



# Oregon Passenger Rail

## Eugene - Portland

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CHOOSING A PATH FORWARD

## Appendix D

### Revised DEIS Sections

April 2021



# Executive Summary

The U.S. Department of Transportation's (USDOT) Federal Railroad Administration (FRA) and the Oregon Department of Transportation (ODOT) prepared this Tier 1 environmental impact statement (EIS) to evaluate improved Amtrak Cascades intercity passenger rail service alternatives for the Oregon Passenger Rail Project (OPR Project). The OPR Project examines an approximately 125-mile segment of the Federally designated Pacific Northwest Rail Corridor (PNWRC) from the Eugene-Springfield urban area to Portland. In addition to this EIS, ODOT is preparing a Service Development Plan (SDP) for the corridor to guide further development and capital investment in passenger rail improvements.

The PNWRC has been the subject of intercity passenger rail planning, development and operation for more than 30 years. The PNWRC is one of 11 Federally designated high-speed rail corridors in the United States. FRA designated this passenger rail corridor on October 20, 1992, as one of five original corridors called for in the Intermodal Surface Transportation Efficiency Act of 1991. The 466-mile PNWRC serves the most densely populated regions of British Columbia, Washington, and Oregon. It links Vancouver, British Columbia, Seattle, Washington, and Portland and Eugene, Oregon, with growing intermediate communities (including the capital cities of Salem, Oregon, and Olympia, Washington).

[Burlington Northern Santa Fe \(BNSF\) Railway](#) owns the existing PNWRC railroad infrastructure in Washington, in British Columbia, and in Oregon north of Portland's Union Station. Union Pacific Railroad (UPRR) owns the existing PNWRC railroad infrastructure in Oregon south of Portland's Union Station. A mix of freight and passenger trains (operated by BNSF Railway, UPRR, Oregon Pacific, Portland Terminal Railroad, Willamette Valley Railway, Portland & Western Railroad, and Amtrak) currently utilize [or connect to](#) BNSF Railway and UPRR trackage that serves as the PNWRC. Intercity passenger rail service consists of three round trips per day between Eugene and Portland (two Amtrak Cascades trains plus one Amtrak Coast Starlight—a "2+1" passenger train schedule), and six round trips per day between Portland, Oregon, and Vancouver, Washington (four Amtrak Cascades trains plus the Amtrak Coast Starlight and the Amtrak Empire Builder—a "4+2" schedule). The Washington State Department of Transportation (WSDOT) has commitments to increase to a "6+2" intercity train schedule between Portland and Seattle, Washington (six Amtrak Cascades trains plus the Amtrak Coast Starlight and the Amtrak Empire Builder [Empire Builder runs only between Portland and Vancouver, Washington]).

This EIS evaluates a reasonable range of alternatives and identifies a preferred alternative within the OPR Project EIS study area, which is the aforementioned area between Eugene-Springfield, Oregon, and the Washington state line at the Columbia River. A No Action Alternative, two build alternatives, and one build alternative option are evaluated. The build alternatives include infrastructure improvements in existing rail corridors and sections of new rail corridor. This EIS evaluates the potential environmental impacts for each of the alternatives, in accordance with the National Environmental Policy Act (NEPA).

Following the release of the DEIS, ODOT will gather feedback from stakeholders and interested parties and the public will have an opportunity to review and provide comments. The Final EIS will respond to substantive comments received on this Draft EIS and identify and describe the final preferred alternative which may or may not be the preferred alternative identified in this DEIS. FRA's identification of a preferred alternative in an EIS is required by the CEQ regulations implementing NEPA but does not represent an approval or selection of the Project by FRA for any possible future funding opportunities that ODOT may pursue.

### 3.1.4 Ridership

Because of increases in population and employment and the associated intercity travel market growth forecasted to occur within and beyond the study area, intercity passenger rail and bus ridership would be higher under the No Action Alternative than under existing conditions. [Table 3-2a](#) and [Table 3-2b](#) shows station activity (riders on and off) for existing conditions (2015) and projected 2035 No Action Alternative conditions. The figures include both the Amtrak Cascades train service and Thruway bus service.

[Table 3-2b](#) presents updated estimates based on ridership data obtained after the evaluation completed for the DEIS. Ridership and ticket revenue forecasts for the proposed Amtrak Cascades service options were prepared for the Tier 1 DEIS using an incremental model that utilizes observed Amtrak ridership and ticket revenue data as well as socio-economic data and forecasts and Amtrak timetables. Those forecasts were originally prepared in 2015 and documented in the 2018 Tier 1 DEIS.

The Service Development Plan (SDP) focuses exclusively on future year passenger ridership and revenue forecasts for the No Action Alternative and Preferred Alternative as designated in the Tier 1 FEIS. Following the original analysis time period (2015) and publication of the Tier 1 DEIS (2018), a number of factors have contributed to a decline in Oregon Amtrak Cascades rail ridership, including: declining fuel prices, changes in scheduled service, on-time performance problems in the Portland-Seattle portion of the PNWRC, and the growth in competing services for intercity passenger travel.

For the SDP, the Tier 1 DEIS passenger ridership and revenue forecasts for the future No Action Alternative and Build Alternative 1 have been updated and adjusted to account for the recent ridership trends in the PNWRC.

**Table 3-2.a. Annual Amtrak Cascades Train and Thruway Bus Station Activity – Existing (2015) and 2035 Conditions for No Action Alternative (Tier 1 DEIS)**

Station	Station Activity (Number of riders both on and off)		
	Existing Conditions (2015)	No Action Alternative (2035)	Percent Growth: Existing Conditions to No Action Alternative
Eugene	85,800	172,500 <sup>a</sup>	101%
Albany	31,800	54,800 <sup>a</sup>	72%
Salem	65,300	97,100	49%
Oregon City	15,100	17,000	13%
Portland <sup>b</sup>	458,800	961,100	109%
<b>Total<sup>c</sup></b>	<b>656,800</b>	<b>1,302,500</b>	<b>98%</b>

<sup>a</sup> There were no plans to extend the current Portland to Salem bus south to Eugene when the ridership forecasting was done. Therefore, numbers for Albany and Eugene do not include a seventh bus round trip.

<sup>b</sup> Activity at Portland's Union Station encompasses all Amtrak Cascades train and Thruway bus passengers in Portland, including those from north of the Portland market.

<sup>c</sup> Numbers do not sum due to rounding.

Source: Amtrak Cascades Incremental Model Results (Williams, 2015).

**Table 3-2.b. Annual Amtrak Cascades Train and Thruway Bus Station Activity – Existing (2015) and 2035 Conditions for No Action Alternative (Service Development Plan)**

Station	Station Activity (Number of riders both on and off)		
	Existing Conditions (2015)	No Action Alternative (2035)	Percent Growth: Existing Conditions to No Action Alternative
Eugene	85,800	155,200 <sup>a</sup>	81%
Albany	31,800	50,200 <sup>a</sup>	58%
Salem	65,300	90,700	39%
Oregon City	15,100	16,600	10%
Portland <sup>b</sup>	458,800	860,600	88%
<b>Total<sup>c</sup></b>	<b>656,800</b>	<b>1,173,300</b>	<b>79%</b>

<sup>a</sup> There were no plans to extend the current Portland to Salem bus south to Eugene when the ridership forecasting was done. Therefore, numbers for Albany and Eugene do not include a seventh bus round trip.

<sup>b</sup> Activity at Portland's Union Station encompasses all Amtrak Cascades train and Thruway bus passengers in Portland, including those from north of the Portland market.

<sup>c</sup> Numbers do not sum due to rounding.

Source: Amtrak Cascades Incremental Model Results (Williams, 2015); Draft Oregon Passenger Rail Service Development Plan, ODOT, October 2020).

### 3.2.4 Ridership

Alternative 1 is estimated to have the highest Amtrak Cascades ridership of the alternatives, with about 108 percent higher ridership than in the No Action Alternative. Alternative 2 would have slightly lower ridership than Alternative 1 even though the travel time between Springfield and Eugene would be 18 minutes less for Alternative 2 than Alternative 1. Alternative 2 would move multiple existing station locations away from downtown city cores. As a result, fewer estimated riders would opt for passenger rail travel under Alternative 2 than under Alternative 1. [Table 3-8a and Table 3-8b](#) shows the existing (2015) and 2035 forecast Amtrak Cascades (including Thruway Bus) ridership between Eugene and Portland. [As noted in Section 3.1.4, ODOT updated ridership forecasts using data on ridership trends since publication of the DEIS; Tier 1 DEIS passenger ridership and revenue forecasts for the future Alternative 1 \(Preferred Alternative\) have been updated and adjusted to account for the recent ridership trends in the PNWRC and are shown in Table 3-8b.](#)

**Table 3-8.a. Amtrak Cascades Service Ridership: Eugene to Portland (2015 and Estimated 2035) (Tier 1 DEIS)**

Eugene to Portland	Actual 2015	No Action (2035)	Alt 1 (2035)	Alt 2 (2035)
Train	105,000	197,000	646,000	631,000
Bus	89,000	193,000	93,000	92,000
<b>Total</b>	<b>194,000</b>	<b>390,000</b>	<b>739,000</b>	<b>723,000</b>

**Table 3-8.b. Amtrak Cascades Service Ridership: Eugene to Portland (2015 and Estimated 2035) (Service Development Plan)**

Eugene to Portland	Actual 2015	No Action (2035)	Alt 1 (2035)	Alt 2 (2035)
Train	105,000	153,600	519,500	NA
Bus	89,000	106,000	20,300	NA
<b>Total</b>	<b>194,000</b>	<b>259,600</b>	<b>539,800</b>	<b>NA</b>

NA- Not Applicable – Future ridership forecast refinements in the Service Development Plan focused only on the Tier 1 FEIS Preferred Alternative (Alternative 1)

#### 3.2.4.1 Alternative 1

In 2035, total ridership (both Amtrak Cascades train and Thruway bus) for Alternative 1 is projected to be 739,000 annual passengers (including 646,000 rail passengers) compared to 390,000 annual passengers under the No Action Alternative. Similar to the No Action Alternative, under Alternative 1, the Portland’s Union Station and Eugene Station would have the two highest numbers of passenger boardings and alightings (passengers getting on or off the train or bus) of all the stations, while Oregon City and Albany Stations would have the two lowest. [Table 3-9a](#) shows the existing station activity and the projected activity for the No Action Alternative and Alternative 1 in 2035. [Table 3-9b shows updated numbers presented in the Service Development Plan developed for the Preferred Alternative.](#)

Table 3-9.a. Annual Amtrak Cascades Train and Thruway Bus Station Activity – Existing and 2035 Conditions for No Action Alternative and Alternative 1 (Tier 1 DEIS)

Station	Station Activity (Number of riders both on and off)			Percent Growth	
	Existing Conditions (2015)	No Action Alternative (2035)	Alternative 1 (2035)	Existing Conditions to Alternative 1	No Action Alternative to Alternative 1
Eugene	85,800	172,500 <sup>a</sup>	362,300	322%	110%
Albany	31,800	54,800 <sup>a</sup>	119,300	275%	118%
Salem	65,300	97,100	203,700	212%	110%
Oregon City	15,100	17,000	40,500	168%	138%
Portland <sup>b</sup>	458,800	961,100	1,136,900	148%	18%
<b>Total<sup>c</sup></b>	<b>656,800</b>	<b>1,302,500</b>	<b>1,862,700</b>	<b>184%</b>	<b>43%</b>

<sup>a</sup> There were no plans to extend the current Portland to Salem bus south to Eugene when the ridership forecasting was done. Therefore, numbers for Albany and Eugene do not include a seventh bus round trip.

<sup>b</sup> Activity at Portland's Union Station encompasses all Amtrak Cascades train and Thruway bus passengers in Portland, including those from north of the Portland market.

<sup>c</sup> Numbers may not sum due to rounding.

Source: Amtrak Cascades Incremental Model Results (Williams, 2015).

