3.4 Land Use and Economic Activity

Jurisdictions in the Portland-Vancouver region integrate their transportation and land use planning processes to help confirm that major transportation improvements do not create unintended or unforeseen effects on land use patterns and the economy. Both Oregon and Washington have growth management laws to regulate land use and growth. The Modified LPA has been designed to accommodate the travel needs of existing land uses and support the region's anticipated growth and economic development. This section evaluates the potential effects of the Modified LPA on the region's land use planning and economic activity.

The information in this section is based on data and analysis in the Land Use and Economics Technical Reports (as listed in Appendix H), which contain greater detail and analysis of the information that follows.

The assessment of reasonably foreseeable effects in this section is based upon the temporal proximity parameters detailed in the Chapter 3 introduction. The geographic proximity used in the assessment of reasonably foreseeable effects is described in Section 3.4.2.

3.4.1 Changes or New Information Since 2013

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

- Updates to land use plans, policies, and regulations at the federal, state, regional, and local levels; updated zoning regulations for the Cities of Vancouver and Portland; updated environmental guidance for ODOT and WSDOT.
- Changes in businesses (e.g., closure of Safeway grocery store on Hayden Island) and ongoing development projects.
- Land use changes in the study area, including development at the Vancouver Waterfront, changes in planned uses on Hayden Island, and recently constructed, altered, or removed buildings.
- Changes in the project footprint necessitated by changed conditions resulted in shifting the light-rail transit (LRT) alignment and modifying interchange designs.

3.4.2 Existing Conditions

Study Areas

Oregon's Statewide Planning Goals and Washington's Growth Management Act agree on general principles of compact urban form, preservation of rural areas, use of urban growth boundaries, and multimodal transportation systems. Regional plans tailor these goals for the Portland-Vancouver region, and local plans further refine these goals and implement them through zoning and development regulations.

The Portland-Vancouver region is located at the confluence of two navigable rivers—the Columbia and the Willamette—and is served by BNSF Railway and Union Pacific Railroad transcontinental rail lines, Portland International Airport, and marine terminals at the ports of Portland and Vancouver. The region's economic competitiveness depends in large part on its role as a gateway and distribution center for domestic and international markets.

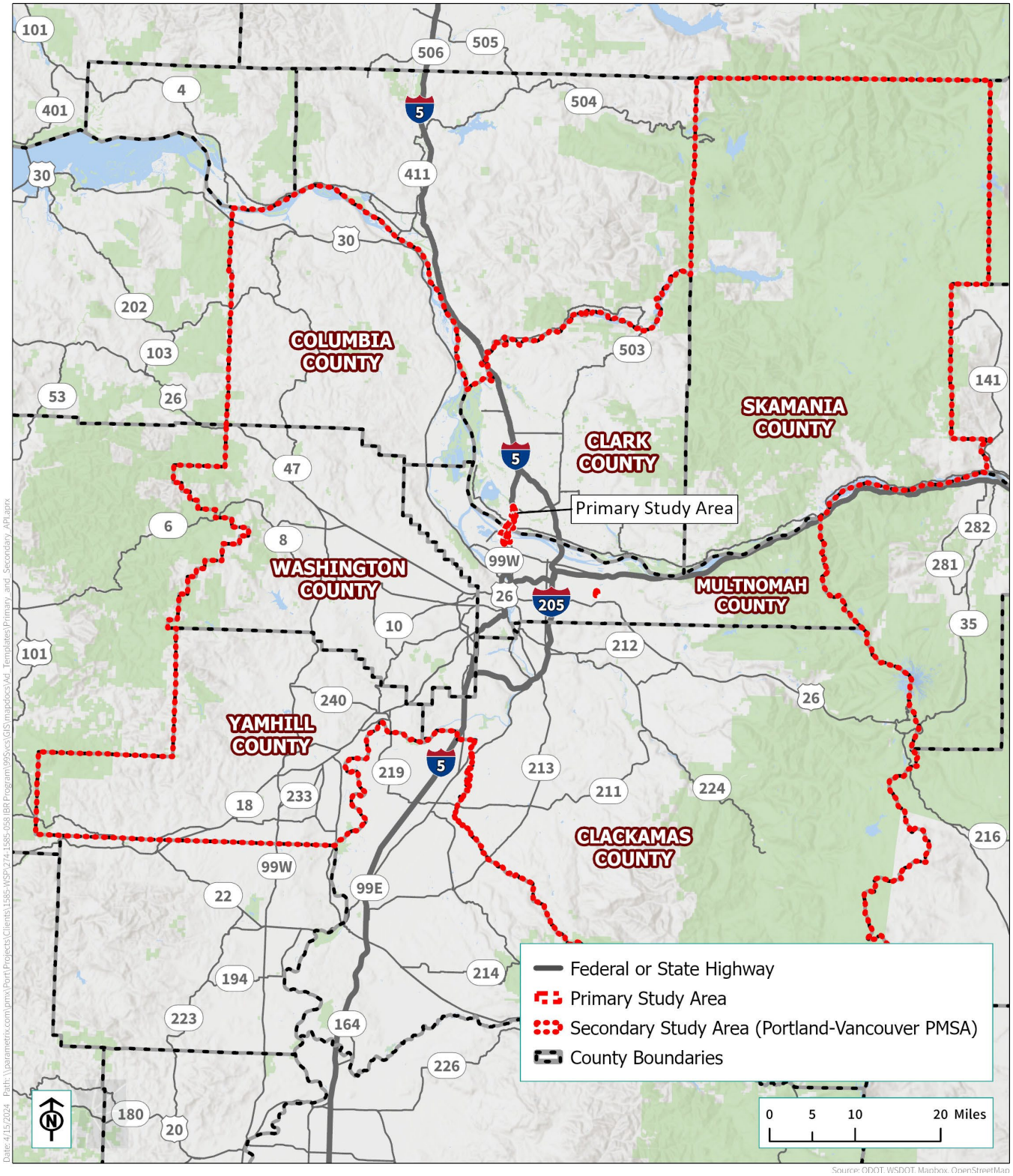
In addition to considering the primary study area, described in the Chapter 3 introduction, the land use analysis also considered a secondary study area, both of which are shown in Figure 3.4-1. The primary study area represents the area that would experience the most immediate impacts from construction and operation of the Modified LPA. Because major transportation projects can affect regional growth trends and patterns, the secondary study area was identified to evaluate where more attenuated (e.g., later in time and place) effects (e.g., traffic and development changes) could occur. The secondary study area extends from the I-5/I-84 interchange in the south to approximately where I-5 and I-205 meet in the north and includes a 1-mile buffer on both the east and west sides of the I-5 right of way.

The potential for land use changes that could affect marine commerce is evaluated in the Navigation Impact Report (IBR 2025). Appendix A of the Navigation Impact Report (IBR 2025) assesses existing commercial and industrial development and land uses along the Columbia River upstream of the Interstate Bridge to evaluate the potential for future development that could result in different vessels using the waterway. The appendix identifies properties along the Columbia River that currently have marine facilities available or have the potential for future development of such facilities. It concludes that there are few opportunities for new or expanded commercial and industrial development that would require the use of vessels too large to pass beneath the proposed new Columbia River bridges. Section 3.4.4,Reasonably Foreseeable Effects, provides more information on the potential for upriver marine facility development.

Like the land use analysis, the economics analysis also considered two study areas (Figure 3.4-2). The primary study area is the same as the land use study area, while the secondary study area for the economics analysis is composed of the seven-county Portland-Vancouver Primary Metropolitan Statistical Area (PMSA), which includes the counties of Clackamas, Columbia, Multnomah, Washington, and Yamhill in Oregon, and Clark and Skamania Counties in Washington. This larger area allowed for consideration of the reasonably foreseeable regional effects of the Modified LPA within the economic analysis.

Figure 3.4-1. Land Use Primary and Secondary Study Areas and Existing Land Uses

Figure 3.4-2. Economic Analysis Primary and Secondary Study Areas



Land Use

Oregon

The primary study area is largely characterized by commercial land uses with smaller amounts of vacant land, multifamily residential, and parks/open space. The Oregon portion of the secondary study area is largely residential, with commercial activity on the major transportation corridors such as Interstate Avenue and Martin Luther King Jr. Boulevard. The southern portion of the secondary study area (Figure 3.4-3) includes the Lloyd District, which is a mix of residential and commercial land uses and includes regional facilities such as the Moda Center, the Veterans Memorial Coliseum, and the Oregon Convention Center. This area is a major employment center for the region, with several large office buildings housing the Bonneville Power Administration, State of Oregon, Metro and TriMet offices, the Lloyd Center Mall, and various small businesses.

The area of North Portland between N Columbia Boulevard and the Columbia River (Figure 3.4-4) is primarily industrial and commercial uses, but also includes multifamily housing, parks, public facilities, and open space. Some regionally important land uses in this area are the Portland International Raceway, the Portland Expo Center, and an Amazon delivery facility that occupies the site of the former Portland Meadows horse racing track. This area includes the Columbia Slough, Hayden Island, and Delta Park, which contains large wetlands west of I-5 as well as a variety of recreational facilities. Currently, the TriMet MAX light-rail line ends at the Expo Center, just south of the Columbia River. Historically, the city of Vanport was located south of the Expo Center (see Section 3.8, Cultural Resources).

Hayden Island is currently only accessible via I-5. N Hayden Island Drive is the main road within the island. The primary land uses within this portion of the primary study area are commercial and include the Jantzen Beach Center shopping center and surrounding big-box retailers. Residential land uses on Hayden Island include multifamily residential developments, manufactured homes, and floating homes in small marinas. The Columbia River, the boundary between Oregon and Washington, is lined on both sides by marinas, homes, hotels, restaurants, and public facilities.

Section 3.2 of the Land Use Technical Report (as listed in Appendix H) contains a list with additional detail on recent and pending development within the Oregon primary study area. Since publication of the CRC Final EIS, six developments have been completed within the Oregon primary study area, while three are proposed and in various early stages of development permit review. Projects consist of retail commercial, multifamily residential, light industrial, and hotel uses.

Figure 3.4-3. Existing Land Uses – Southern Portion of the Secondary Study Area

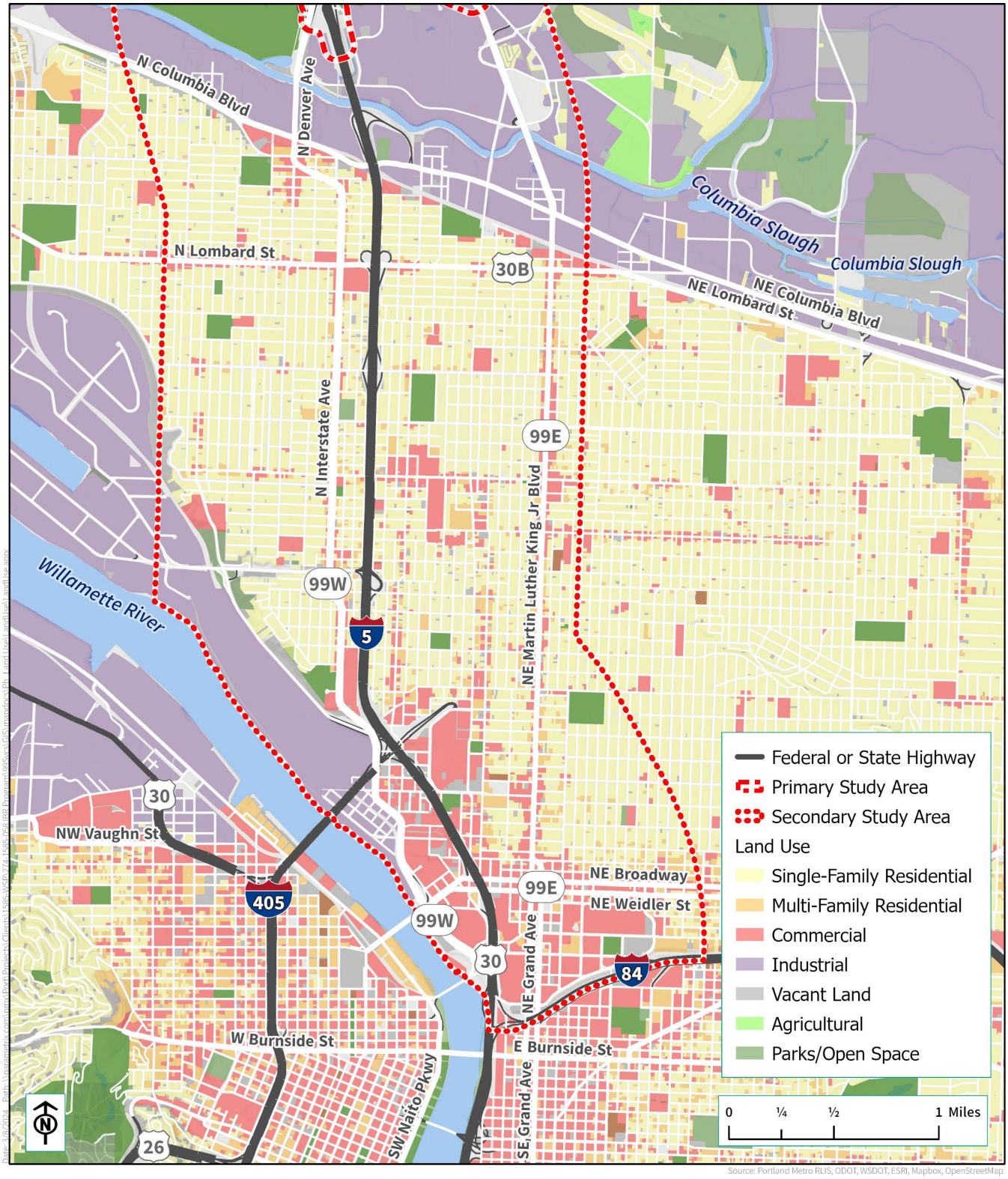
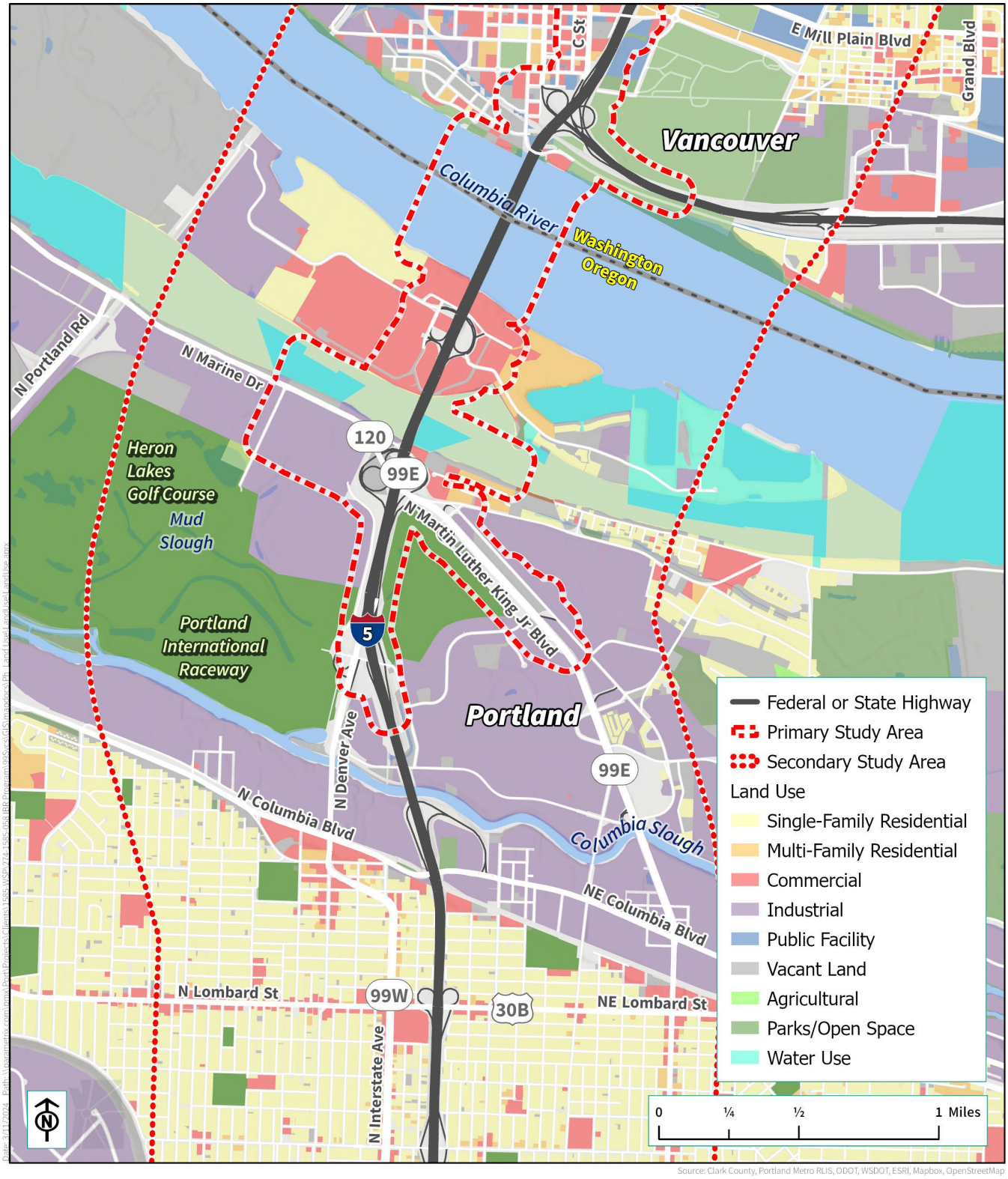


