states that the northern portion of the North Port site is leased to Northwest Innovation Works, LLC - Kalama for the development of a methanol production plant (Port of Kalama 2015).

9.3.1.4 Population and Housing Characteristics

The study area for the assessment of population and housing characteristics is a 12-county area covering major cities and towns within a less than 90-minute driving radius of the project site. Based on an analysis conducted by ECONorthwest, this is the area where employees of the proposed project and their families are most likely to reside (ECONorthwest 2015). According to the U.S. Census Bureau’s 2013 ACS five-year estimates, the population of the study area was 2,718,987 residents (see Table 9-1).

The table below provides an overview of the most recent population and housing characteristics for the study area.

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<tr>
<th>Study Area</th>
<th>2009-2013 Population</th>
<th>2009-2013 Total Housing Units</th>
<th>2009-2013 Vacant Housing Units</th>
<th>Vacancy Rate (%)</th>
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<tr>
<td>Study Area</td>
<td>2009-2013 Population¹</td>
<td>2009-2013 Total Housing Units</td>
<td>2009-2013 Vacant Housing Units</td>
<td>Vacancy Rate (%)</td>
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<td>--------------------------------</td>
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<tr>
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<td><strong>Total</strong></td>
<td><strong>2,718,987</strong></td>
<td><strong>1,131,642</strong></td>
<td><strong>79,880</strong></td>
<td><strong>7.1%</strong></td>
</tr>
</tbody>
</table>

Notes:
1. The ACS collects data throughout a given period on an ongoing, monthly basis. The 2009-2013 ACS reflects population data over the period from 2009 to 2013.
Sources:

9.3.2 Related Actions

As described in Kalama Lateral Project Environmental Assessment, issued by FERC in July 2015, land uses along the proposed pipeline route primarily consist of forest land, developed commercial and industrial properties, and residential developments (see Figure 9-5 and Appendix B). The construction of the proposed pipeline is subject to applicable policies and provisions in the Cowlitz County Comprehensive Plan, Cowlitz County Code, and Cowlitz County Critical Areas Ordinance. Land uses along the proposed new transmission line and upgraded transmission line are industrial, open space, and transportation.

9.4 Environmental Impacts

The following sections describe the direct and indirect impacts on land and shoreline use that could result from the construction and operation of the proposed project and No-Action Alternative. The proposed project, with either Technology Alternative and either Marine Terminal Alternative, would result in the same types of land uses on the project site, the same overall construction duration and tasks, and the same employment during construction and operation. Therefore, the proposed project with either Technology Alternative and either Marine Terminal Alternative would have the same potential impacts on land and shoreline use and housing and population characteristics, and this analysis focuses on the proposed project and only distinguishes among the Technology and Marine Terminal Alternatives where necessary, such as in the discussion of consistency with the Cowlitz County SMMP.

9.4.1 Proposed Project Alternatives

9.4.1.1 Construction Impacts

Land Use

The project site is currently used for dredged material disposal, which involves regular earth-moving activities that use heavy machinery and require access to the site by construction-related vehicles, including large trucks.
Construction of the proposed project would introduce a new industrial activity to the project site, which would change the land use character of the site as compared to the existing dredged material disposal use. The proposed project would also result in construction activities in proximity to informal recreational uses. These recreational uses would remain available for public use throughout the construction period, except during the period when the recreation access improvements that are part of the proposed project would be under construction.

The project site, temporary construction parking areas, and surrounding properties are unzoned with a Heavy Industrial comprehensive plan designation. In general, industrial uses are expected to generate noise, dust, smoke, vibration, and other disruptive environmental conditions. Construction of the proposed project would be generally consistent with the existing industrial uses and comprehensive plan designation of the project site and surrounding area. Furthermore, disruptions due to construction activities would occur primarily within the project site, and would have limited effects on land uses within the 1-mile study area.

Other temporary disruptions and inconveniences during construction activities would be due to traffic congestion, noise and vibration, air pollutant emissions and fugitive dust. These potential impacts on nearby uses, including residential uses and recreational facilities within a mile of the project site, are addressed in Chapter 4, Air and Greenhouse Gas Emissions, Chapter 12, Transportation, and Chapter 14, Noise.

The proposed project would also result in construction activities in proximity to informal recreational uses. These recreational uses would remain available for public use throughout the construction period, except during the period when the recreation access improvements that are part of the proposed project would be under construction. Overall, construction activities would be temporary and would not alter surrounding land uses or otherwise affect land use patterns of the surrounding area during construction. Therefore, construction of the proposed project would not result in any significant adverse impacts on land use.

