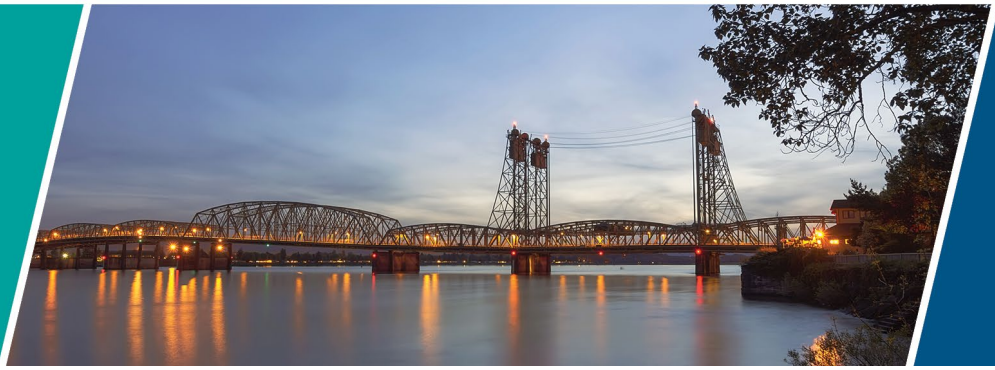
Interstate BRIDGE Replacement Program

Considering the importance of our natural environment



Parks and Recreation Technical Report

September 2024

OREGON

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Parks and Recreation Technical Report

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ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Definition
ADA	Americans with Disabilities Act
BRT	bus rapid transit
CRC	Columbia River Crossing
CTR	Commute Trip Reduction
C-TRAN	Clark County Public Transit Benefit Area Authority
FEIS	Final Environmental Impact Statement
FHWA	Federal Highway Administration
FLP Program	Federal Lands to Parks Program
FSCR	Flood Safe Columbia River
HBC	Hudson Bay Company
I-5	Interstate 5
IBR	Interstate Bridge Replacement
LCRWT	Lower Columbia River Water Trail
LOS	Level of Service
LPA	Locally Preferred Alternative
LRT	light-rail transit
LRV	light-rail vehicle
LWCF	Land and Water Conservation Fund
MAX	Metropolitan Area Express
NAVD 88	North American Vertical Datum of 1988
NEPA	National Environmental Policy Act
NHS	National Historic Site
NPS	National Park Service

Acronym/Abbreviation	Definition
ODOT	Oregon Department of Transportation
OPRD	Oregon Parks and Recreation Department
OTC	Oregon Transportation Commission
PCC	Portland City Code
PMLS	Portland Metro Levee System
PNCD	Preliminary Navigation Clearance Determination
PP&R	Portland Parks & Recreation
ROD	Record of Decision
SEIS	Supplemental Environmental Impact Statement
SOV	single-occupancy vehicle
SR	State Route
TriMet	Tri-County Metropolitan Transportation District of Oregon
UFSWQD	Urban Flood Safety and Water Quality District
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USDOT	U.S. Department of Transportation Act
VCPRD	Vancouver-Clark Parks and Recreation Department
VMC	Vancouver Municipal Code
VNHR	Vancouver National Historic Reserve
VPR&C	Vancouver Parks, Recreation and Cultural Services
VPS	Vancouver Public School
WSDOT	Washington State Department of Transportation
WSTC	Washington State Transportation Commission

1. PROGRAM OVERVIEW

This technical report provides an evaluation of the potential long-term, temporary, and indirect effects on parks and recreation resources within the study area for the Interstate Bridge Replacement (IBR) program. Effects on parks or recreation areas could include permanent or temporary acquisition of land, airspace, or subsurface easements; permanent or temporary changes in access; changes to the visual quality to or from the resource; or modified noise levels or air quality conditions.

The purpose of this report is to satisfy applicable portions of the National Environmental Policy Act (NEPA) 42 United States Code (USC) 4321 "to promote efforts which will prevent or eliminate damage to the environment." Information and potential environmental consequences described in this technical report will be used to support the Draft Supplemental Environmental Impact Statement (SEIS) for the IBR Program pursuant to 42 USC 4332.

The objectives of this report are to:

- Define the study area and the methods of data collection and evaluation (Chapter 2).
- Describe the existing parks and recreation facilities within the study area (Chapter 3).
- Discuss potential long-term, temporary, and indirect effects on parks and recreation resources resulting from construction and operation of the Modified Locally Preferred Alternative (LPA) compared to the No-Build Alternative (Chapters 4, 5, and 6).
- Provide a preliminary assessment of federally assisted and protected public outdoor recreation lands (Chapter 7).
- Provide proposed avoidance and mitigation measures to help prevent, eliminate, or minimize long-term and temporary effects from the Modified LPA (Chapter 8).

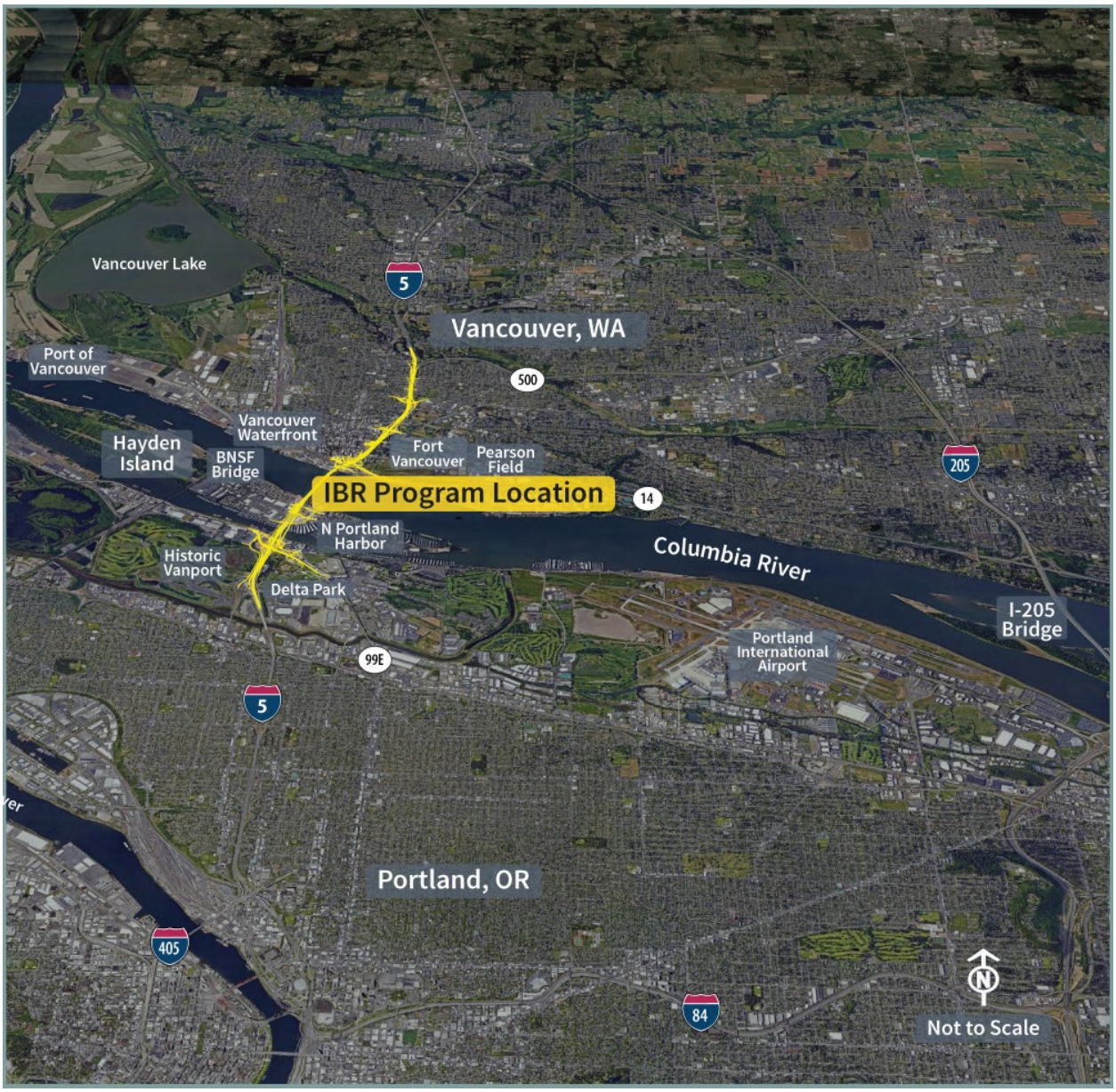
The Modified LPA is a modification of the LPA for the Columbia River Crossing (CRC) project, which completed the NEPA process with a signed Record of Decision (ROD) in 2011 and two re-evaluations that were completed in 2012 and 2013. The CRC project was discontinued in 2014. The IBR Program's SEIS is evaluating the effects of changes in project design since the CRC ROD and re-evaluations, as well as changes in regulations, policies, and physical conditions.

The following two overall questions guide this analysis:

- Would the Modified LPA have long-term direct effects on existing or planned future public parks or recreation areas, or events?
- Would a public park, recreation facilities, or event be affected temporarily during construction of the Modified LPA?

The IBR Program is a continuation of the previously suspended CRC project with the same purpose to replace the aging Interstate 5 (I-5) Bridge across the Columbia River with a modern, seismically resilient multimodal structure. The proposed infrastructure improvements are located along a 5-mile stretch of the I-5 corridor that extends from approximately Victory Boulevard in Portland to State Route (SR) 500 in Vancouver as shown in Figure 1-1.

Figure 1-1. IBR Program Location Overview



1.1 Components of the Modified LPA

The basic components of the Modified LPA include:

- A new pair of Columbia River bridges—one for northbound and one for southbound travel—built west of the existing bridge. The new bridges would each include three through lanes, safety shoulders, and one auxiliary lane (a ramp-to-ramp connection on the highway that improves interchange safety by providing drivers with more space and time to merge, diverge, and weave) in each direction. When all highway, transit, and active transportation would be moved to the new Columbia River bridges, the existing Interstate Bridge (both spans) would be removed.
  - Three bridge configurations are under consideration: (1) double-deck truss bridges with fixed spans, (2) single-level bridges with fixed spans, and (3) single-level bridges with movable spans over the primary navigation channel. The fixed-span configurations would provide up to 116 feet of vertical navigation clearance, and the movable-span configuration would provide 178 feet of vertical navigation clearance in the open position. The primary navigation channel would be relocated approximately 500 feet south (measured by channel centerline) of its existing location near the Vancouver shoreline.
  - A two auxiliary lane design option (two ramp-to-ramp lanes connecting interchanges) across the Columbia River is also being evaluated. The second auxiliary lane in each direction of I-5 would be added from approximately Interstate Avenue/Victory Boulevard to SR 500/39th Street.
- A 1.9-mile light-rail transit (LRT) extension of the current Metropolitan Area Express (MAX) Yellow Line from the Expo Center MAX Station in North Portland, where it currently ends, to a terminus near Evergreen Boulevard in Vancouver. Improvements would include new stations at Hayden Island, downtown Vancouver (Waterfront Station), and near Evergreen Boulevard (Evergreen Station), as well as revisions to the existing Expo Center MAX Station. Park and rides to serve LRT riders in Vancouver could be included near the Waterfront Station and Evergreen Station. The Tri-County Metropolitan Transportation District of Oregon (TriMet), which operates the MAX system, would also operate the Yellow Line extension.
  - Potential site options for park and rides include three sites near the Waterfront Station and two near the Evergreen Station (up to one park and ride could be built for each station location in Vancouver).
- Associated LRT improvements such as traction power substations, overhead catenary system, signal and communications support facilities, an overnight light-rail vehicle (LRV) facility at the Expo Center, 19 new LRVs, and an expanded maintenance facility at TriMet's Ruby Junction.
- Integration of local bus transit service, including bus rapid transit (BRT) and express bus routes, in addition to the proposed new LRT service.
- Wider shoulders on I-5 from Interstate Avenue/Victory Boulevard to SR 500/39th Street to accommodate express bus-on-shoulder service in each direction.
- Associated bus transit service improvements would include three additional bus bays for eight new electric double-decker buses at the Clark County Public Transit Benefit Area Authority

(C-TRAN) operations and maintenance facility (see Section 1.1.7, Transit Operating Characteristics, for more information about this service).

- Improvements to seven I-5 interchanges and I-5 mainline improvements between Interstate Avenue/ Victory Boulevard in Portland and SR 500/39th Street in Vancouver. Some adjacent local streets would be reconfigured to complement the new interchange designs, and improve local east-west connections.
  - An option that shifts the I-5 mainline up to 40 feet westward in downtown Vancouver between the SR 14 interchange and Mill Plain Boulevard interchange is being evaluated.
  - An option that eliminates the existing C Street ramps in downtown Vancouver is being evaluated.
- Six new adjacent bridges across North Portland Harbor: one on the east side of the existing I-5 North Portland Harbor bridge and five on the west side or overlapping with the existing bridge (which would be removed). The bridges would carry (from west to east) LRT tracks, southbound I-5 off-ramp to Marine Drive, southbound I-5 mainline, northbound I-5 mainline, northbound I-5 on-ramp from Marine Drive, and an arterial bridge for local traffic with a shared-use path for pedestrians and bicyclists.
- A variety of improvements for people who walk, bike, and roll throughout the study area, including a system of shared-use paths, bicycle lanes, sidewalks, enhanced wayfinding, and facility improvements to comply with the Americans with Disabilities Act. These are referred to in this document as active transportation improvements.
- Variable-rate tolling for motorists using the river crossing as a demand-management and financing tool.

The transportation improvements proposed for the Modified LPA and the design options are shown in Figure 1-2. The Modified LPA includes all of the components listed above. If there are differences in environmental effects or benefits between the design options, those are identified in the sections below.

Figure 1-2. Modified LPA Components

Section 1.1.1, Interstate 5 Mainline, describes the overall configuration of the I-5 mainline through the study area, and Sections 1.1.2, Portland Mainland and Hayden Island (Subarea A), through Section 1.1.5, Upper Vancouver (Subarea D), provide additional detail on four geographic subareas (A through D), which are shown on Figure 1-3. In each subarea, improvements to I-5, its interchanges, and the local roadways are described first, followed by transit and active transportation improvements. Design options are described under separate headings in the subareas in which they would be located.

Table 1-1 shows the different combinations of design options analyzed in this Technical Report. However, **any combination of design options is compatible**. In other words, any of the bridge configurations could be combined with one or two auxiliary lanes, with or without the C Street ramps, a centered or westward shift of I-5 in downtown Vancouver, and any of the park-and-ride location options. Figures in each section show both the anticipated limit of ground disturbance, which includes disturbance from temporary construction activities, and the location of permanent infrastructure elements.

Figure 1-3. Modified LPA – Geographic Subareas

Table 1-1. Modified LPA and Design Options

Design Options	Modified LPA	Modified LPA with Two Auxiliary Lanes	Modified LPA Without C Street Ramps	Modified LPA with I-5 Shifted West	Modified LPA with a Single-Level Fixed-Span Configuration	Modified LPA with a Single-Level Movable-Span Configuration
Bridge Configuration	**Double-deck fixed-span***	Double-deck fixed-span	Double-deck fixed-span	Double-deck fixed-span	**Single-level fixed-span***	**Single-level movable-span***
Auxiliary Lanes	**One***	**Two***	One	One	One	One
C Street Ramps	**With C Street ramps***	With C Street ramps	**Without C Street Ramps***	With C Street ramps	With C Street ramps	With C Street ramps
I-5 Alignment	**Centered***	Centered	Centered	**Shifted West***	Centered	Centered
Park-and-Ride Options	**Waterfront:*** 1. Columbia Way (below I-5); 2. Columbia Street/SR 14; 3. Columbia Street/Phil Arnold Way **Evergreen:*** 1. Library Square; 2. Columbia Credit Union					

Bold text with an asterisk (*) indicates which design option is different in each configuration.

1.1.1 Interstate 5 Mainline

Today, within the 5-mile corridor, I-5 has three 12-foot-wide through lanes in each direction, an approximately 6- to 11-foot-wide inside shoulder, and an approximately 10- to 12-foot-wide outside shoulder with the exception of the Interstate Bridge, which has approximately 2- to 3-foot-wide inside and outside shoulders. There are currently intermittent auxiliary lanes between the Victory Boulevard and Hayden Island interchanges in Oregon and between SR 14 and SR 500 in Washington.

The Modified LPA would include three 12-foot through lanes from Interstate Avenue/Victory Boulevard to SR 500/39th Street and a 12-foot auxiliary lane from the Marine Drive interchange to the Mill Plain Boulevard interchange in each direction. Many of the existing auxiliary lanes on I-5 between the SR 14 and Main Street interchanges in Vancouver would remain, although they would be reconfigured. The existing auxiliary lanes between the Victory Boulevard and Hayden Island interchanges would be replaced with changes to on- and off-ramps and interchange reconfigurations. The Modified LPA would also include wider shoulders (12-foot inside shoulders and 10- to 12-foot outside shoulders) to be consistent with ODOT and WSDOT design standards. The wider inside shoulder would be used by express bus service to bypass mainline congestion, known as “bus on shoulder” (refer to Section 1.1.7, Transit Operating Characteristics). The shoulder would be available for express bus service when general-purpose speeds are below 35 miles per hour (mph).

Figure 1-4 shows a cross section of the collector-distributor (C-D)[1] roadways, Figure 1-5 shows the location of the C-D roadways, and Figure 1-6 shows the proposed auxiliary lane layout. The existing Interstate Bridge over the Columbia River does not have an auxiliary lane; the Modified LPA would add one auxiliary lane in each direction across the new Columbia River bridges.

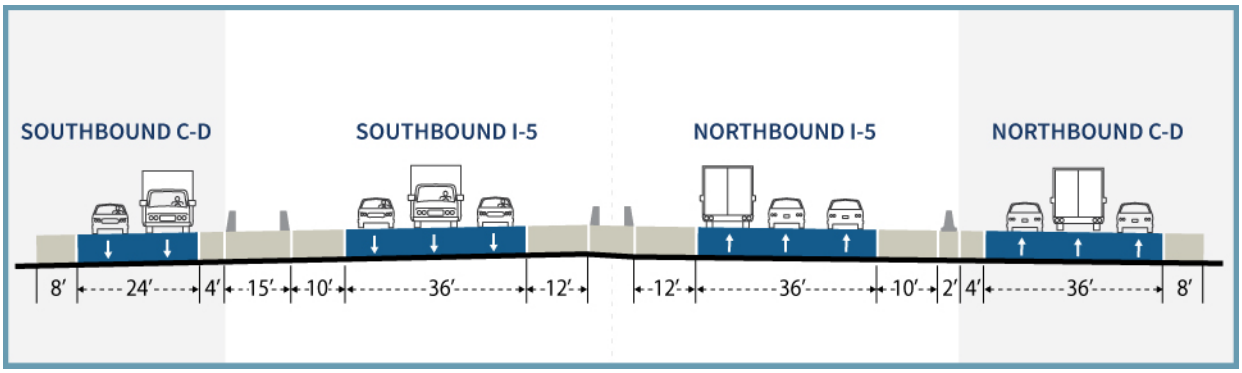
On I-5 northbound, the auxiliary lane that would begin at the on-ramp from Marine Drive would continue across the Columbia River bridge and end at the off-ramp to the C-D roadway, north of SR 14 (see Figure 1-5). The on-ramp from SR 14 westbound would join the off-ramp to the C-D roadway, forming the northbound C-D roadway between SR 14 and Fourth Plain Boulevard. The C-D roadway would provide access from I-5 northbound to the off-ramps at Mill Plain Boulevard and Fourth Plain Boulevard. The C-D roadway would also provide access from SR 14 westbound to the off-ramps at Mill Plain Boulevard and Fourth Plain Boulevard, and to the on-ramp to I-5 northbound.

On I-5 northbound, the Modified LPA would also add one auxiliary lane beginning at the on-ramp from the C-D roadway and ending at the on-ramp from 39th Street, connecting to an existing auxiliary lane from 39th Street to the off-ramp at Main Street. Another existing auxiliary lane would remain between the on-ramp from Mill Plain Boulevard to the off-ramp to SR 500.

On I-5 southbound, the off-ramp to the C-D roadway would join the on-ramp from Mill Plain Boulevard to form a C-D roadway. The C-D roadway would provide access from I-5 southbound to the off-ramp to SR 14 eastbound and from Mill Plain Boulevard to the off-ramp to SR 14 eastbound and the on-ramp to I-5 southbound.

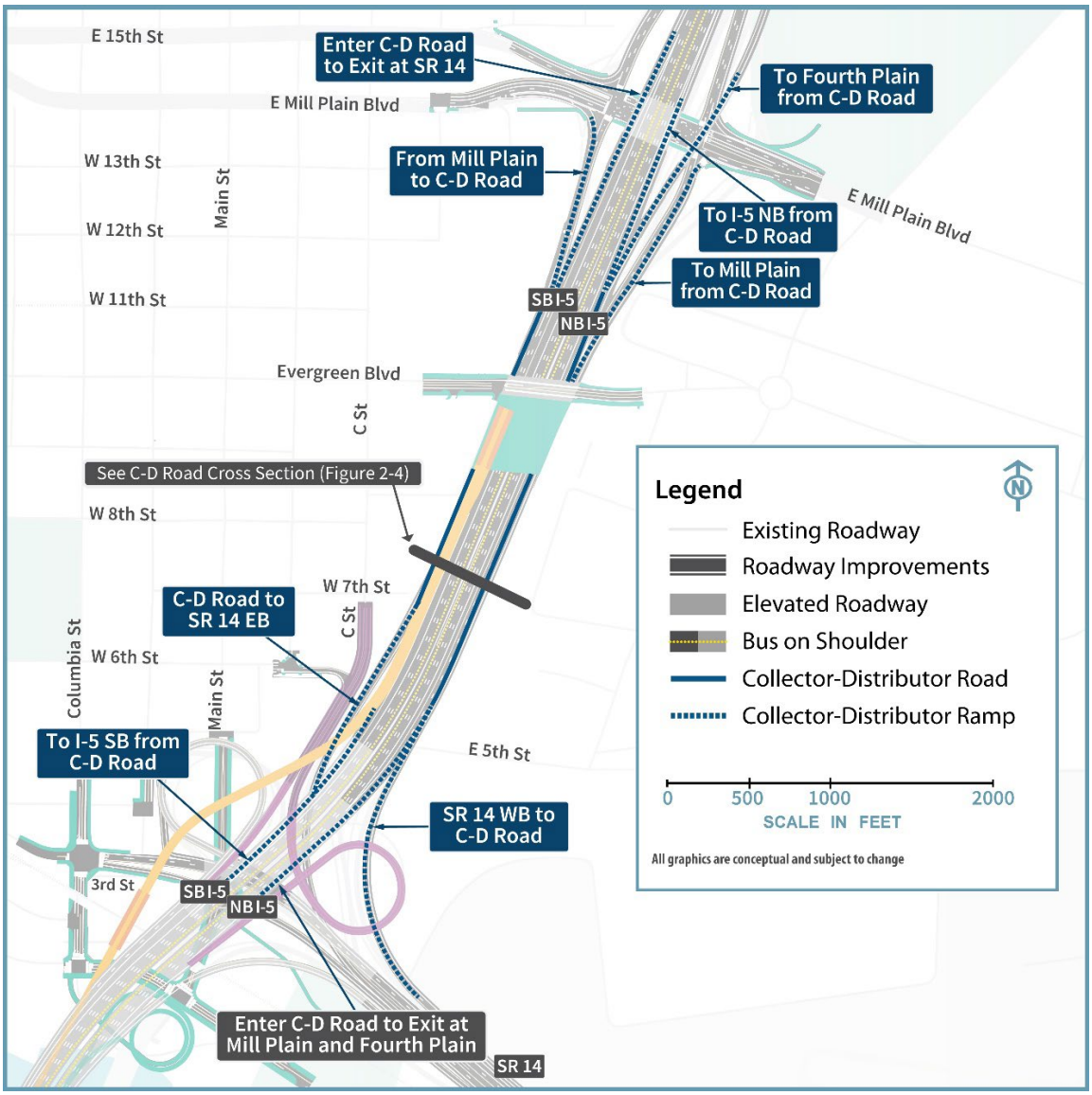
On I-5 southbound, an auxiliary lane would begin at the on-ramp from the C-D roadway and would continue across the southbound Columbia River bridge and end at the off-ramp to Marine Drive. The combined on-ramp from SR 14 westbound and C Street would merge into this auxiliary lane.

Figure 1-4. Cross Section of the Collector-Distributor Roadways



[1] A collector-distributer roadway parallels and connects the main travel lanes of a highway and frontage roads or entrance ramps.

Figure 1-5. Collector-Distributor Roadways



C-D = collector-distributor; EB = eastbound; NB = northbound; SB = southbound; WB = westbound

1.1.1.1 Two Auxiliary Lane Design Option

This design option would add a second 12-foot-wide auxiliary lane in each direction of I-5 with the intent to further optimize travel flow in the corridor. This second auxiliary lane is proposed from the Interstate Avenue/Victory Boulevard interchange to the SR 500/39th Street interchange.

On I-5 northbound, one auxiliary lane would begin at the combined on-ramp from Interstate Avenue and Victory Boulevard, and a second auxiliary lane would begin at the on-ramp from Marine Drive. Both auxiliary lanes would continue across the northbound Columbia River bridge, and the on-ramp from Hayden Island would merge into the second auxiliary lane on the northbound Columbia River

bridge. At the off-ramp to the C-D roadway, the second auxiliary lane would end but the first auxiliary lane would continue. A second auxiliary lane would begin again at the on-ramp from Mill Plain Boulevard. The second auxiliary lane would end at the off-ramp to SR 500, and the first auxiliary lane would connect to an existing auxiliary lane at 39th Street to the off-ramp at Main Street.