Table 3-9.b. Annual Amtrak Cascades Train and Thruway Bus Station Activity – Existing and 2035 Conditions for No Action Alternative and Alternative 1 (Service Development Plan)

Station	Station Activity (Number of riders both on and off)			Percent Growth	
	Existing Conditions (2015)	No Action Alternative (2035)	Alternative 1 (2035)	Existing Conditions to Alternative 1	No Action Alternative to Alternative 1
Eugene	85,800	155,200 <sup>a</sup>	345,000	302%	122%
Albany	31,800	50,200 <sup>a</sup>	114,700	261%	128%
Salem	65,300	90,700	197,300	202%	118%
Oregon City	15,100	16,600	40,100	166%	142%
Portland <sup>b</sup>	458,800	860,600	1,036,400	126%	21%
<b>Total<sup>c</sup></b>	<b>656,800</b>	<b>1,173,300</b>	<b>1,733,800</b>	<b>164%</b>	<b>48%</b>

<sup>a</sup> There were no plans to extend the current Portland to Salem bus south to Eugene when the ridership forecasting was done. Therefore, numbers for Albany and Eugene do not include a seventh bus round trip.

<sup>b</sup> Activity at Portland's Union Station encompasses all Amtrak Cascades train and Thruway bus passengers in Portland, including those from north of the Portland market.

<sup>c</sup> Numbers may not sum due to rounding.

Source: Amtrak Cascades Incremental Model Results (Williams, 2015); Draft Oregon Passenger Rail Service Development Plan, ODOT, October 2020).

### 3.2.5.3.2.6 Costs

This section presents preliminary construction and O&M costs for the build alternatives. The construction cost estimates include right-of-way, engineering and environmental costs, and a contingency factor. As previously noted in 3.1.6, the cost estimates presented in this chapter reflect a level of accuracy commensurate with the conceptual engineering work and analysis performed for the development of this Tier 1 evaluation. ODOT would refine these costs as the project progresses, and would evaluate specific project costs and implementation strategies for the design of the passenger rail system in any future Tier 2 NEPA process.

#### 3.2.5.13.2.6.1 Capital Costs

Initial planning-level capital costs for each of the build alternatives are provided in Table 3-11. The capital cost estimates for each build alternative include [the planned ODOT-owned train overhaul cost that applies to the No Action Alternative \(see 3.1.6\)](#), the cost to construct infrastructure improvements along the route, including track and station improvements, ROW costs, the cost to buy new train equipment and a contingency factor of 30 percent.

Table 3-11. Estimated Capital Costs of Build Alternatives (dollars in millions, 2015 dollars)

Section	Alternative 1		Alternative 2		Alternative 2 with Central Albany Option	
	Low	High	Low	High	Low	High
<a href="#">Train Overhaul</a>	\$5	\$12	\$5	\$12	\$5	\$12
Construction Cost	\$81,13570 <sup>a, b</sup>	\$1,023985 <sup>a, b</sup>	\$3,61822 <sup>c</sup>	\$4,43842 <sup>c</sup>	\$3,6537	\$4,5337
New Train sets (2) <sup>d</sup>	\$4066	\$4066	\$4066	\$4066	\$4066	\$4066
Total <sup>e</sup>	\$9151,201	\$1,977464	\$3,667684	\$4,50494	\$3,702719	\$4,599

<sup>a</sup> Total cost to construct improvements to accommodate both increased passenger service and estimated freight growth in 2035. ODOT estimates that the construction of improvements to accommodate increased passenger service would cost between [\\$695-632 million and \\$804-758 million](#).

<sup>b</sup> Construction cost for Alternative 1 includes estimated cost of the PE/NEPA projects identified in the operational modeling for the project. Willbridge: \$8.1 million; [Penn Junction \\$4.1 million](#); Eugene Stub Tracks \$23.4 million. Funding for the North Portland/[Peninsula Junction](#) project ([\\$13-217.3 million](#)) has been identified via [a Connect Oregon grants](#) and matched dollars from UPRR.

<sup>c</sup> Construction cost for Alternative 2 includes estimated cost of the PE/NEPA projects identified in the operational modeling for the project. Willbridge: \$8.1 million; [Penn Junction \\$4.1 million](#). Funding for the North Portland/[Peninsula Junction](#) project ([\\$13-217.3 million](#)) has been identified via [a Connect Oregon grants](#) and matched dollars from UPRR.

<sup>d</sup> Train set costs are based on [WSDOT's recent locomotive purchase \(8 locomotives in 2017\) and CRISI grant application for new passenger coaches \(2019\)](#) ODOT's recent purchase of two Talgo Series 8 train sets. DMU trainsets assumed to be of similar cost with contingency. If DMUs selected, they would be added to existing fleet as needed.

<sup>e</sup> Numbers may not sum because of rounding.

The construction cost for Alternative 2 is an estimate of the cost to build that alternative all at one time. If Alternative 2 were built in phases, the Amtrak Cascades trains would continue to use parts of the existing UPRR alignment. To add more daily round trips before full build-out, ODOT would have to construct improvements to the UPRR alignment to accommodate the increased passenger trips. The cost of those improvements would depend on which phase of Alternative 2 was built first and the number of new round trips that were added. With a phased construction of Alternative 2, all improvements to the UPRR south of Oregon City would be abandoned when Alternative 2 was fully built.

ODOT estimates that two additional passenger rail train sets would be needed to accommodate increased service between Eugene/Springfield and Portland. A train set is composed of locomotive, passenger cars and service cars (e.g., dining car, baggage car) that would serve the passenger line. [The cost of procuring](#)

each new train set (locomotive and coaches) is assumed to be \$20-33 million, which would account for a FRA-compliant DMU train set or a locomotive hauled train set. If DMU technology is used for future increased passenger rail service, this EIS assumes that the entire fleet would *not* be converted to that technology; instead, the new DMUs would be used alongside the existing locomotive fleet. This mixed-use approach would require different maintenance procedures and associated training than used for the existing diesel locomotive hauled technology. For the purposes of this EIS, maintenance costs were assumed to be those associated with locomotive hauled units, and are based on current experience (see Section 3.2.6.2, Operations and Maintenance Costs).

### 3.2.5-23.2.6.2 Operations and Maintenance Costs

Amtrak operates the Cascades passenger rail service for Oregon and Washington. WSDOT, ODOT, and Amtrak negotiate O&M cost every year. ODOT also pays separately for maintenance of the state-owned passenger trains. Currently ODOT pays about \$17.75 million per year for O&M for the two daily Amtrak Cascades round trips between Eugene and Portland. Those costs include about \$12.5 million paid to Amtrak to operate the service and about \$5.25 million paid to Talgo and Amtrak for maintenance of the two state-owned trains. ODOT developed estimated O&M costs for Alternatives 1 and 2 primarily based on the current O&M costs. Actual O&M costs would be negotiated as additional round trips are added. Conservatively, full build-out of Alternative 1 or Alternative 2 would triple the number of Amtrak Cascades daily round trips from two to six. In addition, ODOT would have to purchase two additional passenger trains to operate either alternative, thus doubling the current number of state-owned passenger trains from two to four. Currently, Amtrak maintains the existing fleet in Seattle, WA. Based on the increase in equipment and concerns about fleet rotation in the Cascades service corridor, ODOT is considering the need to build a maintenance facility in Oregon, potentially at the terminus of the Cascades route in Eugene. The Service Development Plan in development by ODOT considers the cost and phasing needs for such a facility, which would be warranted for either Build Alternative.

Alternative 1 would continue to operate on the current UPRR route; therefore, estimated O&M costs for Alternative 1 are based on current costs. Again, ODOT conservatively estimates that payments to Amtrak would triple, because the number of daily round trips would triple. The cost to maintain the state-owned trains would double, because the number of state-owned passenger trains would double. ODOT estimates annual O&M costs for Alternative 1 to be about \$48-38.5 million, including about \$37-535.4 million for Amtrak and \$10-3.15 million for maintenance of the state-owned passenger trains.

O&M costs for Alternative 2 would be higher than those for Alternative 1, because about two-thirds of Alternative 2 would be state-owned and used only by passenger trains. When the Amtrak Cascades trains operate on shared track owned by a freight railroad, ODOT shares the maintenance cost with the host railroad. When the Amtrak Cascades trains operate on state-owned track used only for passenger rail, ODOT must pay the full maintenance cost. ODOT estimates that O&M costs for Alternative 2 would be about \$51-544.1 million a year, including about \$41.0 million paid to Amtrak and \$10-53.1 million for maintenance of the state-owned passenger trains.

## 4.6.4 Affected Environment

### 4.6.4.1 Parks and Recreation Resources

**Table 4.6-1** lists Section 4(f) and Section 6(f) parks/recreation resources located within the study area.

**Table 4.6-1. Section 4(f) and 6(f) Parks/Recreation Resources in the Study Area**

Resource Name	Amenities	Alternative	Location/ Jurisdictional Owner	Section 4(f) Property?	Section 6(f) Property?
Washington/ Jefferson Park	Basketball court, horseshoe pits, performance stage/space, a 23,000-square-foot skatepark, open grass areas, walking paths, and restrooms	Alternative 1	150 Jefferson Street, Eugene/ ODOT (City of Eugene leases)	No <sup>a</sup>	Yes
Eastgate Woodlands/ Alton Baker Park/ Whilamut Natural Area	Urban greenway connecting Eugene and Springfield. Paved bike/running paths, boat landing, picnic tables, playground, natural area, and parking.	Alternative 2	512 Aspen Street, Springfield/ Willamalane Park and Recreation District	Yes	Yes
Armitage County Park	Boat ramp on the McKenzie River, picnic sites, trails, volleyball courts, an off-leash dog area, and horseshoe pits	Alternative 2	90064 Coburg Road, unincorporated Lane County/ Lane County Parks	Yes	<u>NoYes</u>
Freeway Lakes County Park	Three lakes within the park (approximately 7 acres, 9 acres and 21 acres). Public recreation boat landing, dock access, and restroom facilities	Alternative 2; Alternative 2 with Central Albany Option	6000 Three Lakes Road SE, unincorporated Linn County/ Linn County	Yes	No
Maple Lawn Park	Open grass fields and two playground areas	Alternative 2 with Central Albany Option	1950 SE 4th Avenue, Albany/ City of Albany	Yes	No
Santiam River I-5 Boat Ramp	Public boat ramp	Alternative 2	Unincorporated Marion County/ Oregon Department of Transportation	Yes	No <sup>b</sup>
Keizer Little League Park	12 youth-sized baseball diamonds, a picnic shelter, and a parking lot	Alternative 2	5245 Ridge Drive NE, Keizer/ City of Keizer	Yes	No
St. Louis Ponds County Park	Fishing amenities and picnic sites	Alternative 2	Unincorporated Marion County/ Marion County	Yes	Yes
Settlemier Park	Three picnic shelters, playground, skatepark, baseball/softball field, and an aquatic center	Alternative 1	400 Settlemier Street, Woodburn/ City of Woodburn	Yes	Yes
North Front Street Park	Playground and open play field	Alternative 1	1080 N. Front Street, Woodburn/ City of Woodburn	Yes	No

Resource Name	Amenities	Alternative	Location/ Jurisdictional Owner	Section 4(f) Property?	Section 6(f) Property?
Boones Ferry Park	Basketball court, picnic areas, walking paths, playground, gazebo, restrooms, and parking	Alternative 2	31240 SW Boones Ferry Road, Wilsonville/ City of Wilsonville	Yes	Yes
Fish Eddy Landing	Undeveloped natural area, boat access, and open grass area	Alternative 1	Canby/ City of Canby	Yes	No <sup>a</sup>
West Bridge Park	River access, trails and forested areas	Alternative 2	5300 River Street, West Linn/ City of West Linn	Yes	No
Sportcraft Landing	Public boat launch and dock, trails, and restroom facilities	Alternative 2	1701 Clackamette Drive, Oregon City/ City of Oregon City	Yes	Yes
North Clackamas District Park – Three Creeks Natural Area	Natural area with trails through wetlands and upland forest	Alternative 1; Alternative 2	Unincorporated Clackamas County/ North Clackamas Parks & Recreation District	Yes	No
Campbell Elementary School Athletic Fields	Athletic fields (baseball, softball, and soccer), open to the general public	Alternative 1; Alternative 2	11326 SE 47th Avenue, Milwaukie/ City of Milwaukie	Yes	No
Minthorn Springs Natural Area	Natural area with trails	Alternative 1; Alternative 2	Milwaukie/ Wetlands Conservancy and City of Milwaukie	Yes	No
Minthorn North Natural Area	Natural area with trails	Alternative 1; Alternative 2	Milwaukie/ City of Milwaukie	Yes	No
Roswell Pond Open Space	Natural area with trails	Alternative 1; Alternative 2	Milwaukie/ City of Milwaukie	Yes	No
Springwater Corridor Trail	21 mile multi-use trail	Alternative 1; Alternative 2	Milwaukie (affected segment)/ Metro	Yes	No
Eastmoreland Golf Course	Public golf course	Alternative 1; Alternative 2	2425 SE Bybee Boulevard, Portland/ City of Portland	Yes	No <sup>a</sup>
Vera Katz Eastbank Esplanade	1.5 mile multi-use trail	Alternative 1; Alternative 2	Portland/ City of Portland	Yes	No
Steel Bridge Riverwalk	0.2-mile multi-use trail	Alternative 1; Alternative 2	Portland/ City of Portland	Yes	No

<sup>a</sup> Washington/Jefferson Park is located on leased property owned by ODOT. The land remains under ODOT jurisdiction, with ODOT's right of use for transportation purposes reserved as the site's primary use. Therefore, Washington/Jefferson Park does not qualify as a Section 4(f) property.