**Population and Housing**

The proposed project, with either Technology Alternative and either Marine Terminal Alternative, would employ approximately 1,000 workers at its peak during construction (ECONorthwest 2015). It is likely that many construction would already live in the area, and therefore would not have the potential to affect population and housing characteristics; however, this analysis conservatively assumes that all workers would be new to the population and housing study area.

The 12-county study area included approximately 1.4 million workers in 2014 (ECONorthwest 2015). The proposed project’s construction employment would constitute approximately less than 0.1 percent of the total employment in these counties and available construction workers by trade exceed what is needed by the project by at least seven times. It is estimated that 10 percent of construction workers may come from areas beyond the 12-county study area. Given the number of people currently employed in the study area and the availability of construction labor, it is anticipated that the proposed project could predominately utilize the existing construction labor pool and construction laborers would not represent a significant increase in population or impact the housing characteristics of the study area.
9.4.1.2 Operational Impacts

Land Use

The proposed project would redevelop the project site with a methanol manufacturing facility that would include processing facilities, storage facilities, loading facilities, and a new marine terminal in the Columbia River. The proposed project would introduce a more active and intensive industrial land use to the project site as compared to the existing dredge material disposal use of the site. Although this would constitute a substantial change to the land use character of the project site, the proposed project would be located in an area that already contains industrial uses and would be generally compatible with other nearby land uses. Land use adjacent to the project site is already characterized by the presence of many industrial and transportation/utility uses. The proposed project would be consistent with these industrial and transportation/utility land uses including the existing Air Liquide industrial facility, the Port’s industrial wastewater treatment plant, the BNSF tracks, the I-5 interchange, the existing dock adjacent to the proposed project site, and the Steelscape manufacturing facility. Use of the site for the proposed project is not expected to create any adjacent use compatibility impacts nor trigger any pressure for those adjacent land uses to change from their existing use.

Single-family residential uses are located within the 1-mile study area with the nearest residential-type uses occurring approximately 0.3 mile south of the project site along Sportsmens Club Road. These uses would be separated from the project site by intervening uses including the Steelscape facility and densely vegetated areas along Sportsmens Club Road. These uses already coexist with existing industrial uses in the area surrounding the project site. The proposed project would be further away than those uses and separated from the residential uses by the intervening industrial uses and densely vegetated areas and, therefore, would not significantly affect the residential uses with respect to land use compatibility.

The proposed project would improve the roadway used to access the informal recreation area located to the north of the project site and would provide a new parking area. This would directly affect the recreation area by creating improved access for users. The proposed project would be adjacent to, but would not eliminate, the existing informal recreational area located to the north of the project site. Users of the informal recreation area north of the project site would experience some change in user experience because of the increased activity and industrial facilities (e.g., the infiltration pond and wastewater treatment area), but the area would continue to be available for use by the surrounding community with increased accessibility from the improved roadway and new parking area. The proposed project would not have significant effects on the land use characteristics of other recreation uses in the 1-mile study area due to the distance between the project site and these uses. The proposed project, including improvements to the roadway used to access the informal recreation area, would not significantly affect recreational uses with respect to land use compatibility.

The proposed project would not affect the continued use of the Columbia River for recreational purposes. At completion, the proposed project would result in the introduction of approximately 3 to 6 vessels per month (36 to 72 per year) to the Columbia River. This increase would be relatively small compared to the typical historic levels for river traffic. According to vessel entry and transit data, the river accommodated approximately 1,581 cargo and passenger vessels, tank ships, and articulated tug barge transits in 2014 (Ecology 2015). Historically, the Columbia River has supported even higher levels of ship traffic, with a recent peak of 2,269 vessel, tank ship, and barge vessel calls in 1999 (Ecology 2014b). Recreational users already co-exist with and take account of commercial vessels within the river, including large oceangoing ships. These recreational users would similarly take account of the relatively small
increase in river traffic resulting from the proposed action. Therefore, the proposed project would not significantly affect the recreational use of the Columbia River.

When not in use for loading methanol, the proposed marine terminal, under either Marine Terminal Alternative, would be made available for general use by the Port, for other cargo loading and unloading, for vessel supply operations, as a lay berth, for short- and long-term vessel moorage, and for topside vessel maintenance. This general use by the Port would result in minor additional vessel traffic to the marine terminal, but this traffic would still be within the typical historic levels for river traffic. Furthermore, in most cases it is expected that these would be vessels that would already be transiting the Columbia River for other reasons.