On I-5 southbound, two auxiliary lanes would begin at the on-ramp from SR 500. Between the on-ramp from Fourth Plain Boulevard and the off-ramp to Mill Plain Boulevard, one auxiliary lane would be added to the existing two auxiliary lanes. The second auxiliary lane would end at the off-ramp to the C-D roadway, but the first auxiliary lane would continue. A second auxiliary lane would begin again at the southbound I-5 on-ramp from the C-D roadway. Both auxiliary lanes would continue across the southbound Columbia River bridge, and the combined on-ramp from SR 14 westbound and C Street would merge into the second auxiliary lane on the southbound Columbia River bridge. The second auxiliary lane would end at the off-ramp to Marine Drive, and the first auxiliary lane would end at the combined off-ramp to Interstate Avenue and Victory Boulevard.

Figure 1-6 shows a comparison of the one auxiliary lane configuration and the two auxiliary lane configuration design option. Figure 1-7 shows a comparison of the footprints (i.e., the limit of permanent improvements) of the one auxiliary lane and two auxiliary lane configurations on a double-deck fixed-span bridge. For all Modified LPA bridge configurations (described in Section 1.1.3, Columbia River Bridges (Subarea B)), the footprints of the two auxiliary lane configurations differ only over the Columbia River and in downtown Vancouver. The rest of the corridor would have the same footprint. For all bridge configurations analyzed in this document, the two auxiliary lane option would add 16 feet (8 feet in each direction) in total roadway width compared to the one auxiliary lane option due to the increased shoulder widths for the one auxiliary lane option.[2] The traffic operations analysis incorporating both the one and two auxiliary lane design options applies equally to all bridge configurations in this Technical Report.

[2] Under the one auxiliary lane option, the width of each shoulder would be approximately 14 feet to accommodate maintenance of traffic during construction. Under the two auxiliary lane option, maintenance of traffic could be accommodated with 12-foot shoulders because the additional 12-foot auxiliary lane provides adequate roadway width. The total difference in roadway width in each direction between the one auxiliary lane option and the two auxiliary lane option would be 8 feet (12-foot auxiliary lane – 2 feet from the inside shoulder – 2 feet from the outside shoulder = 8 feet).

Figure 1-6. Comparison of Auxiliary Lane Configurations

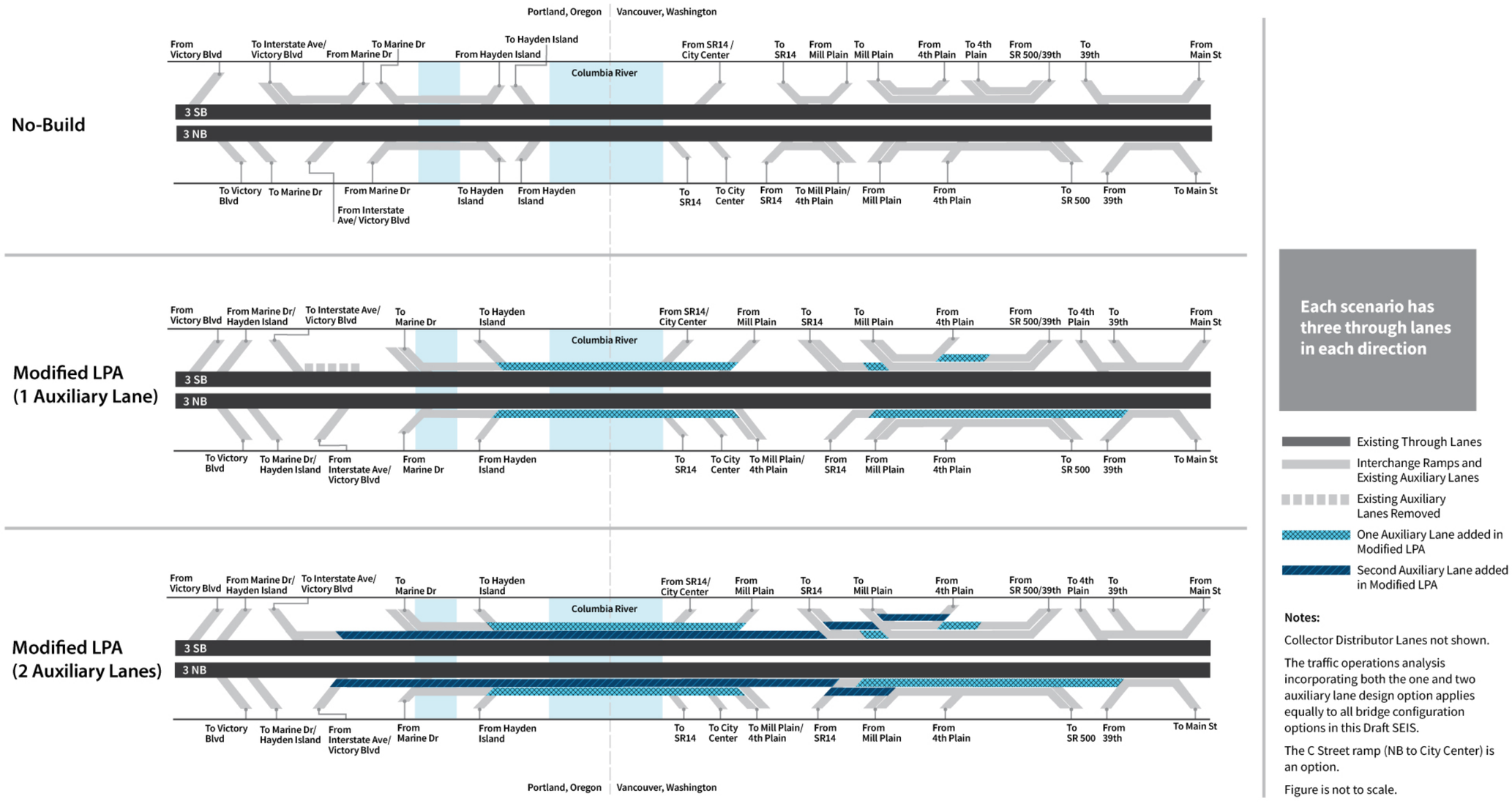
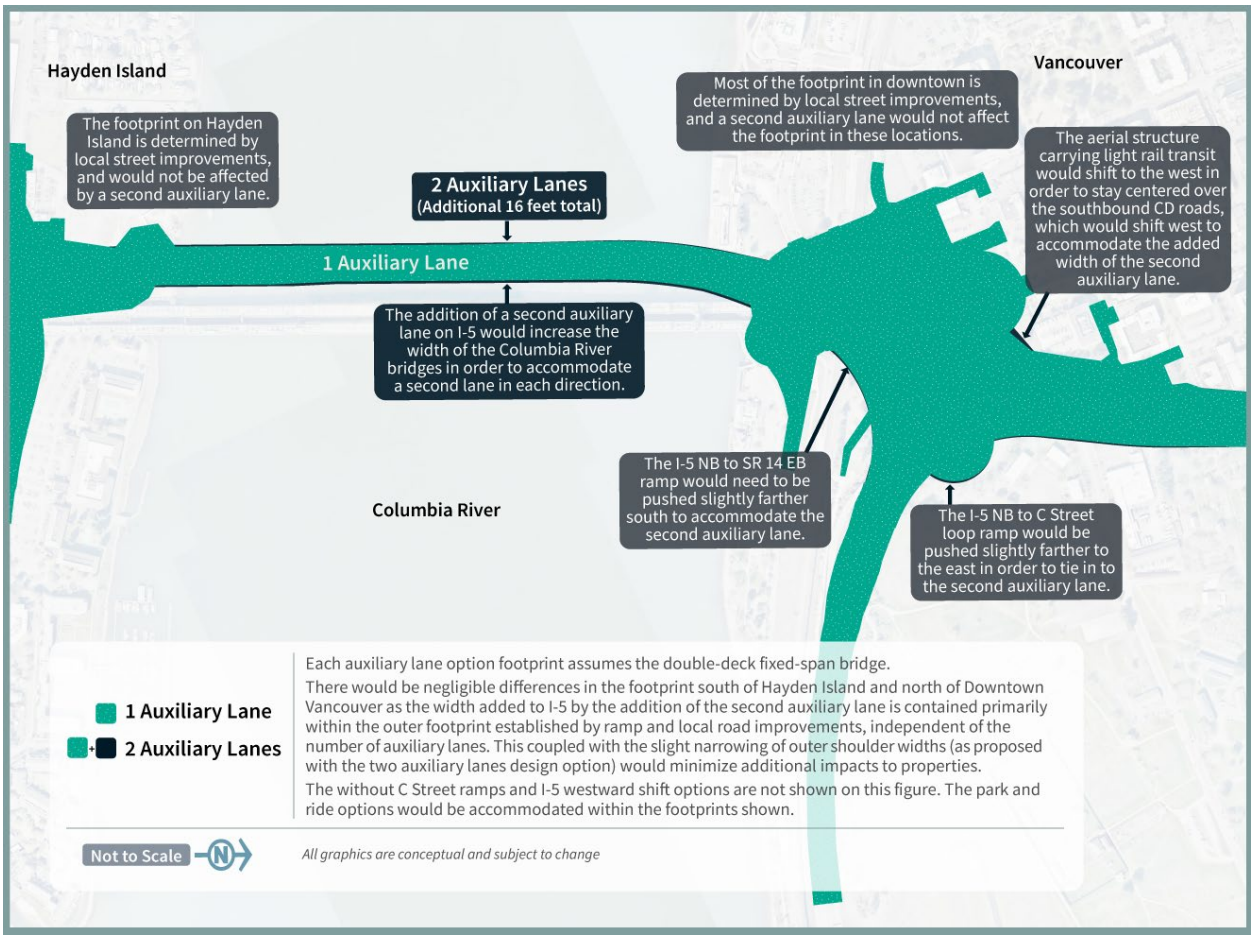


Figure 1-7. Auxiliary Lane Configuration Footprint Differences



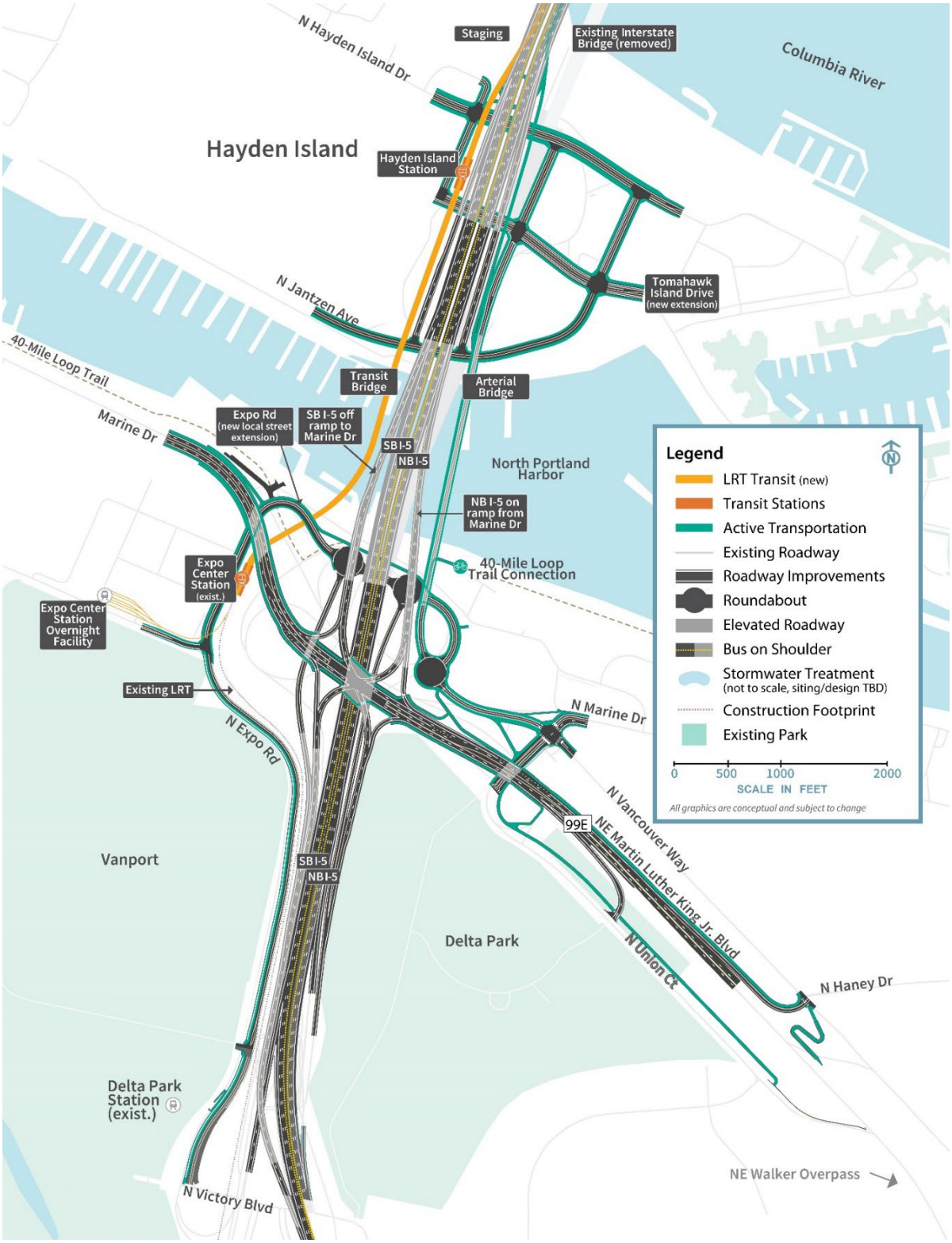
1.1.2 Portland Mainland and Hayden Island (Subarea A)

This section discusses the geographic Subarea A shown in Figure 1-3. See Figure 1-8 for highway and interchange improvements in Subarea A, including the North Portland Harbor bridge. Figure 1-8 illustrates the one auxiliary lane design option; please refer to Figure 1-6 and the accompanying description for how two auxiliary lanes would alter the Modified LPA's proposed design. Refer to Figure 1-3 for an overview of the geographic subareas.

Within Subarea A, the IBR Program has the potential to alter three federally authorized levee systems:

- The Oregon Slough segment of the Peninsula Drainage District Number 1 levee (PEN 1).
- The Oregon Slough segment of the Peninsula Drainage District Number 2 levee (PEN 2).
- The PEN1/PEN2 cross levee segment of the PEN 1 levee (Cross Levee).

Figure 1-8. Portland Mainland and Hayden Island (Subarea A)



LRT = light-rail transit; NB = northbound; SB = southbound; TBD = to be determined

The levee systems are shown on Figure 1-9, and intersections with Modified LPA components are described throughout Section 1.1.2, Portland Mainland and Hayden Island (Subarea A), where appropriate. Within Subarea A, the IBR Program study area intersects with PEN 1 to the west of I-5 and with PEN 2 to the east of I-5. PEN 1 and PEN 2 include a main levee along the south side of North Portland Harbor and are part of a combination of levees and floodwalls. PEN 1 and PEN 2 are separated by the Cross Levee that is intended to isolate the two districts if one of them fails. The Cross Levee is located along the I-5 mainline embankment, except in the Marine Drive interchange area where it is located on the west edge of the existing ramp from Marine Drive to southbound I-5.[3]

There are two concurrent efforts underway that are planning improvements to PEN1, PEN2, and the Cross Levee to reduce flood risk:

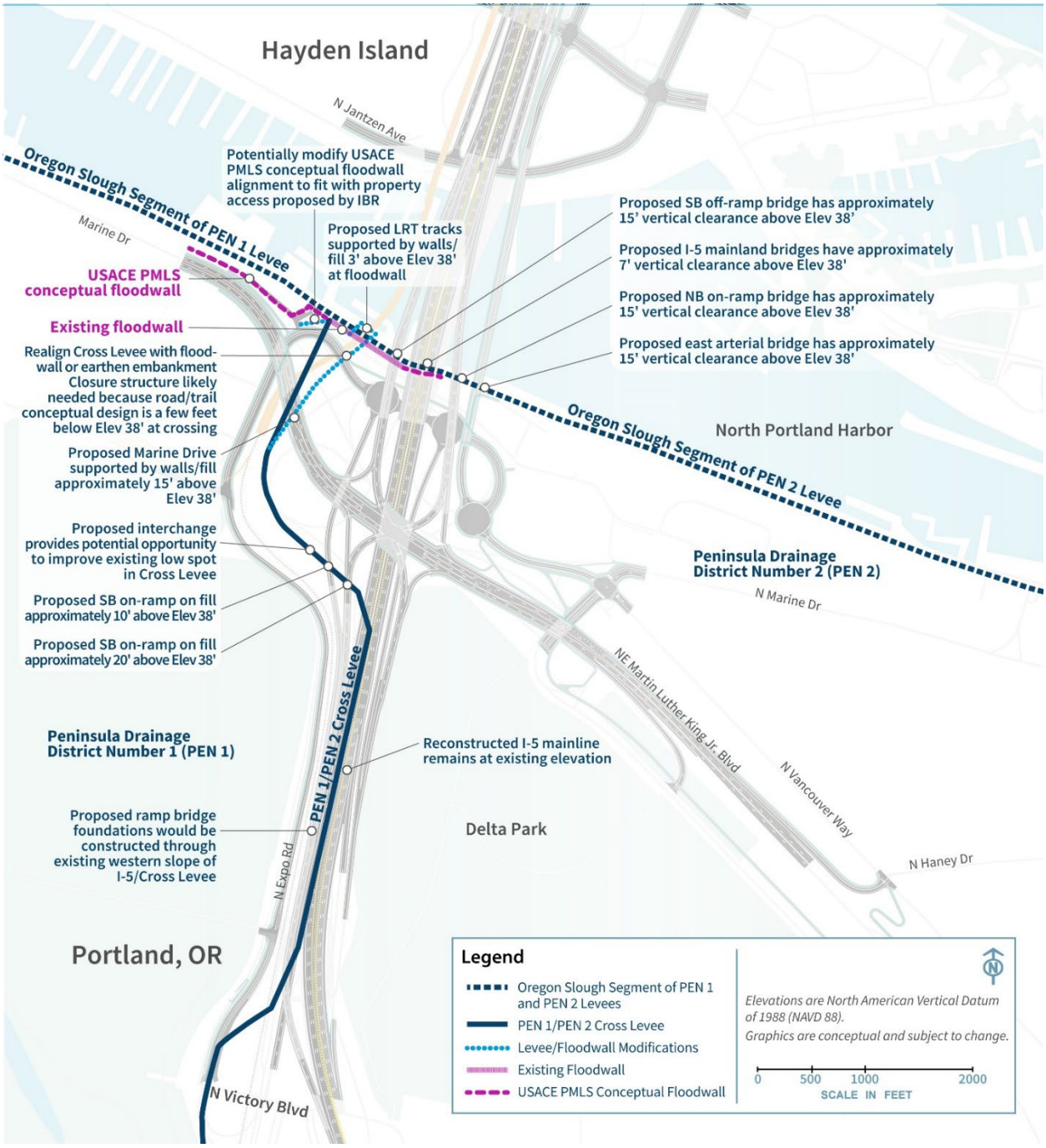
- The U.S. Army Corps of Engineers (USACE) Portland Metro Levee System (PMLS) project.
- The Flood Safe Columbia River (FSCR) program (also known as "Levee Ready Columbia").

The Urban Flood Safety and Water Quality District (UFSWQD)[4] is working with the USACE through the PMLS project, which includes improvements at PEN 1 and PEN 2 (e.g., raising these levees to elevation 38 feet North American Vertical Datum of 1988 [NAVD 88]).[5] Additionally, as part of the FSCR program, UFSWQD is studying raising a low spot in the Cross Levee on the southwest side of the Marine Drive interchange.

The IBR Program is in close coordination with these concurrent efforts to ensure that the IBR Program's design efforts consider the timing and scope of the PMLS and the FSCR proposed modifications. The intersection of the IBR Program proposed actions to both the existing levee configuration and the anticipated future condition based on the proposed PMLS and FSCR projects are described below, where appropriate.

[3] The portion of the original Denver Avenue levee alignment within the Marine Drive interchange area is no longer considered part of the levee system by UFSWQD.
[4] UFSWQD includes PEN 1 and PEN 2, Urban Flood Safety and Water Quality District No. 1, and the Sandy Drainage Improvement Company.
[5] NAVD 88 is a vertical control datum (reference point) used by federal agencies for surveying.

Figure 1-9. Levee Systems in Subarea A



1.1.2.1 Highways, Interchanges, and Local Roadways

VICTORY BOULEVARD/INTERSTATE AVENUE INTERCHANGE AREA

The southern extent of the Modified LPA would improve two ramps at the Victory Boulevard/Interstate Avenue interchange (see Figure 1-8). The first ramp improvement would be the southbound I-5 off-ramp to Victory Boulevard/ Interstate Avenue; this off-ramp would be braided below (i.e., grade separated or pass below) the Marine Drive to the I-5 southbound on-ramp (see the Marine Drive Interchange Area section below). The other ramp improvement would lengthen the merge distance for northbound traffic entering I-5 from Victory Boulevard and from Interstate Avenue.

The existing I-5 mainline between Victory Boulevard/Interstate Avenue and Marine Drive is part of the Cross Levee (see Figure 1-9). The Modified LPA would require some pavement reconstruction of the mainline in this area; however, the improvements would mostly consist of pavement overlay and the profile and footprint would be similar to existing conditions.

MARINE DRIVE INTERCHANGE AREA

The next interchange north of the Victory Boulevard/Interstate Avenue interchange is at Marine Drive. All movements within this interchange would be reconfigured to reduce congestion for motorists entering and exiting I-5. The new configuration would be a single-point urban interchange. The new interchange would be centered over I-5 versus on the west side under existing conditions. See Figure 1-8 for the Marine Drive interchange's layout and construction footprint.

The Marine Drive to I-5 southbound on-ramp would be braided over I-5 southbound to the Victory Boulevard/Interstate Avenue off-ramp. Martin Luther King Jr. Boulevard would have a new more direct connection to I-5 northbound.

The new interchange configuration would change the westbound Marine Drive and westbound Vancouver Way connections to Martin Luther King Jr. Boulevard. An improved connection farther east of the interchange (near Haney Street) would provide access to westbound Martin Luther King Jr. Boulevard for these two streets. For eastbound travelers on Martin Luther King Jr. Boulevard exiting to Union Court, the existing loop connection would be replaced with a new connection farther east (near the access to the East Delta Park Owens Sports Complex).

Expo Road from Victory Boulevard to the Expo Center would be reconstructed with improved active transportation facilities. North of the Expo Center, Expo Road would be extended under Marine Drive and continue under I-5 to the east, connecting with Marine Drive and Vancouver Way through three new connected roundabouts. The westernmost roundabout would connect the new local street extension to I-5 southbound. The middle roundabout would connect the I-5 northbound off-ramp to the local street extension. The easternmost roundabout would connect the new local street extension to an arterial bridge crossing North Portland Harbor to Hayden Island. This roundabout would also connect the local street extension to Marine Dr and Vancouver Way.

To access Hayden Island using the arterial bridge from the east on Martin Luther King Jr. Boulevard, motorists would exit Martin Luther King Jr. Boulevard at the existing off-ramp to Vancouver Way just

west of the Walker Street overpass. Then motorists would travel west on Vancouver Way, through the intersection with Marine Drive and straight through the roundabout to the arterial bridge.

From Hayden Island, motorists traveling south to Portland via Martin Luther King Jr. Boulevard would turn onto the arterial bridge southbound and travel straight through the roundabout onto Vancouver Way. At the intersection of Vancouver Way and Marine Drive, motorists would turn right onto Union Court and follow the existing road southeast to the existing on-ramp onto Martin Luther King Jr. Boulevard.

The conceptual floodwall alignment from the proposed USACE PMLS project is located on the north side of Marine Drive, near two industrial properties, with three proposed closure structures[6] for property access. The Modified LPA would realign Marine Drive to the south and provide access to the two industrial properties via the new local road extension from Expo Road. Therefore, the change in access for the two industrial properties could require small modifications to the floodwall alignment (a potential shift of 5 to 10 feet to the south) and closure structure locations.

Marine Drive and the two southbound on-ramps would travel over the Cross Levee approximately 10 to 20 feet above the proposed elevation of the improved levee, and they would be supported by fill and retaining walls near an existing low spot in the Cross Levee.

The I-5 southbound on-ramp from Marine Drive would continue on a new bridge structure. Although the bridge's foundation locations have not been determined yet, they would be constructed through the western slope of the Cross Levee (between the existing I-5 mainline and the existing light-rail).

NORTH PORTLAND HARBOR BRIDGES

To the north of the Marine Drive interchange is the Hayden Island interchange area, which is shown in Figure 1-8. I-5 crosses over the North Portland Harbor when traveling between these two interchanges. The Modified LPA proposes to replace the existing I-5 bridge spanning North Portland Harbor to improve seismic resiliency.

Six new parallel bridges would be built across the waterway under the Modified LPA: one on the east side of the existing I-5 North Portland Harbor bridge and five on the west side or overlapping the location of the existing bridge (which would be removed). From west to east, these bridges would carry:

- The LRT tracks.
- The southbound I-5 off-ramp to Marine Drive.
- The southbound I-5 mainline.
- The northbound I-5 mainline.
- The northbound I-5 on-ramp from Marine Drive.

[6] Levee closure structures are put in place at openings along the embankment/floodwall to provide flood protection during high water conditions.