<sup>b</sup> Construction of the Santiam River I-5 Boat Ramp was partially funded by a Federal Sport Fish Restoration Act grant and an Oregon State Marine Board boating facility grant; each of these grants has a conversion of use provision similar to Section 6(f) of the LWCFR. Source: ODOT, 2016e.

In addition to resources identified in **Table 4.6-1**, the following parks/recreation resources are also located in the study area. However, no OPR Project actions are proposed near these resources, and the only potential effects would be increased noise and visual effects from increased passenger train frequency. These resources are already near an active mainline freight track which pre-dates the existence of all these resources. No further analysis or documentation is required.

- Harrisburg City Skateboard Park (Harrisburg)
- 5th Street Park (Turner)
- Claggett Creek Natural Area (Salem)
- Coalca Landing Willamette River Greenway (Clackamas County)
- Canemah Bluff Natural Area (Oregon City)
- McLoughlin Promenade (Oregon City)
- Governor Tom McCall Waterfront Park (Portland)
- The Fields Neighborhood Park (Portland)
- Heron Lakes Golf Course (Portland)

#### 4.6.4.2 Section 4(f) Cultural Resources

Within the collective study area for Alternatives 1 and 2, there are 121 historic (built) properties listed in or eligible for the NRHP, including 15 buildings and three historic districts listed in the NRHP and therefore protected by Section 4(f). **Table 4.6-2** below identifies these NHRP-listed properties and their association with Alternative 1 and/or Alternative 2. Ten of these properties contribute to the three listed historic districts, while six are located within one of these historic districts but have been previously determined as ineligible/non-contributing resources. The remaining 93 properties are not currently listed in the NRHP but have been previously determined eligible for listing; these properties would require further research during Tier 2 environmental analyses to verify missing information (such as the property name, type, date of construction, and area of significance for each eligible property).

**Table 4.6-2. NRHP-Listed Section 4(f) Historic (Built) Properties in the Study Area**

Property Name	Year Built	Location	Alternative
Southern Pacific Passenger Depot	1908	433 Willamette Street, Eugene	Alternative 1
McCracken Brothers Motor Freight Building	c. <sup>a</sup> 1930	375 W 4th Avenue, Eugene	Alternative 1
Hackleman Historic District (1 contributing building in APE <sup>b</sup> )	c. 1860–1915	Albany, Linn County	Alternative 1; Alternative 2 with Central Albany Option
Thomas Kay Woolen Mill	1886	1313 Mill Street SE, Salem	Alternative 1
Salem Southern Pacific Railroad Station	1918	500 13th Street SE, Salem	Alternative 1
Chemawa Indian School Site	1885	3700 Chemawa Road NE, Chemawa	Alternative 1
Bank of Woodburn	1890	199 N Front Street, Woodburn	Alternative 1
Aurora Colony Historic District (2 contributing buildings in APE)	c. 1856–1881	Aurora, Marion County	Alternative 1

Property Name	Year Built	Location	Alternative
Canemah Historic District (7 contributing buildings in APE)	c. 1850–1928	Oregon City, Clackamas County	Alternative 1
Erwin Charles House (Gray-Hackett House)	1893	415 17th Street, Oregon City	Alternative 1
Jones Cash Store	1921	111 SE Belmont Street, Portland	Alternative 1
Spokane, Portland & Seattle Railway Steam Locomotive	1938	2250 SE Water Avenue, Portland	Alternative 1; Alternative 2
International Harvester Warehouse	1912	79 SE Taylor Street, Portland	Alternative 1
Oregon Portland Cement Building	1929	111 SE Madison Street, Portland	Alternative 1
Pacific Hardware & Steel Company Warehouse (Vinton Company Warehouse, Fuller, WP & Company)	1910	2181 NW Nicolai Street, Portland	Alternative 1; Alternative 2
Olympic Cereal Mill	1920	107 SE Washington Street, Portland	Alternative 1; Alternative 2
Portland's Union Station	1894	800 NW 6th Avenue, Portland	Alternative 1; Alternative 2
John Deere Plow Company Building	1911	215 SE Morrison Street, Portland	Alternative 2

<sup>a</sup> c. = circa.

<sup>b</sup> APE = Area of potential effect.

Source: ODOT, 2016e.

As listed in Table 4.11-2 (Section 4.11, Cultural Resources), eight known archaeological sites are within the No Action Alternative/Alternative 1 study area, and ten known sites are within the Alternative 2 study area. Three of these archaeological sites are common to both proposed build alternatives. Previously, five of these archaeological sites were determined eligible for listing in the NRHP. It is likely that Tier 2 archaeological surveys would identify additional archaeological sites in association with a more definitive OPR Project design and study area. At that time, sites not previously evaluated for listing in the NRHP would be evaluated.

## 4.6.5 Environmental Consequences

This subsection identifies the potential direct, indirect, and construction-related impacts associated with Section 4(f) and Section 6(f) resources within the OPR Project study area.

### 4.6.5.1 Direct and Indirect Impacts

#### No Action Alternative

The No Action Alternative would not affect Section 4(f) or Section 6(f) resources.

#### Alternative 1

##### *Parks/Recreation Resources*

Alternative 1 could result in potential impacts to 13 Section 4(f) parks/recreation resources. Section 6(f) of the LWCFR also protects **four** of these resources. Based on the high-level assessment performed for this Tier 1 EIS effort, as summarized below, ODOT and FRA anticipate that more refined project-level engineering could result in avoidance of permanent incorporation of most Section 4(f) properties, and they do not

expect potential impacts to adversely affect the features, attributes or activities qualifying any Section 4(f) resource for protection. Based on the Tier 1 analysis, impacts to Section 4(f) parks/recreation resources would likely be no more than *de minimis* in nature. Tier 2 environmental studies and coordination with jurisdictional authorities would further quantify OPR Project impacts to Section 4(f) resources and determine the 4(f) effects, which could in turn result in project design modifications intended to avoid and/or minimize impacts to Section 4(f) resources.

Section 4(f) and Section 6(f) parks/recreation resources in the Alternative 1 study area are described below, along with potential impacts that could result from the OPR Project.

ODOT and FRA do not expect adverse effects from noise, vibration or visual intrusions. All of the 4(f) resources listed are presently next to an active freight mainline (UPPR), which existed prior to the resource establishments. All of these resources are currently subject to noise, vibration and visual intrusion from freight and passenger rail activity. Additional analysis of potential noise, vibration and visual impacts will be conducted during Tier 2.

#### Washington/Jefferson Park

According to GIS analysis, 1.24 acres of the 21-acre Washington/Jefferson Park property is located within the study area. The park is located in Eugene below the elevated I-105 freeway, on land leased from ODOT. The land remains under ODOT jurisdiction, with ODOT's right of use for transportation purposes reserved as the site's primary use. Therefore, Washington/Jefferson Park does not qualify as a Section 4(f) property.

Because Washington/Jefferson Park received LWCF grant funds, the park is subject to the requirements of Section 6(f). As such, if subsequent Tier 2 environmental analyses for individual projects determined that the acquisition of parkland is required, replacement parkland of equal value, location, and usefulness could be required as mitigation. Although Alternative 1 could be designed during subsequent project-level analysis to avoid permanent incorporation of any of this park property, this alternative could impact a thin strip of unimproved parkland located along the edge of the park, just north of the existing rail tracks, that contains a row of evergreen trees.

#### Settlemier Park

Approximately 0.21 acre of the 10-acre Settlemier Park property located in Woodburn is situated within the Alternative 1 study area. Alternative 1 would avoid permanent incorporation of any of this park property, and no other adverse effects to the features, attributes or activities qualifying the property for protection under Section 4(f) are anticipated, because no recreation amenities are located in the study area.

The park is also subject to the requirements of Section 6(f) because of the use of LWCF grant funds; therefore, acquisition of replacement parkland could be required if parkland is converted to a non-recreational use.

#### North Front Street Park

Approximately 0.09 acre of the 1.14-acre North Front Street park property in Woodburn is located within the study area. This part of the property contains a thin strip from the eastern edge of the open play field; no recreation improvements are located in the study area. Alternative 1 would avoid any permanent incorporation of any of this park property, and would not be likely to result in adverse effects to the features, attributes or activities qualifying the property for protection under Section 4(f), because no recreation amenities are located in the study area.

#### Fish Eddy Landing

Approximately 0.65 acre of the 20-acre Fish Eddy Landing property is located within the study area. However, Alternative 1 would avoid any permanent incorporation of any of this park property, and ODOT and FRA do not anticipate adverse effects to the features, attributes or activities qualifying the property for protection under Section 4(f). Because Fish Eddy Landing received LWCF grant funds, the park is subject to

the requirements of Section 6(f). As such, if subsequent Tier 2 environmental analyses for individual projects determined that the acquisition of parkland is required, replacement parkland of equal value, location, and usefulness could be required as mitigation.

#### North Clackamas District Park – Three Creeks Natural Area

Approximately 11.5 acres along the southern edge of Three Creeks Natural Area are located within the study area. However, because Alternative 1 improvements would be located on the south side of the existing tracks, Alternative 1 could be developed to either avoid permanent incorporation of this park property, or any impact would likely not exceed a narrow strip of land along the very southern edge of the natural area. Because no recreation amenities are located in the study area, ODOT and FRA do not anticipate adverse effects to the features, attributes or activities qualifying the property for protection under Section 4(f).

#### Campbell Elementary School Athletic Fields

Approximately 0.2 acre of the Campbell Elementary School property is located within the study area. Alternative 1 improvements would be located on the south side of the existing rail tracks, whereas the athletic fields are located north of the existing rail tracks. Therefore, it is not anticipated that Alternative 1 improvements would impact the main baseball field, nor would they adversely affect the features, attributes or activities qualifying the property for protection under Section 4(f).

#### Minthorn Springs Natural Area

According to GIS analysis, 0.6 acre along the northern edge of Minthorn Springs Natural Area is located within the study area. This part of the property contains a strip of wetlands but no recreation improvements. Design improvements and coordination with the Wetlands Conservancy and the City of Milwaukie could minimize the amount of area acquired as well as the impact on wetlands. Alternative 1 would not be likely to result in adverse effects to the features, attributes or activities qualifying the property for protection under Section 4(f), because no recreation amenities are located in the study area.

#### Minthorn North Natural Area

Approximately 0.5 acre on the northern edge of the 1-acre Minthorn North Natural Area property is located within the study area. This part of the property contains a strip of wetlands but no recreation improvements. Design improvements and coordination with the Wetlands Conservancy and the City of Milwaukie could potentially avoid or minimize the amount of area acquired as well as the impact on wetlands. Because no recreation amenities are located in the study area, ODOT and FRA do not anticipate adverse effects to the features, attributes or activities qualifying the property for protection under Section 4(f).

#### Roswell Pond Open Space

Approximately 0.6 acre along the western edge of the 1.7-acre Roswell Pond property is located within the study area. There are no recreation amenities located in this area and, as such, adverse effects to the features, attributes or activities qualifying the property for protection under Section 4(f) are not anticipated.

#### Springwater Corridor Trail

Approximately 0.53 acre of the 21-mile, multi-use trail Springwater Corridor Trail property is located within the study area. The Springwater Corridor Trail is elevated on a bridge structure at this location. The area under the existing bridge could accommodate construction of Alternative 1 improvements with no effect on the structure or trail. Therefore, ODOT and FRA do not anticipate adverse effects to the features, attributes or activities qualifying the property for protection under Section 4(f).