Overall, the proposed project would not result in significant adverse impacts to land and shoreline use.

Consistency with Zoning

The project site and adjacent parcels are unzoned. Therefore, an assessment of zoning consistency is not warranted. The proposed project would not affect zoning designations in other portions of the study area. As a result, the proposed project would not result in significant adverse impacts to zoning.

Consistency with Land Use Plans and Public Policies

_Cowlitz County Comprehensive Plan_

The current Cowlitz County comprehensive plan designates the majority of the project site as Heavy Industrial. The purpose of this classification is to “assure the presence of adequate amounts of land for industrial growth in the County.” A small portion of the project site is designated by the current Cowlitz County comprehensive plan as Forestry – Open Space. The purpose of this classification is to preserve “the growing and harvesting of trees” and “to conserve unique wildlife habitats, natural features, and recreation areas.”

The proposed project would be consistent with the Cowlitz County comprehensive plan designation of Heavy Industrial because it would maintain and expand the industrial use of the project site and would be supportive of the plan’s various policies related to industrial land uses.

The improved recreation access and portions of the stormwater infiltration pond and flare would be located within the Forestry – Open Space designation. The use of the site for recreational purposes is consistent with the Cowlitz County comprehensive plan because it would improve an existing recreation access point. While the use of the Forestry – Open Space designated areas of the site for the infiltration pond and flare is not consistent with the plan designation, it would not result in any land use or policy impacts because the site is not currently used for timber production, there are no adjacent areas under timber production and the site does not represent unique wildlife habitat. As noted in Chapter 3, soils on site consist of modified or fill land and, according to the U.S. Department of Agriculture Natural Resource Conservation Service, are not suitable for timber production (Pringle 2006). In addition, Chapter 6, Plants and Animals, concludes that the site has only limited habitat qualities.

_Cowlitz County Shoreline Management Master Program_

The proposed project, with either Technology Alternative and either Marine Terminal Alternative, would result in development within the shoreline area regulated by the Cowlitz
County SMP, which designates the shoreline environment at the project site as Urban and Conservancy. According to the shoreline use activity regulations of the County’s 1977 SMP, ports and water-related industries are permitted uses on Urban shorelines and conditional uses on Conservancy shorelines. In addition, some water-dependent uses, such as dredging in the Urban environment, are classified as a conditional use as well. The project proponent has prepared a shoreline substantial development permit (SSDP) and shoreline conditional use permit (SCUP) for the proposed project with the ULE Alternative and Marine Terminal Alternative 1 that demonstrates compliance with all applicable criteria contained in the County SMMP. Compliance with the goals and policies of the Cowlitz County SMMP are addressed in the shoreline narrative, attached as Appendix H. The CR Alternative and Marine Terminal Alternatives would involve the same general features and elements as the ULE Alternative and would be expected to be in compliance with the SMMP. The southern half of the project site is located within the Urban District of the shoreline. For the proposed project with the ULE Alternative and Marine Terminal Alternative 1, the activities proposed within the Urban District would consist of the following:

- Dredging
- Ranney collector well and associated improvements
- Dock (for mooring and loading methanol onto ship’s cargo operations, loading and unloading, vessel supply operations, layberthing, and for short- and long-term vessel moorage)
  - Dock structure (piles, caps, decking, etc.)
  - Operation shack
  - Longshore break shelter
  - Stormwater pump station
  - Security gate
  - Utilities
  - Hydraulic and electric utility boxes
  - Marine loading arms
- Electrical substation
- Methanol pipelines
- Pipe rack
- Methanol pump pad/ship scrubber
- Site process water and pump station
- Utilities serving site uses
- Security guard shack and parking
- Site grading and excavation
- Temporary falsework
- Stormwater weir and outfall removal
- Security fencing
- Tradewinds Road (part) (private)
Portions of the north side of project site are located in the Conservancy District of the shoreline. Activities proposed within the Conservancy District would consist of the following:

- Tradewinds Road (private)
- Parking for recreation
- Recreational access point
- Infiltration ponds
- First flush pond
- Foam buildings
- Portion of the bulk product storage
- Portion of the fire suppression water storage
- Habitat mitigation
- Loop Road
- Site grading and excavation
- Security fencing

The CR Alternative and Marine Terminal Alternative 2 would remove the air separation unit, ship scrubber, and Loop Road from the shoreline environment, but would introduce chemical storage and the cooling water system. As with Marine Terminal Alternative 1, Marine Terminal Alternative 2 would be located within the Urban District. In 2004, a SSDP was obtained for Marine Terminal Alternative 2, but the marine terminal was not constructed. It is anticipated that the shoreline impacts would be similar regardless of the Technology or Marine Terminal Alternative and through the submittal of the SSDP and SCUP and compliance with any permit conditions, the proposed project would be consistent with public policy related to the County SMMP.