- An arterial bridge between the Portland mainland and Hayden Island for local traffic; this bridge would also include a shared-use path for pedestrians and bicyclists.

Each of the six replacement North Portland Harbor bridges would be supported on foundations constructed of 10-foot-diameter drilled shafts. Concrete columns would rise from the drilled shafts and connect to the superstructures of the bridges. All new structures would have at least as much vertical navigation clearance over North Portland Harbor as the existing North Portland Harbor bridge.

Compared to the existing bridge, the two new I-5 mainline bridges would have a similar vertical clearance of approximately 7 feet above the proposed height of the improved levees (elevation 38 feet NAVD 88). The two ramp bridges and the arterial bridge would have approximately 15 feet of vertical clearance above the proposed height of the levees. The foundation locations for the five roadway bridges have not been determined at this stage of design, but some foundations could be constructed through landward or riverward levee slopes.

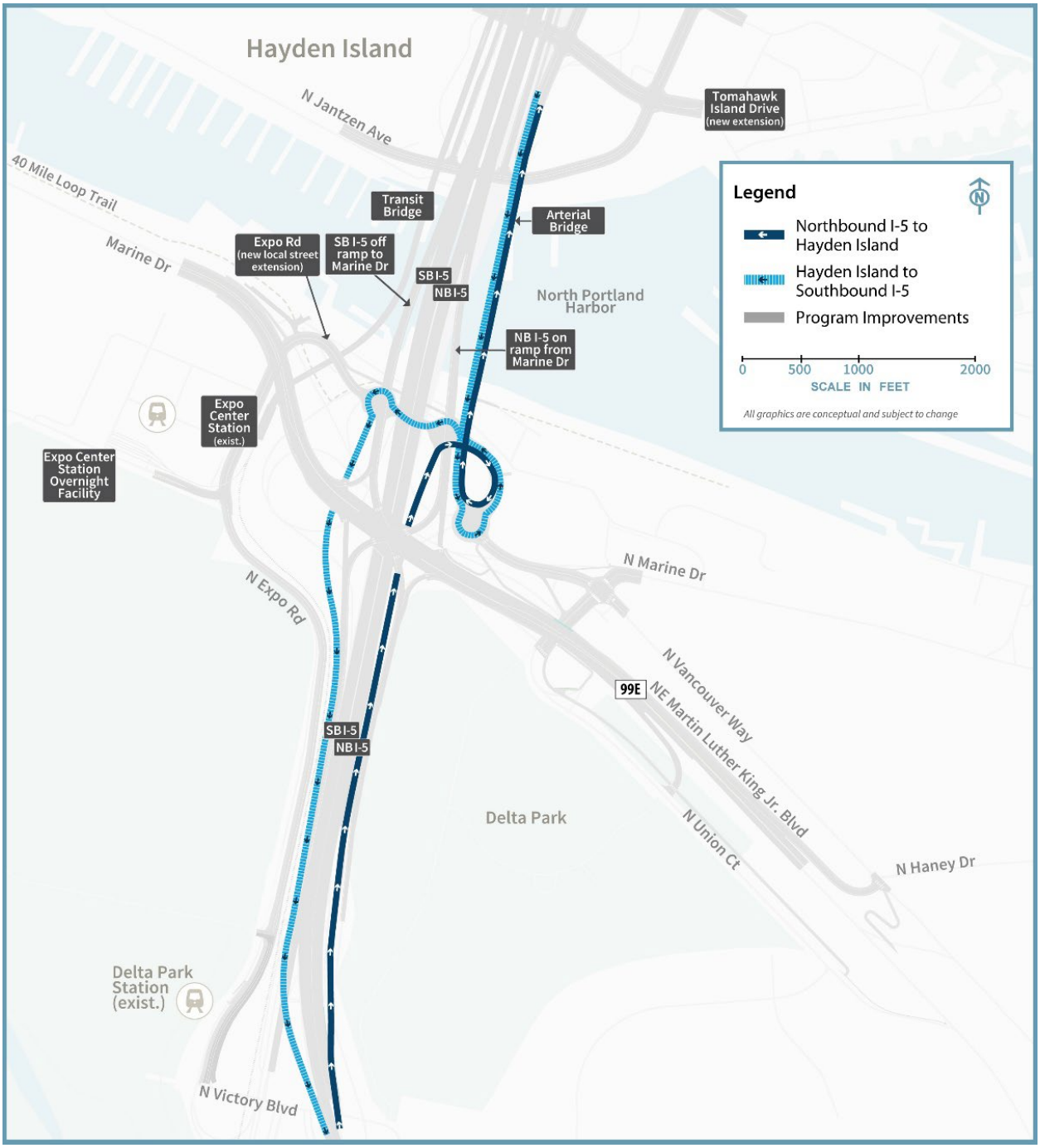
HAYDEN ISLAND INTERCHANGE AREA

All traffic movements for the Hayden Island interchange would be reconfigured. See Figure 1-8 for a layout and construction footprint of the Hayden Island interchange. A half-diamond interchange would be built on Hayden Island with a northbound I-5 on-ramp from Jantzen Drive and a southbound I-5 off-ramp to Jantzen Drive. This would lengthen the ramps and improve merging/diverging speeds compared to the existing substandard ramps that require acceleration and deceleration in a short distance. The I-5 mainline would be partially elevated and partially located on fill across the island.

There would not be a southbound I-5 on-ramp or northbound I-5 off-ramp on Hayden Island. Connections to Hayden Island for those movements would be via the local access (i.e., arterial) bridge connecting North Portland to Hayden Island (Figure 1-10). Vehicles traveling northbound on I-5 wanting to access Hayden Island would exit with traffic going to the Marine Drive interchange, cross under Martin Luther King Jr. Boulevard to the new roundabout at the Expo Road local street extension, travel east through this roundabout to the easternmost roundabout, and use the arterial bridge to cross North Portland Harbor. Vehicles on Hayden Island looking to enter I-5 southbound would use the arterial bridge to cross North Portland Harbor, cross under I-5 using the new Expo Road local street extension to the westernmost roundabout, cross under Marine Drive, merge with the Marine Drive southbound on-ramp, and merge with I-5 southbound south of Victory Boulevard.

Improvements to Jantzen Avenue may include additional left-turn and right-turn lanes at the interchange ramp terminals and active transportation facilities. Improvements to Hayden Island Drive would include new connections to the new arterial bridge over North Portland Harbor. The existing I-5 northbound and southbound access points from Hayden Island Drive would also be removed. A new extension of Tomahawk Island Drive would travel east-west through the middle of Hayden Island and under the I-5 interchange, thus improving connectivity across I-5 on the island.

Figure 1-10. Vehicle Circulation between Hayden Island and the Portland Mainland



NB = northbound; SB = southbound

1.1.2.2 Transit

A new light-rail alignment for northbound and southbound trains would be constructed within Subarea A (see Figure 1-8) to extend from the existing Expo Center MAX Station over North Portland Harbor to a new station at Hayden Island. An overnight LRV facility would be constructed on the southeast corner of the Expo Center property (see Figure 1-8) to provide storage for trains during hours when MAX is not in service. This facility is described in Section 1.1.6, Transit Support Facilities. The existing Expo Center MAX Station would be modified to remove the westernmost track and platform. Other platform modifications, including track realignment and regrading the station, are anticipated to transition to the extension alignment. This may require reconstruction of the operator break facility, signal/communication buildings, and traction power substations. Immediately north of the Expo Center MAX Station, the alignment would curve east toward I-5, pass beneath Marine Drive, cross the proposed Expo Road local street extension and the 40-Mile Loop Trail at grade, then rise over the existing levee onto a light-rail bridge to cross North Portland Harbor. On Hayden Island, proposed transit components include northbound and southbound LRT tracks over Hayden Island; the tracks would be elevated at approximately the height of the new I-5 mainline. An elevated LRT station would also be built on the island immediately west of I-5. The light-rail alignment would extend north on Hayden Island along the western edge of I-5 before transitioning onto the lower level of the new double-deck western bridge over the Columbia River (see Figure 1-8). For the single-level configurations, the light-rail alignment would extend to the outer edge of the western bridge over the Columbia River.

After crossing the new local road extension from Expo Road, the new light-rail track would cross over the main levee (see Figure 1-9). The light-rail profile is anticipated to be approximately 3 feet above the improved levees at the existing floodwall (and improved floodwall), and the tracks would be constructed on fill supported by retaining walls above the floodwall. North of the floodwall, the light-rail tracks would continue onto the new light-rail bridge over North Portland Harbor (as described above).

The Modified LPA's light-rail extension would be close to or would cross the north end of the Cross Levee. The IBR Program would realign the Cross Levee to the east of the light-rail alignment to avoid the need for a closure structure on the light-rail alignment. This realigned Cross Levee would cross the new local road extension. A closure structure may be required because the current proposed roadway is a few feet lower than the proposed elevation of the improved levee.

1.1.2.3 Active Transportation

In the Victory Boulevard interchange area (see Figure 1-8), active transportation facilities would be provided along Expo Road between Victory Boulevard and the Expo Center; this would provide a direct connection between the Victory Boulevard and Marine Drive interchange areas, as well as links to the Delta Park and Expo Center MAX Stations.

New shared-use path connections throughout the Marine Drive interchange area would provide access between the Bridgeton neighborhood (on the east side of I-5), Hayden Island, and the Expo Center MAX Station. There would also be connections to the existing portions of the 40-Mile Loop Trail, which runs north of Marine Drive under I-5 through the interchange area. The path would

continue along the extension of Expo Road under the interchange to the intersection of Marine Drive and Vancouver Way, where it would connect under Martin Luther King Jr. Boulevard to Delta Park.

East of the Marine Drive interchange, new shared-use paths on Martin Luther King Jr. Boulevard and on the parallel street, Union Court, would connect travelers to Marine Drive and across the arterial bridge to Hayden Island. The shared-use facilities on Martin Luther King Jr. Boulevard would provide westbound and eastbound cyclists and pedestrians with off-street crossings of the interchange and would also provide connections to both the Expo Center MAX Station and the 40-Mile Loop Trail to the west.

The new arterial bridge over North Portland Harbor would include a shared-use path for pedestrians and bicyclists (see Figure 1-8). On Hayden Island, pedestrian and bicycle facilities would be provided on Jantzen Avenue, Hayden Island Drive, and Tomahawk Island Drive. The shared-use path on the arterial bridge would continue along the arterial bridge to the south side of Tomahawk Island Drive. A parallel, elevated path from the arterial bridge would continue adjacent to I-5 across Hayden Island and cross above Tomahawk Island Drive and Hayden Island Drive to connect to the lower level of the new double-deck eastern bridge or the outer edge of the new single-level eastern bridge over the Columbia River. A ramp down to the north side of Hayden Island Drive would be provided from the elevated path.

1.1.3 Columbia River Bridges (Subarea B)

This section discusses the geographic Subarea B shown in Figure 1-3. See Figure 1-11 for highway and interchange improvements in Subarea B. Refer to Figure 1-3 for an overview of the geographic subareas.

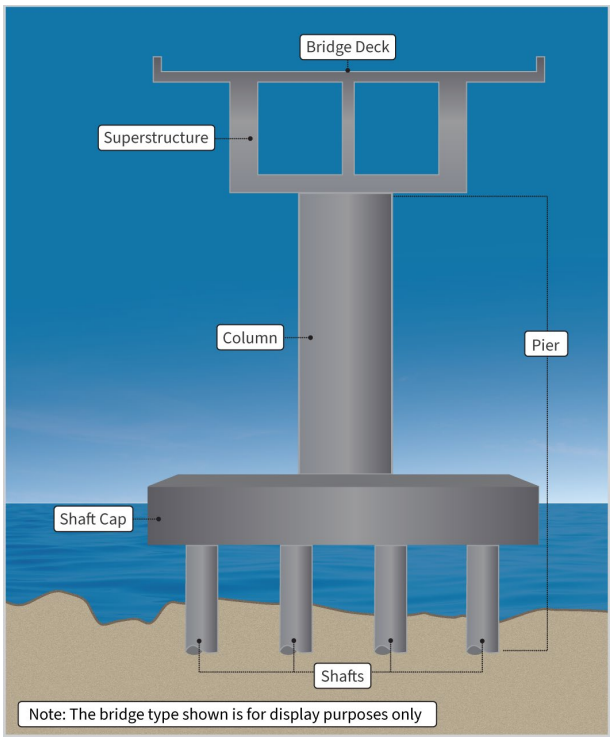
1.1.3.1 Highways, Interchanges, and Local Roadways

The two existing parallel I-5 bridges that cross the Columbia River would be replaced by two new parallel bridges, located west of the existing bridges (see Figure 1-11). The new eastern bridge would accommodate northbound highway traffic and a shared-use path. The new western bridge would carry southbound traffic and two-way light-rail tracks. Whereas the existing bridges each have three lanes with no shoulders, each of the two new bridges would be wide enough to accommodate three through lanes, one or two auxiliary lanes, and shoulders on both sides of the highway. Lanes and shoulders would be built to full design standards.

Figure 1-11. Columbia River Bridges (Subarea B)

As with the existing bridge (), the new Columbia River bridges would provide three navigation channels: a primary navigation channel and two barge channels (see Figure 1-14). The current location of the primary navigation channel is near the Vancouver shoreline where the existing lift spans are located. Under the Modified LPA, the primary navigation channel would be shifted south approximately 500 feet (measured by channel centerlines), and the existing center barge channel would shift north and become the north barge channel. The new primary navigation channel would be 400 feet wide (this width includes a 300-foot congressionally or USACE-authorized channel plus a 50-foot channel maintenance buffer on each side of the authorized channel) and the two barge channels would also each be 400 feet wide.

Figure 1-12. Bridge Foundation Concept



The existing Interstate Bridge has nine in-water pier sets,[7] whereas the new Columbia River bridges (any bridge configuration) would be built on six in-water pier sets, plus multiple piers on land (pier locations are shown on Figure 1-14). Each in-water pier set would be supported by a foundation of drilled shafts; each group of shafts would be tied together with a concrete shaft cap. Columns or pier walls would rise from the shaft caps and connect to the superstructures of the bridges (see Figure 1-12).

BRIDGE CONFIGURATIONS

Three bridge configurations are being considered: (1) double-deck fixed-span (with one bridge type), (2) a single-level fixed-span (with three potential bridge types), and (3) a single-level movable-span (with one bridge type). Both the double-deck and single-level fixed-span configurations would provide 116 feet of vertical navigation clearance at their respective highest spans; the same as the CRC LPA. The CRC LPA included a double-deck fixed-span bridge configuration. The single-level fixed-span configuration was developed and is being considered as part of the IBR Program in response to physical and contextual changes (i.e., design and operational considerations) since 2013 that necessitated examination of a refinement in the double-deck bridge configuration (e.g., ingress and egress of transit from the lower level of the double-deck fixed-span configuration on the north end of the southbound bridge).

[7] A pier set consists of the pier supporting the northbound bridge and the pier supporting the southbound bridge at a given location.

Consideration of the single-level movable-span configuration as part the IBR Program was necessitated by the U.S. Coast Guard's (USCG) review of the Program's navigation impacts on the Columbia River and issuance of a Preliminary Navigation Clearance Determination (PNCD) (USCG 2022). The USCG PNCD set the preliminary vertical navigation clearance recommended for the issuance of a bridge permit at 178 feet; this is the current vertical navigation clearance of the Interstate Bridge.

The IBR Program is carrying forward the three bridge configurations to address changed conditions, including changes in the USCG bridge permitting process, in order to ensure a permittable bridge configuration is within the range of options considered. The IBR Program continues to refine the details supporting navigation impacts and is coordinating closely with the USCG to determine how a fixed-span bridge may be permittable. Although the fixed-span configurations do not comply with the current USCG PNCD, they do meet the Purpose and Need and provide potential improvements to traffic (passenger vehicle and freight), transit, and active transportation operations.

Each of the bridge configurations assumes one auxiliary lane; two auxiliary lanes could be applied to any of the bridge configurations. All typical sections for the one auxiliary lane option would provide 14-foot shoulders to maintain traffic during construction of the Modified LPA and future maintenance.

Figure 1-13. Existing Navigation Clearances of the Interstate Bridge

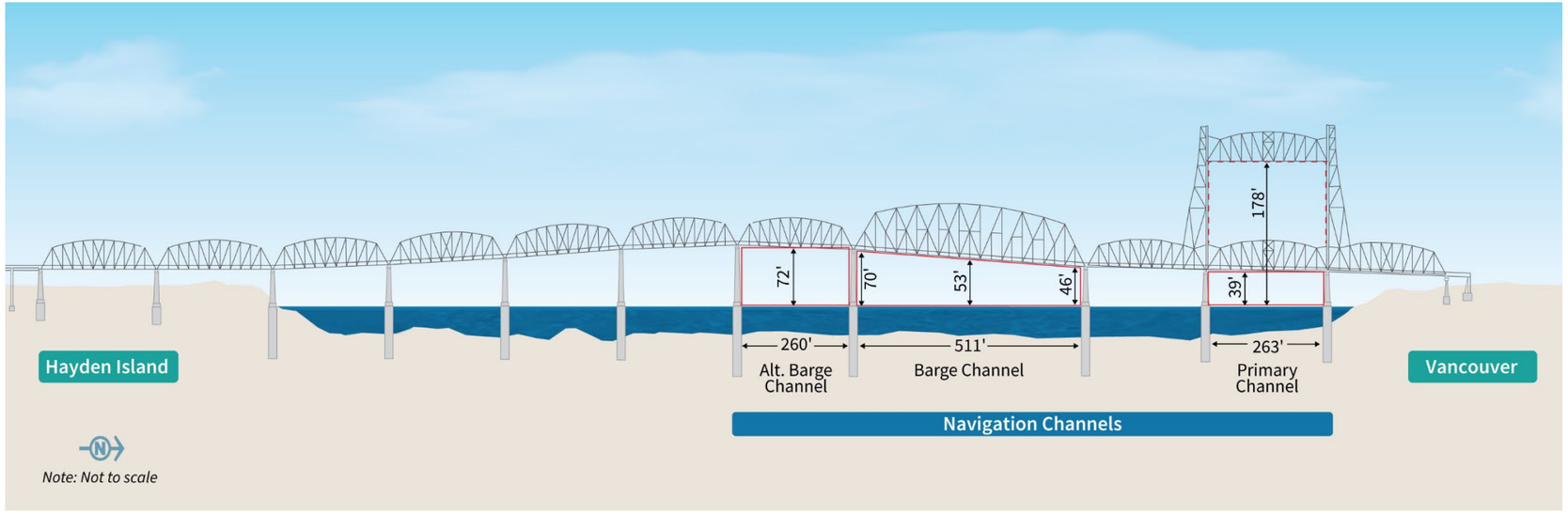
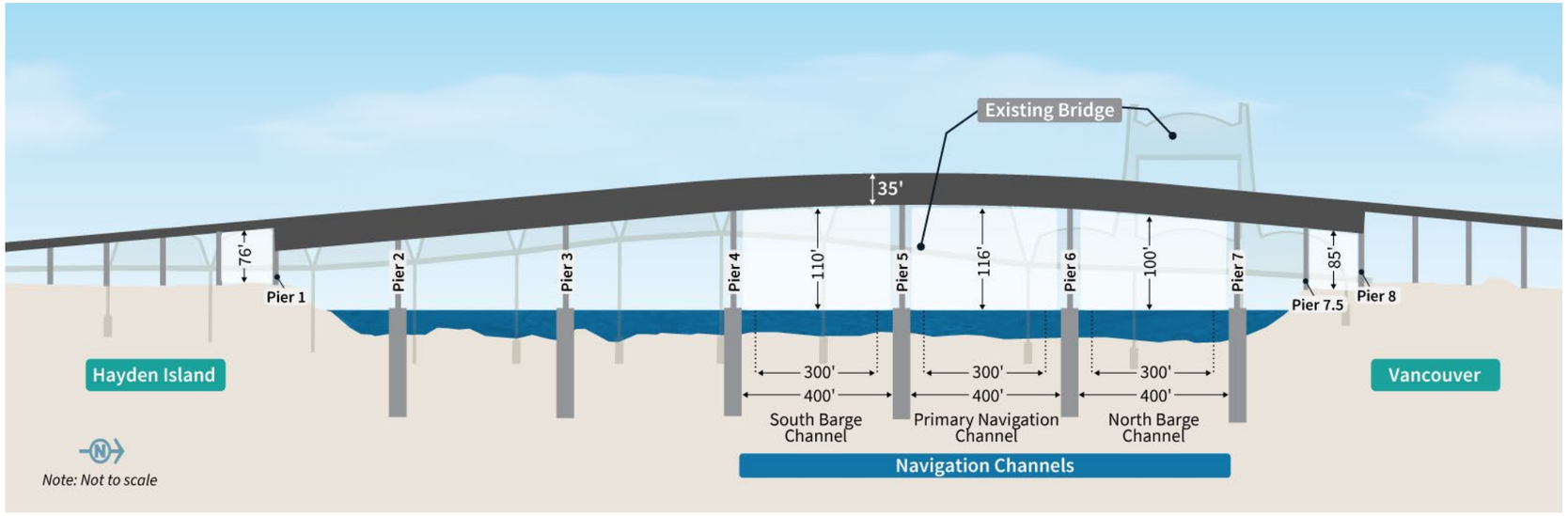


Figure 1-14. Profile and Navigation Clearances of the Proposed Modified LPA Columbia River Bridges with a Double-Deck Fixed-Span Configuration



Note: The location and widths of the proposed navigation channels would be same for all bridge configuration and bridge type options. The three navigation channels would each be 400 feet wide (this width includes a 300-foot congressionally or USACE-authorized channel (shown in dotted lines) plus a 50-foot channel maintenance buffer on each side of the authorized channel). The vertical navigation clearance would vary

Double-Deck Fixed-Span Configuration

The double-deck fixed-span configuration would be two side-by-side, double-deck, fixed-span steel truss bridges. Figure 1-15 is an example of this configuration (this image is subject to change and is shown as a representative concept; it does not depict the final design). The double-deck fixed-span configuration would provide 116 feet of vertical navigation clearance for river traffic using the primary navigation channel and 400 feet of horizontal navigation clearance at the primary navigation channel, as well as barge channels. This bridge height would not impede takeoffs and landings by aircraft using Pearson Field or Portland International Airport.

The eastern bridge would accommodate northbound highway traffic on the upper level and the shared-use path and utilities on the lower level. The western bridge would carry southbound traffic on the upper level and two-way light-rail tracks on the lower level. Each bridge deck would be 79 feet wide, with a total out-to-out width of 173 feet.[8]

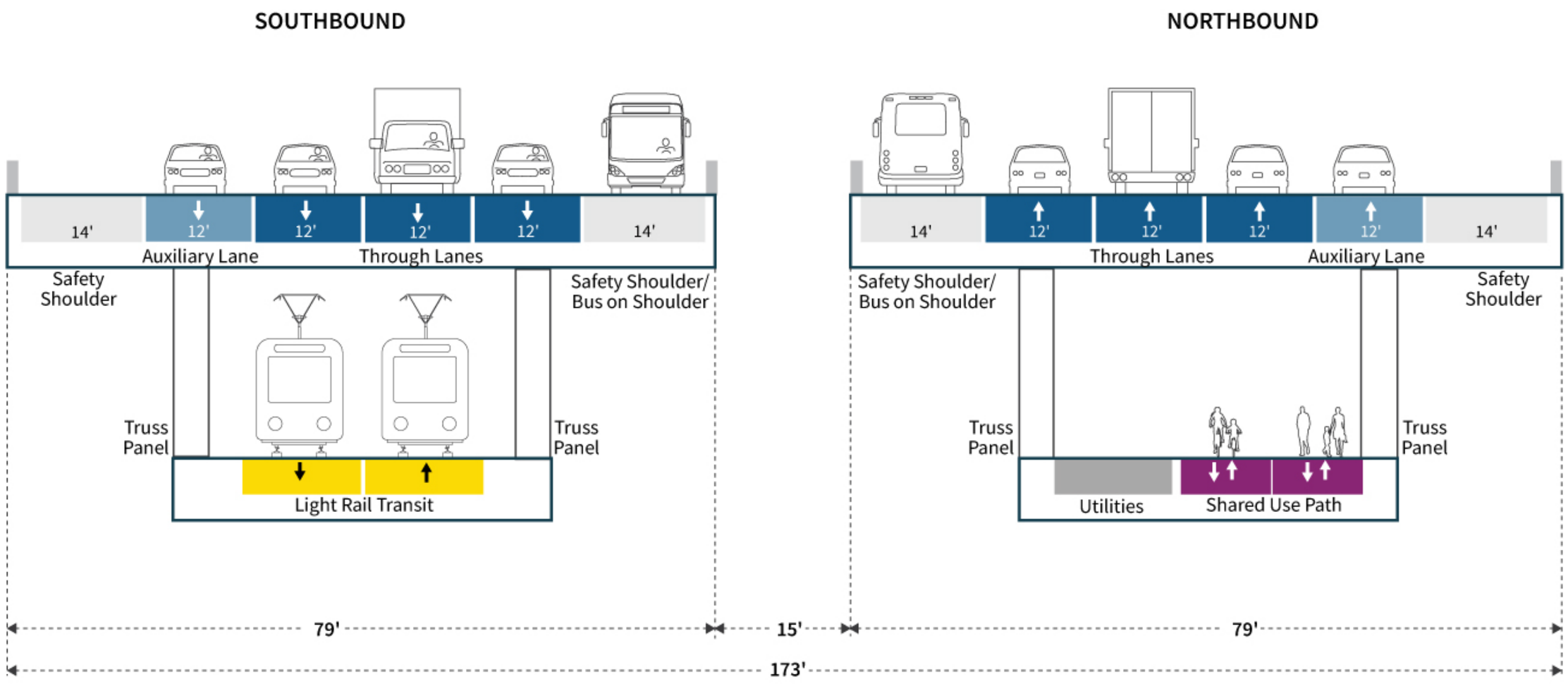
Figure 1-15. Conceptual Drawing of a Double-Deck Fixed-Span Configuration

Note: Visualization is looking southwest from Vancouver.