Figure 3.4-4. Existing Land Uses in North Portland, Hayden Island, and the Columbia River



Washington

The Washington portion of the primary study area includes downtown Vancouver, adjacent residential areas, the Fort Vancouver National Historic Reserve (VNHR), and the Fort Vancouver National Historic Site (NHS), a unit of the National Park Service (see Figure 3.4-5). Land uses are primarily commercial (including retail, office, industrial, and governmental uses) and residential. Community facilities include an Amtrak train station, C-TRAN bus rapid transit facilities (including Turtle Place Transit Station), Esther Short Park, the Vancouver Waterfront, and various government offices. The I-5 corridor divides the downtown area, with the commercial/office center on the west and the VNHR and Clark College on the east. E Evergreen Boulevard and E Mill Plain Boulevard provide east-west connections across I-5.

North of the central city, commercial development is centered on I-5 and Highway 99 (Figure 3.4-6). East and west of I-5, much of the secondary study area is single-family residential with some multifamily districts along major arterial roadways. Public facilities, parks, and open spaces are located throughout the secondary study area. The Vancouver urban growth boundary is just north of the secondary study area, approximately at the intersection of I-5 and 209th Street.

The uptown commercial district (between Mill Plain and Fourth Plain Boulevards on Main Street) is a transitional area between downtown and lower-density land uses to the north. The area contains primarily residential uses, with major transportation corridors supporting commercial uses. The City of Vancouver's municipal boundary in the vicinity of the primary and secondary study areas is roughly along 63rd Street.

North of 63rd Street, and south of Salmon Creek and 119th Street, residential areas consist of large-lot single-family uses. The commercial areas (along Highway 99 and Hazel Dell Avenue) have frequent bus service but are primarily automobile-oriented. Infill development of single housing units and very small subdivisions is being built on lots previously used as farmland. Commercial areas along 134th Street and Highway 99 are auto-oriented. This area includes a number of regional facilities: the Clark County Fairgrounds, the Clark County Amphitheater, and Legacy Salmon Creek Hospital. The Washington State University Vancouver campus is located just outside the secondary study area. I-5 and I-205 come together in this area, as do 134th Street, Salmon Creek Avenue, and Highway 99. Congestion from these major roadways has twice led to development moratoria in the area.

Since publication of the CRC Final EIS, 10 or more projects have been completed within the Washington primary study area. The planned 32-acre Waterfront Vancouver development is partially complete, with over 180,000 square feet of office and retail space, 183 hotel rooms, and 1,900 dwelling units in operation. Another three projects within the development are currently under construction, and three more are proposed or in various stages of development permit review. These projects consist of several multifamily residential and mixed-use multifamily residential/commercial developments, along with commercial office, retail, and public projects including a library and an elementary school. Section 3.3 of the Land Use Technical Report (as listed in Appendix H) contains additional detail on recent and pending development within the Washington primary study area.

Figure 3.4-5. Existing Land Uses in Downtown Vancouver

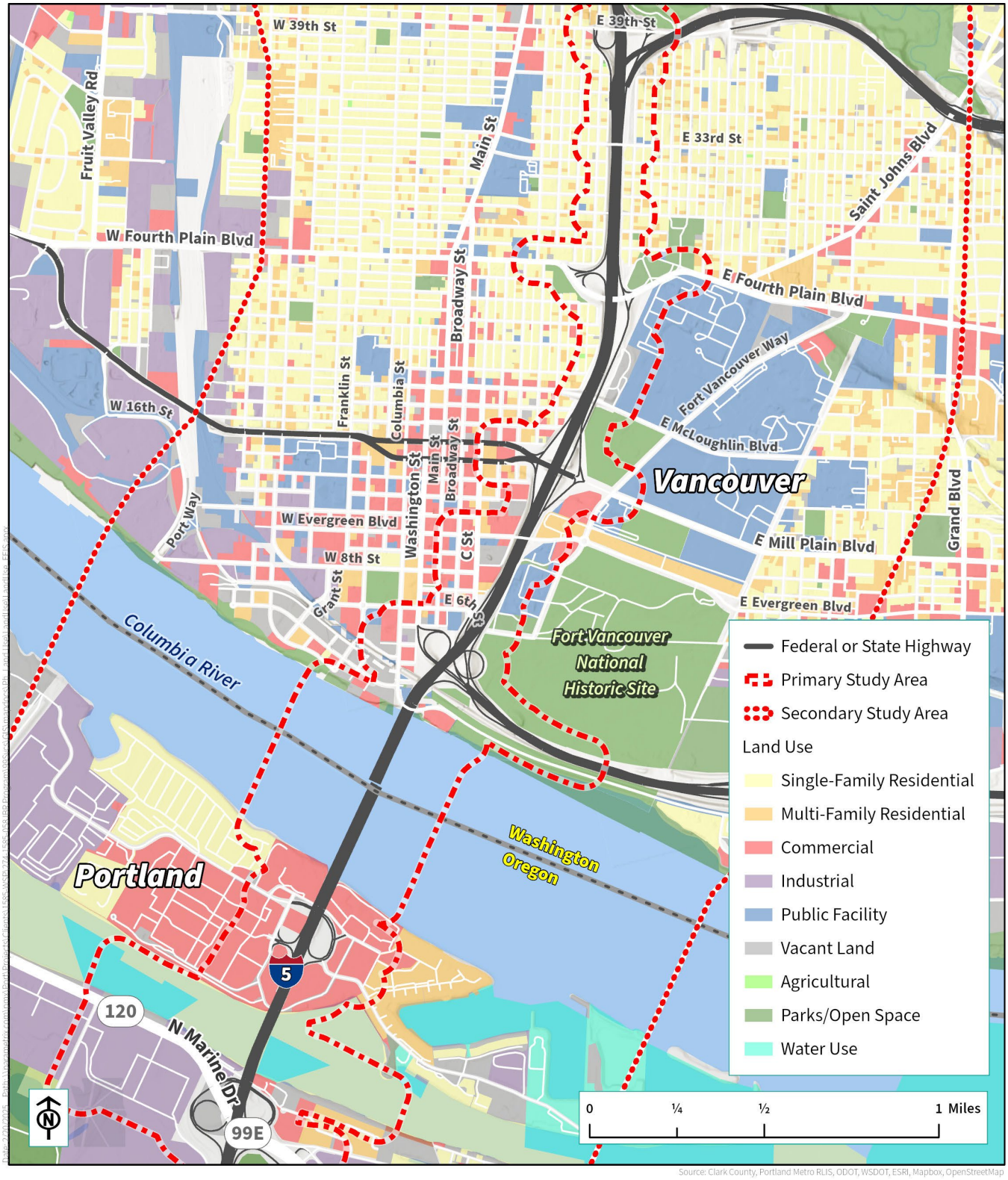
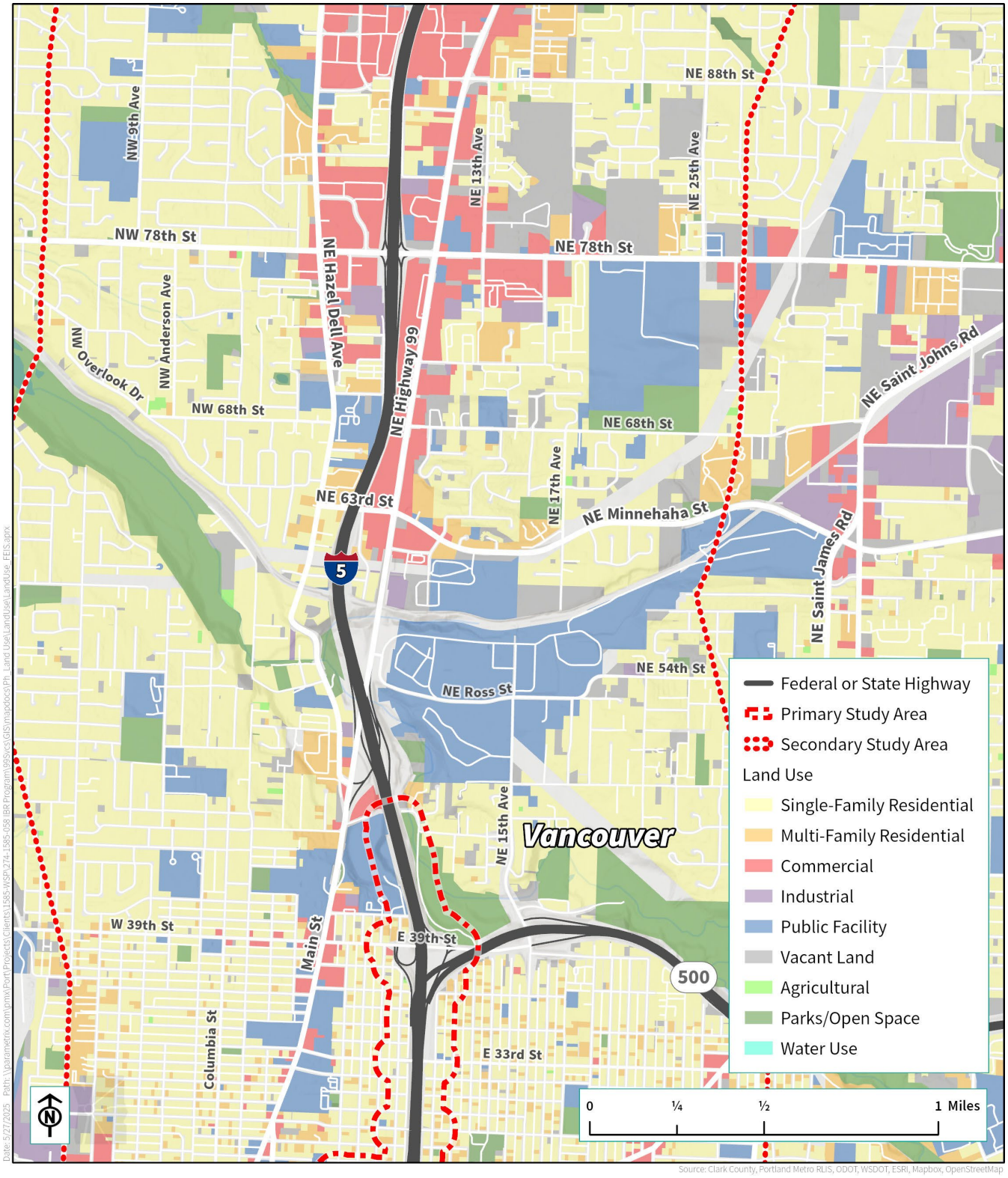


Figure 3.4-6. Existing Land Uses in North Vancouver and Clark County



Economics

Regional Economic Conditions

Many of the region's industries, including private marine facilities, depend on the movement of freight and reliable freight access to stay competitive locally and internationally.

From 2015 to 2023, the unemployment rate for the Portland-Vancouver PMSA, which includes Clark, Clackamas, Multnomah, Yamhill, Columbia, and Skamania Counties, trended lower than overall rates in Washington, Oregon, and trended lower than or equal to the national rate (BLS 2025). Unemployment spikes in 2009 to 2011 and in 2020 were caused by the economic recession and the pandemic, respectively. The most recent unemployment information (2023) shows a positive trend of economic recovery from the COVID-19 pandemic. Data on unemployment rates show 3.6% for the region, 3.7% for Oregon, 4.1% for Washington, and 3.6% nationally.

The number of jobs in the Portland-Vancouver PMSA increased by 301,160 (or 33.5%) between 2002 and 2019 (U.S. Census Bureau 2019); the largest increases were in health care and social assistance (3.2% increase) and professional, scientific, and technical services (1.5% increase). In the same time period, the largest decreases in employment share were in manufacturing (2.9% decrease) and retail trade (1.3% decrease). Of the Interstate Bridge commuters, 79% are residents of Clark County who work in the Oregon PMSA counties, and 21% are Oregon PMSA residents working in Clark County (U.S. Census Bureau 2018).

Table 3.4-1 lists the 10 largest employers in the Portland-Vancouver Metropolitan Statistical Area (MSA), which includes Clackamas, Multnomah, Washington, and Clark counties (as of September 2023). Each of these businesses depends on the region's transportation system to provide reliable movement of goods and services, and on the I-5 corridor to connect to Mexico, California, and Canada.

Table 3.4-1. Largest Employers in the Portland-Vancouver Metropolitan Statistical Area

Rank	Employer	No. of Employees
1	Providence Health System	23,100
2	Intel Corp.	22,328
3	Oregon Health & Science University	19,603
4	Nike, Inc.	15,522
5	Legacy Health System	13,087
6	Kaiser Permanente	12,514
7	Fred Meyer Stores	8,163
8	Portland Public Schools	7,111
9	City of Portland	6,753
10	Multnomah County	6,317

Source: Portland Business Journal 2023

In the Portland-Vancouver MSA, the median household income increased from $56,000 in 2010 to $75,000 in 2019, below the Washington median of $78,687 but above the Oregon and national medians, $67,058 and $65,712 respectively. In Portland, the 2023 median household income was $86,057, $5,631 above the $80,426

median income of Oregon. The 2023 median household income for Vancouver was $80,618, $10,334 below the 2023 median household income of Washington ($90, 952) (US Census Bureau 2023).