#### Eastmoreland Golf Course

Approximately 5.6 acres of the 68-acre Eastmoreland Golf Course property are located within the study area. However, based on the widths of the existing rail ROW and the proposed additional track, ODOT and FRA anticipate that Tier 2 engineering design efforts could facilitate avoidance and/or minimization of adverse effects to the Section 4(f)-qualifying features, attributes and activities of the golf course. Tier 2 environmental studies would also need to ensure that construction activities would avoid and/or minimize any temporary use of the Section 4(f) property. Because Eastmoreland Golf Course received LWCF grant funds, the park is subject to the requirements of Section 6(f). As such, if subsequent Tier 2 environmental analyses for individual projects determined that the acquisition of parkland is required, replacement parkland of equal value, location, and usefulness could be required as mitigation.

#### Vera Katz Eastbank Esplanade

Approximately 1.2 acres of the City of Portland's Vera Katz Eastbank Esplanade linear park property are located within the study area. The segment of the Esplanade property in the study area is a stub pedestrian/bicycle multi-use path on a bridge structure that crosses the existing UPRR line and connects to NE Lloyd Boulevard. Because the stub pedestrian/bicycle facility is elevated on a bridge structure at this location, there is ample room for improvements under the existing trail bridge. Therefore, ODOT and FRA do not anticipate adverse effects to the features, attributes or activities qualifying the property for protection under Section 4(f).

#### Steel Bridge Riverwalk

Approximately 0.3 acre of the Steel Bridge Riverwalk property is located within the study area. The segment of the trail in the study area is located directly adjacent to the existing railroad track on the lower deck of the Steel Bridge. No improvements are proposed to the Steel Bridge, and there would be no permanent incorporation of the Steel Bridge Riverwalk. As such, ODOT and FRA do not anticipate adverse effects to the features, attributes or activities qualifying the property for protection under Section 4(f).

#### **Cultural Resources**

There are 102 NRHP-listed or NRHP-eligible historic (built) properties within the study area for Alternative 1. Forty-eight of those are located adjacent to the proposed rail alignment and to existing station facilities. The remaining properties are located adjacent to the existing mainline in areas where there would not be infrastructure improvements. Section 4.11, Cultural Resources, discusses the potential impacts to these properties in more detail.

Under Alternative 1, historic (built) properties adjacent to new track and other infrastructure improvements could experience direct impacts from ROW acquisition, as well as minor visual and noise and vibration proximity impacts from the increased number of passenger trains. Although most ROW acquisition from historic properties would likely consist of linear strips of unimproved property, it could still constitute a Section 4(f) use, and it is also possible that the removal of historic properties would be required. Tier 2 analyses for subsequent projects would further assess the potential for adverse effects resulting from ROW acquisition. Because the historic properties are currently located adjacent to the railroad tracks, Alternative 1 improvements and additional passenger trains would not likely result in a significant increase in visual, noise, or vibration impacts beyond those under the No Action Alternative. Similarly, historic or potentially historic properties located adjacent to the existing mainline where no improvements are proposed would not be expected to experience visual, noise, or vibration impacts beyond those under the No Action Alternative.

Alternative 1 considers a potential new Woodburn station, and the station study area includes a c. 1930 property that has not been evaluated for NRHP eligibility. The potential for adverse effects associated with the property would be dependent on the potential new station's exact location and design, as well as the NRHP eligibility of the property. If the Woodburn station is selected for development, these considerations would be assessed further in Tier 2 analyses.

All five of the existing stations under Alternative 1 are historic; the Oregon City and Albany stations are eligible for NRHP listing, and the remaining three are listed on the NRHP—those in Eugene, Salem, and Portland. Separate projects are currently developing preliminary engineering and environmental analysis for the Eugene Station and Portland Union Station. Although Alternative 1 assumes no physical changes to the stations, any potential improvements within the station properties (i.e., improvements to the railroad tracks) could result in changes to the historic settings. Railroad tracks are an integral part of the settings of existing historic railroad stations. Even so, regular maintenance and technology-related improvements throughout history have altered the settings of the existing historic railroad stations to improve their overall functionality. Such improvements, particularly those that have occurred within the period of significance for the stations, do not diminish the integrity of the historic buildings. Changes to existing stations that occur outside of the designated periods of significance could result in adverse effects.

In addition to the potential impacts discussed above, Alternative 1 could result in improvements on a historic railroad line—the former Southern Pacific line, which may be eligible for the Fast Act Section 11502 exemption. Construction of new adjacent track and/or additional sidings, cross-overs, and industry connections are typical improvements that the railroads have made over the years, and it is not likely that these improvements would significantly diminish the integrity of the overall resource or adversely affect the railroad line's character-defining qualities. Addition of a parallel mainline track and improvements to the existing track would not diminish the railroad's significant association with the early development of Oregon, its cities, and the Northwest region. For these reasons, it is unlikely that improvements under Alternative 1 would result in adverse effects to the historic rail line.

Eight known historic (archaeological) sites are located within the Alternative 1 study area. One of these sites has been determined eligible for listing in the NRHP. Additional archaeological sites could be recorded during SHPO consultation and subsequent fieldwork activities within the Tier 2 APE, and if so would require NRHP eligibility evaluation prior to construction. Direct impacts to archaeological resources could be caused by physical, ground-disturbing actions associated with infrastructure construction. Because field investigations were not conducted for this Tier 1 EIS, the potential adverse impacts of the OPR Project to archaeological sites would be determined during subsequent Tier 2 environmental studies. For archaeological sites, any direct impact is permanent and potentially adverse. An inadvertent discovery plan may also be put into effect in case previously undiscovered resources are exposed during construction.

Indirect impacts to historic properties from Alternative 1 could be prompted by increases in vehicular and pedestrian traffic near Alternative 1 station areas due to growth in passenger rail ridership. As demand rises for access to passenger rail stations, related local transportation improvements and commercial growth could potentially result in physical impacts to historic properties as well as adverse effects on the settings of small towns, historic districts, and individual historic properties. Conversely, local transportation improvements and increased commercial growth could result in rehabilitation of historic buildings and revitalization of historic districts.

Archaeological data recovery is usually considered a mitigating action for adverse impacts. However, the destruction of an archaeological site, even through data recovery, is permanent, and such resources are finite. Significant archaeological sites that warrant preservation in place are protected under Section 4(f). It should be noted that this discussion addresses only those sites within the Alternative 1 study area. Additional sites adjacent to Alternative 1 (outside the study area, where no project activities are planned) are not addressed.

Indirect impacts to archaeological sites could be caused by construction activities that result in access to sites not previously identified or previously inaccessible.

## **Alternative 2**

### ***Parks/Recreation Resources***

Alternative 2 would result in potential impacts to 18 Section 4(f) parks/recreation resources. Section 6(f) of the LWCF also protects six of these resources. Based on the high-level assessment performed for this Tier 1 EIS effort as summarized below, these potential impacts would not be expected to adversely affect the features, attributes, or activities qualifying any Section 4(f) resource for protection. Therefore, any direct impacts to Section 4(f) park/recreation resources are expected to be *de minimis* in nature. Tier 2 environmental studies and coordination with jurisdictional authorities would further quantify OPR Project impacts to Section 4(f) resources, which could in turn result in project design modifications intended to avoid and/or minimize impacts to Section 4(f) resources.

Potential impacts to the following Section 4(f)-protected parks/recreation resources under Alternative 2 are the same as those described above for Alternative 1:

- North Clackamas District Park – Three Creeks Natural Area
- Campbell Elementary School Athletic Fields
- Minthorn Springs Natural Area
- Minthorn North Natural Area
- Roswell Pond Open Space
- Springwater Corridor Trail
- Eastmoreland Golf Course
- Vera Katz Eastbank Esplanade
- Steel Bridge Riverwalk

Potential impacts to Section 4(f) and Section 6(f) parks/recreation resources that would be unique to Alternative 2 are described in the remainder of this section.

#### Eastgate Woodlands/Alton Baker Park/Whilamut Natural Area

Eastgate Woodlands is located along the Willamette River at the eastern-most end of the Whilamut Natural Area of Alton Baker Park, an urban greenway connecting the communities of Eugene and Springfield. Approximately 4.5 acres of Eastgate Woodlands are located within the study area. This part of the property contains segments of two paved bike paths and a strip of forested land along the park's western edge. However, because the Alternative 2 alignment would be on elevated track as it crosses this resource, it is not anticipated that there would be disruption to the continuity of the existing recreational trails. The only direct impact would be from the installation of columns to support the elevated-rail guideway. During design, the support columns could be placed away from the existing trails or, if necessary, the trails could be realigned to avoid the installed columns while preserving the continuity of the trails. Therefore, adverse effects to the features, attributes or activities qualifying the property for protection under Section 4(f) are not anticipated. Tier 2 environmental studies would need to ensure that construction activities would avoid and/or minimize any temporary use of the Section 4(f) property.

Alton Baker Park has received LWCF grant funds and, therefore, is subject to the requirements of Section 6(f). As such, if subsequent, Tier 2 environmental analyses for individual projects determines that the acquisition of parkland is required, the OPR Project would need to obtain replacement parkland of equal value, location, and usefulness as that land being acquired from Eastgate Woodlands associated with the installation of support columns.

#### Armitage County Park

Approximately 1.46 acres of the 56.7-acre Armitage County Park property are located within the study area. This part of the park contains recreation amenities such as a portion of a park circulation road, some open grass and forested areas, a paved walking trail, and a portion of a beach area fronting the McKenzie River.

However, because the Alternative 2 alignment would be on elevated track as it crosses this resource, it is not anticipated that there would be disruption to the continuity of the existing recreational trails or adverse effects to other recreation amenities. The only direct impact would be from the installation of columns to support the elevated-rail guideway. During design, the support columns could be placed away from the existing amenities. Therefore, adverse effects to the features, attributes, or activities qualifying the property for protection under Section 4(f) are not anticipated. Tier 2 environmental studies would need to ensure that construction activities would avoid and/or minimize any temporary use of the Section 4(f) property. Because Armitage County Park received LWCF grant funds, the park is subject to the requirements of Section 6(f). As such, if subsequent Tier 2 environmental analyses for individual projects determined that the acquisition of parkland is required, replacement parkland of equal value, location, and usefulness could be required as mitigation.

#### Freeway Lakes County Park

Approximately 1.76 acres of the 27-acre Freeway Lakes County Park property are located within the study area. There are three lakes within the park connected by Oak Creek, which flows under I-5. The part of the property within the study area contains forested strips along each side of I-5. No recreation features are located in the study area. The Alternative 2 alignment would be on elevated track as it crosses this resource. Therefore, the only direct impact would be from the installation of columns to support the elevated-rail guideway. These support columns could be designed so they would not impact the channel connection between the lakes located on either side of the highway. Therefore, adverse effects to the features, attributes, or activities qualifying the property for protection under Section 4(f) are not anticipated. Tier 2 environmental studies would need to ensure that construction activities would avoid and/or minimize any temporary use of the Section 4(f) property.

#### Santiam River I-5 Boat Ramp

The Santiam River I-5 Boat Ramp is located within the Alternative 2 study area. The I-5 Santiam River Rest Area provides the only vehicular access to this public boat ramp. The Alternative 2 alignment would be on elevated track as it crosses the interstate rest area, and the nearest direct impacts would be from the installation of columns to support the elevated-rail guideway located east of and parallel to I-5. Based on this Tier 1 assessment, the proposed Alternative 2 alignment would not directly impact the Santiam River I-5 Boat Ramp. Tier 2 environmental studies would need to ensure that construction activities would avoid and/or minimize any temporary and constructive use of the Section 4(f) property.

#### Keizer Little League Park

Approximately 0.33 acres of the 16.7-acre Keizer Little League Park property is located within the study area. This part of the property contains only an unimproved gravel area; no recreation improvements are located in the study area. Alternative 2 could avoid permanent incorporation of any of this park property, and no other adverse effects to the features, attributes or activities qualifying the property for protection under Section 4(f) are not anticipated.

#### St. Louis Ponds County Park

Approximately 2 acres of the 21.87-acre St. Louis Ponds County Park property are located within the study area. This part of the property contains unimproved land along the park's western edge; no recreation improvements are located in the study area. Therefore, adverse effects to the features, attributes, or activities qualifying the property for protection under Section 4(f) are not anticipated.

St. Louis Ponds County Park has received LWCF grant funds and, therefore, is subject to the requirements of Section 6(f). As such, if subsequent Tier 2 environmental analyses for individual projects determines that conversion of parkland would occur, replacement parkland of equal value, location, and usefulness could be required as mitigation.