Figure 1-16 is a cross section of the two parallel double-deck bridges. Like all bridge configurations, the double-deck fixed-span configuration would have six in-water pier sets. Each pier set would require 12 in-water drilled shafts, for a total of 72 in-water drilled shafts. Each individual shaft cap would be approximately 50 feet by 85 feet. This bridge configuration would have a 3.8% maximum grade on the Oregon side of the bridge and a 4% maximum grade on the Washington side.

[8] "Out-to-out width" is the measurement between the outside edges of the bridge across its width at the widest point.

Figure 1-16. Cross Section of the Double-Deck Fixed-Span Configuration



Single-Level Fixed-Span Configuration

The single-level fixed-span configuration would have two side-by-side, single-level, fixed-span steel or concrete bridges. This report considers three single-level fixed-span bridge type options: a girder bridge, an extradosed bridge, and a finback bridge. The description in this section applies to all three bridge types (unless otherwise indicated). Conceptual examples of each of these options are shown on Figure 1-17. These images are subject to change and do not represent final design.

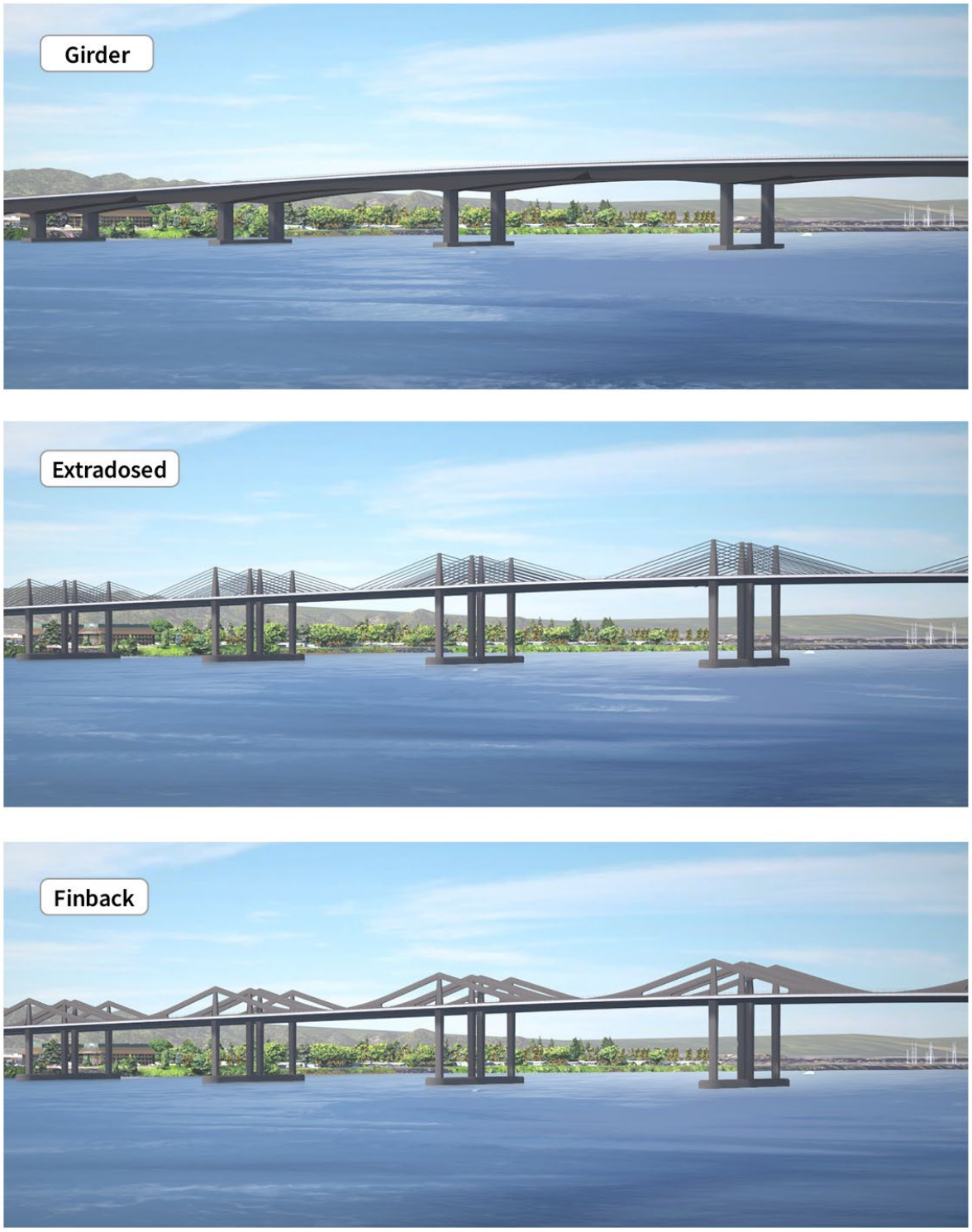
This configuration would provide 116 feet of vertical navigation clearance for river traffic using the primary navigation channel and 400 feet of horizontal navigation clearance at the primary navigation channel, as well as barge channels. This bridge height would not impede takeoffs and landings by aircraft using Pearson Field or Portland International Airport.

The eastern bridge would accommodate northbound highway traffic and the shared-use path; the bridge deck would be 104 feet wide. The western bridge would carry southbound traffic and two-way light-rail tracks; the bridge deck would be 113 feet wide. The I-5 highway, light-rail tracks, and the shared-use path would be on the same level across the two bridges, instead of being divided between two levels with the double-deck configuration. The total out-to-out width of the single-level fixed-span configuration (extradosed or finback options) would be 272 feet at its widest point, approximately 99 feet wider than the double-deck configuration. The total out-to-out width of the single-level fixed-span configuration (girder option) would be 232 feet at its widest point. Figure 1-18 shows a typical cross section of the single-level configuration. This cross section is a representative example of an extradosed or finback bridge as shown by the 10-foot-wide superstructure above the bridge deck; the girder bridge would not have the 10-foot-wide bridge columns shown on Figure 1-18.

There would be six in-water pier sets with 16 in-water drilled shafts on each combined shaft cap, for a total of 96 in-water drilled shafts. The combined shaft caps for each pier set would be 50 feet by 230 feet.

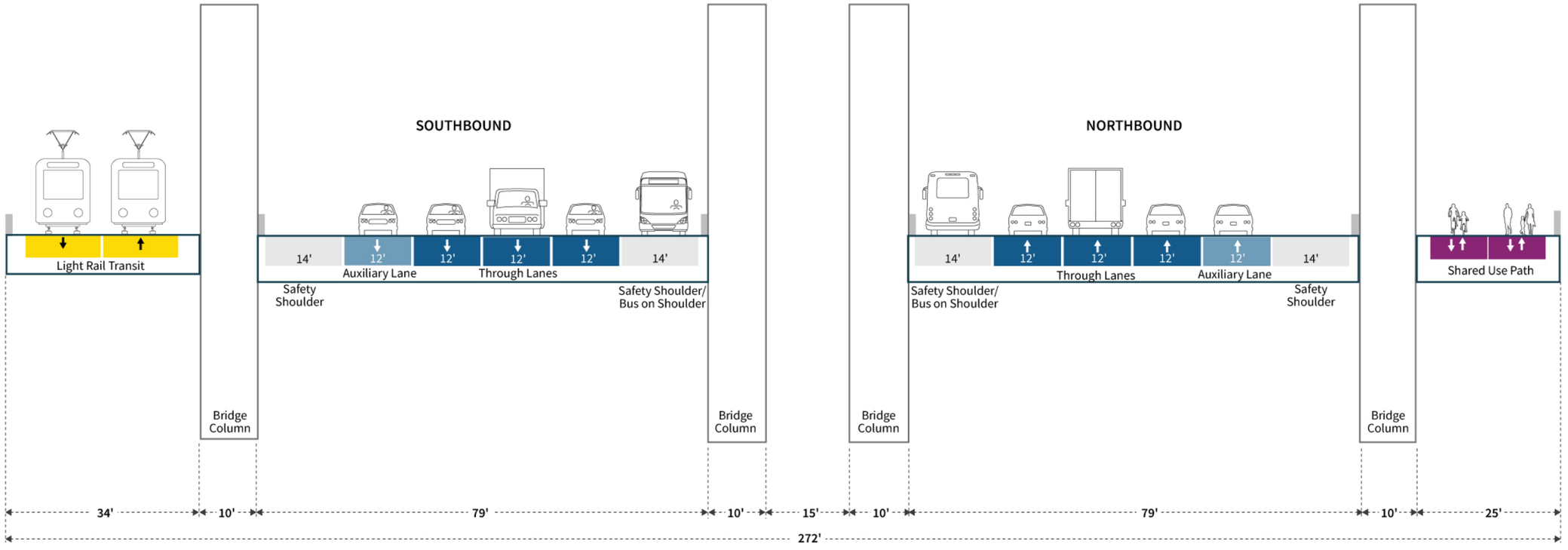
This bridge configuration would have a 3% maximum grade on both the Oregon and Washington sides of the bridge.

Figure 1-17. Conceptual Drawings of Single-Level Fixed-Span Bridge Types



Note: Visualizations are for illustrative purposes only. They do not reflect property impacts or represent final design. Visualization is looking southwest from Vancouver.

Figure 1-18. Cross Section of the Single-Level Fixed-Span Configuration (Extradosed or Finback Bridge Types)



Note: The cross section for a girder type bridge would be the same except that it would not have the four 10-foot bridge columns making the total out-to-out width 232 feet.

Single-Level Movable-Span Configuration

The single-level movable-span configuration would have two side-by-side, single-level steel girder bridges with movable spans between Piers 5 and 6. For the purpose of this report, the IBR Program assessed a vertical lift span movable-span configuration with counterweights based on the analysis in the *River Crossing Bridge Clearance Assessment Report – Movable-Span Options,* included as part of Attachment C in Appendix D, Design Options Development, Screening, and Evaluation Technical Report. A conceptual example of a vertical lift-span bridge is shown in Figure 1-19. These images are subject to change and do not represent final design.

A movable span must be located on a straight and flat bridge section (i.e., without curvature and with minimal slope). To comply with these requirements, and for the bridge to maintain the highway, transit, and active transportation connections on Hayden Island and in Vancouver while minimizing property acquisitions and displacements, the movable span is proposed to be located 500 feet south of the existing lift span, between Piers 5 and 6. To accommodate this location of the movable span, the IBR Program is coordinating with USACE to obtain authorization to change the location of the primary navigation channel, which currently aligns with the Interstate Bridge lift spans near the Washington shoreline.

The single-level movable-span configuration would provide 92 feet of vertical navigation clearance over the proposed relocated primary navigation channel when the movable spans are in the closed position, with 99 feet of vertical navigation clearance available over the north barge channel. The 92-foot vertical clearance is based on achieving a straight, movable span and maintaining an acceptable grade for transit operations. In addition, it satisfies the requirement of a minimum of 72 feet of vertical navigation clearance (the existing Interstate Bridge's maximum clearance over the alternate (southernmost) barge channel when the existing lift span is in the closed position).

In the open position, the movable span would provide 178 feet of vertical navigation clearance over the proposed relocated primary navigation channel.

Similar to the fixed-span configurations, the movable span would provide 400 feet of horizontal navigation clearance for the primary navigation channel and for each of the two barge channels.

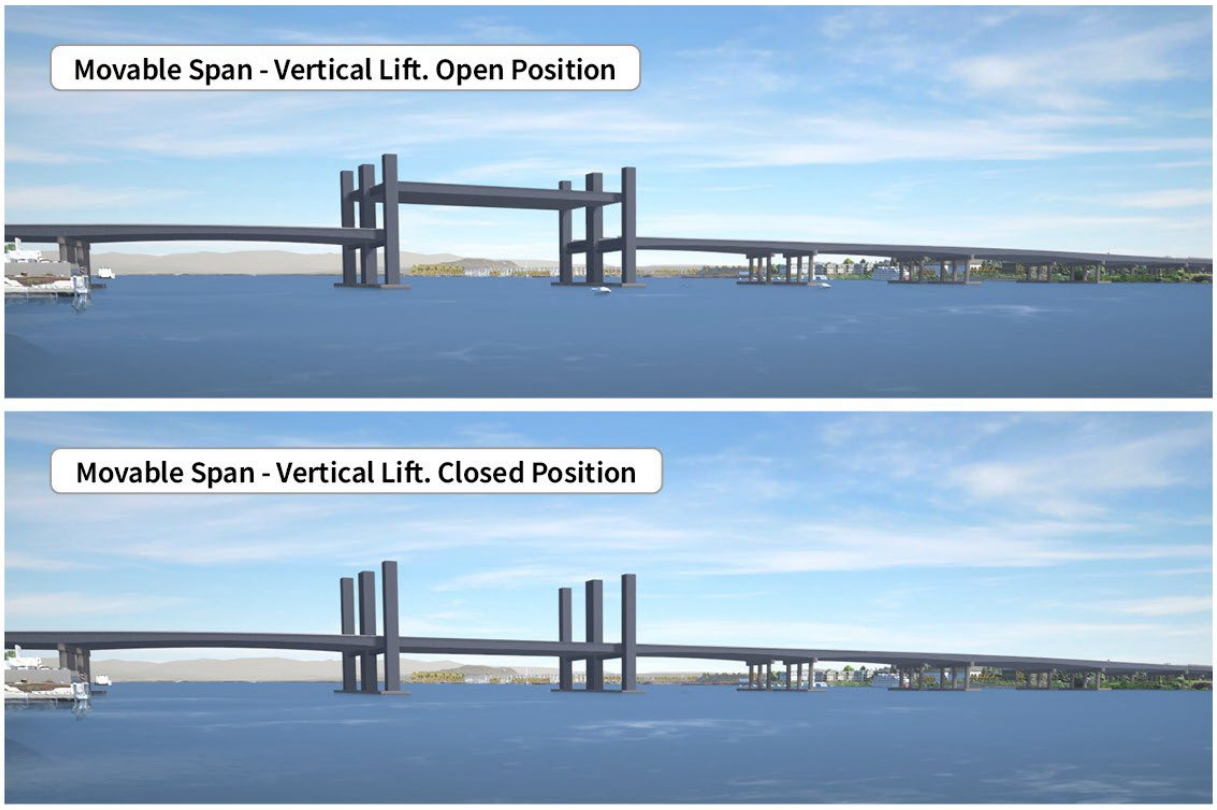
The vertical lift-span towers would be approximately 243 feet high; this is shorter than the existing lift-span towers, which are 247 feet high. This height of the vertical lift-span towers would not impede takeoffs and landings by aircraft using Portland International Airport. At Pearson Field, the Federal Aviation Administration issues obstacle departure procedures to avoid the existing Interstate Bridge lift towers; the single-level movable-span configuration would retain the same procedures.

Similar to the single-level fixed-span configuration, the eastern bridge would accommodate northbound highway traffic and the shared-use path, and the western bridge would carry southbound traffic and two-way light-rail tracks. The I-5 highway, light-rail tracks, and shared-use path would be on the same level across the bridges instead of on two levels as with the double-deck configuration. Cross sections of the single-level movable-span configuration are shown in Figure 1-20; the top cross section depicts the vertical lift spans (Piers 5 and 6), and the bottom cross section depicts the fixed spans (Piers 2, 3, 4, and 7). The movable and fixed cross sections are slightly different because the movable span requires lift towers, which are not required for the other fixed spans of the bridges.

There would be six in-water pier sets and two piers on land per bridge. The vertical lift span would have 22 in-water drilled shafts each for Piers 5 and 6; the shaft caps for these piers would be 50 feet by 312 feet to accommodate the vertical lift spans. Piers 2, 3, 4, and 7 would have 16 in-water drilled shafts each; the shaft caps for these piers would be the same as for the fixed-span options (50 feet by 230 feet). The vertical lift-span configuration would have a total of 108 in-water drilled shafts.

This single-level movable-span configuration would have a 3% maximum grade on the Oregon side of the bridge and a 1.5% maximum grade on the Washington side.

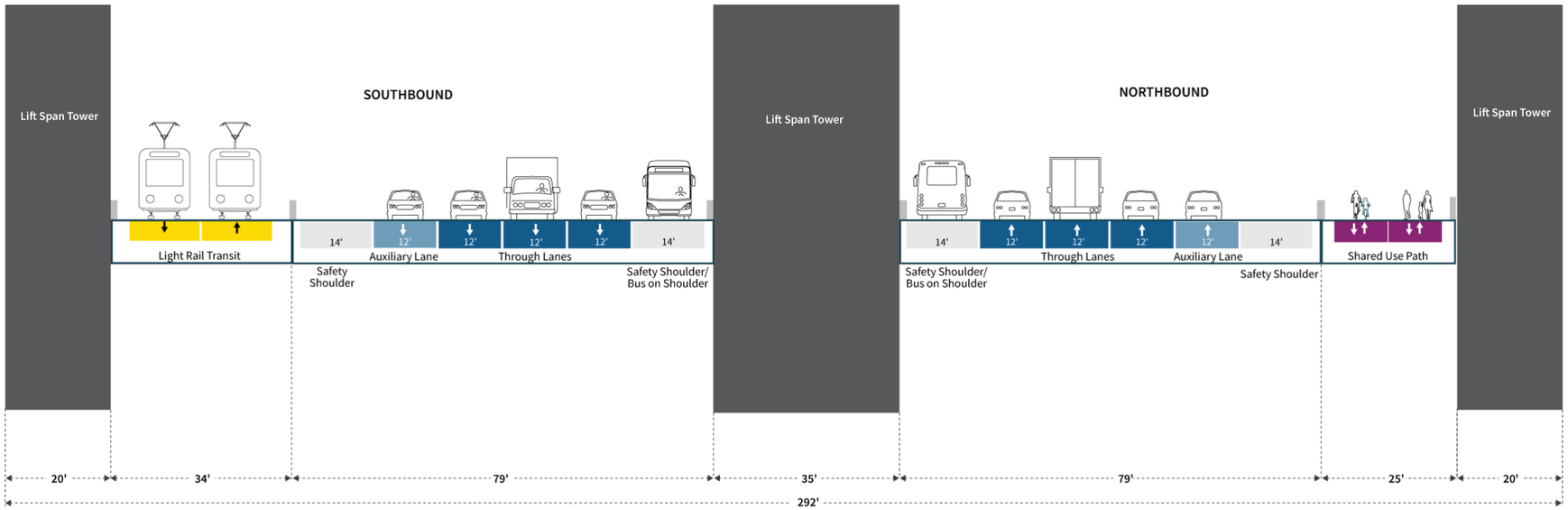
Figure 1-19. Conceptual Drawings of Single-Level Movable-Span Configurations in the Closed and Open Positions



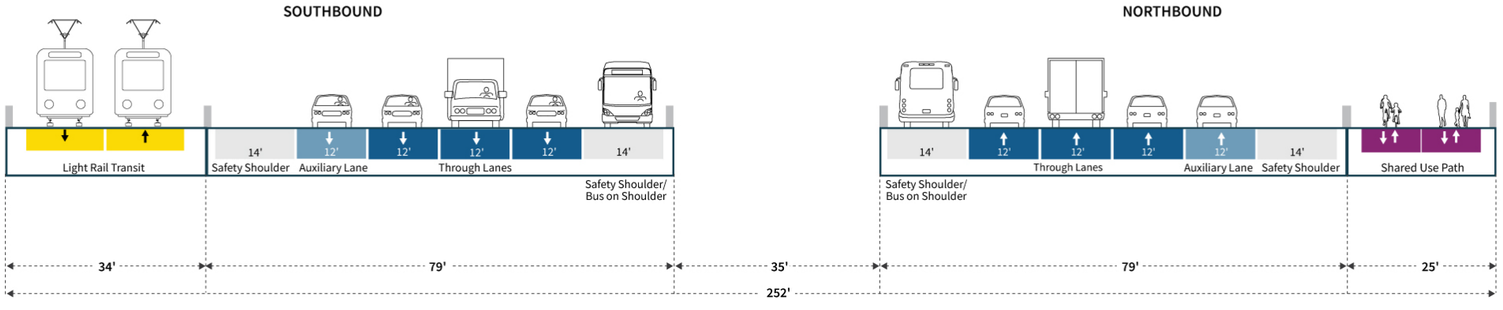
Note: Visualizations are for illustrative purposes only. They do not reflect property impacts or represent final design. Visualization is looking southeast (upstream) from Vancouver.

Figure 1-20. Cross Section of the Single-Level Movable-Span Bridge Type

Single-level Bridge with Movable Span - Vertical Lift Span Cross-section (Piers 5 and 6)



Single-level Bridge with Movable Span - Fixed Spans Cross-section (Piers 2, 3, 4, and 7)



Summary of Bridge Configurations

This section summarizes and compares each of the bridge configurations. Table 1-2 lists the key considerations for each configuration. Figure 1-21 compares each configuration's footprint. The footprints of each configuration would differ in only three locations: over the Columbia River and at the bridge landings on Hayden Island and Vancouver. The rest of the I-5 corridor would have the same footprint. Over the Columbia River, the footprint of the double-deck fixed-span configuration would be 173 feet wide. Comparatively, the finback or extradosed bridge types of the single-level fixed-span configuration would be 272 feet wide (approximately 99 feet wider), and the single-level fixed-span configuration with a girder bridge type would be 232 feet wide (approximately 59 feet wider). The single-level movable-span configuration would be 252 feet wide (approximately 79 feet wider than the double-deck fixed-span configuration), except at Piers 5 and 6, where larger bridge foundations would require an additional 40 feet of width to support the movable span. The single-level configurations would have a wider footprint at the bridge landings on Hayden Island and Vancouver because transit and active transportation would be located adjacent to the highway, rather than below the highway in the double-deck option.

Figure 1-22 compares the basic profile of each configuration. The lower deck of the double-deck fixed-span and the single-level fixed-span configuration would have similar profiles. The single-level movable-span configuration would have a lower profile than the fixed-span configurations when the span is in the closed position.

This section summarizes and compares each of the bridge configurations. Table 1-2 lists the key considerations for each configuration. Figure 1-21 compares each configuration's footprint. The footprints of each configuration would differ in only three locations: over the Columbia River and at the bridge landings on Hayden Island and Vancouver. The rest of the I-5 corridor would have the same footprint. Over the Columbia River, the footprint of the double-deck fixed-span configuration would be 173 feet wide. Comparatively, the finback or extradosed bridge types of the single-level fixed-span configuration would be 272 feet wide (approximately 99 feet wider), and the single-level fixed-span configuration with a girder bridge type would be 232 feet wide (approximately 59 feet wider). The single-level movable-span configuration would be 252 feet wide (approximately 79 feet wider than the double-deck fixed-span configuration), except at Piers 5 and 6, where larger bridge foundations would require an additional 40 feet of width to support the movable span. The single-level configurations would have a wider footprint at the bridge landings on Hayden Island and Vancouver because transit and active transportation would be located adjacent to the highway, rather than below the highway in the double-deck option.