In 2022, the most recent year for available data, retail sales totaled $72.4 billion per year in the Portland-Vancouver MSA (U.S. Census Bureau 2022).

Truck Transport

The ports of Portland and Vancouver are critical to the economic growth and prosperity of the region. The total annual tonnage moving through the two ports is expected to double from approximately 300 million tons in 2007 to almost 600 million tons in 2040 (Cambridge Systematics 2015). Commodities moved by trucks are expected to grow from about 200 million tons to about 400 million tons, though the percentage of total freight transported by truck is expected to remain roughly the same at 67%. Approximately $133 million in commodity value was transported by trucks daily across the Interstate Bridge in 2019. The projected growth in truck traffic, along with passenger travel, has implications for the roadway network and capacity needs, as efficient and safe movement of products to and from the ports is needed to maintain their competitiveness. See Section 3.2 of the Economics Technical Report (as listed in Appendix H) for more detail on the transport of commodities by mode through the Port of Portland and Section 3.4 of the Transportation Technical Report (as listed in Appendix H) for more detail on freight moved by truck. Because the Portland-Vancouver region depends on the distribution of goods to broader regional, national, and global markets, it is susceptible to long-term economic losses from traffic congestion.

River Transport

The Columbia River has been a commerce route from time immemorial for Native Americans. European and European American contact with the Columbia River occurred around 1800 and prompted further exploration, trade, and settlement activities. The Interstate Bridge (existing northbound span) was built and opened in 1917, replacing a ferry system to transport people and goods across the river. The original bridge included a lift span to accommodate navigation for vessels and cargo with heights up to 178 feet. In 1958, a second bridge (existing southbound span) was completed and opened for traffic; this bridge was designed as a twin to the original bridge, including a lift span to accommodate navigation. For over 100 years, the Interstate Bridge has supported navigation on the Columbia River for commerce, recreation, and government agency missions.

Inland navigation along the 360-mile Columbia Snake River System, Portland/Vancouver to Lewiston, Idaho, carried over 8.3 million tons of commercial cargo in 2020 (PNWA 2024). Commercial vessels on the Columbia River include cruise vessels, tugs, tows, barges, and marine contractors' vessels. Commercial tugs and barges have the highest share of river usage and transit year-round and accounted for approximately 54% of the Interstate Bridge opening events across a 35-year study period. Tugs and barges are usually able to use the Interstate Bridge barge channel or alternate barge channel unless river and weather conditions are a factor or cargo requires additional vertical clearance. Tugs and barges may request an opening of the Interstate Bridge to provide sufficient vertical clearance or minimize safety hazards between the Interstate Bridge and the BNSF Railway Bridge downstream.

Several passenger cruise lines host tours up and down the Columbia and Snake Rivers and require frequent passage under the Interstate Bridge during the cruise season. Recreational vessels, such as sailboats, powerboats, personal watercraft, and yachts modestly contribute to the regional economy.

Existing horizontal and vertical obstructions limit the size of vessels on the Columbia River—at the Interstate Bridge and at locations upriver. The Hood River-White Salmon Bridge, located approximately 60 miles

upstream of the Interstate Bridge, currently has a vertical clearance of 148 feet in the raised position.[1] The BNSF Railway Bridge at Celilo Falls, located 95 miles upstream of the Interstate Bridge, has a vertical clearance of 79 feet in the raised position. Upstream from Celilo, several bridges and other obstructions such as power cables further limit the vertical clearance on the river to less than 79 feet. In addition, the Bonneville Locks and all other locks on the Columbia/Snake River system constrain navigation use to a maximum width of 86 feet, which prohibits passage by ocean-going barges. The river channel to the Ports of Vancouver and Portland downstream of the Interstate Bridge are authorized and maintained at -43 feet, supporting ocean-going vessels. Although the primary navigation channel at the existing Interstate Bridge is authorized to -27 feet, the existing river depth is maintained by the USACE to -17 feet. To dredge the channel to -27 feet would require additional regulatory review and funding. These navigation clearances are a form of obstruction to river navigation; businesses, government, and recreational users who are partially or fully dependent on the Columbia River must account for the vertical and horizontal navigation clearance of the Interstate Bridge to safely navigate the river. As described in Chapter 2, the existing Interstate Bridge provides a maximum vertical clearance of 72 feet when closed and a maximum vertical clearance of 178 feet when the lift span is opened. Apart from a small number of specialized vessels that use the river infrequently, the majority of vessels require vertical clearances of less than 90 feet from the surface of the water to the bottom of the bridge deck. Required openings of the Interstate Bridge, for vessels requiring more than 72 feet VNC, have declined from an average of 289 per year between 1997 and 2012 to 156 per year between 2007 and 2024. Approximately 60% of the bridge openings were for tugs, 34% were for sailboats, and the remainder were other vessel types. These openings are required for 4% to 7% of the total river traffic, based on openings of the BNSF Railway Bridge just downstream of the Interstate Bridge and use of the locks at the Bonneville Dam. Currently, bridge openings are restricted to non-peak commute hours to minimize delays to traffic on I-5. See Chapter 3.2, Navigation, for more discussion on vessels transiting under the Columbia River near the Interstate Bridge.

Marine contractors use vessels such as crane barges, dredges, and other construction equipment transported on the Columbia River. Transits of the Interstate Bridge are not limited to a particular time of year or frequency, as construction work is typically performed on an as-needed or contract basis. Whether the transport of construction equipment requires a bridge opening depends upon the contractor's location and the location of the construction project. Between 2012 and 2024, construction equipment used by marine contractors accounted for an average of 0.25% of total annual bridge openings (excluding maintenance openings) to a high of 1.71% (2020), noting there were no lifts in nine out of these 13 years.

Some river users downstream of the Interstate Bridge conduct all their activities without needing to transit the bridge; for example, ocean bound vessels may travel between the Pacific Ocean and call on the Port of Portland or Port of Vancouver facilities, which are nearly all located downstream of the Interstate Bridge. Other users, such as several marine contractors and government vessels, may stage vessels at home ports downstream of the bridge but conduct their work upstream of the Interstate Bridge. Additionally, several industrial businesses located upstream of the bridge manufacture large products that must pass under the bridge for delivery to customers downstream or are ocean-bound.

The vertical navigation clearance (VNC) of the Columbia River between the Interstate Bridge and the I-205 Glenn L. Jackson Bridge changes from 178 feet at the Interstate bridge to 136 feet at the I-205 Bridge, which is approximately six river miles upstream from the Interstate Bridge. Within this river reach, there are marinas that support recreation, and one existing facility that currently supports manufacturing that is river-based and has, in the past, required bridge lifts for cargo greater than 116 VNC. On the south side of the river, land use includes recreational vessel moorage, parks, residential areas, commercial uses, and the Portland International Airport. On the north side of the river, land uses include parks, commercial and industrial uses,

[1] The Port of Hood River is currently proposing to replace the Hood River-White Salmon Bridge. The USCG issued a Preliminary Navigation Clearance Determination for this bridge in 2020 which determined that 90 feet of VNC would meet the reasonable needs of navigation (USCG 2020).

and residential areas. The IBR Program has coordinated with marinas and has not found any recreational vessels that require greater than 116 VNC.

The approximately 220-acre industrial park, the Columbia Business Center, on the north side of the river is about 1.2 miles upstream of the Interstate Bridge. This site was once the location of the Henry J. Kaiser Vancouver Shipyard established in 1942 as one of three emergency shipyards in the Portland-Vancouver area to build vessels for World War II. The last ship was delivered in 1946 and the shipyard was closed thereafter. Although this site was originally established for marine-based uses, industrial uses have changed over the past 80 years. Some tenant businesses remain reliant on access to the Columbia River to receive and ship manufactured goods, provide shipyard services, and build vessels, whereas others tenant businesses are not marine-dependent. The owner of the Columbia Business Center reports that business activity at this industrial park accounts for 5 to 6% of Clark County's total economic output (Schwabe 2024). Three metal fabricators are tenants at this industrial park; each of these fabricators manufacture a variety of products that often support local, national and international infrastructure projects. Historically, some of the products manufactured at these sites have been so large they could only be transported by water. Tugs and barges are used in these cases and up to 178 feet of vertical navigation clearance was needed. One of the three metal fabricators announced in a 2024 article in the *Portland Business Journal*, that it would be changing its business model and ceasing the fabrication of steel girders and other large complex components formerly fabricated at this industrial site and would, therefore, no longer require passages with high vertical clearances. In addition, the owner of the majority of the Columbia Business Center is pursuing zoning changes for part of this property to a Regional Activity Center, which would include lands that offer opportunities for economic, entertainment, civic, and housing needs, as part of the City of Vancouver's ongoing comprehensive plan update (City of Vancouver 2025).

Local Economic Conditions

Table 3.4-2 presents Metro's forecast population data for the primary study area, by state and for the four-county Portland-Vancouver Standard Metropolitan Statistical Area (SMSA).[2] Between 2015 and 2045, Metro forecasts that Portland-Vancouver SMSA will grow by an annual 1.4%, lower than the projected 2.7% growth for the Oregon portion of the primary study area, but slightly higher than the 1.1% forecast for the Washington portion.

Table 3.4-2. Population Forecast in the Primary Study Area

Area	2015	2045	Average Annual Growth Rate
Oregon (primary study area only)	61,362	110,128	2.7%
Washington (primary study area only)	60,228	80,323	1.1%
Portland-Vancouver SMSA	2,006,417	2,850,534	1.4%

Source: Metro 2021
SMSA = Standard Metropolitan Statistical Area

Between 2015 and 2045, the number of households in the Portland-Vancouver SMSA is forecast to grow approximately 1.5% per year; this is lower than the 2.7% projected for Oregon but higher than the 1.2% projected for Washington. Forecast household growth in the Portland-Vancouver SMSA is similar to population. However, the Metro forecast predicts a slight decrease in persons per household, declining from 2.36 in 2015 to 2.32 in 2045 (assuming no change in housing vacancy rates). Table 3.4-3 presents recent and forecast household data.

[2] Forecast data provided by Metro includes the four-county SMSA, which includes Clark, Clackamas, Multnomah and Washington counties. The PMSA includes these four counties and also includes Yamhill and Columbia Counties in Oregon and Skamania County in Washington.

Table 3.4-3. Household Forecast in the Primary Study Area

Area	2015	2045	Average Annual Growth Rate
Oregon (primary study area only)	26,023	47,469	2.7%
Washington (primary study area only)	25,542	34,622	1.2%
Portland-Vancouver SMSA	850,898	1,228,679	1.5%

Source: Metro 2021
SMSA = Standard Metropolitan Statistical Area

Table 3.4-4 presents employment forecast data for the Oregon and Washington portions of the primary study area and the Portland-Vancouver SMSA. Between 2015 and 2045, Metro forecasts total employment in the SMSA to grow by approximately 1.6% per year, slightly higher than the 1.1% forecast for Oregon and the 1.0% forecast for Washington.

Table 3.4-4. Employment Forecast in the Primary Study Area

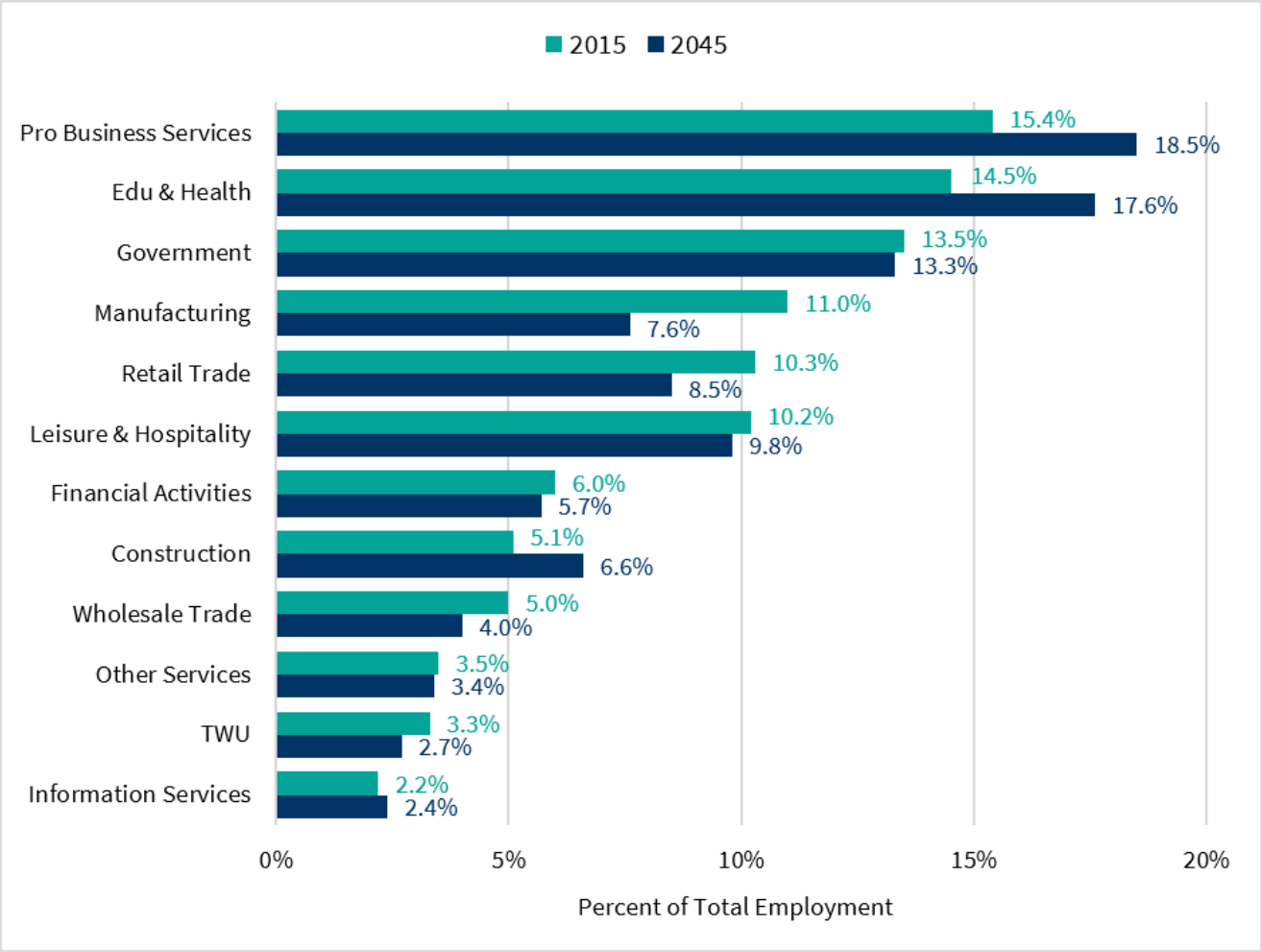
Area	2015	2045	Average Annual Growth Rate
Oregon (primary study area only)	55,251	73,186	1.1%
Washington (primary study area only)	36,647	47,914	1.0%
Portland-Vancouver SMSA	1,072,925	1,592,290	1.6%

Source: Metro 2021
SMSA = Standard Metropolitan Statistical Area

Figure 3.4-7 presents (2015) and forecast (2045) employment by sector, in total and on a percentage basis, for the Portland MSA. Metro forecasts that the percentage of total jobs in the Professional Business Services, Education and Health, Construction, and Information Services will increase, while other sectors will either decrease or stay roughly the same. Retail Trade and Manufacturing in the Portland MSA are both predicted to decrease the most as a share of total employment, with the actual number of Manufacturing jobs decreasing by 5,500. Note that Metro's industry categories do not correspond directly with the Census Bureau's categories.