### Boones Ferry Park

Approximately 0.95 acre of the 3.1-acre Boones Ferry Park property is located within the study area. This part of the property contains a strip of open grass and forested area on the western edge of the park; no recreation improvements are located in the study area. The Alternative 2 alignment would be on elevated track as it crosses this resource, so the only direct impact would be from the installation of columns to support the elevated-rail guideway. Based on this Tier 1 assessment, it is not anticipated that improvements would have an adverse effect on Boones Ferry Park or its qualifying Section 4(f) elements. Tier 2 environmental studies would need to ensure that construction activities would avoid and/or minimize any temporary use of the Section 4(f) property.

Boones Ferry Park has received LWCF grant funds and, therefore, is subject to the requirements of Section 6(f). As such, if subsequent Tier 2 environmental analyses for individual projects determined that the conversion of parkland would occur, replacement parkland could be required as mitigation.

### West Bridge Park

Approximately 1.17 acres of the 4.1-acre West Bridge Park property are located within the study area. This part of the property contains a forested riverbank area and a portion of a trail. However, because the Alternative 2 alignment would be on elevated track as it crosses this resource, it is not anticipated that there would be disruption to the continuity of the existing recreational trails. The only direct impact would be from the installation of columns to support the elevated-rail guideway. During design, the support columns could be placed away from the existing trails or, if necessary, the trails could be realigned to avoid the installed columns while preserving the continuity of the trails. In addition, the design of support column locations could minimize impacts on existing trees, especially mature trees and/or significant groves. Tier 2 environmental studies would need to ensure that construction activities would avoid and/or minimize any temporary use of the Section 4(f) property.

### Sportcraft Landing

Approximately 0.98 acre of the 3.4-acre Sportcraft Landing property is located within the study area. This part of the property contains a public boat dock and a parking area. However, because the Alternative 2 alignment would be on elevated track as it crosses this resource, impacts on the public boat dock are not anticipated. Design of future projects could seek to avoid placing columns near the boat dock or in the parking lot. Based on this Tier 1 assessment, it is not anticipated that improvements would have an adverse effect on Sportcraft Landing or its qualifying Section 4(f) elements. Tier 2 environmental studies would need to ensure that construction activities would avoid and/or minimize any temporary use of the Section 4(f) property.

Sportcraft Landing has received LWCF grant funds and, therefore, is subject to the requirements of Section 6(f). As such, if subsequent Tier 2 environmental analyses for individual projects determines that the conversion of parkland would occur, replacement parkland of equal value, location, and usefulness could be required as mitigation.

### **Cultural Resources**

Thirty-three NRHP-listed or NRHP-eligible historic (built) properties are within the study area of Alternative 2. Section 4.11, Cultural Resources, discusses the potential impacts to these properties in more detail.

Alternative 2 would include the addition of a new track throughout the full alignment, with siding tracks placed every 10 to 12 miles to facilitate passing operations. Therefore, ODOT and FRA anticipate that Alternative 2 would result in more impacts than Alternative 1 in relation to the acquisition of ROW and the potential impacts to historic (built) properties. Construction of the cut-and-cover tunnel that would run below Southeast 2nd Avenue in southeast Portland would require ROW acquisition, including the potential purchase of large parcels, two of which contain buildings constructed in 1946 and 1937, respectively. ODOT

and FRA have not determined the NRHP eligibility of these buildings. Further evaluation would be required during subsequent Tier 2 environmental studies to determine impacts associated with ROW acquisition.

In addition to the acquisition of ROW and potential demolition, impacts associated with the new mainline track could include increased visual, noise, and vibration on surrounding historic (built) properties. For the majority of the Alternative 2 alignment, potentially impacted historic properties are immediately adjacent to an existing freeway. Therefore, identified historic properties are already subject to the noise, vibration, and visual effects resulting from heavy road traffic, and it is unlikely that those indirect impacts from Alternative 2 improvements would be a considerable change from the No Action Alternative.

Alternative 2 would include construction of new elevated viaducts and bridges. Although no known NRHP-listed or NRHP-eligible properties are adjacent to the proposed bridge or elevated structures, visual impacts and adverse effects on the settings of surrounding historic properties could occur. Further evaluation would be required during subsequent Tier 2 environmental studies to determine these impacts.

Construction of new stations along Alternative 2 could also result in adverse effects on historic properties. Alternative 2 considers five potential new station locations. The Salem and Tualatin station locations would be adjacent to, or in the vicinity of, buildings constructed in or before 1969 that have not been evaluated for NRHP eligibility and could be historic. These new stations could require demolition of existing buildings or structures, which could also result in adverse effects on potential historic properties on or adjacent to those sites. The Tualatin station location is within the freeway median, which would limit the impact on any surrounding historic properties. At this time, there are no known properties constructed in or before 1969 within the study area for the Springfield, Albany, Keizer, Woodburn, or Wilsonville station locations. There are approximately 70 properties in the study area of the aforementioned station locations for which the year of construction is still unknown. For this reason, the number of potentially impacted historic buildings associated with these new stations could be higher. For each station selected for development, further evaluation would be required during Tier 2 environmental studies to determine potential impacts.

Under Alternative 2, potential Section 4(f) impacts could occur along the segment of the historic Oregon Electric Railway line between Keizer and Wilsonville, which is potentially eligible for listing in the NRHP and may be eligible for the Fast Act Section 11502 exemption. As discussed above, improvements to the existing track and an additional mainline track and sidings are unlikely to significantly diminish the integrity of the overall resource, adversely affect the railroad line's character-defining qualities, or diminish the railroad's significant association with the early development of Oregon, its cities, and the Northwest region.

Ten known archaeological sites are located within the Alternative 2 study area. Five of these sites have been determined eligible for listing in the NRHP. Because field investigations were not conducted as part of this Tier 1 analysis, potential adverse impacts to archaeological sites would be determined during subsequent Tier 2 environmental studies.

## **Alternative 2 with Central Albany Option**

### ***Parks/Recreation Resources***

Potential impacts to parks and recreational resources under the Alternative 2 Central Albany Option would be the same as those described for Alternative 2, with the addition of potential impacts on one more Section 4(f) property: Maple Lawn Park.

#### **Maple Lawn Park**

Approximately 0.46 acre of the 2-acre Maple Lawn Park property is located within the study area for the Alternative 2 Central Albany Option. This part of the park contains the front lawn of Maple Park Preschool and a portion of the school's parking lot; no recreation amenities are located in the study area. This property is already adjacent to an active, double-tracked freight rail mainline and subject to noise, vibration and visual impacts and the OPR Project is not anticipated to substantially increase those impacts.

Therefore, ODOT and FRA do not anticipate adverse effects to the features, attributes, or activities qualifying the property for protection under Section 4(f).

### **Cultural Resources**

In addition to the NRHP-listed or NRHP-eligible properties within the study area of Alternative 2, one NRHP-listed historic district (the Hackleman Historic District, including a contributing building) and three additional NRHP-eligible historic (built) properties are located within the Alternative 2 Central Albany Option study area. Although no direct impacts on the Hackleman Historic District or the NRHP-eligible properties are anticipated, minor visual, noise, and vibration impacts could result in adverse effects. Further evaluation would be required during subsequent Tier 2 environmental studies to determine these impacts.

No additional known historic (archaeological) sites were identified for the Alternative 2 Central Albany Option segment. Because field investigations were not conducted as part of this Tier 1 analysis, potential adverse impacts to archaeological sites would be determined during subsequent Tier 2 environmental studies.

#### 4.6.5.2 Construction Impacts

Construction impacts under Alternative 1 would be less intensive, affect a smaller area, and would be shorter in duration than under Alternative 2. Because an existing railroad line does not exist adjacent to substantial portions of Alternative 2 and new passenger rail stations would be built, an increased level of construction would be necessary, along with a greater reliance on surface roads for delivery of equipment and materials compared to Alternative 1. Potential construction impacts of the build alternatives to Section 4(f) and Section 6(f) resources could include noise, vibration, and dust impacts to adjacent properties as well as minor delays to local traffic circulation. Construction impacts could also include unanticipated discovery of previously unknown historic (archaeological) sites, which would need to be evaluated for NRHP eligibility. Construction-related activities occurring close to any of the Section 4(f) and Section 6(f) resources described above could result in temporary occupancy of those resources. Further evaluation would be required during subsequent Tier 2 environmental studies to determine whether temporary occupancy would occur.

#### 4.6.6 Potential Mitigation

None of the build alternatives considered at this Tier 1 level of NEPA analysis, including the preliminary alternatives that were considered and dismissed, would avoid all Section 4(f) resources in the OPR Project study area. However, ODOT and FRA anticipate that: (1) the build alternatives studied in this EIS could avoid most of the identified potential Section 4(f) impacts, and (2) those Section 4(f) resources that cannot be completely avoided would likely meet the criteria for a Section 4(f) *de minimis* impact finding.

Subsequent project-level design efforts and Tier 2 environmental studies would more specifically identify OPR Project impacts to Section 4(f) and Section 6(f) resources, and could result in modifications to Tier 1 conceptual infrastructure design in order to avoid and/or minimize impacts to these resources. Any mitigation provided to compensate for Section 4(f) *de minimis* impacts would be determined in association with Tier 2 environmental studies. If a specific Tier 2 passenger rail project could not avoid LWCF lands, replacement property of at least equal fair market value and of reasonably equivalent location and usefulness could be required as mitigation.

## 4.12.6 Potential Mitigation

Tier 2 environmental studies would consider and implement project-specific mitigation strategies for biological resources, as appropriate. Mitigation measures for impacts to biological resources would follow a hierarchy of avoidance, minimization, and compensation for impacts. Future project-level mitigation measures could include, but would not be limited to, the following actions:

- Impacts to biological resources could be avoided or minimized during design by:
  - Locating new tracks, sidings, and other facilities away from known occurrences of listed species and critical habitats, and wetlands;
  - Minimizing rail alignment impact areas with retaining walls instead of fill placement (these walls would need to be designed to minimize barrier effects); and
  - Minimizing construction staging areas by utilizing the rail bed itself for staging.
- The project could maintain the preconstruction hydrologic regime of the area, creating replacement wildlife habitat and rehabilitating existing nearby habitat, and improving water quality.
- The project could mitigate for construction activities by revegetating disturbed areas.
- For wildlife crossings within wildlife linkage areas, careful design and placement of culverts and bridges could be incorporated to include wildlife passage features. Furthermore, rail bed embankments alongside other ROWs are potential ecological corridors that could be used for providing connectivity between habitats (English Nature, 2002). Existing rail corridor infrastructure that could be retrofitted to provide hydrological and ecological connectivity, i.e. using oversized bottomless culverts, underpasses, overpasses, or specific smaller structures allowing for connectivity and species passage may be used.
- Potential direct impacts on streams and aquatic habitat would be associated with work in the water for stream crossings; this includes pile driving, culvert installation, and placement of bridge-abutment footings. One potential strategy to avoid direct impacts to biological resources from this type of work would be to build crossings as full-span bridges; the engineering feasibility of this approach could be assessed in subsequent design efforts and Tier 2 environmental studies. Mitigation strategies for unavoidable in-water construction activities would include best management practices for erosion and sediment control, spill prevention and pollution control measures, and seasonal work restrictions.
- Best management practices for the protection of migratory birds are to avoid disturbance between February 1 and July 31, when birds are nesting and rearing their young. If disturbance is anticipated during those months, conduct activities to prevent nesting prior to February 1.

Most potential indirect impacts created by new rail stations would be associated with stormwater runoff from new pavement. These impacts could be mitigated by collecting and treating runoff for water quality using best management practices (such as bioswales and filters).

## 4.15.6 Potential Mitigation

Tier 2 environmental studies would consider and implement project-specific mitigation strategies with respect to water quality, surface water, and stormwater, as appropriate.

Wetland mitigation estimates for each build alternative are presented in **Table 4.15-5** below. The range of potential mitigation acreage for Alternative 1 is less than the potential needs for Alternative 2, including the Alternative 2 with Central Albany Option. Estimate assumptions are included in the notes following the table. As shown, there is roughly an order-of-magnitude difference between the low and high estimates for each build alternative. In part, this is because a large amount of hydric soil occurs within the study area, and there is a high degree of uncertainty as to whether these hydric soils areas contain wetlands. The range in estimates is also large because the type of mitigation is unknown. [The State of Oregon has finalized a new approach to compensatory mitigation, called the Aquatic Resources Mitigation Framework. This new approach to compensating for wetland and stream losses will be collaboratively implemented by the Oregon DSL, US Army Corps of Engineers-Portland District and the US EPA. Future projects requiring permits from the Oregon DSL or the Corps will be expected to conform to the state's new mitigation standards. Typically, based on historic Oregon DSL ratios,](#) mitigation in the form of restoration occurs at a 1:1 mitigation ratio; mitigation in the form of enhancement occurs at a 3:1 ratio (that is, 3 acres of mitigation for each acre of impact).