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Figure 1-21. Bridge Configuration Footprint Comparison

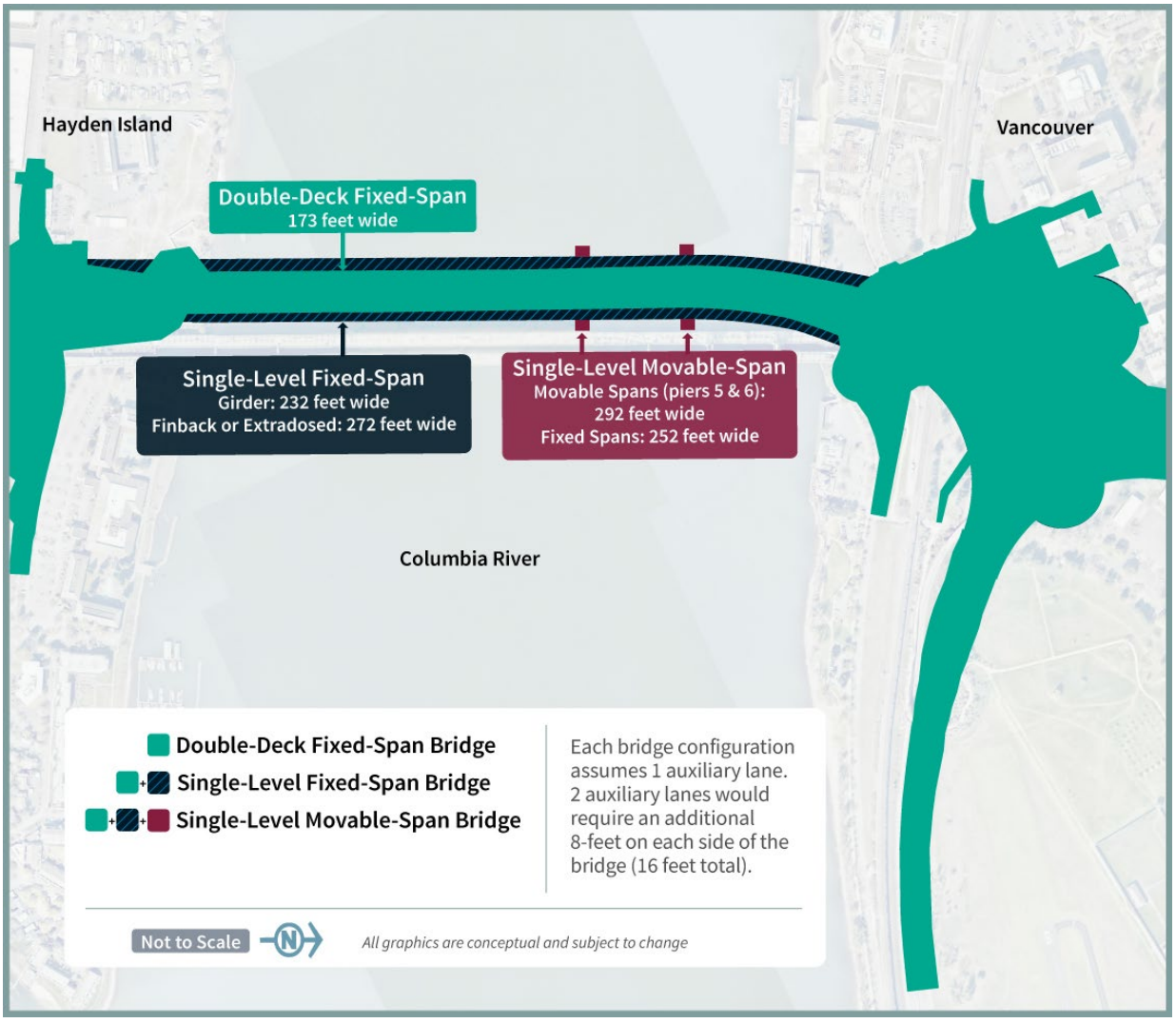


Figure 1-22. Bridge Configuration Profile Comparison

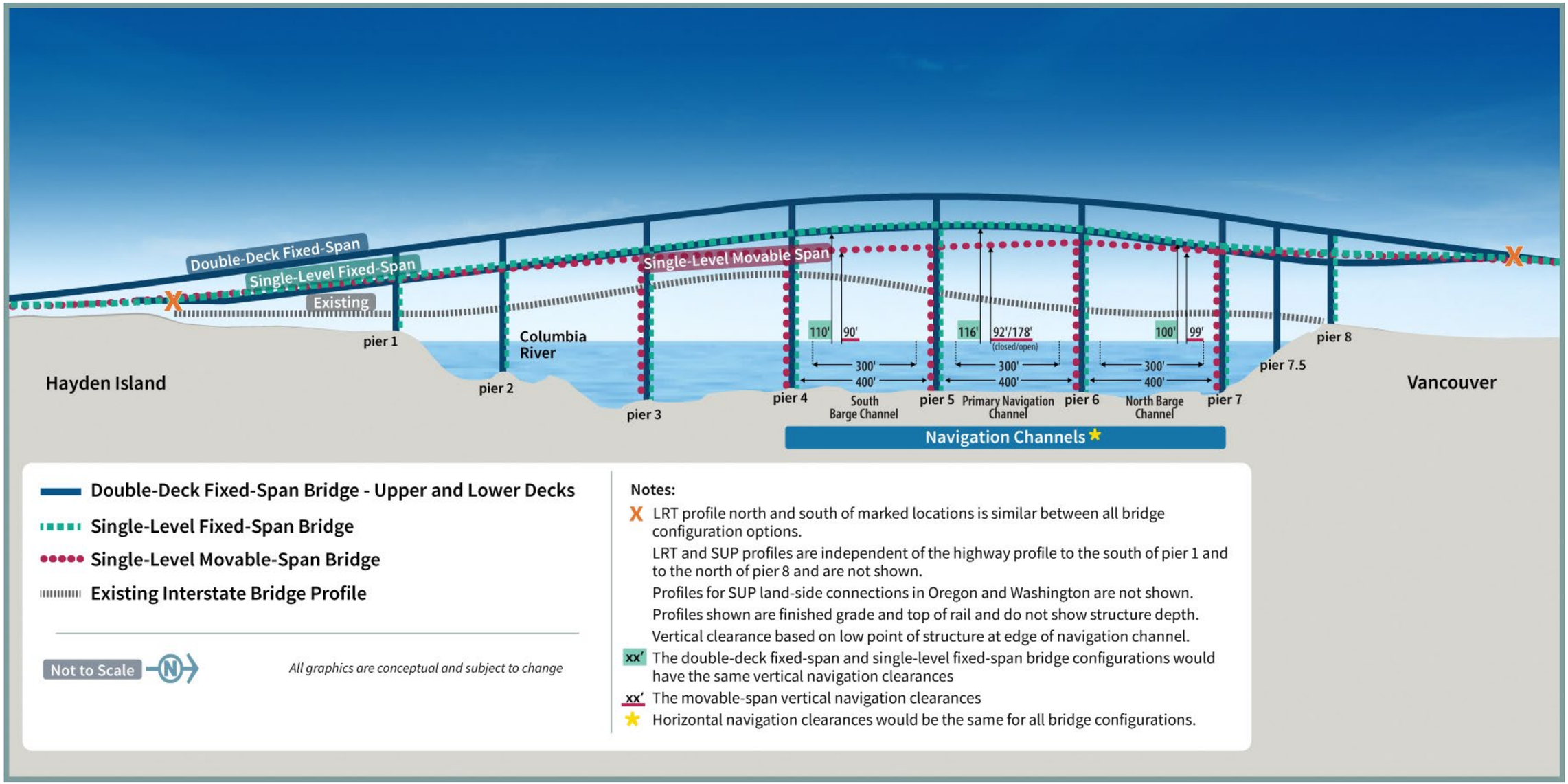


Table 1-2. Summary of Bridge Configurations

	No-Build Alternative	Modified LPA with Double-Deck Fixed-Span Configuration	Modified LPA with Single-Level Fixed-Span Configuration [a]	Modified LPA with Single-Level Movable-Span Configuration
Bridge type	Steel through-truss spans.	Double-deck steel truss.	Single-level, concrete or steel girders, extradosed or finback.	Single-level, steel girders with vertical lift span.
Number of bridges	Two	Two	Two	Two
Movable-span type	Vertical lift span with counterweights.	N/A	N/A	Vertical lift span with counterweights.
Movable-span location	Adjacent to Vancouver shoreline.	N/A	N/A	Between Piers 5 and 6 (approximately 500 feet south of the existing lift span).
Lift opening restrictions	Weekday peak AM and PM highway travel periods. b	N/A	N/A	Additional restrictions to daytime bridge openings; requires future federal rulemaking process and authorization by USCG (beyond the assumed No-Build Alternative bridge restrictions for peak AM and PM highway travel periods).b Typical opening durations are assumed to be 9 to 18 minutes c for the purposes of impact analysis but would ultimately depend on various operational considerations related to vessel traffic and river and weather conditions. Additional time would also be

	No-Build Alternative	Modified LPA with Double-Deck Fixed-Span Configuration	Modified LPA with Single-Level Fixed-Span Configuration [a]	Modified LPA with Single-Level Movable-Span Configuration
				required to stop traffic prior to opening and restart traffic after the bridge closes.
Out-to-out width [d]	138 feet total width.	173 feet total width.	Girder: 232 feet total width. Extradosed/Finback: 272 feet total width.	• 292 feet at the movable span. • 252 feet at the fixed spans.
Deck widths	52 feet (SB) 52 feet (NB)	79 feet (SB) 79 feet (NB)	Girder: • 113 feet (SB) • 104 feet (NB) Extradosed/Finback: • 133 feet (SB) • 124 feet (NB)	113 feet SB fixed span. 104 feet NB fixed span.
Vertical navigation clearance	Primary navigation channel: • 39 feet when closed. • 178 feet when open. Barge channel: • 46 feet to 70 feet. Alternate barge channel: • 72 feet (maximum clearance without opening).	Primary navigation channel: • 116 feet maximum. North barge channel: • 100 feet maximum. South barge channel: • 110 feet maximum.	Primary navigation channel: • 116 feet maximum. North barge channel: • 100 feet maximum. South barge channel: • 110 feet maximum.	Primary navigation channel: • Closed position: 92 feet. • Open position: 178 feet. North barge channel: • 99 feet maximum. South barge channel: • 90 feet maximum.
Horizontal navigation clearance	263 feet for primary navigation channel. 511 feet for barge channel.	400 feet for all navigation channels (300-foot congressionally or	400 feet for all navigation channels (300-foot congressionally or	400 feet for all navigation channels (300-foot congressionally or

	No-Build Alternative	Modified LPA with Double-Deck Fixed-Span Configuration	Modified LPA with Single-Level Fixed-Span Configuration [a]	Modified LPA with Single-Level Movable-Span Configuration
	260 feet for alternate barge channel.	USACE-authorized channel plus a 50-foot channel maintenance buffer on each side).	USACE-authorized channel plus a 50-foot channel maintenance buffer on each side).	USACE-authorized channel plus a 50-foot channel maintenance buffer on each side).
Maximum elevation of bridge component (NAVD 88) [e]	247 feet at top of lift tower.	166 feet.	Girder: 137 feet. Extradosed/Finback: 179 feet at top of pylons.	243 feet at top of lift tower.
Movable span length (from center of pier to center of pier)	278 feet.	N/A	N/A	450 feet.
Number of in-water pier sets	Nine	Six	Six	Six
Number of in-water drilled shafts	N/A	72	96	108
Shaft cap sizes	N/A	50 feet by 85 feet.	50 feet by 230 feet.	Piers 2, 3, 4, and 7: 50 feet by 230 feet. Piers 5 and 6: 50 feet by 312 feet (one combined footing at each location to house tower/equipment for the lift span).
Maximum grade	5%	4% on the Washington side. 3.8% on the Oregon side.	3% on the Washington side. 3% on the Oregon side.	1.5% on the Washington side. 3% on the Oregon side.

	No-Build Alternative	Modified LPA with Double-Deck Fixed-Span Configuration	Modified LPA with Single-Level Fixed-Span Configuration [a]	Modified LPA with Single-Level Movable-Span Configuration
Light-rail transit location	N/A	Below highway on SB bridge.	West of highway on SB bridge.	West of highway on SB bridge.
Express bus	Shared roadway lanes.	Inside shoulder of NB and SB (upper) bridges.	Inside shoulder of NB and SB bridges.	Inside shoulder of NB and SB bridges.
Shared-use path location	Sidewalk adjacent to roadway in both directions.	Below highway on NB bridge.	East of highway on NB bridge.	East of highway on NB bridge.

a When different bridge types are not mentioned, data applies to all bridge types under the specified bridge configuration.

b The No-Build Alternative assumes existing conditions that restrict bridge openings during weekday peak periods (Monday through Friday 6:30 a.m. to 9 a.m.; 2:30 p.m. to 6 p.m., excluding federal holidays). This analysis estimates the potential frequency for bridge openings for vessels requiring more than 99 feet of clearance.

c For the purposes of the transportation analysis (see the Transportation Technical Report), the movable-span opening time is assumed to be an average of 12 minutes.

d "Out-to-out width" is the measurement between the outside edges of the bridge across its width at the widest point.

e NAVD 88 (North American Vertical Datum of 1988) is a vertical control datum (reference point) used by federal agencies for surveying.

NB = northbound; SB = southbound; USCG = U.S. Coast Guard

1.1.4 Downtown Vancouver (Subarea C)

This section discusses the geographic Subarea C shown in Figure 1-3. See Figure 1-23 for all highway and interchange improvements in Subarea C. Refer to Figure 1-3 for an overview of the geographic subareas.

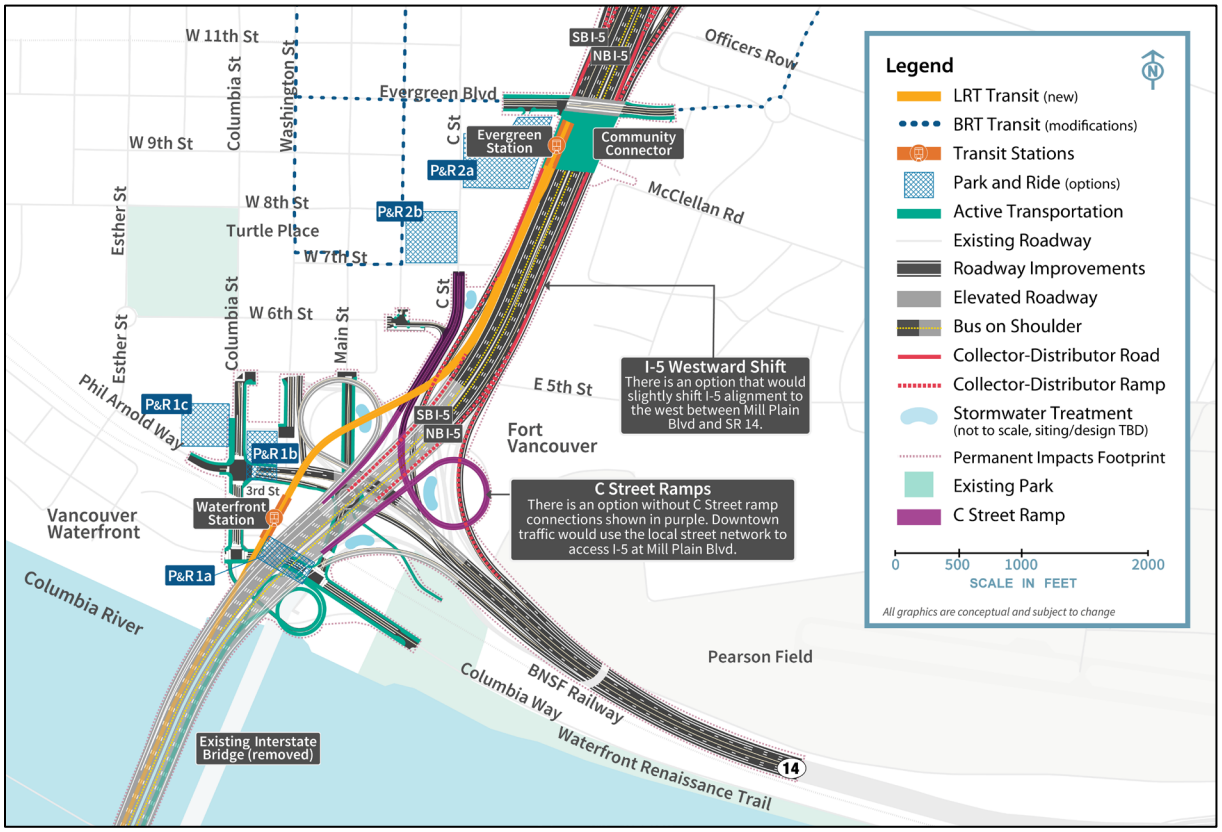
1.1.4.1 Highways, Interchanges, and Local Roadways

North of the Columbia River bridges in downtown Vancouver, improvements are proposed to the SR 14 interchange (Figure 1-23).

SR 14 INTERCHANGE

The new Columbia River bridges would touch down just north of the SR 14 interchange (Figure 1-23). The function of the SR 14 interchange would remain essentially the same as it is now, although the interchange would be elevated. Direct connections between I-5 and SR 14 would be rebuilt. Access to and from downtown Vancouver would be provided as it is today, but the connection points would be relocated. Downtown Vancouver I-5 access to and from the south would be at C Street as it is today, while downtown connections to and from SR 14 would be from Columbia Street at 3rd Street.

Figure 1-23. Downtown Vancouver (Subarea C)



BRT = bus rapid transit; LRT = light-rail transit; NB = northbound; P&R = park and ride; SB = southbound

Main Street would be extended between 5th Street and Columbia Way. Vehicles traveling from downtown Vancouver to access SR 14 eastbound would use the new extension of Main Street to the roundabout underneath I-5. If coming from the west or south (waterfront) in downtown Vancouver, vehicles would use the Phil Arnold Way/3rd Street extension to the roundabout, then continue to SR 14 eastbound. The existing Columbia Way roadway under I-5 would be realigned to the north of its existing location and would intersect both the new Main Street extension and Columbia Street with T intersections.

In addition, the existing overcrossing of I-5 at Evergreen Boulevard would be reconstructed.

Design Option Without C Street Ramps

Under this design option, downtown Vancouver I-5 access to and from the south would be through the Mill Plain interchange rather than C Street. There would be no eastside loop ramp from I-5 northbound to C Street and no directional ramp on the west side of I-5 from C Street to I-5 southbound. The existing eastside loop ramp would be removed. This design option has been included because of changes in local planning that necessitate consideration of design options that reduce the footprint and associated direct and temporary environmental impacts in Vancouver.

Design Option to Shift I-5 Westward

This design option would shift the I-5 mainline and ramps approximately 40 feet to the west between SR 14 and Mill Plain Boulevard. The westward I-5 alignment shift could also be paired with the design option without C Street ramps. The inclusion of this design option is due to changes in local planning, which necessitate consideration of design options that that shifts the footprint and associated direct and temporary environmental impacts in Vancouver.

1.1.4.2 Transit

LIGHT-RAIL ALIGNMENT AND STATIONS

Under the Modified LPA, the light-rail tracks would exit the highway bridge and be on their own bridge along the west side of the I-5 mainline after crossing the Columbia River (see Figure 1-23). The light-rail bridge would cross approximately 35 feet over the BNSF Railway tracks. An elevated light-rail station near the Vancouver waterfront (Waterfront Station) would be situated near the overcrossing of the BNSF tracks between Columbia Way and 3rd Street. Access to the elevated station would be primarily by elevator as the station is situated approximately 75 feet above existing ground level. A stairwell(s) would be provided for emergency egress. The number of elevators and stairwells provided would be based on the ultimate platform configuration, station location relative to the BNSF trackway, projected ridership, and fire and life safety requirements. Passenger drop-off facilities would be located at ground level and would be coordinated with the C-TRAN bus service at this location. The elevated light-rail tracks would continue north, cross over the westbound SR 14 on-ramp and the C Street/6th Street on-ramp to southbound I-5, and then straddle the southbound I-5 C-D roadway. Transit components in the downtown Vancouver area are similar between the two SR 14 interchange area design options discussed above.

North of the Waterfront Station, the light-rail tracks would continue to the Evergreen Station, which would be the terminus of the light-rail extension (see Figure 1-23). The light-rail tracks from downtown Vancouver to the terminus would be entirely on an elevated structure supported by single columns, where feasible, or by columns on either side of the roadway where needed. The light-rail tracks would be a minimum of 27 feet above the I-5 roadway surface. The Evergreen Station would be located at the same elevation as Evergreen Boulevard, on the proposed Community Connector, and it would provide connections to C-TRAN's existing BRT system. Passenger drop-off facilities would be near the station and would be coordinated with the C-TRAN bus service at this location.

PARK AND RIDES

Up to two park and rides could be built in Vancouver along the light-rail alignment: one near the Waterfront Station and one near the Evergreen Station. Additional information regarding the park and rides can be found in the Transportation Technical Report.

> Park and rides can expand the catchment area of public transit systems, making transit more accessible to people who live farther away from fixed-route transit service, and attracting new riders who might not have considered using public transit otherwise.

Waterfront Station Park-and-Ride Options

There are three site options for the park and ride near the Waterfront Station (see Figure 1-23). Each would accommodate up to 570 parking spaces.

1. Columbia Way (below I-5). This park-and-ride site would be a multilevel aboveground structure located below the new Columbia River bridges, immediately north of a realigned Columbia Way.
2. Columbia Street/SR 14. This park-and-ride site would be a multilevel aboveground structure located along the east side of Columbia Street. It could span across (or over) the SR 14 westbound off-ramp to provide parking on the north and south sides of the off-ramp.
3. Columbia Street/Phil Arnold Way (Waterfront Gateway Site). This park-and-ride site would be located along the west side of Columbia Street immediately north of Phil Arnold Way. This park and ride would be developed in coordination with the City of Vancouver's Waterfront Gateway program and could be a joint-use parking facility not constructed exclusively for park-and-ride users.

Evergreen Station Park-and-Ride Options

There are two site options for the park and ride near the Evergreen Station (see Figure 1-23).

1. Library Square. This park-and-ride site would be located along the east side of C Street and south of Evergreen Boulevard. It would accommodate up to 700 parking spaces in a multilevel belowground structure according to a future agreement on City-owned property associated with Library Square. Current design concepts suggest the park and ride most likely would be a joint-use parking facility for park-and-ride users and patrons of other uses on the ground or upper levels as negotiated as part of future decisions.
2. Columbia Credit Union. This park-and-ride site is an existing multistory garage that is located below the Columbia Credit Union office tower along the west side of C Street between 7th Street and 8th Street. The existing parking structure currently serves the office tower above it and the

Regal City Center across the street. This would be a joint-use parking facility, not for the exclusive use of park-and-ride users, that could serve as additional or overflow parking if the 700 required parking spaces cannot be accommodated elsewhere.

1.1.4.3 Active Transportation

Within the downtown Vancouver area, the shared-use path on the northbound (or eastern) bridge would exit the bridge at the SR 14 interchange, loop down on the east side of I-5 via a vertical spiral path, and then cross back below I-5 to the west side of I-5 to connect to the Waterfront Renaissance Trail on Columbia Street and into Columbia Way (see Figure 1-23). Access would be provided across state right of way beneath the new bridges to provide a connection between the recreational areas along the City's Columbia River waterfront east of the bridges and existing and future waterfront uses west of the bridges.

Active transportation components in the downtown Vancouver area would be similar without the C Street ramps and with the I-5 westward shift.

At Evergreen Boulevard, a community connector is proposed to be built over I-5 just south of Evergreen Boulevard and east of the Evergreen Station (see Figure 1-23). The structure is proposed to include off-street pathways for active transportation modes including pedestrians, bicyclists, and other micro-mobility modes, and public space and amenities to support the active transportation facilities. The primary intent of the Community Connector is to improve connections between downtown Vancouver on the west side of I-5 and the Vancouver National Historic Reserve on the east side.

1.1.5 Upper Vancouver (Subarea D)

This section discusses the geographic Subarea D shown in Figure 1-3. See Figure 1-24 for all highway and interchange improvements in Subarea D. Refer to Figure 1-3 for an overview of the geographic subareas.

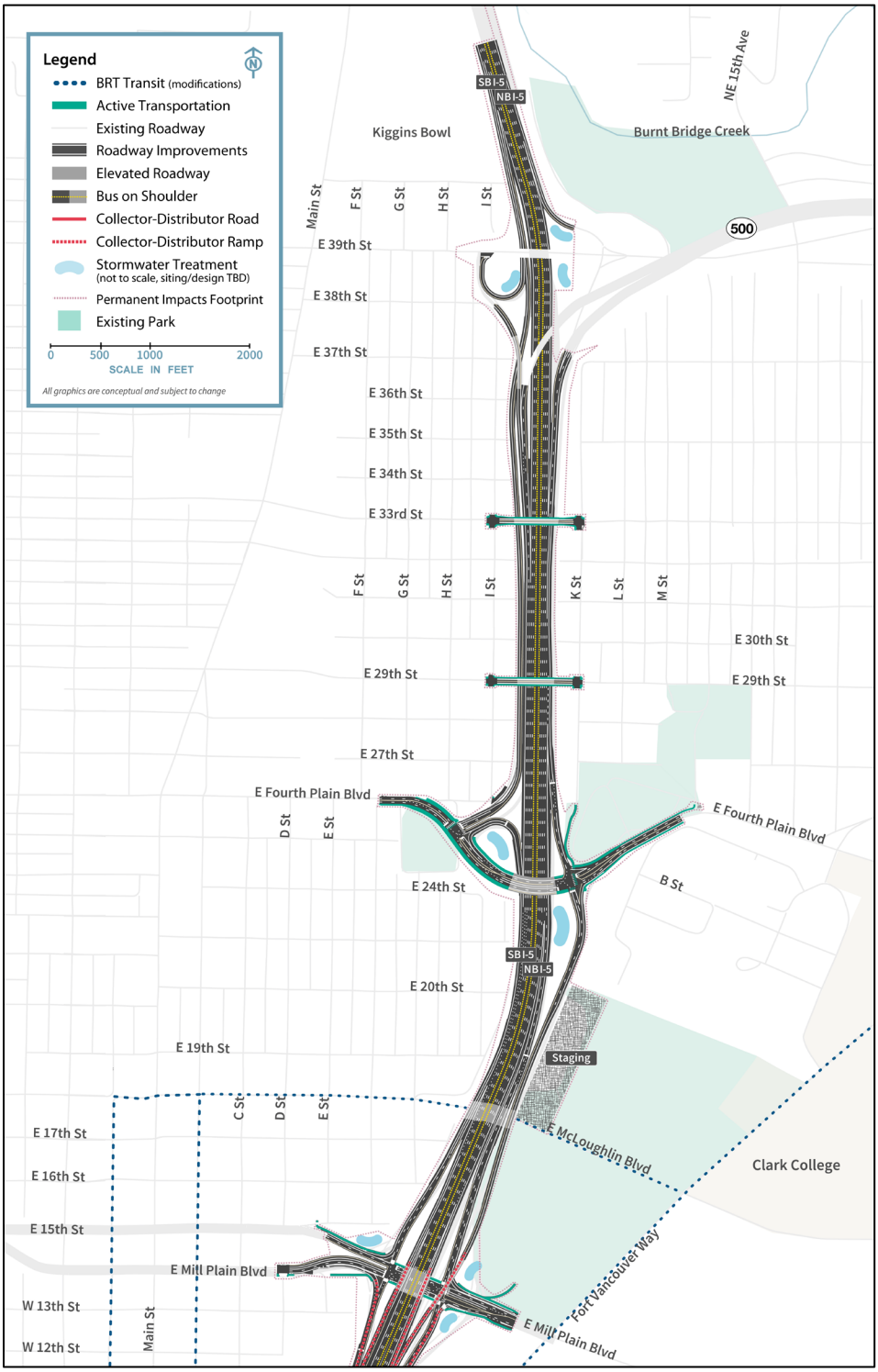
1.1.5.1 Highways, Interchanges, and Local Roadways

Within the upper Vancouver area, the IBR Program proposes improvements to three interchanges—Mill Plain, Fourth Plain, and SR 500—as described below.