More recent data and forecasts show accelerating traded sector job growth—including transportation and warehousing growth—even through the COVID-19 recession. The Oregon Employment Department's 2019–2029 industry projections (reflecting a peak-to-peak long-term horizon) for the Portland Tri-County Area (82% of MSA jobs in 2019) identify transportation and warehousing among the fastest growing sectors at 1.7% average annual growth rate (AAGR) and manufacturing growth at 0.5% AAGR, both substantially exceeding the earlier forecasts (State of Oregon Employment Department 2020; City of Portland 2022b).

Figure 3.4-7. Percent of Total Employment by Industry for Portland MSA, 2015 and 2045



Source: Metro 2018b
Pro = professional; Edu = education; TWU = transportation, warehousing, and utilities

Looking more closely at manufacturing jobs supporting river-based industries upstream of the Interstate Bridge, particularly those located between the Interstate Bridge and the I-205 Glenn L. Jackson Bridge, data was queried from the U.S. Census OnTheMap, which is an on-line database that shows the location of where workers live and work (U. S. Census Bureau 2025). Manufacturing employment at Columbia Business Center industrial park grew from an average of 460 (2002 through 2012) to 745 (2013 through 2022), while manufacturing employment in the sub-area of the industrial park used by metal fabricators fell from 322 to 309. The share of countywide manufacturing that occurred at this industrial park grew from 3.6% to 5.4%, while the share that occurred in the sub-area used by fabricators fell from 2.5% to 2.3%. Moreover, non-industrial jobs in the sub-area used by fabricators have increased from 40 jobs (average between 2002 and 2012) to 112 jobs (average of 2013 to 2022).

Both the City of Portland and the City of Vancouver rely on tax revenues to fund general services. Portland's largest source of revenue is property taxes (49%), as Oregon does not have a sales tax. In Vancouver, the largest source of revenue is business and occupation taxes (32%), followed by property tax and then sales tax.

3.4.3 Long-Term Benefits and Reasonably Foreseeable Effects

Long-term benefits and reasonably foreseeable effects on land use and economics were assessed using the geographic proximity described in Section 3.4.2 and the temporal scope described in the Chapter 3 introduction.

Table 3.4-5 summarizes the reasonably foreseeable effects of the No-Build Alternative and the Modified LPA, and its design options, on land use and economics. Additional information on the effects is provided in the sections that follow.

No-Build Alternative

Land Use

The No-Build Alternative would not address current deficiencies in the Interstate Bridge structure, design, or capacity. Existing land uses that rely on I-5 to travel within the region would remain vulnerable to high levels of congestion narrow travel lanes, lack of safety shoulders, short weave and merge conditions, and potential earthquake-induced failure. There would also be no high-capacity transit service to connect the regional centers of downtown Vancouver and downtown Portland, which would be inconsistent with the stated policies and goals of applicable regional transportation plans. Without high-capacity transit and associated light-rail stations on Hayden Island and in downtown Vancouver, the demand for higher-density development would be less likely to materialize, and the development strategy provided for in local land use plans may not be achievable. Vehicle, express bus, and active transportation would be the only mode option for crossing the Columbia River because high-capacity transit would not be available. Because the No-Build Alternative would have fewer transportation mode options to cross the river and would not include the LRT stations proposed under the Modified LPA, it would be less likely to support the increased development density provided for under the local planning documents.

Under the No-Build Alternative, increased growth in the region by 2045 would result in traffic congestion that would impair road-based freight movement and reduce the region's productivity. This could indirectly impede the effective implementation of land use plans and hinder goals for economic development. A loss in the growth of local jobs could have impacts such as decreased property values, increased commercial vacancies, and reduced demand for downtown revitalization. Refer to Section 3.1, Transportation, of this Final SEIS for more information on the No-Build Alternative traffic conditions.

Economics

The No-Build Alternative would retain the existing Interstate Bridge and would only make minor preservation improvements to I-5 within the primary study area. Several local road projects are planned to improve freight mobility, access, and safety in the primary study area, and those would continue. The Interstate Bridge would increasingly serve as a bottleneck for both northbound and southbound traffic, including freight traffic. Traffic operations forecasts indicate that congestion on the southbound bridge on weekdays would last from 5 a.m. to 9 p.m., a total of 16 hours. On the northbound bridge, congestion would last 14 hours, from 7 a.m. until 9 p.m.

Under the No-Build Alternative, no businesses in Oregon or Washington would be displaced by right-of-way acquisition, and there would be no resulting decrease in property or sales tax revenues or jobs. However, increasing congestion on I-5 could result in significant economic effects, as planned economic development may occur more slowly with business owners reluctant to locate in an area with poor access and mobility for employees and customers. Freight reliability would decrease as congestion would continue to spread throughout the day. Customers could elect to shop in areas with better access and mobility. The No-Build Alternative would not contribute to changes to operations or jobs at marine-based businesses.

Table 3.4-5. Long-Term Land Use and Economics Benefits and Effects

1 No-Build Alternative	2: IBR Program Recommended Design Options Modified LPA with Single-Level Fixed-Span Bridge Configuration [a,b], One Auxiliary Lane, with C Street Ramps, Centered I-5, and All Five Park and Rides	3 Modified LPA with Double-Deck Fixed-Span Bridge Configuration, One Auxiliary Lane, with C Street Ramps, Centered I-5, and All Five Park and Rides [a]	4 Modified LPA with Single-Level Fixed-Span Bridge Configuration, Two Auxiliary Lanes, with C Street Ramps, Centered I-5, and All Five Park and Rides [a]	5 Modified LPA with Single-Level Fixed-Span Bridge Configuration, One Auxiliary Lane, with C Street Ramps, I-5 Westward Shift, and All Five Park and Rides [a]	6 Modified LPA with Single-Level Movable-Span Bridge Configuration, One Auxiliary Lane, with C Street Ramps, Centered I-5, and All Five Park and Rides [a]	7 Modified LPA with Single-Level Fixed-Span Bridge Configuration, One Auxiliary Lane, without C Street Ramps, Centered I-5, and All Five Park and Rides [a]
• Existing land uses would remain vulnerable to high levels of congestion and potential earthquake-induced failure. • No high-capacity transit, which is inconsistent with the stated policies and goals of regional transportation plans. • Congestion would impair freight movement and reduce area productivity, which could indirectly impact the implementation of land use plans and goals for economic development. • Loss in job growth could lead to decreased housing prices, increased commercial vacancies, and reduced demand for downtown revitalization.	• Converts approximately 128.4 acres of land to transportation use compared to the No-Build Alternative (Column 1); currently primarily zoned industrial or commercial with some land zoned residential. • High-capacity transit is consistent with state, regional, and local plans and policies. • Higher toll rates during peak periods would support regional and local policies for congestion and are not expected to change land use patterns. • Property tax revenues would be reduced compared to the No-Build Alternative (Column 1). • Business displacements have the potential to impact 66 businesses and 521 employees; affected businesses would be provided relocation assistance. • Bridge height would exclude up to four existing users/vessels that require more than 116 feet of vertical clearance from passage underneath the new Columbia River bridges as compared to Column 1 (No-Build Alternative). Changes to business operations for these four river users may occur, and some job loss could result.	The double-deck fixed-span bridge configuration design option would have effects similar to those described in Column 2 for the single-level fixed-span bridge configuration design option, except: • Converts approximately 0.3 acres less of land to transportation use. • Higher maximum bridge height and increased highway grade which could reduce freight vehicle speed compared to the single-level fixed-span bridge, with corresponding economic effects.	The two auxiliary lane design option would have effects similar to those described in Column 2 for the one auxiliary lane design option, except: • Improved traffic operations (shorter duration and length of congestion, reduced travel times, and improved mobility options) compared to design options with one auxiliary lane would result in improved mobility and access for freight and employment.	The I-5 westward shift design option would have effects similar to those described in Column 2 for the centered I-5 design option, except: • Larger areas of properties would be permanently acquired. • Additional 2.0 acres of permanent acquisition. • Additional three business displacements. • Potential to impact 135 additional employees.	The single-level movable -span bridge configuration design option would have effects similar to those described in Column 2 for the single-level fixed-span bridge configuration design option, except: • Bridge openings could interrupt vehicle and truck highway travel, transit service, and active transportation across the new Columbia River bridges. • No existing or future maritime vessels or cargo freight would be excluded from passage. • Lower bridge height compared to fixed-span bridge configuration design options would allow fewer existing marine users/vessels to pass without a bridge opening but would allow more existing marine users/vessels to pass without a bridge opening as compared to the No-Build Alternative. Movable-span operations, and thus river navigation operations, may have increased restrictions on bridge openings, which could impact marine commerce by restricting the times of day for large vessel movements.	The without C Street ramps design option would have effects similar to those described in Column 2 for the with C Street ramps design option, except: • Removal of the C Street ramps would result in traffic delay and increased travel times near the Mill Plain Boulevard interchange and in downtown Vancouver, which would have an economic impact on local businesses.

Notes: The underlined design options shown in columns 3 through 7 identify the specific effects on land use and economics for that particular design option compared to the Modified LPA with Recommended Design Options (column 2). For example, the effects of two auxiliary lanes (column 4) would occur with any other combination of the C Street ramps, I-5 alignment, bridge configuration, and park and ride design options.

a Totals shown in this table include all five park and rides. These totals could decrease if only one park and ride is established at each of the LRT stations. Property acquisitions related to park and rides are described below under "Park and Ride" and summarized in Table 3.4-9.

b The effects associated with the single-level fixed-span bridge configuration design option would be the same for all bridge type options.

I-5 = Interstate 5; IBR = Interstate Bridge Replacement; LPA = Locally Preferred Alternative; LRT = light-rail transit

Modified LPA

The reasonably foreseeable long-term effects on land use and economics would generally not differ among the Modified LPA design options. Where differences would occur, they are described in the subsections below.

Land Use

The long-term reasonably foreseeable effects on land use are defined as converting land from its existing use to a transportation use. This analysis of impacts is based on acquisition data developed for the Modified LPA, as described in Section 3.3, Property Acquisitions and Displacements.

A combined total of approximately 128.4 to 130.4 acres of property would be permanently acquired, depending on the design options selected. This total includes between 122.2 and 124.2 acres for the construction and long-term operation and maintenance of the Modified LPA design options and up to 6.2 acres for the park and rides. Variations in acquisitions among the design options would occur only in the Washington portion of the primary study area. All design options would include approximately 2.7 acres of permanent subsurface easements, which are required for the potential installation of tie-back anchors associated with retaining walls.

Most of the land that would be acquired is currently zoned industrial or commercial, with some land zoned residential in upper Vancouver. Although these conversions would reduce the area of land available for non-transportation uses, they would comprise only a small portion of the total land in the Portland-Vancouver area and would not be substantial in a regional context. The acquisition of new right of way, displacement of active land uses, and other impacts would not lead to a significant change in the mix of land uses, land use patterns, zoning, or land use plans in the primary study area.

The transportation infrastructure associated with the Modified LPA, such as the extension of LRT, would be consistent with the goals and policies of adopted land use plans as described in the "Consistency with Plans and Policies" section below. Consistency with applicable land use plans and policies is also detailed in Section 4.3 of the Land Use Technical Report (as listed in Appendix H).

Oregon

Table 3.4-6 shows the change in land use from acquisitions in Oregon by zoning designation. The extent of direct land use impacts from property acquisitions would be the same for all of the design options. A total of 71 parcels, comprising approximately 113 acres, would be affected; 29 of these parcels would be fully acquired, including a 65.1-acre mitigation site on West Hayden Island, and 41 would be partially acquired. Partial acquisitions may not require the acquisition of buildings or affect the current use of the property. Partially acquired properties which require displacement of buildings or businesses may still leave a portion of the parcel available for redevelopment.

As described in Chapter 2, the construction activities associated with the Modified LPA would likely require both temporary and permanent modifications to portions of the Portland Metro Levee System, which is a system of federal flood control levees located along the south bank of the Columbia River/North Portland Harbor within the primary study area. Modifications may include activities to restore temporarily disturbed portions of the levees, permanent modifications where proposed infrastructure would intersect with the existing levees, or changes in access to the levees as a result of roadway reconfiguration. Modifications or improvements would be coordinated for consistency with the planned future condition of the levees under the Columbia Corridor Drainage Districts Joint Contracting Authority's Levee Ready Columbia project. The assessment of long-term effects to land use and economics associated with the Modified LPA presented in this section includes those associated with potential modifications to the federal levee system.

Table 3.4-6. Oregon Right-of-Way Acquisitions by Zoning Designation

Area	Zoning [a]	Acquisition Type	Parcel Count	Total Permanent Land Use Acquired (acres)
Oregon Mainland	CE	Full	1	1.59
	CE	Partial	1	<0.01
	CM2	Partial	3	0.06
	IG2	Full	2	1.5
	IG2	Partial	9	12.9
	OS	Partial	2	0.24
Subtotal (Oregon Mainland)	N/A	N/A	**18**	**16.3**
Ruby Junction	HI	Full	4	5.41
	HI	Partial	1	0.00
	SC-RJ	Partial	1	0.05
Subtotal (Ruby Junction)	N/A	N/A	**6**	**5.5**
Hayden Island	CE	Full	17	10.88
	CE	Partial	12	13.52
	CM1	Full	4	0.86
	CM1	Partial	7	0.87
	MUF19	Full	2	65.1
	MUF19	Partial	3	0
	IG2	Partial	2	0
Subtotal (Hayden Island)	N/A	N/A	**47**	**91.13**
Totals	**N/A**	**N/A**	**71**	**113.0**

a Zoning designations shown for Ruby Junction are City of Gresham zoning designations; Oregon Mainland and Hayden Island are City of Portland designations. On Hayden Island, West Hayden Island Zoning Designations (MUF19 and IG2) are Multnomah County zoning designations but identified in Portland zoning ordinance. West Hayden Island land use is governed by the City of Portland Comprehensive Plan

CE = commercial employment; CM1 = commercial mixed use 1; CM2 = commercial mixed use 2; HI = heavy industrial; MUF19 = multiple use forest district; IG2 = general industrial 2; N/A = not applicable; OS = open space; SC-RJ = Ruby Junction Station Center – Ruby Junction Overlay; sq ft = square feet

Washington

Table 3.4-7 summarizes land use changes that would result from acquisitions associated with the Modified LPA in Washington, according to zoning designation and design option. Total acquisitions in Washington would vary from 9.3 to 11.3 acres, depending on design option, and would affect 96 parcels under all design options, exclusive of acquisition associated with the proposed park and rides, which could add up to 6.2 acres. Totals for each design option are summarized below, with more detail provided in Table 3.4-7. The total acquisition acreages associated with the park and rides are described separately under "Park-and-Rides" and summarized in Table 3.4-8. For additional information on the locations of acquired properties, see Section 3.3, Acquisitions.