Table 4.15-5. Estimated Wetland Mitigation Acreage Requirements

Estimate	Alternative 1 (acres)	Alternative 2 (acres)	Alternative 2 with Central Albany Option (acres)
Low	16	72	73
Medium	118	329	346
High	219	585	618

Notes:

- Low estimate is based on a 1:1 mitigation ratio for 50 percent of potential direct impacts to areas mapped as wetland. This estimate assumes that direct impacts have been overestimated, because the analysis uses a 200-foot-wide direct impact study area (that is, the actual impact area would be considerably less).
- Medium estimate is an average of the low and high estimates.
- High estimate is based on a 3:1 mitigation ratio for 50 percent of potential direct impacts to areas mapped as wetland and 15 percent of areas in the direct impact area mapped as hydric soils but not wetland. [Ratios could be higher depending on requirements under the Aquatic Resources Mitigation Framework established in 2019.](#)

As described in more detail below, the mitigation strategy for direct impacts could be based on the following three strategies:

1. Using wetland mitigation banks
2. Establishing project-specific wetland mitigation sites
3. Combining Strategies 1 and 2

### Wetland Mitigation Banks

Wetland mitigation banks within the Willamette Valley could potentially be used to offset impacts from the OPR Project. Mitigation banks contain a set number of credits and cover a set service area. As of May 2017, thirteen wetland mitigation banks were present along the project study area (DSL, 2017). The combined service areas of these banks cover the entire geographic extent of the project build alternatives with the exception of the Portland area along the Willamette River north of the confluence with the Clackamas River. Availability of existing banks would need to be assessed at the time of Tier 2 project-specific design, environmental analysis and implementation to determine if the desired amount of credits to cover the service areas are available. However, new mitigation banks might be available in the future.

### **Project-Specific Mitigation**

Project-specific mitigation could occur through strategic acquisition of property within the Willamette Valley where wetland restoration, creation, or enhancement could occur. Converting agricultural lands with installed drainage systems to native wetland habitats would likely be the most viable opportunity (for example, breaking up drain tiles, filling drainage ditches). It would be desirable for wetland mitigation to occur in coordination with other potential natural resource mitigation requirements for the project and in line with the OCS. Such mitigation could include listed species habitat enhancement within mitigation wetlands, restoration of native wet prairie habitats, and other measures.

### **Combining Wetland Mitigation Banks and Project-Specific Mitigation**

It is likely that any build alternative would be implemented incrementally, and this should be factored into the overall mitigation strategy, whether using mitigation banks, project-specific mitigation, or a combination of the two. Ultimately, the preferred solution for mitigation could be a combination of using wetland mitigation banks and project-specific mitigation.

## 4.18 Cumulative Impacts

This section presents an evaluation of the potential cumulative impacts of implementing the OPR Project in combination with other past, present, and reasonably foreseeable future actions that could result in environmental impacts.

### 4.18.1 Legal Requirements

The CEQ's NEPA implementing regulations (40 CFR Parts 1508.7 and 1508.25(a)(2) and (c)) require proposed major Federal actions to consider potential cumulative impacts associated with the range of alternatives. The CEQ NEPA regulations define cumulative impact as "the impact on the environment which results from the incremental impact of the action when added to the past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes the action. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." (40 CFR 1508.7). In addition, Section 14(n) of FRA's environmental procedures (64 FR 28545) advises that EIS analyses should consider potentially significant cumulative impacts resulting from the proposed FRA action.

### 4.18.2 Methods

This qualitative evaluation was performed to assess the potential cumulative impacts that could be associated with the construction and operation of the OPR Project. To be commensurate with the service level of detail associated with this Tier 1 EIS, consideration of past, present, and reasonably foreseeable future actions generally considers broader categories of actions and regional-level projects rather than local, site-specific projects.

Information from multiple sources were reviewed to identify applicable past, present, and reasonably foreseeable future actions that could contribute potential cumulative effects to the built and natural environment along with the OPR Project. These sources included technical documents prepared for the OPR Project and other referenced sources in this Tier 1 DEIS, state, regional, and local long-range land use and transportation plans, and state transportation improvement plans.

#### **Tier 2 Analysis**

Future Tier 2 environmental studies for individual rail improvement projects proposed subsequent to this Tier 1 service level analysis could include additional analyses regarding potential cumulative impacts.

### 4.18.3 Study Area

For this evaluation, the cumulative impacts study area is broadly defined as the Willamette Valley between the Eugene-Springfield and Portland metropolitan areas. The study area includes highly developed urban areas, cities, areas outside of urban growth boundaries, low-density suburbs, rural areas, and land that is primarily agricultural.

#### 4.18.4 Past, Present, and Reasonably Foreseeable Future Actions

Development of transportation networks, along with population growth, land use changes, and urban development have resulted in cumulative environmental impacts over time within the study area. The following two sections summarize past actions, and present and reasonably foreseeable future actions that serve as the primary context for the OPR Project cumulative impacts evaluation.

##### **Past Actions**

Numerous bands of indigenous Chinook and Kalapuyans occupied the western part of Oregon including the study area from the late Pleistocene epoch, circa 11,000 years ago, up to the time of Euroamerican contact in the early 1800s. While Native Americans occupied and traveled through the study area for thousands of years, those activities had a relatively minor effect on current conditions.

Based on the historic record of European-American settlement that shaped the built environment in the study area, the past time frame begins in the early 1800's with the settlement of populated communities and establishment of major transportation routes that linked communities and developed into the primary north-south "spine" that evolved from Native American paths along the Siskiyou Trail that connected Pacific Northwest tribes to California's Central Valley, and became more developed over the decades for movement of people and goods by wagon, stagecoach, ferry, automobile, bus, truck, and train through the study area.

The Lewis and Clark Expedition, which lasted from 1804 to 1806, radically increased the nation's sense of accessible geography and initiated the rapid Euroamerican migration and settlement of the Pacific Northwest by explorers, trappers, traders, hunters, prospectors, homesteaders, ranchers, businessmen, and missionaries. Through the early portion of the nineteenth century, fur trappers, including those operating out of the Hudson's Bay Company in Fort Vancouver, adopted the Siskiyou Trail as a major trade corridor between the Northern Oregon Territory and California, and established settlements that developed into the communities and cities through the study area.

In 1843, the Willamette Valley settlers drafted a constitution that organized the land claim process in the territory. The Donation Land Claim Act of 1850 granted 320 acres (half a section) of land to single adult white males and 640 acres (a section) of land to married couples at no cost to encourage settlement (City of Albany, 2014). This free land opportunity gave many people from east of Oregon motivation to settle there. From 1842 to 1852, approximately 18,000 emigrants, including many who started at Independence, Missouri, traveled west over the Oregon Trail and other routes to Oregon (ODOT, 2017).

In 1851, the Oregon house passed created the Territorial Road Act. The first Federal aid came in 1856. By the coming of statehood, about 100 roads, each separately authorized, had been established in Territorial Oregon. In the Willamette Valley, then two-thirds of settled Oregon, Territorial Roads had been established to the California border, Puget Sound, The Dalles, and the mouth of the Columbia River. Some of these routes were only partly finished and some were only mapped. Territorial roads, state roads, and county roads established by the Oregon Territorial Legislature or by County Commissioners were declared legal roads by the State of Oregon when Oregon entered the Union on February 14, 1859. Immigration over these trails and roads continued through the Civil War, but declined after the (east-west) transcontinental railroad was completed in 1869.

In the late 1800s, many short line stage coaches operated in Oregon. The first continuous line between Portland and Sacramento, California began in 1860 when previously built roads, including one that extended south of Portland through the Willamette Valley, were connected. This line made travel between Portland and Sacramento using one stagecoach company. The trip covered 700 miles and took seven days - the second longest continuous stage route in the United States at the time. The California Stage Company operated this line until 1865. Other shorter stagecoach lines continued to operate between Oregon and California until 1887, when the railroad was completed. (ODOT, 2017).

Railroads were key to developing the agricultural and natural resources of the Willamette Valley and Portland Basin. On July 25, 1866, Congress agreed to award 20 640-acre section segments of public land for each completed mile of construction for a railroad project that would connect northern California and Portland, Oregon (Walker, 2011). The law provided for the California and Oregon land grants to be conveyed to the California & Oregon Railroad Company of California and to a company to be designated by the Oregon Legislature to build the railroad line. The California & Oregon Railroad Company incorporated June 30, 1865, to build north from California. Two competing companies incorporated in Oregon, one in 1866 and the other in 1867, both called the Oregon Central Railroad. The older company proposed building a line west of the Willamette River while the newer company planned to build east of the river. Both railroads broke ground in April 1868, the eastsiders one day after their westside competitors. By Christmas day 1869 the eastsiders had completed 20 miles of line, a requirement to secure their land grant, but they were in financial difficulty. A new corporation, the Oregon and California Railroad Company, was created in March 1870 to acquire the eastside Oregon Central and continue building south, reaching Eugene in October of 1871. Meanwhile, the westside Oregon Central built a line from Portland to St. Joseph between 1868 and 1872. In January 1879 the line was leased to the Western Oregon Railroad Company which promptly extended the line from St. Joseph to Corvallis before both companies were acquired by the Oregon and California on October 9, 1880. One was on the east side of the Willamette River and the other was on the west side. The Oregon Central Railroad – East Side Company broke ground in East Portland on April 16, 1868. In 1870, the Oregon Central Railroad – West Side Company sold out to the East Side Company, which then reorganized as the Oregon and California Railroad (O&C; Heath, 1944).

The O&C was continued to pursue forging the first to establish a rail link between Portland and California and trains from the north began running to Ashland in May 1884. But by then the company had depleted its financial resources and was placed into the hands of a receiver. Operations continued under the receiver until July 1887 when the O&C was leased to Southern Pacific. In California, northward construction had reached Redding in 1872 where it paused for 11 years. SP's takeover of the O&C sparked new interest in completing the line and with the backing of the Central Pacific Railway construction of the California segment moved ahead rapidly, crossing the state line into Oregon in June of 1887 and reaching Siskiyou, the summit of the Siskiyou Mountains, in October. Heavy rains during November and December caused slides and hampered track construction, causing a planned final spike-driving celebration to be postponed twice. Late in the day of December 15, 1887, a final spike ceremony was held at the south end of Ashland rail yard and a through railroad between California and the Pacific Northwest became a reality. In 1927 the O&C was acquired by SP and the O&C identity dissolved. from north to south throughout the Willamette Valley replacing steamboats. Construction began in Portland in 1868, and by 1872, the O&C line had been extended to Roseburg in the southern Willamette Valley. The O&C reached the California border in late 1887. Passenger rail service began in 1887 as the Oregon Express (northbound) and the California Express (southbound). In that same year, the Southern Pacific Railroad (SP) gained control of the O&C and, in 1927, purchased it outright (Ganoe, 1924; Ellis, 1948). In 1912, the Oregon Electric Railway operated managed 122 miles of electrified track that connected Portland and Eugene and ran nearly parallel to the O&C mainline (Beckham, 2014). A rail bridge over the Columbia River, completed in 1909, replaced allowed a train ferry that began operating in 1884, facilitating increased freight and passenger transport and enhancing increased the viability of the Ports of Portland and Vancouver for interstate trade. Industrialized farming, irrigation and water impoundment, and grain shipping increased.

Highway construction starting in the 1920s, including Highway 99E that runs from Eugene to Portland, and the rapid rise of the automobile during the early 20th century led to the decline of the region's reliance on the O&C mainline and interurban electric railway passenger services. The Federal-Aid Highway Act provided the funds to construct I-5, which runs north-south through the Willamette Valley and was completed in 1966. Later, other highways were built to provide connections to the interstate, including I-205 which runs north-south from Tualatin, OR, to Vancouver, WA (constructed between 1968 and 1983).

In 1969, the Oregon Legislature enabled the creation of transit districts and authorized them to raise revenue through a payroll tax. This legislation led to development and growth of regional transit districts and bus service providers of various scales in and between cities throughout the study area.