MILL PLAIN BOULEVARD INTERCHANGE

The Mill Plain Boulevard interchange is north of the SR 14 interchange (see Figure 1-24). This interchange would be reconstructed as a tight-diamond configuration but would otherwise remain similar in function to the existing interchange. The ramp terminal intersections would be sized to accommodate high, wide heavy freight vehicles that travel between the Port of Vancouver and I-5. The off-ramp from I-5 northbound to Mill Plain Boulevard would diverge from the C-D road that would continue north, crossing over Mill Plain Boulevard, to provide access to Fourth Plain Boulevard via a C-D roadway. The off-ramp to Fourth Plain Boulevard would be reconstructed and would cross over Mill Plain Boulevard east of I-5, similar to the way it functions today.

Figure 1-24. Upper Vancouver (Subarea D)



BRT = bus rapid transit; TBD = to be determined

FOURTH PLAIN BOULEVARD INTERCHANGE

At the Fourth Plain Boulevard interchange (Figure 1-24), improvements would include reconstruction of the overpass of I-5 and the ramp terminal intersections. Northbound I-5 traffic exiting to Fourth Plain Boulevard would first exit to the northbound C-D roadway which provides off-ramp access to Fourth Plain Boulevard and Mill Plain Boulevard. The westbound SR 14 to northbound I-5 on-ramp also joins the northbound C-D roadway before continuing north past the Fourth Plain Boulevard and Mill Plain Boulevard off-ramps as an auxiliary lane. The southbound I-5 off-ramp to Fourth Plain Boulevard would be braided below the 39th Street on-ramp to southbound I-5. This change would eliminate the existing nonstandard weave between the SR 500 interchange and the off-ramp to Fourth Plain Boulevard. It would also eliminate the existing westbound SR 500 to Fourth Plain Boulevard off-ramp connection. The existing overcrossing of I-5 at 29th Street would be reconstructed to accommodate a widened I-5, provide adequate vertical clearance over I-5, and provide pedestrian and bicycle facilities.

SR 500 INTERCHANGE

The northern terminus of the I-5 improvements would be in the SR 500 interchange area (Figure 1-24). The improvements would primarily be to connect the Modified LPA to existing ramps. The off-ramp from I-5 southbound to 39th Street would be reconstructed to establish the beginning of the braided ramp to Fourth Plain Boulevard and restore the loop ramp to 39th Street. Ramps from existing I-5 northbound to SR 500 eastbound and from 39th Street to I-5 northbound would be partially reconstructed. The existing bridges for 39th Street over I-5 and SR 500 westbound to I-5 southbound would be retained. The 39th Street to I-5 southbound on-ramp would be reconstructed and braided over (i.e., grade separated or pass over) the new I-5 southbound off-ramp to Fourth Plain Boulevard.

The existing overcrossing of I-5 at 33rd Street would also be reconstructed to accommodate a widened I-5, provide adequate vertical clearance over I-5, and provide pedestrian and bicycle facilities.

1.1.5.2 Transit

There would be no LRT facilities in upper Vancouver. Proposed operational changes to bus service, including I-5 bus-on-shoulder service, are described in Section 1.1.7, Transit Operating Characteristics.

1.1.5.3 Active Transportation

Several active transportation improvements would be made in Subarea D consistent with City of Vancouver plans and policies. At the Fourth Plain Boulevard interchange, there would be improvements to provide better bicycle and pedestrian mobility and accessibility; these include bicycle lanes, neighborhood connections, and a connection to the City of Vancouver's planned two-way cycle track on Fourth Plain Boulevard. The reconstructed overcrossings of I-5 at 29th Street and 33rd Street would provide pedestrian and bicycle facilities on those cross streets. No new active transportation facilities are proposed in the SR 500 interchange area. Active transportation improvements at the Mill Plain Boulevard interchange include buffered bicycle lanes and sidewalks, pavement markings, lighting, and signing.

1.1.6 Transit Support Facilities

1.1.6.1 Ruby Junction Maintenance Facility Expansion

The TriMet Ruby Junction Maintenance Facility in Gresham, Oregon, would be expanded to accommodate the additional LRVs associated with the Modified LPA's LRT service (the Ruby Junction location relative to the study area is shown in Figure 1-25). Improvements would include additional storage for LRVs and maintenance materials and supplies, expanded LRV maintenance bays, expanded parking and employee support areas for additional personnel, and a third track at the northern entrance to Ruby Junction. Figure 1-25 shows the proposed footprint of the expansion.

The existing main building would be expanded west to provide additional maintenance bays. To make space for the building expansion, Eleven Mile Avenue would be vacated and would terminate in a new cul-de-sac west of the main building. New access roads would be constructed to maintain access to TriMet buildings south of the cul-de-sac.

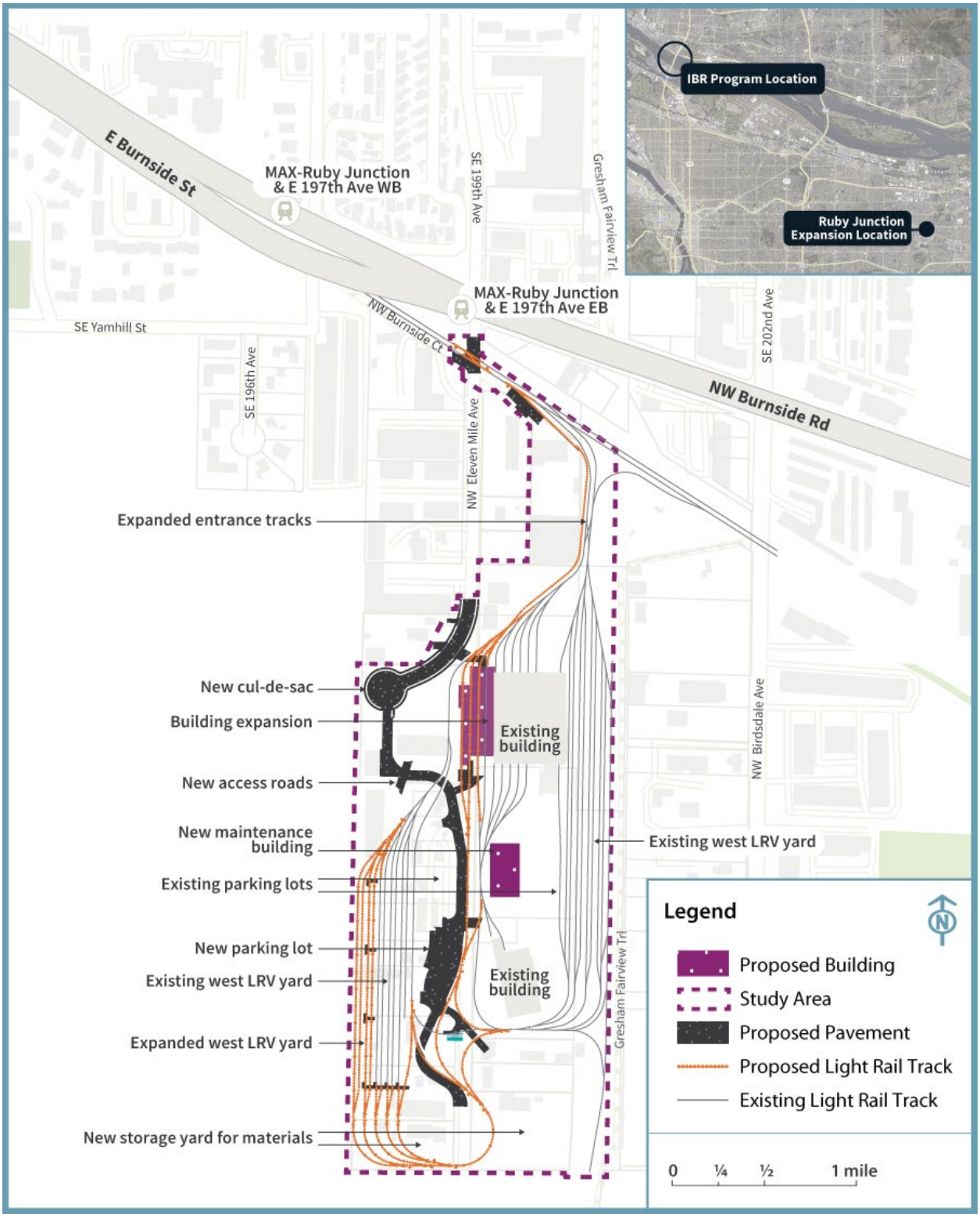
The existing LRV storage yard, west of Eleven Mile Avenue, would be expanded to the west to accommodate additional storage tracks and a runaround track (a track constructed to bypass congestion in the maintenance yard). This expansion would require partial demolition of an existing TriMet building (just north of the LRV storage) and would require relocating the material storage yard to the properties just south of the south building.

All tracks in the west LRV storage yard would also be extended southward to connect to the proposed runaround track. The runaround track would connect to existing tracks near the existing south building. The connections to the runaround track would require partial demolition of an existing TriMet building plus full demolition of one existing building and partial demolition of another existing building on the private property west of the south end of Eleven Mile Avenue. The function of the existing TriMet building would either be transferred to existing modified buildings or to new replacement buildings on site.

The existing parking lot west of Eleven Mile Avenue would be expanded toward the south to provide more parking for TriMet personnel.

A third track would be needed at the north entrance to Ruby Junction to accommodate increased train volumes without decreasing service. The additional track would also reduce operational impacts during construction and maintenance outages for the yard. Constructing the third track would require reconstruction of Burnside Court east of Eleven Mile Avenue. An additional crossover would also be needed on the mainline track where it crosses Eleven Mile Avenue; it would require reconstruction of the existing track crossings for vehicles, bicycles, and pedestrians.

Figure 1-25. Ruby Junction Maintenance Facility Study Area



EB = eastbound; LRV = light-rail vehicle; WB = westbound

1.1.6.2 Expo Center Overnight LRV Facility

An overnight facility for LRVs would be constructed on the southeast corner of the Expo Center property (as shown on Figure 1-8) to reduce deadheading between Ruby Junction and the northern terminus of the MAX Yellow Line extension. Deadheading occurs when LRVs travel without passengers to make the vehicles ready for service. The facility would provide a yard access track, storage tracks for approximately 10 LRVs, one building for light LRV maintenance, an operator break building, a parking lot for operators, and space for security personnel. This facility would necessitate relocation and reconstruction of the Expo Road entrance to the Expo Center (including the parking lot gates and booths). However, it would not affect existing Expo Center buildings.

The overnight facility would connect to the mainline tracks by crossing Expo Road just south of the existing Expo Center MAX Station. The connection tracks would require relocation of one or two existing LRT facilities, including a traction power substation building and potentially the existing communication building, which are both just south of the Expo Center MAX Station. Existing artwork at the station may require relocation.

1.1.6.3 Additional Bus Bays at the C-TRAN Operations and Maintenance Facility

Three bus bays would be added to the C-TRAN operations and maintenance facility. These new bus bays would provide maintenance capacity for the additional express bus service on I-5 (see Section 1.1.7, Transit Operating Characteristics). Modifications to the facility would accommodate new vehicles as well as maintenance equipment.

1.1.7 Transit Operating Characteristics

1.1.7.1 LRT Operations

Nineteen new LRVs would be purchased to operate the extension of the MAX Yellow Line. These vehicles would be similar to those currently used for the TriMet MAX system. With the Modified LPA, LRT service in the new and existing portions of the Yellow Line in 2045 would operate with 6.7-minute average headways (defined as gaps between arriving transit vehicles) during the 2-hour morning peak period. Mid-day and evening headways would be 15 minutes, and late-night headways would be 30 minutes. Service would operate between the hours of approximately 5 a.m. (first southbound train leaving Evergreen Station) and 1 a.m. (last northbound train arriving at the station), which is consistent with current service on the Yellow Line. LRVs would be deadheaded at Evergreen Station before beginning service each day. A third track at this northern terminus would accommodate layovers.

1.1.7.2 Express Bus Service and Bus on Shoulder

C-TRAN provides bus service that connects to LRT and augments travel between Washington and Oregon with express bus service to key employment centers in Oregon. Beginning in 2022, the main express route providing service in the IBR corridor, Route 105, had two service variations. One pattern provides service between Salmon Creek and downtown Portland with a single intermediate stop at the 99th Street Transit Center, and one provides service between Salmon Creek and downtown Portland with two intermediate stops: 99th Street Transit Center and downtown Vancouver. This route currently provides weekday service with 20-minute peak and 60-minute off-peak headways.

Once the Modified LPA is constructed, C-TRAN Route 105 would be revised to provide direct service from the Salmon Creek Park and Ride and 99th Street Transit Center to downtown Portland, operating at 5-minute peak headways with no service in the off-peak. The C-TRAN Route 105 intermediate stop service through downtown Vancouver would be replaced with C-TRAN Route 101, which would provide direct service from downtown Vancouver to downtown Portland at 10-minute peak and 30-minute off-peak headways.

Two other existing C-TRAN express bus service routes would remain unchanged after completion of the Modified LPA. C-TRAN Route 190 would continue to provide service from the Andresen Park and Ride in Vancouver to Marquam Hill in Portland. This route would continue to operate on SR 500 and I-5 within the study area. Route headways would be 10 minutes in the peak periods with no off-peak service. C-TRAN Route 164 would continue to provide service from the Fisher's Landing Transit Center to downtown Portland. This route would continue to operate within the study area only in the northbound direction during PM service to use the I-5 northbound high-occupancy vehicle lane in Oregon before exiting to eastbound SR 14 in Washington. Route headways would be 10 minutes in the peak and 30 minutes in the off-peak.

C-TRAN express bus Routes 105 and 190 are currently permitted to use the existing southbound inside shoulder of I-5 from 99th Street to the Interstate Bridge in Vancouver. However, the existing shoulders are too narrow for bus-on-shoulder use in the rest of the I-5 corridor in the study area. The Modified LPA would include inside shoulders on I-5 that would be wide enough (14 feet on the Columbia River bridges and 11.5 to 12 feet elsewhere on I-5) to allow northbound and southbound buses to operate on the shoulder, except where I-5 would have to taper to match existing inside shoulder widths at the north and south ends of the corridor. Figure 1-8, Figure 1-16, Figure 1-23, and Figure 1-24 show the potential bus-on-shoulder use over the Columbia River bridges. Bus on shoulder could operate on any of the Modified LPA bridge configurations and bridge types. Additional approvals (including a continuing control agreement), in coordination with ODOT, may be needed for buses to operate on the shoulder on the Oregon portion of I-5.

After completion of the Modified LPA, two C-TRAN express bus routes operating on I-5 through the study area would be able to use bus-on-shoulder operations to bypass congestion in the general-purpose lanes. C-TRAN Route 105 would operate on the shoulder for the full length of the study area. C-TRAN Route 190 would operate on the shoulder for the full length of the corridor except for the distance required to merge into and out of the shoulder as the route exits from and to SR 500. These two express bus routes (105 and 190) would have a combined frequency of every 3 minutes during the 2045 AM and PM peak periods. To support the increased frequency of express bus service, eight electric double-decker or articulated buses would be purchased.

If the C Street ramps were removed from the SR 14 interchange, C-TRAN Route 101 could also use bus-on-shoulder operations south of Mill Plain Boulevard; however, if the C Street ramps remained in place, Route 101 could still use bus-on-shoulder operations south of the SR 14 interchange but would need to begin merging over to the C Street exit earlier than if the C Street ramps were removed. Route 101 would operate at 10-minute peak and 30-minute off-peak headways. C-TRAN Route 164 would not be anticipated to use bus-on-shoulder operations because of the need to exit to SR 14 from northbound I-5.

1.1.7.3 Local Bus Route Changes

The TriMet Line 6 bus route would be changed to terminate at the Expo Center MAX Station, requiring passengers to transfer to the new LRT connection to access Hayden Island. TriMet Line 6 is anticipated to travel from Martin Luther King Jr. Boulevard through the newly configured area providing local connections to Marine Drive. It would continue west to the Expo Center MAX Station. Table 1-3 shows existing service and anticipated future changes to TriMet Line 6.

As part of the Modified LPA, several local C-TRAN bus routes would be changed to better complement the new light-rail extension. Most of these changes would reroute existing bus lines to provide a transfer opportunity near the new Evergreen Station. Table 1-3 shows existing service and anticipated future changes to C-TRAN bus routes. In addition to the changes noted in Table 1-3, other local bus route modifications would move service from Broadway to C Street. The changes shown may be somewhat different if the C Street ramps are removed.

Table 1-3. Proposed TriMet and C-TRAN Bus Route Changes

Bus Route	Existing Route	Changes with Modified LPA
TriMet Line 6	Connects Goose Hollow, Portland City Center, N/NE Portland, Jantzen Beach and Hayden Island. Within the study area, service currently runs between Delta Park MAX Station and Hayden Island via I-5.	Route would be revised to terminate at the Expo Center MAX Station. Route is anticipated to travel from Martin Luther King Jr. Boulevard through the newly configured Marine Drive area, then continue west to connect via facilities on the west side of I-5 with the Expo Center MAX Station.
C-TRAN Fourth Plain and Mill Plain bus rapid transit (The Vine)	Runs between downtown Vancouver and the Vancouver Mall Transit Center via Fourth Plain Boulevard, with a second line along Mill Plain Boulevard. In the study area, service currently runs along Washington and Broadway Streets through downtown Vancouver.	Route would be revised to begin/end near the Evergreen Station in downtown Vancouver and provide service along Evergreen Boulevard to Fort Vancouver Way, where it would travel to or from Mill Plain Boulevard or Fourth Plain Boulevard depending on clockwise/counterclockwise operations. The Fourth Plain Boulevard route would continue to serve existing Vine stations beyond Evergreen Boulevard.
C-TRAN #2 Lincoln	Connects the 99th Street Transit Center to downtown Vancouver via Lincoln and Kaufman Avenues. Within the study area, service currently runs along Washington and Broadway Streets between 7th and 15th Streets in downtown Vancouver.	Route would be modified to begin/end near C Street and 9th Street in downtown Vancouver.

Bus Route	Existing Route	Changes with Modified LPA
C-TRAN #25 St. Johns	Connects the 99th Street Transit Center to downtown Vancouver via St. Johns Boulevard and Fort Vancouver Way. Within the study area, service currently runs along Evergreen Boulevard, Jefferson Street/Kaufman Avenue, 15th Street, and Franklin Street in downtown Vancouver.	Route would be modified to begin/end near C Street and 9th Street in downtown Vancouver.
C-TRAN #30 Burton	Connects the Fisher's Landing Transit Center with downtown Vancouver via 164th/162nd Avenues and 18th, 25th, 28th, and 39th Streets. Within the study area, service currently runs along McLoughlin Boulevard and on Washington and Broadway Streets between 8th and 15th Streets.	Route would be modified to begin/end near C Street and 9th Street in downtown Vancouver.
C-TRAN #60 Delta Park Regional	Connects the Delta Park MAX station in Portland with downtown Vancouver via I-5. Within the study area, service currently runs along I-5, Mill Plain Boulevard, and Broadway Street.	Route would be discontinued.

1.1.8 Tolling

Tolling cars and trucks that would use the new Columbia River bridges is proposed as a method to help fund the bridge construction and future maintenance, as well as to encourage alternative mode choices for trips across the Columbia River. Federal and state laws set the authority to toll the I-5 crossing. The IBR Program plans to toll the I-5 river bridge under the federal tolling authorization program codified in 23 U.S. Code Section 129 (Section 129). Section 129 allows public agencies to impose new tolls on federal-aid interstate highways for the reconstruction or replacement of toll-free bridges or tunnels. In 2023, the Washington State Legislature authorized tolling on the Interstate Bridge, with toll rates and policies to be set by the Washington State Transportation Commission (WSTC). In Oregon, the legislature authorized tolling giving the Oregon Transportation Commission the authority to toll I-5, including the ability to set the toll rates and policies. Subsequently, the Oregon Transportation Commission (OTC) is anticipated to review and approve the I-5 tollway project application that would designate the Interstate Bridge as a "tollway project" in 2024. At the beginning of 2024, the OTC and the WSTC entered into a bi-state tolling agreement to establish a cooperative process for setting toll rates and policies. This included the formation of the I-5 Bi-State Tolling Subcommittee consisting of two commissioners each from the OTC and WSTC and tasked with developing toll rate and policy recommendations for joint consideration and adoption by each state's commission. Additionally, the two states plan to enter into a separate agreement guiding the sharing and uses of toll revenues, including the order of uses (flow of funds) for bridge construction, debt service, and other required expenditures. WSDOT and ODOT also plan to enter into one or more agreements addressing implementation logistics, toll collection, and operations and maintenance for tolling the bi-state facility.

The Modified LPA includes a proposal to apply variable tolls on vehicles using the Columbia River bridges with the toll collected electronically in both directions. Tolls would vary by time of day with higher rates during peak travel periods and lower rates during off-peak periods. The IBR Program has evaluated multiple toll scenarios generally following two different variable toll schedules for the tolling assessment. For purposes of this NEPA analysis, the lower toll schedule was analyzed with tolls assumed to range between $1.50 and $3.15 (in 2026 dollars as representative of when tolling would begin) for passenger vehicles with a registered toll payment account. Medium and heavy trucks would be charged a higher toll than passenger vehicles and light trucks. Passenger vehicles and light trucks without a registered toll payment account would pay an additional $2.00 per trip to cover the cost of identifying the vehicle owner from the license plate and invoicing the toll by mail.

The analysis assumes that tolling would commence on the existing Interstate Bridge—referred to as pre-completion tolling—starting April 1, 2026. The actual date pre-completion tolling begins would depend on when construction would begin. The traffic and tolling operations on the new Columbia River bridges were assumed to commence by July 1, 2033. The actual date that traffic and tolling operations on the new bridges begin would depend on the actual construction completion date. During the construction period, the two commissions may consider toll-free travel overnight on the existing Interstate Bridge, as was analyzed in the Level 2 Toll Traffic and Revenue Study, for the hours between 11 p.m. and 5 a.m. This toll-free period could help avoid situations where users would be charged during lane or partial bridge closures where construction delays may apply. Once the new I-5 Columbia River bridges open, twenty-four-hour tolling would begin.

Tolls would be collected using an all-electronic toll collection system using transponder tag readers and license plate cameras mounted to structures over the roadway. Toll collection booths would not be required. Instead, motorists could obtain a transponder tag and set up a payment account that would automatically bill the account holder associated with the transponder each time the vehicle crossed the bridge. Customers without transponders, including out-of-area vehicles, would be tolled by a license plate recognition system that would bill the address of the owner registered to that vehicle's license plate. The toll system would be designed to be nationally interoperable. Transponders for tolling systems elsewhere in the country could be used to collect tolls on I-5, and drivers with an account and transponder tag associated with the Interstate Bridge could use them to pay tolls in other states for which reciprocity agreements had been developed. There would be new signage, including gantries, to inform drivers of the bridge toll. These signs would be on local roads, I-5 on-ramps, and on I-5, including locations north and south of the bridges where drivers make route decisions (e.g., I-5/I-205 junction and I-5/I-84 junction).

1.1.9 Transportation System- and Demand-Management Measures

Many well-coordinated transportation demand-management and system-management programs are already in place in the Portland-Vancouver metropolitan region. In most cases, the impetus for the programs comes from state regulations: Oregon's Employee Commute Options rule and Washington's Commute Trip Reduction law (described in the sidebar).

The physical and operational elements of the Modified LPA provide the greatest transportation demand-management opportunities by promoting other modes to fulfill more of the travel needs in the corridor. These include:

- Major new light-rail line in exclusive right of way, as well as express bus routes and bus routes that connect to new light-rail stations.
- I-5 inside shoulders that accommodate express buses.
- Modern bicycle and pedestrian facilities that accommodate more bicyclists and pedestrians and improve connectivity, safety, and travel time.
- Park-and-ride facilities.
- A variable toll on the new Columbia River bridges.

In addition to these fundamental elements of the Modified LPA, facilities and equipment would be implemented that could help existing or expanded transportation system management measures maximize the capacity and efficiency of the system. These include:

- Replacement or expanded variable message signs in the study area. These signs alert drivers to incidents and events, allowing them to seek alternate routes or plan to limit travel during periods of congestion.
- Replacement or expanded traveler information systems with additional traffic monitoring equipment and cameras.
- Expanded incident response capabilities, which help traffic congestion to clear more quickly following accidents, spills, or other incidents.

State Laws to Reduce Commute Trips

Oregon and Washington have both adopted regulations intended to reduce the number of people commuting in single-occupancy vehicles (SOVs). Oregon's Employee Commute Options Program, created under Oregon Administrative Rule 340-242-0010, requires employers with over 100 employees in the greater Portland area to provide commute options that encourage employees to reduce auto trips to the work site. Washington's 1991 Commute Trip Reduction (CTR) Law, updated as the 2006 CTR Efficiency Act (Revised Code of Washington §70.94.521) addresses traffic congestion, air pollution, and petroleum fuel consumption. The law requires counties and cities with the greatest traffic congestion and air pollution to implement plans to reduce SOV demand. An additional provision mandates "major employers" and "employers at major worksites" to implement programs to reduce SOV use.