- The Modified LPA with the single-level fixed- or movable-span bridge configuration, one auxiliary lane, centered I-5, and C Street ramps design options (Recommended Design Options) would acquire 9.7 acres of property in Washington, including 17 full acquisitions, 36 partial acquisitions, and 43 subsurface easements. An additional 11 subsurface easements would be on parcels where partial surface acquisitions are also occurring; therefore, these are not calculated into acreage acquisitions totals.
- The Modified LPA with double-deck fixed-span bridge configuration, one auxiliary lane, C Street ramps, and I-5 westward shift design options would require 18 full acquisitions and 35 partial acquisitions as well as 43 subsurface easements. An additional 11 subsurface easements would be on parcels where partial surface acquisitions are also occurring; therefore, these are not calculated into acreage acquisitions totals.
- For all other combinations of Modified LPA design options and bridge configuration design options, the number of parcel acquisitions would be the same as the Recommended Design Options but the acquisition acreage would be slightly smaller. These other design options and bridge configuration design options would acquire approximately 9.3 acres of property in Washington, including 17 full acquisitions, 36 partial acquisitions, and 43 subsurface easements. Similar to the other options, 11 additional subsurface easements would be on parcels where partial surface acquisitions are also occurring. The total acquisition area for this design option and bridge configuration design option would be 11.3 acres.

Table 3.4-7. Washington Right-of-Way Acquisitions by Zone and Design Option (Not Including Park and Rides)

Zone [b]	Acquisition Type	IBR Program Recommended Design Options: Modified LPA with Single-Level Fixed-Span[a] Bridge Configuration, One Auxiliary Lane, with C Street Ramps, Centered I-5, Parcels (Acres)	Modified LPA with Double-Deck Fixed-Span Bridge Configuration, One Auxiliary Lane, with C Street Ramps, Centered I-5, Parcels (Acres)	Modified LPA with Double-Deck Fixed-Span Bridge Configuration, One Auxiliary Lane, Centered I-5, Without C Street Ramps, Parcels (Acres)	Modified LPA with Double-Deck Fixed-Span Bridge Configuration, One Auxiliary Lane, with C Street Ramps, I-5 Westward Shift, Parcels (Acres)	Modified LPA with Double-Deck Fixed-Span Bridge Configuration, Two Auxiliary Lanes, with C Street Ramps, Centered I-5, Parcels (Acres)	Modified LPA with Movable-Span[a] Bridge Configuration, One Auxiliary Lane, with C Street Ramps, Centered I-5, Parcels (Acres)
CPX (Downtown Vancouver)	Full	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Partial	8 (1.4)	8 (1.4)	8 (1.4)	8 (1.3)	8 (1.4)	8 (1.4)
CX (Downtown Vancouver)	Full	8 (1.3)	8 (1.3)	8 (1.3)	9 (3.3)	8 (1.3)	8 (1.3)
	Partial	14 (2.4)	14 (2.2)	14 (2.2)	14 (2.2)	14 (2.2)	14 (2.4)
	Subsurface Easement [c]	2 (<0.01)	2 (<0.01)	2 (<0.01)	2 (<0.01)	2 (<0.01)	2 (<0.01)
Water (CX) (Downtown Vancouver)	Partial	1 (0.5)	1 (0.3)	1 (0.3)	1 (0.3)	1 (0.3)	1 (0.5)
Park (Downtown Vancouver)	Partial	1 (0.2)	1 (0.2)	1 (0.2)	1 (0.2)	1 (0.2)	1 (0.2)
Utilities (Downtown Vancouver)	Partial	1 (0.2)	1 (0.2)	1 (0.2)	1 (0.2)	1 (0.2)	1 (0.2)
Subtotal (Downtown Vancouver)	Full	8 (1.3)	8 (1.3)	8 (1.3)	9 (3.3)	8 (1.3)	8 (1.3)
	Partial	25 (4.6)	25 (4.3)	25 (4.3)	25 (4.2)	25 (4.3)	25 (4.6)
	Subsurface Easement	2 (<0.01)	2 (<0.01)	2 (<0.01)	2 (<0.01)	2 (<0.01)	2 (<0.01)
	Subtotal	**35 (5.9)**	**35 (5.6)**	**35 (5.6)**	**36 (7.5)**	**35 (5.6)**	**35 (5.9)**
R-22 (Upper Vancouver) [d]	Full	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Partial	1 (<0.1)	1 (<0.1)	1 (<0.1)	1 (<0.1)	1 (<0.1)	1 (<0.1)
	Subsurface Easement	2 [e] (0.3)	2 [e] (0.3)	2 [e] (0.3)	2 [e] (0.3)	2 [e] (0.3)	2 [e] (0.3)
R-9 (Upper Vancouver)	Full	9 (1.0)	9 (1.0)	9 (1.0)	9 (1.0)	9 (1.0)	9 (1.0)
	Partial	10 [f] (0.1)	10 (0.1)	10 [f] (0.1)	10 [f] (0.1)	10 [f] (0.1)	10 [f] (0.1)
	Subsurface Easement	40 [f] (2.4)	40 [f] (2.4)	40 [f] (2.4)	40 [f] (2.4)	40 [f] (2.4)	40 [f] (2.4)
Subtotal (Upper Vancouver)	Full	9 (1.0)	9 (1.0)	9 (1.0)	9 (1.0)	9 (1.0)	9 (1.0)
	Partial	11 (0.1)	11 (0.1)	11 (0.1)	11 (0.1)	11 (0.1)	11 (0.1)
	Subsurface Easement	41 (2.7)	41 (2.7)	41 (2.7)	41 (2.7)	41 (2.7)	41 (2.7)
	Subtotal[e,f]	**61 (3.8)**	**61 (3.8)**	**61 (3.8)**	**61 (3.8)**	**61 (3.8)**	**61 (3.8)**
Totals	Full Acquisitions	17 (2.3)	17 (2.3)	17 (2.3)	18 (4.3)	17 (2.3)	17 (2.3)

Zone [b]	Acquisition Type	IBR Program Recommended Design Options: Modified LPA with Single-Level Fixed-Span[a] Bridge Configuration, One Auxiliary Lane, with C Street Ramps, Centered I-5, Parcels (Acres)	Modified LPA with Double-Deck Fixed-Span Bridge Configuration, One Auxiliary Lane, with C Street Ramps, Centered I-5, Parcels (Acres)	Modified LPA with Double-Deck Fixed-Span Bridge Configuration, One Auxiliary Lane, Centered I-5, Without C Street Ramps, Parcels (Acres)	Modified LPA with Double-Deck Fixed-Span Bridge Configuration, One Auxiliary Lane, with C Street Ramps, I-5 Westward Shift, Parcels (Acres)	Modified LPA with Double-Deck Fixed-Span Bridge Configuration, Two Auxiliary Lanes, with C Street Ramps, Centered I-5, Parcels (Acres)	Modified LPA with Movable-Span[a] Bridge Configuration, One Auxiliary Lane, with C Street Ramps, Centered I-5, Parcels (Acres)
	Partial Acquisitions	36 (4.6)	36 (4.3)	36 (4.3)	36 (4.3)	36 (4.3)	36 (4.6)
	Total Permanent Surface Acquisitions	**53 (6.9)**	**53 (6.6)**	**53 (6.6)**	**54 (8.6)**	**53 (6.6)**	**53 (6.9)**
	Subsurface Easements	**43 (2.7)**	**43 (2.7)**	**43 (2.7)**	**43 (2.7)**	**43 (2.7)**	**43 (2.7)**
	Airspace[g]	**0 (0)**	**0 (0)**	**0 (0)**	**0 (0)**	**0 (0)**	**0 (0)**
	Total Permanent Acquisitions and Easements[e,f]	**96 (9.6)**	**96 (9.3)**	**96 (9.3)**	**97 (11.3)**	**96 (9.3)**	**96 (9.6)**

Acreage totals have been rounded to the nearest tenth of an acre.
Table reflects parcels impacted by acquisitions and does not count duplicate square feet/acres where multi-unit (i.e., condominium) ownership occurs on single parcels in Downtown Vancouver.
Estimated acquisition acreages for park and rides are not included in the total acquisition numbers in Table 3.4-8 because a final decision has not yet been reached on park and rides to be acquired. Acquisitions related to park and rides are discussed below under "Park and Ride" and summarized in Table 3.4-9.

a The Washington right-of-way acquisitions would be the same for all bridge configuration design options and bridge type options except for the Modified LPA with Single-level Fixed- or Movable-Span option or the I-5 westward shift design option.
b (CPX) Central Park Mixed-Use; (CX) City Center; (R-9) Low-Density Residential District; (R-22) Higher-Density Residential District.
c Subsurface easement requirements are preliminary and will be updated prior to construction.
d For Upper Vancouver, all design options have the same impacts.
e Subsurface easement total for the R-22 zone in Upper Vancouver includes 0.28 acre of subsurface easement area on one parcel that is also subject to partial surface acquisition. This easement is not included in overall parcel acquisition impact totals to avoid double counting parcels.
f Subsurface easement total for the R-9 zone in Upper Vancouver includes 0.57 acre of subsurface easement area on ten parcels that are also subject to partial surface acquisition. These easements are not included in overall parcel acquisition impact totals to avoid double counting parcels.
g Airspace easements have not been determined and will be updated prior to construction. In the Acquisitions chapter, airspace easements are provisionally counted as 1 acre. They are not included in the total here; thus, ROW acquisition totals in the Acquisitions chapter will differ from those presented in Table 3.4-8 by 1 acre.

I-5 = Interstate 5; IBR = Interstate Bridge Replacement; LPA = Locally Preferred Alternative

Park and Rides

1,270 park-and-ride spaces dispersed among up to five park and rides could be established along the light rail alignment in Vancouver (Recommended Option), or a single park and ride could be established at each of the two LRT stations. Three of the potential park and rides are near the Waterfront Station and two of the potential park and rides are near the Evergreen Station. Potential land acquisition impacts for each of the park and rides are shown in Table 3.4-8. The park and rides that are ultimately selected as part of Modified LPA implementation could include all five of the sites identified below for a maximum total acquisition area of 6.2 acres, or a smaller total acquisition acreage could occur if only one park and ride is established at each LRT station. Because a final decision has not yet been reached on the park and rides to be acquired, the acreages below are not included in the total acquisition numbers discussed above and shown in Table 3.4-7. The totals listed in the last column of Table 3.4-8 represent the "worst case" acquisition impacts (i.e., all five park and rides are developed).

Table 3.4-8. Acquisition Impacts by Park and Ride

Property Acquisitions	Type	Waterfront Site 1a [a, b]	Waterfront Site 1b [a]	Waterfront Site 1c [a]	Evergreen Site 2a [a,]	Evergreen Site 2b [a, c]	Total
Parcels (count)	Full	0	3	4	5	0	12
	Partial	0	0	0	0	1	1
	Total	0	3	4	5	1	13
Area Acquired (acres)	-	0	0.5	1.5	3.2	1	6.2
Permanent Easements	Property Easements [d, e]	0	0	0	0	0	0
Total of Permanent Acquisitions and Easements (acres)	-	0	0.5	1.5	3.2	1	6.2

a Does not include WSDOT-owned property or right of way or City-owned right of way.
b Properties associated with Waterfront Site 1a would be affected by IBR Program roadway and pedestrian improvements regardless of whether the site is developed as a park and ride.
c The existing parking structure (Evergreen Site 2b) could be used via a shared-use agreement with the existing owner. A shared-use agreement has not been developed for this site; therefore, a partial acquisition is included in the acreage calculations as a conservative assumption.
d Subsurface easement requirements are preliminary and will be updated prior to construction.
e Airspace easements have not been determined but will be identified prior to construction.
IBR = Interstate Bridge Replacement; WSDOT = Washington State Department of Transportation

Consistency with Plans and Policies

The Modified LPA's implementation of high-capacity transit would be consistent with state, regional, and local plans and policies and would help the region achieve anticipated development without expanding urban growth areas. The Modified LPA would not be expected to result in urban sprawl (scattered development on the periphery of urban areas) because the transit improvements would be provided in established urban

areas, the local land use planning strategy to increase density is more likely to be achievable and the Columbia River bridges would be tolled. In Oregon, state law requires ODOT to involve planning officials from affected jurisdictions in planning for transportation projects that require an environmental assessment or EIS. The Oregon Transportation Commission must also adopt a finding that the project is compatible with applicable comprehensive plans and statewide land use planning goals before the project design can be approved. Washington State law, while not explicitly requiring a consistency finding from the state's transportation commission, requires WSDOT to cooperate with city and county governments, planning agencies, transit agencies, and other appropriate local planning entities when planning improvements to highways of statewide significance, including the Interstate system. Appendix A, Agency and Tribal Coordination, provides detail on how the IBR Program has coordinated and collaborated with planning and regulatory agencies as part of the NEPA process. Table 3.4-9 summarizes relevant land use and transportation plans and policies that would apply to the IBR Program and discusses their compatibility with the Program. See Section 4.3 of the Land Use Technical Report (as listed in Appendix H) for additional details on compatibility with applicable land use and transportation plans and policies.

Table 3.4-9. IBR Program Consistency with Relevant Land Use and Transportation Plans

	Plan	Description	IBR Program Consistency
State	Statewide Planning Goals (Oregon)	Directs all Oregon cities and counties to implement comprehensive land use plans that comply with statewide goals and guidelines.	Consistent with Goal 12, Transportation, which requires cities, counties, and the state to create a transportation system plan that addresses mass transit, air, water, rail, highway, bicycle, and pedestrian transportation. Among other objectives of Goal 12, the Modified LPA would: • Serve statewide, regional, and local transportation needs. • Serve the mobility and access needs of those who cannot drive and other underserved populations. • Provide for affordable, accessible and convenient transit, pedestrian, and bicycle access and circulation, with improved connectivity. • Help to reduce pollution from transportation to meet statewide goals. • Facilitate the safe flow of freight, goods, and services within regions and throughout the state. While Goal 12 is the primary statewide planning goal to consider when analyzing IBR Program consistency, Goals 2 (Land Use Planning) and 6 (Air, Water, and Land Resources Quality) also apply. See Section 4.3 of the Land Use Technical Report (as listed in Appendix H) for additional discussion of other statewide land use goals.
	Growth Management Act (Washington)	Requires local jurisdictions to implement a land use policy framework that reduces conversion of rural land to urban development.	• Supports stated goals pertaining to transportation and infrastructure, including encouraging efficient multimodal transportation systems that are based on regional priorities and coordinated with county and city comprehensive plans. • Also consistent with the act's goals for providing infrastructure to urban areas and for directing high-density growth to urbanized locations.