_Cowlitz County Critical Areas Protection (CCC 19.15)_

The proposed project would result in development within five designated critical areas: frequently flooded areas, fish and wildlife habitat conservation areas, geologic hazard areas, CARAs, and wetland buffers that extend onto a portion of the project site. Potential impacts to these critical areas have been assessed in the relevant chapters of this environmental impact statement (Chapter 5, Water Resources, and Chapter 6, Plants and Animals). A critical areas report has also been prepared for the proposed project that describes mitigation measures that ensure there would be no net loss of critical area functions and values (see Appendix H). The proposed project, including the pile removal mitigation measures, would be consistent with public policy related to critical areas protection.

_Port of Kalama Comprehensive Plan and Scheme of Harbor Improvements_

The Port’s comprehensive scheme describes the Port’s plans for future investment, operation, and development of its properties including the North Port site. The proposed project would further the Port’s strategy for continued industrial development of the North Port site and is consistent with the highest and best use of the North Port site, which has been identified as an expansion of the marine terminal and water-dependent industry. The proposed project would, therefore, be consistent with the Port’s comprehensive scheme.
Population and Housing

The proposed project, with either Technology Alternative and either Marine Terminal Alternative, would employ 192 workers during operation (ECONorthwest 2015). It is likely that many operational workers would live in the area, and therefore would not have the potential to affect population and housing characteristics; however, this analysis conservatively assumes that all workers would be new to the population and housing study area.

According to the U.S. Census Bureau’s 2013 ACS five-year estimates, the population of the study area was 2,718,987 residents. The proposed project is anticipated to add approximately 192 jobs, which could increase the population by approximately 492 people based on an average household size of 2.56\(^3\) if all employees were new to the area. This would represent a negligible increase in the overall population of the study area (approximately 0.02 percent of the total 2013 population). Furthermore, with an areawide averaged 7 percent vacancy rate, it is anticipated that any increase in households could be absorbed into the current housing market. Therefore, there would be no significant adverse impacts to population or housing characteristics due to the proposed project.

9.4.2 Related Actions

The following assessment of the related actions is based on the Kalama Lateral Project Environmental Assessment issued by FERC in connection with Northwest’s Section 7(c) application (Docket No. CP15-8-000) and an assessment of the electrical service improvements planned by Cowlitz County Public Utility District No. 1 to serve the project.

9.4.2.1 Kalama Lateral Project

The proposed pipeline would have the potential to result in temporary disruption to activities or inconvenience to persons living or working near the construction area, as well as the introduction of a new use to some areas of the proposed pipeline route. Construction of the proposed pipeline would require acquisition of temporary construction right-of-way (ROW) and temporary extra work areas, as well as the construction of permanent access roads and aboveground facilities. Construction disturbance would affect a total of 127.1 acres. 94.7 acres would be restored to pre-construction conditions and uses and 32.4 acres would be retained for operation of the project. The proposed pipeline would also require a new 50-foot wide permanent ROW for operation. This ROW would be maintained in a grassy state except where it is unnecessary, such as in actively managed agricultural fields and maintained residential properties. The related action would convert approximately 12.4 acres of forest land to maintained ROW for the life of the proposed pipeline (see Appendix B).

Most of the land disturbed by construction and operation of the proposed pipeline would be existing developed land and forest land. Existing land uses would be allowed to continue on the permanent ROW and the easement may be crossed by roads, fences, utilities, etc. However, uses that could hinder, conflict, or interfere with Northwest’s surface or subsurface rights or disturb its ability to operate, maintain, and protect its facilities would be restricted. Prohibited activities on the permanent easement would include erecting structures or other buildings and constructing reservoirs and excavations that change the surface grade or obstruct Northwest’s

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\(^3\) Household size based on an average of the average owner-occupied household size for all study area counties. Source: U.S. Census Bureau 2013 ACS 5-year estimates (2009-2013).
access along the easement. There are no existing structures that would require removal to allow for the permanent ROW and easement.