- Queue jumps or bypass lanes for transit vehicles where multilane approaches are provided at ramp signals for on-ramps. Locations for these features will be determined during the detailed design phase.
- Active traffic management including strategies such as ramp metering, dynamic speed limits, and transit signal priority. These strategies are intended to manage congestion by controlling traffic flow or allowing transit vehicles to enter traffic before single-occupant vehicles.

1.2 Modified LPA Construction

The following information on the construction activities and sequence follows the information prepared for the CRC LPA. Construction durations have been updated for the Modified LPA. Because the main elements of the IBR Modified LPA are similar to those in the CRC LPA (i.e., multimodal river crossings and interchange improvements), this information provides a reasonable assumption of the construction activities that would be required.

The construction of bridges over the Columbia River sets the sequencing for other Program components. Accordingly, construction of the Columbia River bridges and immediately adjacent highway connections and improvement elements would be timed early to aid the construction of other components. Demolition of the existing Interstate Bridge would take place after the new Columbia River bridges were opened to traffic.

Electronic tolling infrastructure would be constructed and operational on the existing Interstate Bridge by the start of construction on the new Columbia River bridges. The toll rates and policies for tolling (including pre-completion tolling) would be determined after a more robust analysis and public process by the OTC and WSTC (refer to Section 1.1.8, Tolling).

1.2.1 Construction Components and Duration

Table 1-4 provides the estimated construction durations and additional information of Modified LPA components. The estimated durations are shown as ranges to reflect the potential for Program funding to be phased over time. In addition to funding, contractor schedules, regulatory restrictions on in-water work and river navigation considerations, permits and approvals, weather, materials, and equipment could all influence construction duration and overlap of construction of certain components. Certain work below the ordinary high-water mark of the Columbia River and North Portland Harbor would be restricted to minimize impacts to species listed under the Endangered Species Act and their designated critical habitat.

Throughout construction, active transportation facilities and three lanes in each direction on I-5 (accommodating personal vehicles, freight, and buses) would remain open during peak hours, except for short intermittent restrictions and/or closures. Advanced coordination and public notice would be given for restrictions, intermittent closures, and detours for highway, local roadway, transit, and active transportation users (refer to the Transportation Technical Report, for additional information). At least one navigation channel would remain open throughout construction. Advanced coordination and notice would be given for restrictions or intermittent closures to navigation channels as required.

Table 1-4. Construction Activities and Estimated Duration

Component	Estimated Duration	Notes
Columbia River bridges	4 to 7 years	• Construction is likely to begin with the main river bridges. • General sequence would include initial preparation and installation of foundation piles, shaft caps, pier columns, superstructure, and deck.
North Portland Harbor bridges	4 to 10 years	• Construction duration for North Portland Harbor bridges is estimated to be similar to the duration for Hayden Island interchange construction. The existing North Portland Harbor bridge would be demolished in phases to accommodate traffic during construction of the new bridges.
Hayden Island interchange	4 to 10 years	• Interchange construction duration would not necessarily entail continuous active construction. Hayden Island work could be broken into several contracts, which could spread work over a longer duration.
Marine Drive interchange	4 to 6 years	• Construction would need to be coordinated with construction of the North Portland Harbor bridges.
SR 14 interchange	4 to 6 years	• Interchange would be partially constructed before any traffic could be transferred to the new Columbia River bridges.
Demolition of the existing Interstate Bridge	1.5 to 2 years	• Demolition of the existing Interstate Bridge could begin only after traffic is rerouted to the new Columbia River bridges.
Three interchanges north of SR 14	3 to 4 years for all three	• Construction of these interchanges could be independent from each other and from construction of the Program components to the south. • More aggressive and costly staging could shorten this timeframe.
Light-rail	4 to 6 years	• The light-rail crossing would be built with the Columbia River bridges. Light-rail construction includes all of the infrastructure associated with light-rail transit (e.g., overhead catenary system, tracks, stations, park and rides).

Component	Estimated Duration	Notes
Total construction timeline	9 to 15 years	• Funding, as well as contractor schedules, regulatory restrictions on in-water work and river navigation considerations, permits and approvals, weather, materials, and equipment, could all influence construction duration.

1.2.2 Potential Staging Sites and Casting Yards

Equipment and materials would be staged in the study area throughout construction generally within existing or newly purchased right of way, on land vacated by existing transportation facilities (e.g., I-5 on Hayden Island), or on nearby vacant parcels. However, at least one large site would be required for construction offices, to stage the larger equipment such as cranes, and to store materials such as rebar and aggregate. Criteria for suitable sites include large, open areas for heavy machinery and material storage, waterfront access for barges (either a slip or a dock capable of handling heavy equipment and material) to convey material to the construction zone, and roadway or rail access for landside transportation of materials by truck or train.

Two potential major staging sites have been identified (see and Figure 1-23). One site is located on Hayden Island on the west side of I-5. A large portion of this parcel would be required for new right of way for the Modified LPA. The second site is in Vancouver between I-5 and Clark College. Other staging sites may be identified during the design process or by the contractor. Following construction of the Modified LPA, the staging sites could be converted for other uses.

In addition to on-land sites, some staging activities for construction of the new Columbia River and North Portland Harbor bridges would take place on the river itself. Temporary work structures, barges, barge-mounted cranes, derricks, and other construction vessels and equipment would be present on the river during most or all of the bridges' construction period. The IBR Program is working with USACE and USCG to obtain necessary clearances for these activities.

A casting or staging yard could also be required for construction of the overwater bridges if a precast concrete segmental bridge design is used. A casting yard would require access to the river for barges, a slip or a dock capable of handling heavy equipment and material, a large area suitable for a concrete batch plant and associated heavy machinery and equipment, and access to a highway or railway for delivery of materials. As with the staging sites, casting or staging yard sites may be identified as the design progresses or by the contractor and would be evaluated via a NEPA re-evaluation or supplemental NEPA document for potential environmental impacts at that time.

1.3 No-Build Alternative

The No-Build Alternative illustrates how transportation and environmental conditions would likely change by the year 2045 if the Modified LPA is not built. This alternative makes the same assumptions as the Modified LPA regarding population and employment growth through 2045, and it assumes that the same transportation and land use projects in the region would occur as planned.

Regional transportation projects included in the No-Build Alternative are those in the financially constrained 2018 *Regional Transportation Plan* (2018 RTP) adopted in December 2018 by the Metro Council (Metro 2018) and in March 2019 (RTC 2019) by the Southwest Washington Regional Transportation Council (RTC) Board of Directors is referred to as the 2018 RTP in this report. The 2018 RTP has a planning horizon year of 2040 and includes projects from state and local plans necessary to meet transportation needs over this time period; financially constrained means these projects have identified funding sources. The Transportation Technical Report lists the projects included in the financially constrained 2018 RTP.

The implementation of regional and local land use plans is also assumed as part of the No-Build Alternative. For the IBR Program analysis, population and employment assumptions used in the 2018 RTP were updated to 2045 in a manner consistent with regional comprehensive and land use planning. In addition to accounting for added growth, adjustments were made within Portland to reallocate the households and employment based on the most current update to Portland's comprehensive plan, which was not complete in time for inclusion in the 2018 RTP.

Other projects assumed as part of the No-Build Alternative include major development and infrastructure projects that are in the permitting stage or partway through phased development. These projects are discussed as reasonably foreseeable future actions in the IBR Cumulative Effects Technical Report. They include the Vancouver Waterfront project, Terminal 1 development, the Renaissance Boardwalk, the Waterfront Gateway Project, improvements to the levee system, several restoration and habitat projects, and the Portland Expo Center.

In addition to population and employment growth and the implementation of local and regional plans and projects, the No-Build Alternative assumes that the existing Interstate Bridge would continue to operate as it does today. As the bridge ages, needs for repair and maintenance would potentially increase, and the bridge would continue to be at risk of mechanical failure or damage from a seismic event.

2. METHODS

2.1 Introduction

Temporary or permanent right of way acquisitions, as well as temporary or permanent changes in noise, views, air quality, traffic, or access, could directly or indirectly affect public parks and recreation resources. This section describes the methods and approach that have been used to:

- Identify the study area and relevant laws and regulations.
- Collect data on parks and recreation resources in the study area, including data from current park master plans and other local parks planning documents.
- Assess impacts and evaluate possible mitigation measures. When impacts on park and recreation resources cannot be avoided, mitigation measures were developed in coordination with the appropriate jurisdiction.

2.2 Study Area

Figure 2-1 shows the study area for parks and recreation resources, which includes a 5-mile segment of I-5 (between approximately the I-5/Columbia Boulevard interchange in Oregon and the State Route [SR] 500 interchange in Washington) and the area around TriMet's existing Ruby Junction Maintenance Facility in Gresham, Oregon. The study area includes temporary construction easements that would be established directly adjacent to proposed construction areas and the potential locations of larger staging areas and casting yards.

2.3 Relevant Laws and Regulations

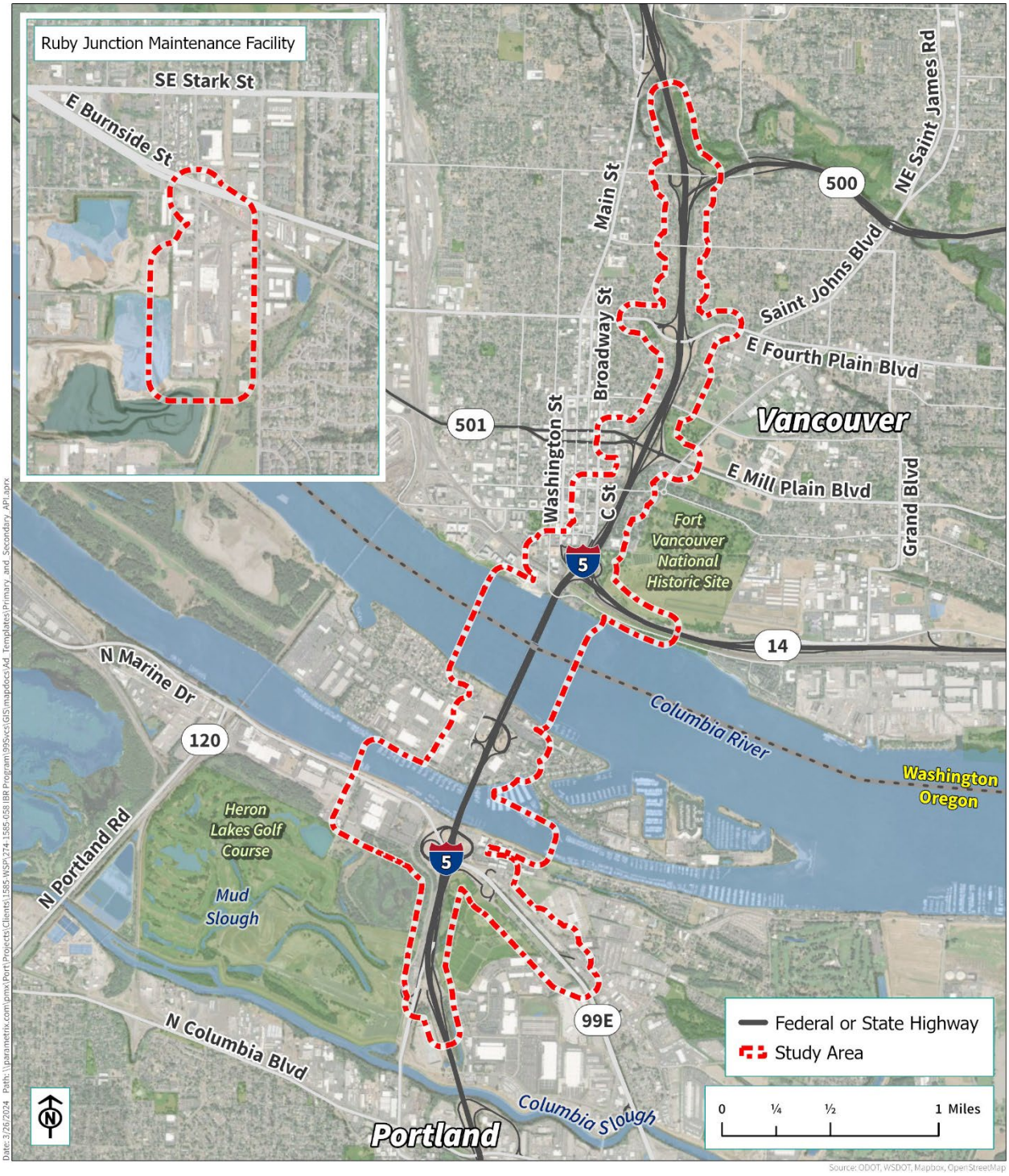
The following sections identify federal and state resource regulations that are relevant to park and recreation resources. The extent to which laws and regulations are relevant to the IBR Program depends on the specific resources within the study area.

2.3.1 Federal

2.3.1.1 Section 4(f)

The Section 4(f) statute of the USDOT policy (49 USC 303 et seq.), implementing regulations at 23 Code of Federal Regulations (CFR) 774, requires the U.S. DOT to avoid the use of Section 4(f) property (which includes any publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance as determined by the federal, state, or local officials having jurisdiction) unless there is no feasible and prudent alternative to using the land, or unless the impact would be de minimis. A de minimis impact on a parkland is defined as an impact that would not adversely affect the features, attributes, or activities qualifying the property for protection under Section 4(f). See the Section 4(f) evaluation and preliminary findings in the IBR Program's Draft SEIS.

Figure 2-1. Parks and Recreation Study Area



This technical report documents impacts to affected parks and recreation facilities but does not evaluate consistency with Section 4(f) regulations. The Section 4(f) Evaluation is documented in the SEIS.

2.3.1.2 Section 6(f)

Section 6(f) of the Land and Water Conservation Fund (LWCF) Act of 1965 (16 USC 4601-4 et seq. and Public Law 88-578, 78 Stat 897) effect analysis (summarized in Chapter 7) included whether properties protected by Section 6(f) of the LWCF Act would be converted. The LWCF Act requires that an area funded with LWCF assistance be "continually maintained in public recreation use" unless the National Park Service (NPS) approves substitution per the conversion requirements, including conversion to other uses either "in whole or in part" (36 CFR Ch 1, Section 59.3). A partial acquisition of Section 6(f) property cannot affect the recreational function of the parklands; however, a temporary use of the land for more than six months may be considered a permanent conversion and acquisition of replacement land may be required.

36 CFR § 59.3 requires that conversion of these lands or facilities be coordinated with the NPS via the appropriate state liaison officer, which are the Oregon Parks and Recreation Department (OPRD) and the Washington State Recreation and Conservation Office. Section 6(f) directs the Department of Interior to ensure that replacement lands of comparable value and function, or monetary compensation (used to enhance the remaining land), location, and usefulness are provided as conditions to such conversions.

This technical report documents impacts to affected parks and recreation facilities but does not evaluate consistency with Section 6(f) regulations. The Section 6(f) Evaluation is documented in the SEIS.

2.3.1.3 Federal Lands to Parks Program

Federal Lands to Parks (FLP) Program, administered by the NPS in compliance with Section 203 (k)(2) of Public Law 91-485, as amended (40 USC 484 (k)(2)). The NPS administers the FLP Program, which helps communities to acquire, reuse, and protect federal properties for local parks and recreation. States, counties, and communities may (at no cost) acquire federal land and buildings that are no longer needed by the federal government with the condition that they are protected for public parks and recreation. FLP Program lands or facilities have similar restrictions as Section 6(f) properties in that their conversion requires replacing land of comparable or greater value and recreational utility, with another federal public-benefit conveyance program (such as for education, public health, or law enforcement) or purchased at fair market value (NPS 2022). If property conveyed under this program is acquired for a non-park or recreation use, this conversion must be approved, and replacement property of equal market value and reasonable equivalent recreational utility must be identified and acquired. Additionally, the General Services Administration must concur in a conveyance and exchange of property rights.

2.3.2 State

2.3.2.1 Oregon Administrative Rule 736-070-030, Community Opportunity Grant Program

This regulation provides OPRD with revenue from recreational vehicle registration fees to counties for park and recreation facilities and programs. The Community Opportunity Grant Program provides funding on a project basis to acquire, develop, rehabilitate, and plan county park and recreation sites that provide camping facilities. Protection measures mimic Section 6(f) requirements, except they do not include NPS involvement.

2.3.2.2 Oregon Administrative Rule Chapter 736-Division 6

This regulation allocates state lottery funds to local governments to finance the protection, repair, operation, and creation of state parks and public recreation areas through OPRD's Local Government Grant Program. Protection measures mimic Section 6(f) requirements, except they do not include NPS involvement.

2.3.2.3 Washington Administrative Code 286-27-060(2)

This regulation prevents the conversion of natural resource and recreation facilities funded through habitat conservation and outdoor recreation grants that the Interagency Committee for Outdoor Recreation-Salmon Recovery Funding Board administers. Protection measures mimic Section 6(f) requirements, except they do not include NPS involvement.

2.4 Data Collection

The methodology for data collection included validating or updating resources previously identified in the CRC Environmental Impact Statement. The following data collection methods were applied:

- Reviewed local, state, and federal maps and databases to update information on existing park and recreation resources within the study area. The study area has been revised to reflect changes to the design of the CRC project's LPA to develop a Modified LPA, including design options.
- Updated the information collected for the CRC project's parks and recreation technical report regarding the character and important features of parks within the study area.
- Reviewed park master plans and other local parks' planning documents to identify additional parks and recreation resources located or planned in the study area.
- Updated information on federally and state-protected park and recreation resources.
- Identified and obtained information on sources of funding previously received for existing and planned parks and recreation resources in the study area.

Resources subject to Section 6(f) protection were identified through an online record search of LWCF funding (LWCF 2022).

2.5 Effects Analysis and Mitigation Development

Potential long-term and temporary effects on parks and recreation areas that were evaluated include:

- Temporary easement during construction or permanent incorporation by the roadway or transit facilities.
- Changes in traffic volumes, routes, and patterns that would affect access to or enjoyment of resources.
- Proximity effects from changes in noise, air, or visual quality.
- Beneficial impacts, such as new or increased public access from new and improved bicycle and pedestrian connections, reduced congestion, and increased service by public transit.

Identification of permanent and temporary impacts relied on the analysis from the Transportation, Noise and Vibration, Air Quality, and Visual Quality Technical Reports.

3. AFFECTED ENVIRONMENT

3.1 Introduction

This chapter provides an overview of the existing and planned parks and recreation facilities within the study area and the policies of the jurisdictions responsible for them. Regional jurisdictions' plans and policies are presented first for context. Resources protected by federal and state funding programs are identified. Descriptions are provided for each resource, organized by geography, as they occur in Oregon on the Oregon mainland, and in Washington in Downtown Vancouver (south of McLoughlin Boulevard) and Upper Vancouver (north of McLoughlin Boulevard). Figure 3-1 shows the locations of existing active transportation trails and park and recreation facilities within the study area. Chapter 4 provides detailed figures of the facilities.

The following parks are located nearby, but outside of the study area, and would not be affected by the Modified LPA:

- Lotus Isle Park (N Tomahawk Drive, east of I-5, Portland)
- Esther Short Park (W Columbia and 8th Streets, Vancouver)
- Leach Park (E 28th Street and K Street, Vancouver)
- Ike Memorial Dog Park (NE Ross Street and NE 15th Avenue, Vancouver)

3.2 Regional Conditions

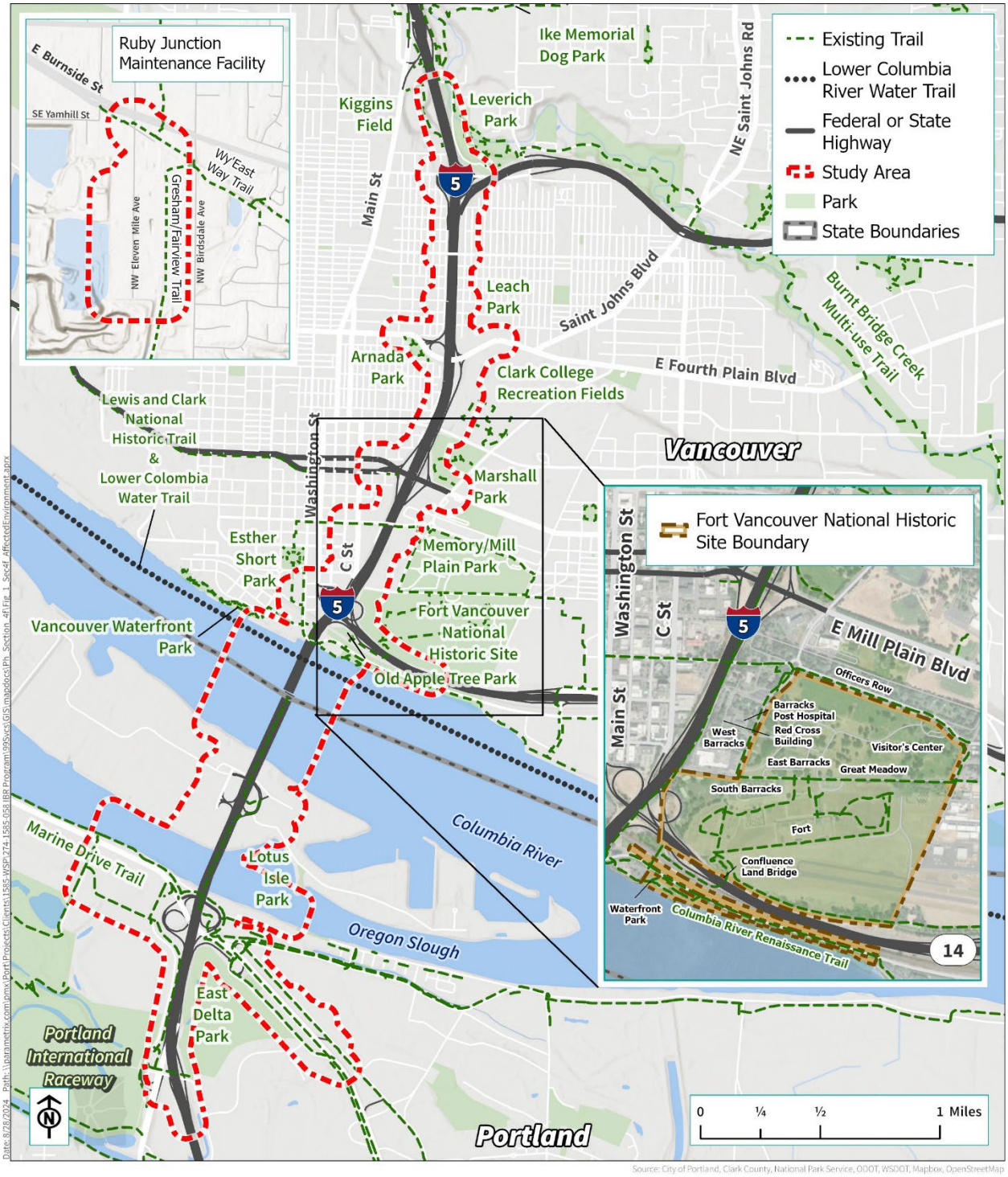
This section describes the policies, goals, and objectives of the jurisdictions that own, operate, and/or manage parks and recreation facilities within the study area.

3.2.1 City of Gresham

3.2.1.1 City of Gresham Strategic Plan

Initiated in 2021 and completed in 2022, the City of Gresham's Strategic Plan serves as a comprehensive plan for Gresham's citywide system (COG 2022). It presents the mission, vision, guiding principles, and strategic priorities for the City of Gresham through 2025. The plan lays a foundation for progress, defines its shared vision for the future, and focuses City resources on five key strategic priorities: Financial Sustainability, Community Safety, Thriving Economy, Housing for All, and Community Vibrancy.

Figure 3-1. Park and Recreation Facilities and Active Transportation within the Study Area



The City's goal for Community Vibrancy is to have community members and visitors come and find a wide choice of activities and opportunities to enjoy recreation and nature in the city. Their objectives on how to achieve that goal are:

- Support and host community events that nurture community pride, celebrate diversity, and build Gresham's reputation as a destination city.
- Support and increase a mix of recreational, arts, and cultural programming for youth and adults to foster community well-being for everyone.
- Promote connection for community members, both social and physical, to meet everyone's needs regardless of physical ability, language, digital access, etc.
- Prioritize long-range planning that supports designing and building quality community gathering spaces, public or private. Create welcoming and inclusive environments with amenities for all.
- Maintain the quality of Gresham's natural resources and increase public access to parks and natural areas for recreation and enjoyment.

3.2.1.2 City of Gresham Parks and Recreation, Trails and Natural Areas Master Plan

In the winter of 2006, the Gresham Parks and Recreation Division began updating its Parks and Recreation, Trails and Natural Areas Master Plan to identify opportunities to enhance the City's park and recreation system. As an update to the 1996 Plan, it establishes specific goals, objectives, and recommendations for maintaining, conserving, and developing quality parks, facilities, trails, and natural areas in a sustainable way. As a 20-year long-range plan, it aims to carry the City into the future (COG 2009).

Based on community priorities for the park system, specific needs for parks, recreation facilities, and programs were identified for Gresham. Key needs include:

- Maintenance: A large number of deferred maintenance projects have led to a steady deterioration of City assets.
- Renovation: Aging recreation facilities are increasing the need for renovations at existing park sites.
- Acquisition and Development: The City will need to acquire extensive acreage to provide parks in unserved areas and growing areas.
- Recreation Programs: Special events, nature programs, and volunteerism should be expanded to bring more people into parks.