	Plan	Description	IBR Program Consistency
Regional	2040 Growth Concept (Metro)	Defines regional growth and development in the Portland metropolitan region. Policies encourage efficient use of land, protection of farmland and natural resources, a balanced transportation system, a healthy economy, and diverse housing options.	Supports Metro's stated policy goals of providing a balanced transportation system and contributing to a healthy economy.
	Regional Framework Plan (Metro)	Identifies regional policies to implement the 2040 Growth Concept. Provides overall guidance for more detailed policies regarding several topics including regional transportation and mass transit systems, and coordination, to the extent feasible, of Metro growth management and land use planning policies with those of Clark County.	Includes IBR Program-related goals of developing a connected region through an integrated system of throughways, arterial streets, freight routes and intermodal facilities, transit services and bicycle and pedestrian facilities.
	2018 Regional Transportation Plan (Metro)	Establishes policies and priorities for all forms of transportation and anticipates the region's current and future transportation needs. Focuses on ensuring the region's transportation system works effectively, recognizing the importance of the movement of goods and services for the regional economy. The RTP adopted by Metro in December 2018 includes the same land uses and transportation projects as the RTP adopted by Clark County in March 2019 (as described below).[3]	The "I-5 Replacement project" is included on the financially constrained project list. This is earlier terminology used to reference the project that is now known as the IBR Program.
	Transportation Improvement Plan (TriMet)	Establishes transit improvement priorities and possible funding allocations. Includes a 5-year roadmap for the rollout of future services and programs to improve service in low-income communities.	Expands public transportation services with the extension of LRT to Hayden Island and Vancouver, improved bus transit service, and station infrastructure improvements.
	20-Year Transit Development Plan (C-TRAN)	Plans for transit services in Clark County. Includes high-capacity transit planning, capital and technology improvements, and a financial plan.	Includes the IBR Program elements of LRT and bus rapid transit improvements.

[3] The financially constrained *Regional Transportation Plan* adopted by the Metro Council in December 2018 (Metro 2018a) and adopted by the Southwest Washington Regional Transportation Council (RTC) Board of Directors in March 2019 is referred to as the "2018 RTP."

	Plan	Description	IBR Program Consistency
	2019 Regional Transportation Plan (Clark County)	Identifies future regional transportation system needs and outlines transportation plans and improvements necessary to maintain mobility within and through the region and access to land uses within the region. The RTP adopted by Clark County in March 2019 includes the same land uses and transportation projects as the as RTP adopted by Metro in December 2018 (as described above).	Includes IBR-related goals of providing reliable mobility for personal travel and freight movement by addressing congestion and transportation system bottlenecks
Local (Oregon)	Multnomah County Comprehensive Plan and Transportation System Plan	Describes policies that guide decisions made by the Land Use Planning Division, as well as the relationship between Multnomah County land use decisions and the policies adopted by the Metro Council and statewide planning agencies. The Transportation System Plan guides decisions about transportation system improvements over the next 20 years or more.	Supports the plan's goals of providing a safe and efficient transportation network.
	2035 Comprehensive Plan (Portland)	Continues the commitment to linking land use and transportation decisions. Seeks to improve Portland as a place that is walkable, bikeable, and transit-friendly with active main streets. Continues Portland's commitment to compact development with active employment centers, expanded housing choice, and access to parks and open space.	Advances multiple goals of the Transportation component of the Comprehensive Plan, including, for example: • Create a coordinated, efficient, more affordable multimodal transportation system. • Improve access to all types of facilities and transportation modes. • Improve safety. • Guide the location and design of new street, pedestrian, bicycle, and trail infrastructure.
	2035 Transportation System Plan (Portland)	Guides Portland's transportation system functions and investments. Recommends that new development and allowed land uses be consistent with the identified function and capacity of, and adopted performance measures for, affected transportation facilities.	Lists the Interstate Bridge replacement and interchange improvements as a financially constrained project to be completed within 1 to 10 years.

	Plan	Description	IBR Program Consistency
	City of Gresham 2035 Transportation System Plan	Provides the framework for addressing Gresham's transportation needs through 2035. A key objective of the TSP is to create a balanced transportation system that benefits mobility for pedestrians, bicyclists and motorists. The TSP also identifies strategies to facilitate freight and goods movement, improve neighborhood connections, and provide an adequate funding forecast.	Improvements to the existing Ruby Junction rail operations facility support the TSP's policy of advocating convenient, expanded transit service within Gresham and the east Multnomah County area, and its goal of supporting TriMet and other entities in the planning and implementation of light rail and bus service improvements.
Neighborhood or Area-Specific (Oregon)	Hayden Island Neighborhood Plan	Addresses the unique situation of the island while considering the best plan for its future. Recommends preserving existing uses while promoting new mixed-use development to meet future needs. Developed concurrently with the CRC project and specifically incorporates guidance for the CRC project.	The Modified LPA is consistent with the plan, supporting specific goals such as: • LRT to, and a station on, Hayden Island. • An LRT alignment adjacent to the west side of I-5 instead of a separate alignment in order to minimize the barrier effects. • Access to local street systems south of North Portland Harbor without using the freeway.
	Bridgeton Neighborhood Plan	Addresses the neighborhood development challenges. Development consists largely of houseboats, rowhouses, and detached single-family homes. Significant wetland and riparian resources exist throughout the neighborhood as well.	Supports specific recommendations in the plan, including providing access to transit and providing for connectivity within the neighborhood and to the rest of the transportation network.
	Kenton Neighborhood Plan (as amended by the Kenton Downtown Plan)	Focuses on bringing back the Denver Avenue business district as a retail corridor.	Supports transportation recommendations including increasing the extent of the neighborhood's LRT connectivity.
	Portland International Raceway Plan District	Sets a goal to preserve and enhance the special character and opportunities of the area, which includes natural areas to the west and "special event" uses to the east.	IBR Program development taking place within the district would be consistent with Chapter 33.566 of the Portland Zoning Code.
	East Columbia Neighborhood Natural Resources Management Plan	Promotes a consistent approach to development within this environmentally sensitive area. Prioritizes preservation of wetlands and wildlife habitats.	Modified LPA design would support policies concerning water quality, protection of wetlands/natural resource areas, and buffering of resources from development.

	Plan	Description	IBR Program Consistency
	Natural Resources Management Plan for Peninsula Drainage District No. 1	Promotes a consistent approach to development within the environmentally sensitive areas of the district.	Supports a MAX LRT station for West Delta Park.
	Portland Interstate Corridor Urban Renewal Plan	Sets goals and objectives to improve livability, increase job opportunities, assist small businesses, and benefit from major infrastructure projects, including the Interstate MAX light-rail line.	Supports extension of light-rail.
Local (Washington)	Clark County Comprehensive Growth Management Plan	Represents the coordinated land use and transportation system plans for the county and seven cities.	Supports transportation and land use goals by providing a balance of transportation modes through the incorporation of bicycle and pedestrian facilities and high-capacity transit.
	City of Vancouver Comprehensive Plan	Guides growth for Vancouver from 2025-2045. Encourages compact urban centers, transit, and supportive development regulations for areas along the defined high-capacity transit corridors identified along I-5 and SR 500.	Supports plan goals of connectivity, accessibility, and providing a range of transportation options, including through enhanced pedestrian connectivity and enhanced transit options, as well as increased commuter accessibility to transit provided by park and rides.
	City of Vancouver 2024-2044 Transportation System Plan (*Vancouver Moves*)	Includes vision statements for the City's evolving transportation system emphasizing accessibility, system efficiency, connectivity, multimodal mobility options, and a walkable community.	Increases public transit and provides greater multimodal opportunities. Increases connectivity between pedestrian facilities and transit facilities.
	City of Vancouver 2023-2029 Strategic Plan	Helps guide the City's decision-making and resource allocation.	Supports goals of developing and maintaining a safe, balanced, and innovative transportation system that will meet the needs of future generations, as well as transportation and mobility goals.

	Plan	Description	IBR Program Consistency
	Vancouver City Center Vision and Subarea Plan	Divides the downtown into six planning areas with goals and guiding principles. Land use goals include focusing waterfront redevelopment on residential uses, with significant public access, recreation, cultural, hospitality, entertainment, and limited commercial uses.	Supports goals of ensuring that expansion of I-5 and Columbia River crossing improvements improve access to the city center and minimize potentially negative effects. Includes specific direction for the IBR Program, including a directive to integrate all modes of transportation, including high-capacity transit, bicycle, and pedestrian circulation, to achieve a true regional multimodal corridor.
	City of Vancouver Shoreline Master Program	Sets a program goal to protect natural values and functions of the shorelines while guiding and allowing appropriate development. New utility and transportation facilities must protect, enhance, and encourage development of physical and visual shoreline public access.	The IBR Program would comply with Shoreline Master Program requirements to protect shoreline ecological processes as well as preserve public access to the Columbia River shoreline.
Neighborhood or Area-Specific (Washington)	Downtown Vancouver Transportation System Plan	Addresses transportation conditions and plans from Fourth Plain Boulevard south to the Columbia River.	Includes specific directives to optimize MAX service into Vancouver, including such things as designating certain streets as transit streets.
	Central Park Plan	Calls for a unified sense of place by celebrating a shared historic landscape and emphasizing design of key features such as a "great street" network.	Includes CRC-specific language within the Plan's vision statements that also applies to the IBR Program: "the I-5 Columbia River Crossing improves access to Central Park from all parts of the city and region."
	Port of Vancouver Waterfront Development Master Plan	Defines a vision for the Columbia River waterfront that is consistent with the Port's mission to provide economic benefit to the community through leadership, stewardship, and partnership in maritime-related development.	Plan accounts for the Interstate Bridge replacement and its alignment relative to adjacent development.
	Highway 99 Sub-Area Plan	Covers the area from 63rd Street north to approximately 134th Street. serves as a guide for public investments and for Team 99, a group of business leaders in the corridor.	Notes that all planning efforts for the Highway 99 Subarea Plan will support the CRC project recommendations for high-capacity transit including light-rail or bus rapid transit. This also applies to the IBR Program.

CRC = Columbia River Crossing; C-TRAN = Clark County Public Transit Benefit Area Authority; IBR = Interstate Bridge Replacement; I-5 = Interstate 5; LRT = light-rail transit; MAX = Metropolitan Area Express; Metro = Oregon Metro; RTP = Regional Transportation Plan; SR = State Route; TriMet = Tri-County Metropolitan Transportation District of Oregon; TSP = Transportation System Plan.

Tolling

Tolling of cars and trucks that use the new Columbia River bridges is proposed as a method to fund the Modified LPA and encourage the use of transit and active transportation. Variable toll rates during peak periods would support regional and local policies for managing traffic congestion. Tolling is not expected to change land use patterns because land use and development in the primary and secondary study areas are governed by state land use and growth management laws, local land use plans and zoning regulations, and other controls. These require all development to be consistent with existing zoning and comprehensive planning in order to be permitted. Effective local plans and policies have been shown to control potential unplanned growth and land use changes resulting from transportation investments (Tidd et al. 2013). See Section 4.3 of the Land Use Technical Report, as listed in Appendix H) for a more detailed discussion.

Because tolling increases the out-of-pocket cost of commuting, individuals have an incentive to shorten their commutes by living closer to alternative transportation connections, services and where they work (Brueckner 2001). Analysis using the Oregon Metro/Southwest Washington Regional Transportation Commission 2018 Regional Transportation Plan Regional Travel Demand Model showed an increase in transit mode share under the Modified LPA and design options relative to the No-Build Alternative as a result of both improved transit investment and the introduction of variable-rate tolling on the new Columbia River bridges. This shift to transit would reduce overall vehicle travel miles traveled across the Columbia River on an average weekday by approximately 1% compared to the No-Build Alternative. While tolling could divert some traffic from I-5 to I-205, the reduction in total vehicle trips because of toll and transit investments is expected to minimize any effect from diversion on traffic congestion. Therefore, tolling is not expected to induce changes in land use. See Section 4.11 of the Transportation Technical Report (as listed in Appendix H) for a more detailed analysis of tolling effects.

Population and Employment Growth

The CRC EIS included an analysis of the project's potential for induced land use changes. The analysis used MetroScope, Metro's integrated land use and transportation model, to predict how the proposed changes in transportation infrastructure could influence the future distribution of employment and housing throughout the region. The modeling effort, which was completed in 2010, concluded that the CRC project would not significantly induce growth or sprawl. Compared to the No-Build Alternative, the model estimated that the CRC project, with tolling, would result in a 0.03% decrease in households in north Clark County and a 0.51% increase in households in the southern, more urban, half of the county (Conder 2010). Metro reviewed these findings in January 2024 and concluded they remain relevant to the Modified LPA.

The amount and timing of land use changes in transit station areas can be affected by transit ridership levels (e.g., higher ridership would be expected to increase land use development compared to lower ridership). Thus, the amount and timing of transit-oriented development in station areas would depend to some degree on transit ridership levels and other factors such as local economic conditions. Regardless of the pace of development, transit-oriented development would be consistent with existing planning and zoning that anticipates the future availability of high-capacity transit to support planned densities.

With respect to the Modified LPA's potential to generate additional automobile traffic and development pressure at areas more distant from the Interstate Bridge, the traffic analysis prepared for this SEIS (as described in Chapter 4 of the Transportation Technical Report and summarized in SEIS Section 3.1) evaluated how the addition of either one or two auxiliary lanes would affect traffic north and south of the primary study area. I-5's capacity to the north and south of the primary study area would remain unchanged at three lanes in each direction. Local streets on both the Washington and Oregon sides of the Columbia River do not have the capacity or connectivity to serve high increases in regional demand. These constraints on regional system capacity, along with the inclusion of variable-rate tolling and greater provisions for transit, active transportation improvements, travel demand management, transportation system management tools (e.g.,

ramp metering), and the adopted regional and local land use plans responding to state law, further reduce the potential for induced demand.

In conclusion, the Modified LPA is expected to have the effect of facilitating planned growth and development within the primary and secondary study areas. However, this growth and development would be focused, and its magnitude and location would be constrained by and consistent with local and regional land use and transportation plans. The No-Build Alternative would do less to encourage denser, transit-oriented development, and congestion resulting from over-capacity transportation facilities could inhibit the region from effectively accommodating planned levels of growth.

Navigation

The potential for future land use changes upstream of the Interstate Bridge could affect marine commerce based on city, port, state and federal land use and other management plans, which typically have planning horizons of 10 to 20 years. There are properties along the Columbia River that currently have marine facilities available or have the potential for future development of such facilities. However, there are few opportunities for new or expanded commercial and industrial development that would require the use of vessels too large to pass beneath the proposed new fixed-span Columbia River bridges. The number of suitable properties is limited by political and geographic constraints on land along the Columbia River waterfront, which include the Columbia River Gorge Natural Scenic Area designation, parallel transportation routes (SR 14, I-84, Union Pacific Railroad, and BNSF Railway), steep topography, and existing recreational and open space uses. The types of industrial uses that currently generate or could generate marine vessel traffic in the future are located within urban areas and typically within established industrial parks (e.g., Columbia Business Center, Port of Cascade Locks Industrial Park).

Per current planning documents, there are no known planned developments within the primary study area that would create additional navigation activities that would be adversely affected by the new Columbia River bridges with either the double-deck or single-level fixed-span bridge configuration design option. If new marine-based businesses were to develop upstream of the new Columbia River bridges over their 100+ year service life, either fixed-span bridge configuration design option would limit their activities to a maximum vertical navigation clearance of 116 feet. The single-level movable-span bridge configuration design option would continue to provide at least 178 feet of vertical clearance, and therefore would pose no additional limitations to future activities or marine development beyond those posed by the existing Interstate Bridge.

Economics

Property acquisition for the Modified LPA would displace up to 69 businesses in the primary study area and their employees. The acquisition of taxable property for additional right of way would also decrease property tax revenues. The additional right of way acquired would include both full parcels, which would be removed from the tax rolls completely, and partial acquisitions. Business displacements and property tax revenue reductions are discussed in the subsections below.