A joint partnership by the Northern Pacific, Great Northern, and Union Pacific railroads operated the predecessor of the Cascades passenger train route until the mid-1960's. Amtrak took over intercity passenger rail operations from private railroads on May 1, 1971. Initial service consisted of three Seattle-Portland round trips. In 1975, the Oregon Legislature approved the first Willamette Valley Passenger Rail Study, and in 1980, Oregon conducted an 18-month-long Willamette Valley Passenger Rail demonstration project. In 1992, the FRA designated Eugene, Oregon to Vancouver, British Columbia, as one of 10 ten nationwide "High-Speed Rail" corridors. In that same year, Oregon completed the Oregon Rail Passenger Policy and Plan, as the legislature required.

### **Present and Reasonably Foreseeable Future Actions**

Current conditions for land use and urbanization were largely established beginning in the 1970s with enactment and implementation of Oregon's State Land Use Law, including the comprehensive State Goals that protect farm, forest and other resource lands, and establish rules guiding the planning and development of urban and urbanizing land within designated Urban Growth Boundary (UGB) areas. The UGB separates urban land uses from rural land uses with the intent of protecting farm and forest lands, while making sure that there is adequate space to meet the needs of growing urban areas. Every city in Oregon must have a UGB that must contain enough land for housing, employment, parks and schools for the next 20 years of population growth.

Population growth within the study area and the associated demand for housing, employment, and services has led to UGB expansions in the study area in the past 20-30 years. The UGB expansions have narrowed the distances between urban and urbanizing communities in the study area, thus increasing the likelihood of more continuous urban development along the existing rail and road alignments once build-out occurs. Within the study area, the cities of Eugene and Springfield have shared a UGB since 1982, and Eugene is scheduled to adopt a city-specific UGB in 2017 that includes some expansion areas for employment, parks and schools at the northern edges of the city.

Present transportation conditions in the study area were largely established through completion of the national Interstate System, including I-5, I-105, I-205, and I-405 in the 1980s, and establishment of Amtrak intercity passenger rail service, particularly the Oregon portion of the Amtrak Cascades route that started service in 1994 to Eugene-Albany-Salem-Oregon City-Portland, with a second round trip train added in 2000.

In addition to Amtrak passenger rail service, multiple intercity bus lines provide connections to urban areas across the state. Some of the bus lines are contracted and subsidized by the state, while others are privately operated.

Since 1994, ODOT has invested in intercity bus services, and Amtrak manages the Thruway intercity bus service that operates on highways parallel to the Amtrak Cascades passenger rail route, with six daily round trips between Eugene and Portland and intermediate stops in Albany, Salem, and Woodburn, and Oregon City.

Greyhound intercity buses are scheduled for four daily round trips between Eugene and Portland, with intermediate stops in Corvallis, Salem, and Woodburn.

BoltBus, a Greyhound subsidiary, operates two to three round trips a day between Eugene and Portland four days a week (travel days between Thursday and Monday), with one intermediate stop in Albany.

Since 2011, the North by Northwest CONNECTOR system has provided coordinated transit service across five counties in northwestern Oregon: Lincoln, Columbia, Tillamook, Benton and Clatsop, and provides intercity transit connections between communities in neighboring counties.

The Linn-Benton Loop Bus links the Cities of Albany and Corvallis.

Urban transit systems that operate within the study area include:

- The Lane Transit District (LTD), in Eugene-Springfield,
- the City of Albany’s Albany Transit System,
- the Salem-Keizer Transit “Cherriots”,
- the City of Wilsonville’s South Metro Area Regional Transit (SMART),
- the Portland metropolitan area’s Tri-County Metropolitan District of Oregon (Tri-Met), and
- the Clark County Public Transit Benefit Area Authority (C-Tran) that serves the greater Vancouver, Washington area and also connects into Portland.

Each of these urban transit providers listed above operate traditional bus service. In addition, as described below, LTD operates a Bus Rapid Transit (BRT) service and Tri-Met operates Light Rail Transit (LRT) and commuter rail services.

LTD began service in 1970, and it has expanded to serve the growing Eugene-Springfield area with a bus transit system centered on an east-west BRT line branded as the Emerald Express (EmX) service that started in 2007.

TriMet, in operation since 1969, serves a tri-county district that includes major portions of Multnomah, Washington, and Clackamas counties with an extensive bus system, plus multiple “MAX” LRT routes, and contracts with PNWR to operate the Westside Express Service (WES) commuter rail line that serves Beaverton-Tigard-Tualatin-Wilsonville. Beginning in 1986 with the opening of the “Banfield” Blue Line between Portland and Gresham, TriMet's light rail and commuter rail lines have evolved over the past 30 years. The Tri-Met MAX LRT consists of the following routes:

- Blue Line: Hillsboro – Beaverton – City Center – Gresham
- Green Line: Portland State University – City Center – Clackamas
- Orange Line: Union Station – City Center – Milwaukie
- Red Line: Beaverton – City Center – Portland International Airport
- Yellow Line: Expo Center – City Center – Portland State University

The foreseeable future for this cumulative impacts evaluation extends from the present time to 2035, which was the year that ODOT and FRA identified as the 20-year planning horizon for the OPR EIS. 2035 is also the planning horizon year used in most relevant and adopted county and metropolitan planning organization (MPO) planning documents when preparation of this Tier 1 EIS commenced. The context for the cumulative analyses is primarily based upon the population growth, and land use and transportation infrastructure development that has occurred within the OPR Project study area through the present time, and which is forecast to occur based on regional and local adopted comprehensive plans.

The No Action Alternative includes a list of committed and funded transportation projects (Section 3.1.5) that are including in the State of Oregon’s adopted 2015-2018 Statewide Transportation Improvement Program (STIP). Reasonable and foreseeable future actions include these projects, and may also include other projects that are listed in adopted metropolitan areas’ comprehensive plans and transportation system plans.

While not funded at this time, four planned freeway capacity and safety enhancement projects are likely to be completed by 2035. These include projects to add a vehicle lane in each direction and reconstruct interchanges along sections of I-5 in the Albany-Millersburg and Salem-Keizer areas, and on a section of

I-205 south of Oregon City. Also included is a project to reconstruct the I-5 interchange in the Donald-Aurora area north of Woodburn.

LTD plans to expand their EmX BRT or enhanced bus service with five potential extensions currently in the planning process. These extensions would radiate outward from downtown Eugene to the north, south, northeast, and southeast.

Metro and Tri-Met are planning to expand the MAX LRT system with a new Southwest Corridor route from downtown Portland through Tigard to Tualatin. [This project is included in the fiscally-constrained RTP and a FEIS and ROD are anticipated in 2021.](#)

The Port of Portland plans to upgrade the UPRR (east-west) Kenton Rail Line to add a second mainline track from Peninsula Junction to I-205 and increase track speeds between North Portland, Peninsula Junction, and Reynolds on this mainline track. The Port of Portland also plans the following port terminal projects:

- At Terminal 5, construct fourth rail loop, improvements on south side of roadway, and rail crossing improvements
- Grade separate Rivergate Lead at Rivergate Boulevard
- Construct a rail overcrossing on Marine Drive

As noted in Section 3.2.1.4, “Additional Projects,” three projects in Oregon are being developed under separate NEPA analyses. These projects are illustrated on Figure 3-1 and summarized below:

- Willbridge Crossovers: The project will replace the two main line crossovers with larger turnouts to reduce freight train congestion and allow passenger trains to cross over at a higher speed. Trains using the Willbridge Crossovers will be able to travel at speeds up to 40 miles per hour (mph), faster than the existing 10 mph for passenger trains.
- North Portland/Peninsula Junction: The project involves realignment of track predominantly within existing rail right-of-way (ROW) and on an active rail line. The Project proposes to upgrade the existing restrictive turnouts with larger turnouts and broaden the curves to allow trains to travel at increased speeds in this section of the railway (25 mph instead of the existing 10 mph).
- Eugene Stub Tracks: Provides additional storage track with provisions for standby electric power service at Eugene Station to allow the overnighting of Amtrak trains.

Each of these projects has independent utility and separate NEPA clearance documentation. Generally, the projects have minimal environmental impacts, because they are all minor improvements to existing rail infrastructure. Brief summaries of the associated environmental impacts follow.

- Willbridge Crossovers: All construction will occur within existing railroad ROW. There are no buildings, structures, parks, wetlands, or known cultural resources in the project area. The potential for encountering contaminated soils is low, because minimal excavations are planned for the project (no extensive and deep excavations that extend into native soils and/or below the groundwater table), and because there are no known hazardous materials sites within the project area. Appropriate local, state and Federal permits will be obtained prior to construction.
- North Portland/Peninsula Junction: The project would require the acquisition of approximately 0.10 acre of public ROW and would result in a wetland impact of approximately 0.27 acre due to placement of fill and construction of a retaining wall. The potential for encountering contaminated soils is low, because minimal excavations are planned for the project (no extensive and deep excavations that extend into native soils and/or below the groundwater table), and because there are no known hazardous materials sites within the project area. Appropriate local, state and Federal permits will be obtained prior to construction. The wetland impact will need to be mitigated, either on-site or via

payment in lieu of replacement mitigation. ODOT has not yet determined the approach to mitigation, but will finalize an approach prior to construction.

- Eugene Stub Tracks: The project would close Lincoln Street in Eugene to facilitate crossover track, require acquisition of approximately 0.68 acres of private ROW, and result in some noise increase to receptors in the station area (due to start-up activities occurring at station instead of in rail yard). No impacts to buried archaeological resources are anticipated. A Phase II environmental site assessment is recommended during final design due to the potential for encountering hazardous materials during construction. Appropriate local, state and Federal permits will be obtained prior to construction.

## 4.18.5 Environmental Consequences

While the context of the OPR Project cumulative effects analysis is transportation-oriented, the past and anticipated future actions have a cumulative effect on most aspects of the natural, built, and socioeconomic environments. This cumulative effects analysis evaluates those resources that would experience potential effects from the build alternatives, and are presented in the same order in this analysis as they are previously in Chapter 4. In general, cumulative effects are linked to population growth, planned land development, and transportation system development including roadway and rail projects. For multiple resources, cumulative effects are most likely to occur in areas where these conditions intersect with a build alternative with a new alignment outside of existing transportation corridors.

### 4.18.5.1 Impacts of No Action Alternative

Under the No Action Alternative, the OPR Project would not be built, and therefore cumulative impacts are not anticipated beyond those that could occur because of other public and private projects. The No Action Alternative would not provide the same level of intercity passenger rail service as the build alternatives, and would not result in transportation-related benefits in the study area between Eugene-Springfield and Portland that the build alternatives would provide. Without the increased capacity that the additional passenger rail service would provide under the build alternatives, a substantial portion of people who could use passenger rail would instead travel by using personal vehicles, private buses, airplanes, and Amtrak Thruway buses under the No Action Alternative. Each of these modes contribute to higher amounts of air pollution, GHG emissions, and energy use per capita when compared to intercity passenger rail travel within and through the OPR Project study area.

### 4.18.5.2 Impacts of Alternative 1 and Alternative 2

Due to the scale of analysis conducted for this Tier 1 EIS, unless otherwise noted, the potential cumulative impacts would be common to both Alternative 1 and Alternative 2, including the Alternative 2 with Central Albany Option.

Alternative 1 would be expected to contribute less to cumulative effects than Alternative 2, because the entire Alternative 1 route would remain within or immediately adjacent to an existing railroad alignment, predominantly using existing railroad tracks and portions of existing infrastructure. Alternative 2, with higher speed rail service on sections of new “greenfield” ROW and track would contribute more to cumulative effects because it would include construction of new facilities including stations, grade separations, and roadway modifications, and would be constructed in new alignments outside of existing transportation corridors.

The majority of impacts for both OPR Project build alternatives would be within or adjacent to existing transportation ROWs and in previously disturbed areas. Alternative 1 would utilize existing track, and improvements would be made within or adjacent to the existing Amtrak route on the UPRR alignment. Alternative 2, including Alternative 2 with Central Albany Option, would have a greater potential for cumulative impacts because of its new rail route. However, because much of the Alternative 2 alignment would be adjacent to existing transportation infrastructure, the potential for cumulative impacts would, in effect, be minimized. The Alternative 2 alignment would be constructed adjacent to the existing I-5 and

I-205 freeways and adjacent to the existing PNWR line between Keizer and Wilsonville. North of Oregon City, improvements would be made to the existing UPRR alignment. Both build alternatives would also increase Amtrak Cascades passenger rail service from two to six daily round trips between Eugene and Portland.