The Cowlitz County Comprehensive Plan’s Community Facilities Element includes goals and policies related to the planning and development of major utility lines. The Kalama Lateral Project Environmental Assessment identifies the primary goal related to major utility lines is that they are “designed and constructed to minimize environmental impacts and that use of existing utility corridors should be maximized before new utilities are constructed in new or expanded corridors.” The proposed pipeline does not parallel or co-locate with existing utilities. Northwest evaluated project alternatives that included substantial lengths of co-location, but it was found that these alternatives would have greater impacts to residential structures and environmental resources.

Utility facilities, including natural gas pipelines, are permitted to cross most designated critical areas if they comply with the requirements of CCC Chapter 19.15, including submittal of a critical areas permit. The Kalama Lateral Project Environmental Assessment states that Northwest would apply for all required permits in February 2016.

Overall, it is not anticipated that the natural gas supply would have significant adverse impacts on land use or public policy.

9.4.2.2 Electrical Service

The proposed electrical service improvements would have the potential to result in temporary disruption to activities or inconvenience to persons living or working near the construction area, as well as the introduction of a new overhead crossing of I-5, the BNSF rail road, and N. Hendrickson Drive within the city of Kalama. The upgrade to the existing transmission line would not involve additional clearing or other significant construction activities because it is located within an existing transmission corridor that has been maintained activity for this use. The new transmission line would be located primarily over existing maintained transportation corridors (road and rail) and would be designed to result in no impacts to these existing land uses. A small section (approximately 100 feet) would be located over vegetated areas of I-5 and may require removal of tall vegetation. There are no residential or other sensitive land uses within the area that could be impacted by the vegetation removal.

The Cowlitz County Comprehensive Plan’s Community Facilities Element includes goals and policies related to the planning and development of major utility lines. The primary goal related to major utility lines is that they are “designed and constructed to minimize environmental impacts and that use of existing utility corridors should be maximized before new utilities are constructed in new or expanded corridors.” The proposed electrical service improvements would be predominantly located in an existing corridor with a new corridor established in an area with minimal environmental impacts because of the limited nature of the corridor and its location over existing transportation corridors.

Utility facilities are permitted to cross most designated critical areas if they comply with the requirements of CCC Chapter 19.15, including submittal of a critical areas permit. Authorization would be obtained from Washington State Department of Transportation, the BNSF Railway, and Cowlitz County or the City of Kalama as necessary.

Overall, it is not anticipated that the electrical service improvements would have significant adverse impacts on land use or public policy.
9.4.3 No-Action Alternative

The proposed project would not be constructed on the project site under the No-Action Alternative. However, it is anticipated that the Port would pursue future industrial or marine terminal development at the North Port site, consistent with the Port’s comprehensive scheme. Therefore, with the No-Action Alternative the project site is likely to be transformed from a dredged material disposal site into a more intensive industrial or marine terminal use. Public access sensitivities of any potential future alternative use are not known; therefore, the No-Action Alternative does not include on-site recreation access improvements like those contemplated under the proposed project. The No-Action Alternative, like the proposed project, would result in an increase in the worker population in the Port area, which could result in a small increase in the residential population and housing demand in the surrounding area. It is anticipated that the No-Action Alternative would not have a significant adverse impact on population or housing characteristics due to the size of the population and number of housing units within the study area.

It is expected that activities under the No-Action Alternative would be consistent with land and shoreline uses and public policy and land use plans. Expected land use and shoreline use impacts of the No-Action Alternative are expected to be similar to those of the proposed project.

9.5 Mitigation Measures

9.5.1 Project Mitigation

The design features and best management practices the Applicant proposes to avoid or minimize environmental impacts during construction and operations and those required by agency standards or permits are assumed to be part of the Project and have been considered in assessing the environmental impacts to land use and shoreline resources. Overall, the proposed project, with either Technology Alternative and either Marine Terminal Alternative, would be compatible with surrounding land and shoreline uses and consistent with zoning and applicable land use plans and public policies.

9.5.2 Additional Mitigation

There are no significant adverse impacts identified for public service and utility resources; therefore, no additional mitigation measures are identified.

9.6 Unavoidable Significant Adverse Impacts

The proposed project, with either Technology Alternative and either Marine Terminal Alternative, would not result in unavoidable significant adverse impacts to land and shoreline use, zoning, land use plans and public policy, population, or housing characteristics.

9.7 References