The Modified LPA would also eliminate parking spaces, primarily at the Expo Center (369 of 2,160 existing stalls) and on Hayden Island (711 of 5,046 existing stalls). The Expo Center seldom requires the use of all 2,160 parking stalls, so no substantial reduction in parking revenue is expected. Any potential reduction in patronage during peak events due to loss of parking would likely be offset by the availability of the new light-rail transit service connecting the Expo Center with Vancouver. The parking loss on Hayden Island is a small fraction of available parking in the area; for businesses affected by parking loss, coordination with property owners would occur as the design progresses to minimize impacts to parking and site use. Overall, no significant economic impacts due to the elimination of parking are anticipated. Impacts to available parking spaces would be the same for all Modified LPA design options.

Business Displacements

Table 3.4-10 provides an estimate of the number of businesses, and their employees, that would be displaced due to land acquisition for the Modified LPA. The types of businesses that would be displaced by the Modified LPA would include industrial, commercial, service and retail establishments; billboards; and a cellular tower. The long-term magnitude of this impact would depend on the potential to relocate displaced businesses in the same neighborhood and the extent and types of infill and redevelopment that occur. This in turn depends on a number of factors such as regional economic trends and market conditions, the willingness of businesses to relocate, available building space for lease during the relocation process, and community and city support for redevelopment. See Sections 4.3 and 4.4 of the Economics Technical Report (as listed in Appendix H) for additional discussion of affected businesses. The centered I-5 design option would result in the same number of business and employee displacements. The I-5 westward shift design option would increase the number of businesses and employees displaced in Downtown Vancouver. Business displacements and resulting employee displacements could also vary depending upon the park-and-ride options selected.

Table 3.4-10. Business Displacements from the Modified LPA

Area	Businesses Displaced from Modified LPA Design Options with Centered I-5	Total Employees of Displaced Businesses from Modified LPA Design Options with Centered I-5	Businesses Displaced with I-5 Westward Shift Design Option	Total Employees of Displaced Businesses with I-5 Westward Shift Design Option
Oregon Mainland	12[a]	53	12[a]	53
Hayden Island	31[b]	165	31[b]	165
Ruby Junction	8	14	8	14
Downtown Vancouver[c]	15	289	18	424
Upper Vancouver	0	0	0	0
Total	66	521	69	656

Sources: Acquisitions Technical Report; Metro 2015

a Includes two billboards at the Marine Drive interchange.

b Includes two cell-phone towers and one billboard.

c Includes 8 businesses and 120 employees from Waterfront Station park and rides 1b and 1c. Totals shown for Downtown Vancouver would decrease if one or both of these sites were not selected. Business displacements would not occur at any other park and rides.

The Modified LPA with a centered I-5 configuration design option would displace a total of 66 businesses with approximately 521 employees. This includes seven businesses with approximately 67 employees at Waterfront Station park-and-ride site 1b and one office building with approximately 53 employees at Waterfront Station park-and-ride 1c; if one or more of these sites were not chosen, the total displacements would decrease. Shifting the I-5 mainline west would displace an additional 3 businesses and 135 employees for a Program-wide total of 69 businesses and approximately 656 employees displaced. Displaced employees may be impacted by longer commutes, depending on the availability of nearby space for the businesses to be relocated. None of the other design options would have different number of business acquisitions.

Property Tax Impacts

Table 3.4-11 presents the estimated reduction in property tax revenues associated with the Modified LPA. The estimated assessed value of right of way for partial acquisitions was calculated by multiplying the land value

of the parcel by the estimated percentage of the parcel acquired for the Modified LPA. The tax effect of the partial acquisitions was calculated by multiplying the actual 2023 property tax collected for the parcel by the estimate of the percentage of the parcel acquired for the Modified LPA. Estimated losses in property tax revenue would not be substantial; in Multnomah County, losses attributable to the Modified LPA would account for less than 0.25% of annual revenues; estimated losses in Clark County would be between approximately 0.32% and 0.41% of annual revenues. The centered I-5 design option would have the same property tax reduction impacts. The I-5 westward shift design option would only affect additional properties in downtown Vancouver, as shown in Table 3.4-11.

Table 3.4-11. Property Tax Reduction from the Modified LPA Design Options

Area	Estimated Assessed Value of Right of Way (millions) from Modified LPA with All Design Options Other Than I-5 Westward Shift	Property Tax Reductions (thousands) from Modified LPA with All Design Options Other Than I-5 Westward Shift	Percentage of 2023 County Budgeted Property Tax Revenues Lost as a Result of Modified LPA with All Design Options Other Than I-5 Westward Shift	Estimated Assessed Value of Right of Way (millions) from Modified LPA with I-5 Westward Shift Design Option	Property Tax Reductions (thousands) from Modified LPA with I-5 Westward Shift Design Option	Percentage of 2023 County Budgeted Property Tax Revenues Lost as a Result of Modified LPA with I-5 Westward Shift Design Option
Oregon Mainland	$10.0	$87.0	0.02%	$10.0	$87.0	0.02%
Hayden Island	$52.3	$842.0	0.22%	$52.3	$842.0	0.22%
Ruby Junction	$2.7	$44.1	0.01%	$2.7	$44.1	0.01%
Downtown Vancouver	$27.2	$200.8	0.28%	$35.6	$266.6	0.37%
Upper Vancouver	$3.1	$30.6	0.04%	$3.1	$30.6	0.04%

Sources: Acquisitions Technical Report; Multnomah County Tax Assessor 2023; Clark County Tax Assessor 2023

The difference in estimated property tax revenue reduction between the centered I-5 and I-5 westward shift design options would be approximately $65,800 in Clark County. This amount represents 0.0001% of Clark County's budgeted property tax revenue for 2023. Given the scale of this difference, the variation in property tax impacts between the design options is considered minimal and would not result in any notable effect on Clark County revenue.

Table 3.4-12 presents the estimated property tax impacts associated with the park and rides that would result in impacts beyond those expected from the Modified LPA. Waterfront Site 1c and Evergreen Station Site 2a are owned by the City of Vancouver; these sites do not currently pay property taxes, so there would be no loss of property tax revenue associated with those potential acquisitions. Evergreen Site 2b is an existing parking structure that would be utilized via a shared-use agreement with the existing owner. The IBR Program would

not acquire the site, so there would be no loss of property tax associated with implementation of this option.[4] The reduction in property tax revenues from land acquired for Waterfront Station Site 1b would represent 0.04% of the total annual 2023 property tax revenues for Clark County. Because only Waterfront Station Site 1b is anticipated to affect property tax revenues, the overall projected sales tax reduction under the Recommended Design Options would be $25,900, which is 0.04% of Clark County's 2023 property tax revenue budget.

Table 3.4-12. Clark County Property Tax Reductions

Park-and-Ride Station	Site	Estimated Assessed Value of Right of Way (millions)	Clark County Property Tax Reduction (thousands)	Percentage of Clark County Budgeted 2023 Property Tax Revenues
Waterfront Station	1a	$0	$0	0.0%
Waterfront Station	1b	$3.4	$25.9	0.04%
Waterfront Station	1c	$4.5	$0	0%
Evergreen Station	2a	$6.0	$0	0%
Evergreen Station	2b	$0	$0	0%
Totals	**--**	**$13.9**	**$25.9**	**0.04%**

Washington Sales Tax Impacts

The displacement of businesses in Vancouver would result in a reduction of sales tax revenue. Detailed information on the amount of sales tax collected by these businesses was not available. However, it is not anticipated that the reduction would have a substantial economic impact, given that most of the affected businesses would be commercial offices that likely do not engage in retail sales. Sales tax impacts are anticipated to be similar for all Modified LPA design options and park and rides.

Impacts to Regional Economic Sectors

Economic Impacts of Delay

According to a study of the regional economic effects of transportation choke points (Cambridge Systematics 2003), five industries in the Portland-Vancouver region are particularly sensitive to road congestion: lumber/wood/paper, distribution/wholesale trade, transportation equipment/steel, farm and food products, and high-tech. These industries are particularly vulnerable to delay and decreased travel time reliability resulting from roadway congestion in the I-5 corridor. According to the study, congestion at the Interstate Bridge increases the cost of congestion delay to trucks. Reducing freight truck travel times by investing in transportation infrastructure improvements that increase access and decrease congestion would help maintain the efficiency of the area's freight movement on I-5. Also, travel time improvements would benefit all business and worker trips that travel through the I-5 corridor in the primary study area.

[4] A shared-use agreement has not been developed for this site, however it is assumed that if Evergreen Site 2b is selected, a shared-use agreement would be established. If a shared-use agreement cannot be obtained, then a portion of the 1-acre parcel could be acquired for public use, which would result in a slight decrease (less than 0.02%) of property tax revenue for Clark County, Washington.

Commercial marine navigation includes similar products to those conveyed by road, which are transported under the Columbia River bridges both up and downriver. As with vehicle transportation, marine vessel transport products can be vulnerable to delays. Delays to some marine transport would occur with the single-level movable-span bridge configuration design option for vessels dependent upon bridge openings, as vessels may not be able to accurately time their arrival to outside the bridge opening time restrictions. No delays to marine transport would occur with either of the fixed-span bridge configuration design options. However, vessels with vertical navigation clearance requirements of greater than 116 feet would permanently be unable to transit under the bridge for its 100+ year service life.

Effects of the Modified LPA on Freight Transport

Truck Transport

The Modified LPA would benefit the trucking industry by reducing travel times and increasing reliability, which in turn would reduce costs and improve efficiency for truck freight operators. As described in Section 3.1, Transportation, traffic operations on I-5 are expected to improve with the addition of one auxiliary lane and would improve even more with the addition of a second auxiliary lane. These improvements would enhance regional mobility and access, which would increase the competitiveness of the regional economy, reduce transportation costs for local businesses, and increase operational flexibility for businesses (e.g., deliveries, shipping, and business operations). However, if the C Street ramps at the SR 14 interchange were eliminated, additional traffic delay and longer travel times near the Mill Plain Boulevard interchange and in downtown Vancouver would have an adverse economic impact on local businesses in that area.

The single-level fixed- and movable-span bridge configuration design options (both bridge type options) would have a reduced maximum highway grade compared to both the existing Interstate Bridge and the double-deck fixed-span bridge configuration design option. The reduced grade would allow for improvements in freight vehicle speed and fuel efficiency. With the single-level movable-span bridge configuration design option, the average number of bridge openings for vessels is anticipated to be less than 152 per year, which is the average number of openings for vessels from 2007 through 2024. If future maritime use increases or decreases, the number of bridge openings may also deviate from recent historical patterns over the course of the 100+ year service life of the new Columbia River bridges.

Although future bridge openings would be less frequent than under the No-Build Alternative, they would continue to cause delays and congestion for freight truck transport, with associated economic impacts that would offset the benefit provided by the reduced grade. As described in Section 3.1, Transportation, under existing conditions, the average bridge opening and gate closure duration during the 5-year period (January 1, 2015, to December 31, 2019) was 11.6 minutes. While bridge openings are not allowed during peak highway traffic periods[5] except in emergency situations, they are allowed before and after the peaks. Depending on the closure time and duration as well as traffic levels, it can take between 5 and 110 minutes for traffic to recover from a bridge opening and gate closure. An opening or closure just before the peak period can last even longer, affecting conditions throughout the peak traffic period.

The single-level movable-span bridge configuration design option would likely have increased restrictions on bridge openings to minimize impacts to vehicle traffic and transit compared to today's restrictions. As described in Chapter 2.2.3 Columbia River Bridges, additional restrictions to daytime bridge openings for the Modified LPA with a single-level movable-span bridge configuration design option would be requested to consolidate fewer bridge openings outside of morning, midday, and evening peak hours when vehicle and transit demand is high in order to improve LRT on-time performance and system reliability and reduce

[5] Interstate Bridge lift openings are currently restricted to avoid weekday peak highway traffic operations between 6:30 a.m. and 9:00 a.m. and between 2:30 p.m. and 6:00 p.m., excluding emergency bridge lifts.

highway congestion. Changes to bridge opening restrictions would require future federal rulemaking process and authorization by the U.S. Coast Guard (USCG).

Highway traffic operations and grade elevations would not differ between the I-5 westward shift and centered I-5 alignment; thus, no difference in economic impacts to truck transportation would be anticipated. Similarly, the locations of park and rides would not change economic factors, such as travel routing or local roadway grades, that could affect truck transportation.

River Transport

The Modified LPA with a double-deck or single-level fixed-span bridge configuration design option would result in some large river-based freight to be potentially height-restricted by the new Columbia River bridges; specifically, this type of freight would be associated with the two industrial operations (metal fabricators) located upstream of the new bridges. Economic impacts for the two metal fabricators could include reduced revenues and job loss associated with a portion of their operations that manufacture large products as well as potentially diminished opportunities to enter new markets. Historically, these types of large products take years to manufacture and are shipped infrequently (once every 5 to 10-plus years)); nonetheless, each product generates substantial revenue and manufacturing jobs. This type of product represents one of several markets for the metal fabricators, so it is anticipated that the Modified LPA with either a double-deck or single-level fixed-span bridge configuration design option would adversely affect a part of, rather than the entire, operations at these two businesses. The IBR Program has negotiated with fabricators to encourage those jobs remain within the region. Furthermore, the metal fabricator occupation is listed as one of the top ten occupation codes[6] in the Southwest Washington Workforce Development Area that spans Clark, Cowlitz and Wahkiakum counties and fabricated metals manufacturing continues to see approximately 4,700 job openings[7] (Washington State Employment Security Department 2024).

In addition, the Modified LPA with a double-deck or single-level fixed-span bridge configuration design option would deny two vessels that currently transit under the Interstate Bridge from transiting the new Columbia River bridges; one vessel would not be able to pass under the bridge under all river conditions, and the other would be precluded only when high-water conditions occur. Business operations associated with these two vessels and the portion of trips that previously included transiting the existing Interstate Bridge could cease for the vessel owners at ports upstream of the Interstate Bridge. The IBR Program has negotiated agreements with the owner of the two vessels to modify their operations and offset those impacts.

The Modified LPA with a movable-span bridge configuration design option would enable continuation of operations for the two fabricators and two vessel owners without any resulting negative economic effects to them.

The marine cargo transportation impacts listed above are a snapshot in time and represent current waterway usage. Over the 107 years of service life of the Interstate Bridge (northbound span opened in 1917 and southbound span opened in 1958), numerous bridge lifts have been conducted for mariners with large vertical navigation clearance requirements, including those requiring openings for clearances over 116 feet and up to 178 feet. It is difficult to predict maritime transportation system demands and associated needs for bridge openings for the 100+ year service life of the bridges, since vessel traffic and river-level conditions vary from year to year and economic trends for maritime commerce may change over time. Nevertheless, a fixed-span bridge configuration design option with 116 feet of vertical clearance would permanently deny access under

[6] The North American Industry Classification System (NAICS) is the standard used by Federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy. The U.S. Bureau of Labor identifies NAICS codes 3323 and 3324 for fabricated metal product manufacturing and provides employment data for the occupation codes within this sector.

[7] Job openings are the sum of occupational separations (from employees retiring or changing to another job occupation) and job growth.

the bridges to mariners who require vertical clearances of greater than 116 feet for the 100+ year service life span of the bridges.