Specific cumulative impacts, and therefore mitigation strategies to address the cumulative impacts, are not discernable at the level of analysis conducted for this Tier 1 EIS. Specific mitigation strategies would be considered during Tier 2 environmental studies.

The following subsections summarize the OPR Project's potential cumulative impacts to each of the discipline and resource elements addressed in this Tier 1 EIS.

### **Transportation**

Both OPR Project build alternatives would increase passenger rail services and reliability, and therefore some intercity trips would be expected to shift from other transportation modes to passenger rail. While this mode shift could slightly reduce congestion on study area roads and highways, such reductions would not be sufficient to accommodate all the estimated future intercity travel demands in the study area.

Table 3-3 in Chapter 3, Section 3.1.5 of this DEIS, as well as the Reasonably Foreseeable Actions narrative above, identify other transportation-related actions proposed for implementation within the study area over the next 20 years. These proposed projects and programs, when combined with the OPR Project, are likely to have a greater influence on the intercity movement of people and goods than the OPR Project could achieve on its own. Collectively, these transportation projects and programs are anticipated to result in cumulatively beneficial effects to intercity travel as a result of increased transportation options and capacity, strengthened transportation network resiliency, and improvements to transit services within the study area.

Near existing and proposed new stations, both build alternatives could result in increased vehicular and pedestrian traffic, which could contribute to local cumulative traffic impacts.

### **Land Use/Farmland**

Past private and public actions have shaped where development has occurred in the study area and resulted in the conversion of undeveloped areas to urban uses. Since 1973, Oregon State Land Use Goal 3 has protected agricultural lands outside of UGBs by limiting what types of uses (non-farm uses) can occur on agricultural lands. However, the construction of reasonable build design alternatives for railroad mainline and branch lines on EFU-zoned land is an allowable transportation improvement consistent with Goal 3.

Where Alternatives 1 and 2 would be constructed within or adjacent to existing transportation ROWs, minimal adverse cumulative land use impacts are anticipated. OPR Project improvements constructed outside of existing transportation ROWs could result in cumulative impacts due to the bisection and/or isolation of farmlands. Proposed improvements outside existing ROW include most of Alternative 2 between Springfield and Salem.

### **Social/Environmental Justice**

This Tier 1 EIS analysis does not include any quantitative analysis to determine whether any of the alternatives result in adverse impacts that are potentially disproportionately high and adverse to EJ populations. Alternative 1 improvements would be built within or adjacent to existing transportation ROWs and would use existing stations; therefore, no adverse cumulative impacts to social resources or EJ populations is anticipated. Because Alternative 2 would involve the construction of up to four new stations and some new railroad track outside of existing transportation ROWs, it has a relatively greater potential than Alternative 1 to adversely impact local social resources and EJ populations. However, on the whole, the majority of potential cumulative impacts to social resources and EJ populations would be considered to be beneficial rather than adverse for both build alternatives

## **Economics**

Historic population growth, along with the development of cities and economic activity areas, have established Class 1 railroads, interstates, and other major roads and transit systems as critical components of the Pacific Northwest region and the state of Oregon's economy. Potential cumulative effects on economic conditions would be expected to correspond to reasonably foreseeable land use development associated with the OPR Project. If a build alternative is not constructed, economic development planned for the study area could occur more slowly as development and activity near existing stations and proposed new stations would follow current trends associated with existing intercity passenger rail service between Eugene and Portland, along with planned development and transportation projects in the communities where stations are located. Construction of either OPR Project build alternative, in combination with other future actions, is anticipated to result in economic growth through construction jobs and increased economic activities associated with improved passenger rail service.

### **Section 4(f) and Section 6(f) Resources**

Section 4(f) of the USDOT Act of 1966 helps to minimize the adverse effects of transportation projects on resource lands and amenities, including impacts such as disruptions to access, and quality of the resources and their users' experiences from transportation projects. This protection reduces the potential for cumulative effects on public parks, recreation areas, wildlife and waterfowl refuges, and historic sites. Similarly, Section 6(f) protects parks and recreational areas acquired or developed with Land and Water Conservation Fund grants from conversion to non-recreational uses.

Because most new railroad track for both build alternatives would be built within or adjacent to existing transportation ROWs, construction of new railroad track is not expected to adversely impact the features, attributes, or activities that qualify the resources for Section 4(f) protection. However, it is possible that Alternative 2 could contribute to cumulative Section 4(f) impacts through demolition of existing historic structures on or adjacent to sites of potential new stations. Because Section 6(f) requires replacement lands to be provided as mitigation for conversion of protected parks and recreational areas, neither build alternative would contribute to cumulative Section 6(f) impacts.

### **Visual Resources**

Intrusions from existing and planned transportation infrastructure can gradually erode the views of distant mountain ranges, local topography, surface water, native prairies, and other notable features across the landscape. The OPR Project would be within or adjacent to developed transportation ROWs and in areas with occasional elevated structures and bridges. Alternative 1 is not anticipated to result in adverse cumulative impacts to visual resources because most of the proposed new track would be at-grade and the existing passenger rail stations would continue to be used.

Alternative 2, however, has the potential to result in adverse cumulative visual impacts. This alternative would require extensive new rail and supporting infrastructure parallel to large portions of I-5 and I-205, including new elevated bridge and viaduct structures, retaining walls, and reconstructed interchanges that would affect the visual setting beyond the extent of reasonably foreseeable actions in the study area. New stations associated with Alternative 2 and associated development that would potentially occur around them could dramatically alter the visual character of the affected areas.

### **Noise and Vibration**

Because the OPR Project would be operated within or adjacent to existing transportation ROWs and mitigation would be required for noise and vibration impacts that exceed Federal standards, no adverse cumulative noise impacts are anticipated.

### **Hazardous Materials**

Any hazardous material contamination sites that could be affected by infrastructure construction, including currently unknown sites discovered during construction, would be addressed and potentially remediated

during Tier 2 of the OPR Project. Such remediation would have a beneficial cumulative effect by reducing local hazardous material contamination.

### **Cultural Resources**

Land-disturbing actions have the potential to adversely affect archaeological sites and historic (built) properties, which could contribute to a cumulative loss of cultural resources. In particular, private developments on lands where cultural resources are relatively unprotected pose the greatest threat to these resources. Federally funded actions such as the OPR Project are subject to Section 106 of the NHPA and Section 4(f) of the 1966 DOT Act, and thus potentially affected cultural resources would be subject to avoidance, minimization of harm, data collection or other mitigation strategies. It is therefore unlikely that Alternative 1 would contribute to adverse cumulative impacts to cultural resources. However, Alternative 2 could contribute to adverse cumulative impacts to the existing NRHP-listed and NRHP-eligible historic (built) stations by removing these stations for passenger rail use.

### **Geology and Soils**

Past and existing development has altered geologic and soil conditions within the OPR Project study area, especially in the urbanized areas. Alternative 1 would be constructed primarily within an existing railroad ROW and along relatively flat terrain; therefore, minimal cumulative impacts related to geology and soils are anticipated. Alternative 2 would be subject to greater geologic risks to new infrastructure because this it would include the construction of new bridges, elevated viaducts, cuts and fills through the hills south of Salem, and a cut-and-cover tunnel in Portland. However, this type of transportation project must be constructed to meet Federal, state, and local requirements regarding geologic and soil hazards. Therefore, adverse cumulative impacts concerning geology and soils are not anticipated.

### **Biological Resources**

The cumulative effects of past human activities including deforestation, agriculture, over-fishing, urbanization and associated infrastructure, and hydroelectric, irrigation and flood control projects have contributed to substantial loss of biological habitat and a dramatic reduction in fish and wildlife throughout the Pacific Northwest, including the OPR study area. Land development, plus construction of roads, railroads, and highways have resulted in significant habitat destruction, changes in natural hydrologic flow patterns, and degradation of water, soil, vegetation, and air quality. Since the introduction of natural resources protection legislation in the 1960's, Federal, state, and local agencies have implemented conservation and protection measures to reduce further loss of critical habitat through requirements to avoid and minimize impacts, and to mitigate for unavoidable impacts to habitats and the species that depend upon them to survive.

Current Federal and state permit requirements are protective of biological resources through enforcement of standards for stormwater treatment and site development. While reasonably foreseeable future actions could result in unavoidable adverse impacts to biological habitats and species, they could also provide some beneficial effects through required mitigation. Alternative 2 would have the potential for greater cumulative biological resources impacts than Alternative 1, because its alignment would include at least six new river crossings, and it would convert more undeveloped land to new railroad infrastructure. Alternative 2 would also result in development of up to four new station areas (Alternative 2 with Central Albany Option would require three new station areas), with additional development in the vicinity of the new stations that could result in even greater potential impacts to biological resources.

### **Floodplains/Waterways**

Past construction of transportation facilities within the central Willamette Valley has adversely affected floodplains and waterways within the OPR Project study area. These previous cumulative effects include, but are not limited to, floodplain encroachment, flood control systems, and realignment of waterways. Both build alternatives could result in further cumulative impacts to floodplains and waterways where new

OPR Project infrastructure and other proposed developments are constructed. However, EO 11988 requires Federal actions to avoid and minimize floodplain impacts unless there is a practicable alternative. Alternative 2 would have the potential for greater cumulative floodplain and waterway impacts than Alternative 1, because its alignment would include at least six new river crossings.

### **Water Quality/Stormwater**

Construction of the OPR Project, in conjunction with other proposed transportation projects, would not likely contribute to additional long-term cumulative impacts on water quality, because construction best management practices (required by the Clean Water Act) would be followed, and additional stormwater facilities would be constructed, as appropriate. Operation of the OPR Project is not anticipated to result in adverse cumulative impacts to water quality, and could actually result in beneficial improvements within the study area due to enhanced stormwater runoff control and current water quality treatment standards.

### **Wetlands**

Past actions and developments have resulted in cumulative impacts to wetlands in the central Willamette Valley, including draining and conversion to farmland as well as other land uses. Early settlers drained the Willamette River floodplain wetlands for agriculture, and flood control modifications (including those to protect urban areas) have fundamentally altered the natural hydrologic dynamics of the river system and floodplain wetlands. Section 404 of the Clean Water Act requires that potential harm to wetlands be avoided and/or minimized, which reduces the potential for cumulative impacts to wetlands. Alternative 1 would be constructed within or adjacent to existing railroad ROW and thus would result in minimal cumulative impacts to wetlands. Due to its scope and the location of proposed new infrastructure, Alternative 2 poses a greater potential for further adverse cumulative impacts to wetlands than Alternative 1.

### **Air Quality**

Construction of the OPR Project would have negligible air quality impacts due to best management practices that would be employed to minimize adverse impacts (e.g., emissions from heavy equipment and fugitive dust). In general, pollution emissions from road vehicles are trending downward as a result of more stringent air quality regulations and increasing use of electric, hybrid-fuel/electric, and other lower emissions vehicles at a national scale. Compared to gasoline and diesel road vehicles, passenger trains emit less air pollution per capita. Based on the combination of adding passenger rail service and current ridership projections that would shift some trips from road vehicles to rail, it is expected that implementation and operation of the OPR Project would result in slightly lower regional air emissions than the No Action Alternative, though the cumulative effect on air quality would not likely be discernable.

### **Energy/Climate Change**

Construction of the OPR Project would cumulatively contribute to the consumption of non-renewable energy and the release of GHG emissions during construction. Because operation of the OPR Project would result increased passenger rail ridership (versus other travel modes with greater fuel consumption per passenger), the OPR Project would in effect create a long-term net energy benefit and reduced GHG emissions compared to the No Action Alternative. However, the combined energy consumption and GHG emission contributions of other future transportation projects would likely offset the beneficial cumulative effects attributable to the OPR Project.

The OPR Project could be vulnerable to future effects related to climate change based on projections of increased storm intensity and duration, increased flood risks, and increased risk of landslides. FRA and ODOT acknowledge that the future climate change effects could alter the function, sizing, and operations of proposed OPR Project infrastructure. For the proposed facilities to function as intended for their planned lifespans, ODOT would design the proposed facilities to perform under the variable conditions expected as a result of climate change. For example, drainage culverts might need to be sized larger than warranted by

existing conditions to accommodate more intense rainfall events and increased seasonal flows of surface water. Subsequent Tier 2 environmental studies would consider and implement climate change adaptation strategies, as appropriate.