Rail Transport

The BNSF Railway mainline operates on an east-west alignment north of the Columbia River in Vancouver, between the river and downtown Vancouver. Regardless of the design options chosen, no long-term economic impacts to rail traffic operations are anticipated as a result of the Modified LPA.

Other Considerations

New transit connections in downtown Vancouver would improve travel time accessibility and broaden the pool of labor available along the corridor and in the region.

Earthquakes could cause economic impacts by delaying or completely stopping the flow of freight, disrupting travel routes for employees traveling to and from work, and destroying billions of dollars in infrastructure. Regardless of the design options chosen, the Modified LPA would withstand a major earthquake, minimizing these impacts to the greatest extent possible.

Tolling

The Modified LPA assumes a variable-price toll using two scenarios. These tolling scenarios are used to study the impacts of various toll rates related to Program funding and other traffic-related impacts. The IBR Program would not be setting toll rates; the Washington Transportation Commission and Oregon Transportation Commission have the authority to jointly set toll rates. Tolling would be the same regardless of the Modified LPA design options chosen.

Scenario A (northbound and southbound tolls with a variable toll rate range of $2.15 to $3.55) estimates toll revenues, while Scenario B (a north and southbound toll with a variable toll rate range of $1.50 to $3.15) forecasts the impacts of tolling on traffic volumes for this NEPA analysis. The tolls are in Fiscal Year 2026 dollars and are assumed to escalate by 2.15% per year. Forecasts also show that the variable-rate tolls would encourage drivers to choose other modes or times of day to travel. This shift would reduce automobile traffic on I-5 across the river and along the entire corridor, including at the other southbound bottleneck locations. Variable tolls are likely to be beneficial for freight-dependent businesses and businesses that rely on just-in-time deliveries because the predictability of travel would also increase. This benefit would be somewhat offset by the higher toll charges truck movements would incur during peak periods; however, peak freight travel times tend to fall outside the peak periods for general-purpose traffic.

The application of a variable toll pricing scheme to the new Columbia River bridges would add an out-of-pocket cost to trips and is anticipated to result in an overall reduction in bridge crossings with the Modified LPA. With the proposed tolling scenarios listed in Section 2.2.8 Tolling, the annual cost of tolls for a driver making an outbound and inbound trip 5 days a week, 50 weeks per year, during only the highest tolling rate periods in Scenario A, would constitute approximately 2% and 2.2% of the 2023 median household's income in Portland ($86,057) and Vancouver ($80,618), respectively. Under Scenario B, this annual cost would constitute approximately 1.8% and 1.9% of the 2023 median household's income in Portland and Vancouver, respectively. According to the Consumer Expenditure Survey, administered by the Bureau of Labor Statistics, the average household spent approximately $13,174 on transportation expenditures in 2023, which is between approximately 15% and 16% of household income for Portland and Vancouver, respectively.

Navigation

The types of economic activity dependent on marine navigation upriver of the bridge are not anticipated to change considerably in the near future. Most of the commercial river traffic in the shallow-draft upriver section of the Columbia/Snake system would continue to be dominated by barged shipments of grain, petroleum products, wood products, and other bulk products for domestic consumption and export. It would

be highly unlikely the nature or composition of upriver navigation would change as a result of the Modified LPA. River depth and other existing, permanent height and width constraints limit the size and draft of vessels capable of upriver navigation, and the availability of suitable waterfront properties for industrial development is, and is expected to remain, extremely limited for the next 20 or more years. As a result, the Modified LPA would be expected to have limited, at most, impact on future upriver economic activity. economic effects are anticipated to be similar across all design options.

3.4.4 Temporary Reasonably Foreseeable Effects

Temporary reasonably foreseeable effects on land use and economics were assessed using the geographic proximity described in Section 3.4.2 and the temporal scope described in the Chapter 3 introduction.

No-Build Alternative

Under the No-Build Alternative, the existing Interstate Bridge, I-5, local roads, and associated infrastructure would remain as they are today. With no new infrastructure, there would be no temporary impacts to land use.

The No-Build Alternative would not involve construction activities, which often result in temporary economic benefits from capital expenditures, opportunities for entering the labor market through construction jobs, the purchasing of local goods and services needed for construction, and construction employees spending money in the community. The No-Build Alternative would also not result in temporary adverse economic impacts such as limiting business visibility and access, traffic delays and detours, and noise.

Modified LPA

The reasonably foreseeable temporary effects on land use and economics are described in the subsections below. Temporary effects on land use and economic activity would not differ among the Modified LPA design options.

Land Use

Construction of the Modified LPA, including construction of the new bridges and removal of the existing bridges, is expected to take between approximately 9 and 15 years overall. Impacts would not be continuous or stationary throughout the full project extent and construction time frame, but would be limited to the duration and location of active construction on a specific component of the Modified LPA. For example, while the overall timeframe of the project could last from 9 to 15 years, construction of specific project components such as interchanges in downtown Vancouver may only last 3 to 4 years. Because construction activities would be temporary, they are unlikely to have any lasting impacts on existing land uses, land use patterns, or planned future land uses. However, construction-related impacts from noise, dust, lighting (for nighttime construction), and traffic delays may have secondary impacts to residential and commercial land uses throughout the primary study area. For example, adjacent residential uses are particularly sensitive to the impacts of construction; commercial uses may also be affected if they rely upon easy access and a pleasant driving experience. For more information, please refer to Sections 3.1, Transportation, 3.9, Public Services and Utilities, 3.10, Air Quality, and 3.11, Noise and Vibration, of this SEIS.

In order to minimize construction impacts, the IBR Program would carefully plan and phase construction of the Modified LPA to reduce or avoid complete closure of roadways and access points to nearby businesses. Detours would be routed to reduce travel times and signed to reduce confusion. The timing of roadway and highway ramp closures could be staggered to minimize access interruptions and lessen impacts in a given area. Construction would be planned to keep business access points open as much as possible and would be well signed. A construction communication plan would be developed to inform travelers and freight operators about detours and road closures and would direct them to businesses. Prior to finalizing construction plans,

the IBR Program would work with agency partners to obtain information on construction timelines for other planned projects and coordinate traffic control plans, business assistance strategies, emergency response plans, and other construction management tools. At the end of the construction period, areas required for temporary easements would be restored to their former condition and use.

Bridge construction would disturb existing land uses and associated activities on Hayden Island. The existing commercial use pattern on the island is predominantly auto-oriented big-box retail. Shoppers and visitors to the area would likely face delays, detours, and other inconveniences. Noise, dust, and vibration impacts may also reduce the shopping center's attractiveness to shoppers during construction, especially when compared to similar shopping centers nearby.

Although I-5 is only one of the ways to access the area, many land uses in downtown Vancouver, particularly businesses which rely heavily on pass-by traffic, could be negatively impacted by construction activities due to detours, unclear access, noise, vibration, and dust. However, construction activities would not change the zoning designation and land use; if a business were to close due to construction impacts, similar businesses compatible with local zoning regulations, overlay districts, and land use plans would be expected to take its place.

A total of approximately 28.2 acres of temporary construction easements would be needed along the length of the Modified LPA, affecting 42 parcels (21.8 acres) in Portland and 104 parcels (6.4 acres) in Vancouver. In Portland, these would include approximately 20.4 acres of temporary construction easements on commercial and industrial properties in the CE and IG2 zones, approximately 0.9 acre on mixed-use properties in the CM1 and CM2 zones, and approximately 0.5 acre of open space in the OS zone. In Vancouver, these would include approximately 6.1 acres on commercial and mixed-used properties in the CX and CPX zones and approximately 0.3 total acres on residential properties in the R-22 and R-9 zones. As listed in Appendix H, see Chapter 5 of the Land Use Technical Report and Chapter 5 of the Acquisitions Technical Report for detailed information on temporary construction easement impacts by parcel, zoning, acreage, and primary study area.

Most of the parcels affected by temporary construction easements would also be permanently affected by other elements of the Modified LPA (i.e., full or partial acquisitions or subsurface easements). In Oregon, 8 out of the 42 total parcels where temporary construction easements would be acquired would not require a full or partial acquisition or subsurface easement. In Washington, 42 out of 104 total parcels where temporary construction easements would be acquired would not require a full or partial acquisition or subsurface easement. Temporary construction easements would be used to access construction sites, store vehicles and equipment, and for other ancillary purposes. Areas required for temporary easements would be restored to their former condition and use at the end of the construction period.

Economics

Regional Temporary Effects

Construction has the potential to cause negative economic effects by blocking visibility and access to businesses and causing traffic delays and detours that increase travel times. Traffic congestion is already a common occurrence within the study area during peak hours. Construction activities and temporary detours could extend the peak duration, negatively impacting businesses whose employees commute via I-5. Likewise, the movement of freight, goods, and services (by truck or rail) could be negatively affected if construction activities make travel times longer or less predictable. These impacts would be similar regardless of the Modified LPA design option selected.

Construction of the new Columbia River bridges would also affect marine commerce on the river. Work on the new bridges is anticipated to take place over a period of approximately 4 to 7 years, with a general sequence of activities including initial preparation, installation of foundation piles, shaft caps, pier columns,

superstructure, and deck. Construction barges would be anchored in the river, and support barges traveling to and from supply points could create conflicts with freight. Some likely effects on marine commerce include:

- There would be temporary closures or changes to the three navigation channels during construction of the proposed Columbia River bridges, but it is assumed that at least one navigable channel would remain open at all times for marine traffic.
- Commercial vessels may be provided with towing assistance during times where navigation is made difficult by construction activities.
- Vertical and horizontal clearance restrictions would be in place for portions of the construction period. Such restrictions would require U.S. Coast Guard concurrence. A temporary construction navigation envelope (height and width of unobstructed clearance for navigation) would be maintained during construction with a minimum clearance of 72 feet (vertical) by 150 to 200 feet (horizontal). During times when these minimum clearances are in effect, vessels requiring more than 72 feet of vertical navigation clearance would be unable to pass under the bridges; however, potential passage with reduced width or scheduled interim short-term openings could be coordinated with the bridge construction contractor.
- Temporary river travel restrictions are anticipated as barges are used to ferry materials to and from work sites.

Construction of the Modified LPA could also result in positive economic effects through increased employment and spending during construction. The extent of these effects depends on the source of funding and the makeup of construction work crews. Funds from local or regional sources are transfers of money that could be spent by residents and businesses on other economic activities in the region, and therefore do not add to the overall supply of funding in the regional economy. Conversely, federal or state funds that are new to a region can have a measurable economic effect, resulting in employment and income gains from construction. The federal government and the states of Oregon and Washington would provide the funds for the Modified LPA, thus resulting in some economic and employment benefits in the region that would otherwise not occur. These benefits are anticipated to be similar regardless of the Modified LPA design option selected.

Local Temporary Effects

Roadway closures associated with the Modified LPA could affect local economic activity, depending on the location and duration. Temporary road closures in Portland would include a closure on the west side of the intersection at the Marine Drive interchange, lasting several weeks, and two ramp closures at I-5 southbound and Tomahawk Island Drive on Hayden Island that would last one weekend. Additionally, Tomahawk Island Drive would be closed from Parker Avenue to Center Avenue for several months. A portion of Jantzen Drive east and west of I-5 would be closed for at least one year to allow for road and utility work. This section of roadway does not include any direct access points for businesses not permanently displaced by the Modified LPA; displaced businesses would be relocated before the start of construction. Access would remain open along N Hayden Island Drive and Center Avenue, but some out-of-direction travel could be required to continue to access businesses in the immediate vicinity of the closure. In Washington, ramp closures associated with improvements to the SR 14 interchange would primarily affect traffic from downtown Vancouver to points east and the connection between Portland and downtown Vancouver on I-5. These would predominantly last for periods of several weekends to several months. Ramp closures at Washington Street to I-5 southbound; I-5 northbound to C Street; and SR 14 westbound to C Street would last several years. Alternate routes would be available to travel to these areas, but they would be more difficult and less direct. This could affect businesses in downtown Vancouver by increasing delivery times for goods and making it more difficult for employees and customers to reach downtown businesses. The public would receive advanced notification about restrictions, intermittent closures, and detours for highway, local roadway, transit, and active transportation users.

Other potential effects of construction on economic activity could include temporarily reduced patronage of businesses near active construction areas due to noise, dust, and visual clutter. For more detail regarding local temporary economic effects due to construction, see Chapter 5 of the Economics Technical Report (as listed in Appendix H). See Table 5-2 in the Transportation Technical Report for more details on major roadway and ramp closures, approximate closure duration, and potential detours. Roadway and ramp closures are anticipated to be similar across all design options.

3.4.5 Intentionally left blank

3.4.6 Avoidance, Minimization, and Mitigation Measures

Table 3.4-13 lists temporary avoidance and minimization measures for land use. No long-term avoidance and minimization measures and no specific temporary or long-term mitigation measures within control of the IBR Program were identified for land use. Table 3.4-14 lists temporary avoidance and minimization measures for economics. Table 3.4-15 lists long-term mitigation measures for economics. No long-term avoidance and minimization measures and temporary mitigation measures within control of the IBR Program were identified for economics. Avoidance, minimization, and mitigation measures for transportation, acquisitions and displacements, neighborhoods and communities, and noise and vibration that could potentially affect land use and economics are described in Section 3.1, Section 3.3, Section 3.5, and Section 3.11, respectively and are not included in the table below.

Table 3.4-13. Avoidance and Minimization Measures for Land Use

Temporary or Long-Term	Impact Type	Avoidance and Minimization Measure
Temporary	Conflicting construction plans with other projects	Prior to finalizing construction plans, ODOT and WSDOT will work with agency partners to obtain information on the construction timelines for other planned projects, including those identified in the Land Use technical report, and will coordinate with those projects to develop traffic and other plans to minimize disruption.

Table 3.4-14. Avoidance and Minimization Measures for Economics

Temporary or Long-Term	Impact Type	Avoidance and Minimization Measure
Temporary	Disruption to railway lines during construction	ODOT and WSDOT will coordinate with the contractor to design construction schedules to minimize temporary impacts to BNSF Railway lines and service frequency, as feasible.
Temporary	Freight delays during construction	ODOT and WSDOT will work with the contractor to coordinate with the Ports of Portland and Vancouver to identify ways to minimize delays for commercial freight vehicles during construction, as feasible.
Temporary	Disruption to freight and business operations during construction	ODOT and WSDOT will work with the contractor to conduct outreach to businesses in areas with high volumes of freight traffic as construction plans and detours are developed to minimize the impact to their business operations, inform them of detours, and help keep freight moving during construction.

Temporary or Long-Term	Impact Type	Avoidance and Minimization Measure
Temporary	Disruption to local business operations during construction	ODOT and WSDOT will coordinate with the contractor to reduce potential impacts to local businesses by implementing a construction schedule that avoids or minimizes complete closures of roads and access points to local businesses, as feasible.
Temporary	Disruption to business access during construction	ODOT and WSDOT will conduct outreach to businesses, in coordination with local jurisdictions, affected by construction as roadway closures and detours are identified to minimize impacts to their businesses.

Table 3.4-15. Mitigation Measures for Economics

Temporary or Long-Term	Impact Type	Mitigation Measure
Long-Term	Disruptions to marine cargo transport during construction	ODOT and WSDOT will continue to work with the U.S. Coast Guard and the U.S. Army Corps of Engineers to help confirm that the potential for effects on river users is addressed through the agencies' permitting processes.