3.2.2 City of Portland

3.2.2.1 Parks 2020 Vision

Initiated in 1999 and completed in 2001, the City of Portland's Parks 2020 Vision (COP 2005) serves as a comprehensive plan for Portland's parks and recreation system. It presents the vision, guiding principles, issues, opportunities, and recommendations for Portland parks and recreation facilities

through 2020. The plan covers parks, open space, natural areas, and facilities (e.g., community centers and swimming pools), and identifies programs, partnerships, and funding.

Parks 2020 Vision does not specifically address the IBR Program. It does identify issues facing the city's parks and recreation system, including the following:

- Areas of the city that lack neighborhood parks within walking distance of the neighborhood's residents.
- A lack of sufficient, full-service community centers with aquatic facilities.
- Too few community gardens to meet local citizens' needs.
- Natural areas being lost to development.
- Greater demand for sports fields than can be accommodated.
- Conflicts over appropriate use of park land.

The Parks 2020 Vision also describes the following opportunities to provide the parks, open spaces, natural areas, programs, and recreation services that the city needs:

- Working with public agencies and private developers to enhance the beauty of the city with parks and urban plazas, and to realize historical dreams of connecting parks to each other with trails, paths, and boulevards.
- Strengthening partnerships between parks and schools to provide the public with the greatest benefit from the existing resources.
- Creating recreation corridors along the rivers and streams that define and bring life to the city.

3.2.2.2 2017–2020 Portland Parks & Recreation Strategic Plan

In 2017, Portland Parks & Recreation (PP&R) initiated a 2017–2020 Portland Parks & Recreation Strategic Plan (COP 2017). This strategic plan is a stepping stone toward fulfilling the Parks 2020 Vision. The plans' goal is to keep PP&R focused on addressing immediate needs based on the current environment while also building capacity for the future and guiding foundational work for developing the next long-term vision plan. The goal of the long-term vision plan is to increase the wellness of Portland residents and the livability of the city, which would be accomplished through the following:

- Establishing, safeguarding, and restoring the parks, natural areas, public places, and urban forest of the city, ensuring that these are accessible to all.
- Developing and maintaining excellent facilities and places for public recreation and community building.
- Providing dynamic recreation programs and services that promote health and well-being for all.
- Partnering with the community being served.

3.2.3 City of Vancouver

Vancouver and its surrounding areas offer a wide range of outdoor recreation opportunities to residents and visitors. Urban walking and biking trails are located throughout the Vancouver area. Federal, state, county, and city areas provide a wide variety of recreational choices for the region.

In 1995 and 1996, the City of Vancouver and Clark County adopted a joint parks plan for the Vancouver urban area. Park impact fees were adopted to help provide funding to acquire and develop community and neighborhood parks, and to acquire urban open space, both inside Vancouver and in the unincorporated urban area. For those park development deficits that could not be addressed by impact fees, the City of Vancouver and Clark County adopted, and dedicated to urban parks for six years, a 0.25% real estate excise tax. Under these funding programs, 65 park sites have been acquired and 16 community and neighborhood parks have been developed (Clark County 2015).

In 1997, the City of Vancouver and Clark County combined their parks services to create the Vancouver-Clark Parks and Recreation Department (VCPRD). The Vancouver Urban Parks, Recreation, and Open Space Plan (2007) covers both the incorporated and unincorporated portions of the Vancouver urban area. It was adopted by both the Vancouver City Council and the Clark County Board of Commissioners. The City of Vancouver Urban Parks, Recreation, and Open Space Plan complements the Regional Parks, Recreation, and Open Space Plan that Clark County adopted in June 2000. The plan is a component of both City of Vancouver's and Clark County's comprehensive land use plans. It also serves as a resource and planning guide for the VCPRD.

At the end of 2013, the City of Vancouver and Clark County chose not to renew their interlocal agreement that provided for joint management of the Park Impact Fee program and Clark County park system. In 2021, Vancouver adopted the 2022–2031 Vancouver Parks, Recreation & Cultural Services Comprehensive Plan (Park Plan) (COV n.d). The Park Plan does not specifically address the IBR Program but lays out guiding principles for Vancouver's parks to accomplish the following:

- Provide safe and equitable access to parks, natural areas, and public arts and culture spaces for all residents.
- Provide an interconnected system of park properties and public spaces that support alternative modes of transportation, public health, recreational opportunity, and environmental stewardship.
- Preserve Vancouver's historical and cultural heritage.
- Expand Level of Service and Equity Gap Analysis to inform and guide project and funding opportunities and priorities.
- Update Improvement Level definitions to include innovative approaches that meet the needs of a growing and diversifying community.
- Maintain and enhance parks, trails, natural areas, culture and heritage spaces, recreation facilities, and community assets to meet identified standards.
- Establish and meet goals outlined in the departmental program areas.
- Reflect the community we serve through creative public engagement, collaborative planning, and culturally responsive communication.

The Vancouver park system classifies its facilities as either urban or regional parks. Urban parks are located within Vancouver's urban growth area. Within the study area, all of the Vancouver parks are urban parks. Urban parks include neighborhood parks (3 to 5 acres in size), community parks (15 to 100 acres in size), and open spaces (e.g., forested areas, wetlands)[9]. Developed urban park sites offer space for active and intensive recreation, including sports fields, play equipment, and ball courts.

The City of Vancouver's ability to provide adequate open space and recreation opportunities to residents of Clark County is, in part, measured against Vancouver's adopted urban park standards:

- Acquisition standard: 6.0 acres/1,000 people
- Development standard: 4.25 acres/1,000 people

3.2.4 National Park Service

The NPS is directed by Congress, under the Department of Interior, to preserve the natural and cultural resources and values of the national park system for the enjoyment, education, and inspiration of this and future generations. The NPS cooperates with partners to extend the benefits of natural and cultural resource conservation and outdoor recreation throughout the country and the world.

National parks are governed by federal regulations that instruct the proper use, management, government, and protection of persons, property, and natural and cultural resources within areas under the jurisdiction of the NPS. These regulations support the statutory purposes of the National Park System "to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations" (NPS 2006). Management Policies: A Guide to Managing the National Parks System was updated in 2006. The key underlying principles in the development of management policies include:

- Preventing impairment of park resources and values.
- Complying with current laws, regulations, and executive orders.
- Ensuring that conservation will be predominant when there is a conflict between the protection of resources and their use.
- Maintaining NPS responsibility for making decisions and for exercising key authorities.
- Emphasizing consultation and cooperation with local, state, tribal, and federal entities.
- Supporting pursuit of the best contemporary business practices and sustainability.
- Encouraging consistency across the system (e.g., "one national park system").
- Reflecting NPS goals and a commitment to cooperative conservation and civic engagement.

[9] https://www.cityofvancouver.us/parksrecculture/page/types-parks

- Employing a tone that leaves no room for misunderstanding the NPS's commitment to the public's appropriate use and enjoyment, including education and interpretation, of park resources, while preventing unacceptable impacts.
- Providing future generations with natural, cultural, and physical resources that meet desired conditions better than they do today, along with improved opportunities for enjoyment.

Park superintendents consider a wide range of techniques in managing recreational use to avoid adverse impacts on park resources and values or desired visitor experiences. Examples of appropriate techniques include using visitor information and education programs, separating conflicting uses by time or location, managing "hardening" sites,[10] modifying maintenance practices, and creating permit and reservation systems. Superintendents may also use their discretionary authority to impose local restrictions, public use limits, and closures, and to designate areas for a specific use or activity. Any restriction of appropriate recreational uses is limited to what is necessary to protect park resources and values, to promote visitor safety and enjoyment, or to meet park management needs. To the extent practicable, public use limits established by the NPS are based on the results of scientific research and other available support data.

Special events are defined as recreational activities that are proposed as organized events or that involve commercialization, advertising, or publicity on the part of participants or organizers. These events are managed in accordance with NPS policies and regulations, and the requirements of a Special Use Permit's criteria and procedures.

3.2.5 Clark College

The Clark College Athletic Department manages the use of recreation and sports facilities on the Clark College campus. The mission of its Athletic Department is to "enrich the greater community and the lives of student athletes by instilling in them a lifelong enjoyment of sports and physical activity." Clark College has a wide variety of recreation facilities, and although they are primarily for use by students, many are open to the public and are used for community activities at low or no cost. Most of the Clark College recreational fields, tennis courts, and multiuse fields are open to the public. The baseball field and select softball and soccer fields are closed to the public. The fitness center and basketball/volleyball gym are available for community use for a fee (LeMasters 2021).

3.2.6 Vancouver Public School District

The Vancouver Public School District (VPS) has adopted policies for the public use of school-related facilities, including recreational fields. Although the facilities of the VPS are primarily for public school purposes, the district has stated in its policies, "Every possible opportunity will be provided for the after-school and evening use of school facilities and equipment by citizens of the Vancouver District, whether student groups, school district employee groups, or other community groups, provided that

[10] Any development that creates an impervious ground surface. Usually used to direct visitor use and reduce impacts to resources.

the purpose of the meeting is in harmony with the public interest and welfare, consistent with the goals and objectives of the public schools, and subject to the laws of the State of Washington and to the policies, rules, and regulations prescribed by the Board of Directors of the Vancouver School District" (Vancouver Public Schools 1989).

Requests for use of a school facility and/or equipment are initiated at, submitted, and approved through the superintendent or designee and the building principal or site administrator. School or school-related activities and activities that further district goals are accorded first priority. The district reserves the right to give preference to VPS residents' request for use of school facilities. The available facilities include gyms, aerobics/dance room, recreational fields, three auditoriums/theaters, and three stadiums: the Columbia River Stadium, Propstra at Hudson's Bay Stadium, and Kiggins Bowl Stadium. There are fees for the use of school facilities unless other agreements have been arranged. At several schools, VPS partners with the Little League for the development, maintenance, and use of baseball fields.

3.2.7 Lower Columbia Estuary Partnership

The Lower Columbia Estuary Partnership coordinates the development and management of the Lower Columbia River Water Trail for use by nonmotorized boats. Specifically, the Lower Columbia Estuary Partnership works to identify and improve points of public access to the river, while promoting stewardship of the river, wildlife, and surrounding landscape.

3.3 Federally, State, and Locally Protected Parks and Recreation Resources in the Study Area

This section identifies parklands protected under federal statutes and regulations (Table 3-1), including those detailed on the Oregon State Land and Water Conservation Fund website (OPRD 2023) and the Washington State Recreation and Conservation Office's database (Washington State Recreation and Conservation Office 2023) (Appendix A). This information is provided as context in considering the Modified LPA's impacts under NEPA. Evaluation of use under Section 4(f) is documented in the IBR Program's Section 4(f) Evaluation (see SEIS). Evaluation of 6(f) and Federal Lands to Parks is documented in the IBR Program's Section 6(f) and FLP Evaluation (see SEIS).

Table 3-1. Summary of Applicable Parkland Regulations

State	Park or Recreation Resource	Section 4(f)	Section 6(f)	Federal Lands to Parks
Oregon	East Delta Park	**YES**	**YES**	**YES**
Oregon	Marine Drive Trail	**YES**	NO	NO
Oregon	Gresham/Fairview Trail	NO	NO	NO
Oregon	Wy'East Way Trail	NO	NO	NO
Washington	Lower Columbia River Water Trail	NO	NO	NO
Washington	Lewis and Clark National Historic Trail	NO	NO	NO
Washington	Vancouver Waterfront Park	**YES**	NO	NO
Washington	Columbia River Renaissance Trail	**YES**	NO	NO
Washington	Old Apple Tree Park	**YES**	NO	**YES**
Washington	Fort Vancouver National Historic Site	**YES**	NO	NO
Washington	Discovery Historic Loop Trail	NO	NO	NO
Washington	Vancouver Landing at Terminal One	**YES**	NO	NO
Washington	Marshall Community Center and Park	**YES**	NO	**YES**
Washington	Clark College Recreation Fields	**YES**	NO	NO
Washington	Arnada Neighborhood Park	**YES**	NO	NO
Washington	Leverich Park	**YES**	NO	NO
Washington	Burnt Bridge Creek Trail	**YES**	**YES**	NO
Washington	Kiggins Bowl Sports Field/ Stadium	**YES**	NO	NO

3.4 Study Area Parks and Recreation Resources

Descriptions of the following resources originated from the CRC Final Environmental Impact Statement (CRC 2011) and were updated for the IBR Program.

3.4.1 East Delta Park

East Delta Park is an 87.5-acre neighborhood/regional park located adjacent to I-5 between NE Martin Luther King Jr. Boulevard and N Denver Avenue. See Figure 3-1 for the location of East Delta Park.

East Delta Park is open from 6:00 a.m. to 10:00 p.m. and is managed by PP&R. Facilities at East Delta Park include a sports complex with seven lighted softball fields, four synthetic soccer fields, five grass soccer fields, six sand volleyball courts, a playground, picnic tables, restrooms, a parking lot, support buildings, and nature trails. An off-leash dog area was located, by agreement, in Oregon Department of Transportation (ODOT) right of way across Union Court; the dog park is currently closed. East Delta Park is also home to the PP&R Urban Forestry Division Headquarters, located between I-5 and Walker Slough.

3.4.2 Marine Drive Trail

The Marine Drive Trail managed by PP&R is a 5-mile-long paved trail located along North Portland Harbor, connecting I-5 and the Marine Drive interchange with Kelley Point Park. The Marine Drive Trail, after navigating from the North Portland Harbor bridges and through the Marine Drive interchange, is located on a public sidewalk on the north side of Marine Drive before traveling slightly north onto a levee located on private property. The Marine Drive Trail travels over private property for approximately 1 mile before connecting back to the sidewalk and heading toward Kelley Point Park.

The Marine Drive Trail is part of the 40-Mile Loop Trail that includes all of Multnomah County and connects more than 30 parks. The Marine Drive portion of the loop was established predominantly on private property through easements. The portion of the Marine Drive Trail closest to the study area is located on Metro-owned property through an easement held by the City of Portland (Figure 3-1). The planned Bridgeton Trail is an incomplete portion of the larger Marine Drive Trail, which does not have established right of way (see Section 3.6).

3.4.3 Gresham/Fairview Trail

The Gresham/Fairview Trail is a 3.29-mile-long trail starting at the intersection of Northeast Halsey Street at 201st Avenue and traveling south to the Springwater Trail at SW 10th Avenue. The Gresham/Fairview Trail is a north–south corridor that will one day link Portland's 40-Mile Loop Trail and is open to the public. The Gresham/Fairview Trail is owned and maintained by the City of Gresham (see Figure 4-3).

3.4.4 Wy'East Way Trail

The Wy'East Way Trail is a 2-mile-long, 12-foot-wide walking and bike path that runs along the MAX light-rail line from the Ruby Junction Station in Rockwood to the Cleveland Station in historic

downtown Gresham. This paved path is open to the public and connects with both the Springwater and Gresham-Fairview trails to make a 6-mile loop through Gresham. The Gresham/Fairview Trail is owned and maintained by the City of Gresham (see Figure 4-3).

3.4.5 Lower Columbia River Water Trail

The Lower Columbia River Water Trail (LCRWT) is a 146-mile recreational waterway use of the Columbia River connecting Bonneville Dam to the Pacific Ocean. The Columbia River crosses the study area directly underneath the existing Interstate Bridge and is used from dawn until dusk by nonmotorized boats, such as canoes and kayaks (Figure 3-1).

3.4.6 Lewis and Clark National Historic Trail

The Lewis and Clark National Historic Trail follows the route of Lewis and Clark's Expedition (1804 through 1806) from Illinois to the Pacific Ocean. The Lewis and Clark National Historic Trail crosses the study area on the Columbia River and includes a campsite, used on their westbound journey, on the north shore of the river in present-day Vancouver. Similar to the LCRWT, users are encouraged to travel the Lewis and Clark National Historic Trail in canoes and kayaks (Figure 3-1).

3.4.7 Vancouver Waterfront Park

The 7.3-acre Vancouver Waterfront Park, completed in 2018, is part of a 35-acre, high-density, mixed-use urban development—the Waterfront. The Vancouver Waterfront Park is open to the public from 5 a.m. to 10 p.m. and incorporates public open spaces with the Columbia River edge (Figure 3-1). Completion of the parks added approximately 0.5 miles of trail west of I-5 connecting to the Columbia River Renaissance Trail, which continues east to Wintler Park, over 5 miles away.

3.4.8 Columbia River Renaissance Trail

The Columbia River Renaissance Trail is a 5-mile-long, 14-foot-wide multiuse paved trail starting at the intersection of Columbia Way and Columbia Street and traveling east to Marine Park and Wintler Park. The Columbia River Renaissance Trail is open to the public from 7:00 a.m. to dusk and connects Vancouver's downtown to the Columbia River waterfront and offers multiple benches for viewing. The Columbia River Renaissance Trail is owned and maintained by the City of Vancouver and is a portion of the Discovery Historic Loop Trail (Figure 3-1).

3.4.9 Old Apple Tree Park

Old Apple Tree Park is a 1.3-acre community park located north of the Columbia River and BNSF Railway and south of SR 14 in the Vancouver National Historic Reserve (VNHR). Old Apple Tree Park can be accessed from Waterfront Park beneath the railroad or from the Fort Vancouver NHS using the Confluence Land Bridge over SR 14. It is owned and maintained by the City of Vancouver and is open to the public from 5:00 a.m. to 10:00 p.m. The Old Apple Tree died in 2020 at the age of 194. Its history lives on through saplings that share its genetic makeup. Interpretive signs, fencing, and the stump of

the original tree remain. Old Apple Tree Park still provides passive recreational space, viewing, and bike parking for the Confluence Land Bridge (Figure 3-1).

3.4.10 Fort Vancouver National Historic Site

The Fort Vancouver NHS includes approximately 209 acres and is managed by the NPS.

The Fort Vancouver NHS is located within the 366-acre VNHR, which Congress established in 1996 to preserve and interpret historically significant areas in Vancouver. Land within the VNHR is managed by the NPS, the U.S. Army Reserve, the City of Vancouver, FHWA Western Federal Lands, and the Washington State Department of Transportation (WSDOT). The VNHR is managed cooperatively by the NPS, the City of Vancouver, and the U.S. Army Reserve, with support from the Vancouver National Historic Reserve Trust (NPS 2000) (Figure 3-1).

The Fort Vancouver NHS is bordered by other parts of the VNHR on the north and west. The City of Vancouver manages and maintains all roads, sidewalks, paths, and landscaped areas along the park borders.

Approximately 0.2 miles of concrete paths and 0.6 miles of decomposed granite trails are within the Fort Vancouver NHS. An unpaved administrative road leads from East 5th Street to a maintenance storage area in the HBC Village in the southwest corner of the Fort Vancouver NHS. Approximately 0.7 miles of concrete sidewalk along Columbia Way and 0.3 miles of concrete/asphalt sidewalk within the Fort Vancouver NHS waterfront parcel border the Vancouver waterfront area.

The Fort Vancouver NHS has 16 major structures that the NPS manages, which includes the following four buildings in the administrative area: the visitor center, administration building, employee residence, and maintenance shop. The reconstructed HBC Village contains 16 structures: the Fort Palisade, the Bastion, the Chief Factor's House, the Kitchen, the Bakehouse, the Blacksmith Shop, the Indian Trade Shop, the Fur Store, the Wash House, the Jail, the Carpenter Shop, the Belfry, the Flagpole, Engagé House, Proulx House, and the Wellsweep. Within the HBC Village area, the NPS is constructing a replica village in the western portion of the NPS property near the U.S. Army Reserve property. Construction of two of the village houses is complete.

Waterfront Park is a 5-acre regional park located at the north end of the Interstate Bridge, which is managed by the NPS as part of the Fort Vancouver NHS. The Waterfront Park component of the Fort Vancouver NHS is open to the public from 7:00 a.m. to dusk and includes passive recreational space and views (Figure 3-1). Waterfront Park is a different park facility than Vancouver Waterfront Park, which is part of the Waterfront mixed-use development.

The construction of a landscaped pedestrian walkway, known as the Confluence Land Bridge, was completed in 2008 to span SR 14 and connect Fort Vancouver to the Waterfront Park component of the NHS. The Confluence Land Bridge landing is located southwest of the reconstructed HBC Village and connects the existing Fort Vancouver NHS facilities through extensions to the existing trail system. On the south side of SR 14, the bridge connects to City of Vancouver property near Old Apple Tree Park, and links to Old Apple Tree Park via a new trail from the bridge landing in Vancouver, Washington. The earth-covered and landscaped bridge contains a curving multimodal path and includes artwork and interpretations of the site's importance in tribal history. The Confluence Land

Bridge is a result of a partnership (the NPS, the City of Vancouver, and WSDOT) of the nonprofit Confluence Project and was funded through federal, state, and private funding.

The Fort Vancouver NHS and larger VNHR is the site of many large recreational events throughout the year. Historically, the largest regularly occurring event has been the Fort Vancouver Independence Day Fireworks. Other events at the NHS include the Archaeological Field School, the Brigade Encampment, 1860s Vintage Base Ball, and Lantern Tours, among others.

3.4.11 Discovery Historic Loop Trail

The Discovery Historic Loop Trail is a 2.3-mile trail that extends east on Evergreen Boulevard over I-5, through the VNHR on multiuse paths and local streets, over SR 14 at the Confluence Land Bridge or under SR 14 at the Columbia Way interchange connecting to the Columbia River Renaissance Trail, and then on local streets through downtown Vancouver to Esther Short Park and then back to Evergreen Boulevard (Figure 3-1). The trail is promoted by the City of Vancouver and NPS, and connects Vancouver's most highly valued historic resources, including the VNHR and Site, with modern-day development in the Vancouver city center. The trail is used for organized walks throughout the year, including the Discovery Walk Festival held in April.

3.4.12 Vancouver Landing at Terminal 1

Vancouver Landing at Terminal 1 is a public dock and park located on the Columbia River to the west of I-5. The Port of Vancouver owns and maintains the landing along with the City of Vancouver Parks, Recreation & Cultural Services (VPR&C). In 2022, the Port of Vancouver completed an upgrade to the Vancouver Landing, which included removing the old amphitheater, rebuilding the landing, linking the existing Renaissance Trail to the landing, and adding a walkway called Rotary Way. The Vancouver Landing also includes a small boat dock and serves river cruise vessels. The Port of Vancouver recently deconstructed and removed the old Red Lion Hotel and Quay Restaurant and will remove the 100+ year old dock that remains. A new dock will be built in its place once funding is secured to support a new public market.

3.4.13 Marshall Community Center, Luepke Senior Center, and Marshall Park

The Marshall Community Center and Park is a 19-acre community park located on the east side of I-5 south of McLoughlin Boulevard (Figure 3-1). Marshall Park, which was renovated in 2006, is owned and maintained by the City of Vancouver and is open from 5:00 a.m. to 10:00 p.m. The site facilities include large fully accessible playground with multiple features, community gardens, a loop trail, picnic tables, horseshoe pits, ball fields, and the Marshall Community and Luepke Senior Centers. The Marshall Community Center, open weekdays from 6:00 a.m. to 8:00 p.m., with shortened hours on Fridays and weekends, has a swimming pool, a fitness center, two basketball courts, a commercial kitchen, meeting rooms, administrative offices, an aerobics dance studio, and an arts and craft studio. In 2022, the City of Vancouver completed a playground renovation at Marshall Park. The parking lot contains 272 parking spaces, including 26 spaces that are accessible per requirements of the

Americans with Disabilities Act. The Luepke Senior Center is a full-service senior center with a multi-purpose room and meeting rooms. In 2010, a large group picnic shelter was added to Marshall Park.

3.4.14 Clark College Recreation Fields

The Clark College recreational fields comprise a 13-acre recreation facility located on the east side of I-5 north of McLoughlin Boulevard. The Clark College owns the recreational fields, but the softball field, tennis courts, and open fields are open to the public from 7 a.m. to dusk. The site facilities include sports fields for college students and the public, batting cages, and benches (Figure 3-1).

3.4.15 Arnada Park

Arnada Park is a 3-acre neighborhood park located on the west side of I-5 and south of Fourth Plain Boulevard. Arnada Park is owned and maintained by VPR&C and is open to the public from 5 a.m. to 10 p.m. The site facilities include a gazebo, picnic shelter, play equipment, a sports court, benches, and a paved walkway (Figure 3-1).

3.4.16 Leverich Community Park

Leverich Community Park is a 16-acre community park located on the east side of I-5 in the northeast corner of the I-5/SR 500 interchange (Figure 3-1). Leverich Community Park is owned and maintained by VPR&C and is open to the public between 5 a.m. and 10 p.m. Site facilities include a disc golf course, picnic tables, paved walkways, a picnic shelter, restrooms, and play equipment.

3.4.17 Burnt Bridge Creek Trail

The Burnt Bridge Creek Trail is an 8-mile paved multiuse trail that travels through the Burnt Bridge Creek Greenway located on the east and west sides of I-5, north of the I-5/SR 500 interchange. The trail is owned and maintained by VPR&C and travels over I-5 on a pedestrian and bicycle-only overcrossing south of the I-5/Main Street interchange. Figure 3-1 shows the portion of this trail that travels through the study area.

3.4.18 Kiggins Bowl Sports Fields and Stadium

The Kiggins Bowl Sports Fields and Stadium is a 3-acre sports venue adjacent to Discovery Middle School west of I-5 and north of 39th Street. The Kiggins Bowl Sports Fields and Stadium is owned and maintained by the Vancouver Public Schools but is open to the public during non-school hours for approved activities. Site facilities include natural areas and trails, as well as sports fields and a track that surrounds an artificial turf soccer/football field known as Kiggins Field. A spur trail travels through the Kiggins Bowl Sports Fields and Stadium site and past Discovery Middle School, connecting the Lincoln Neighborhood to the Burnt Bridge Creek portion of the Discovery Trail (Figure 3-1).

3.5 State and Locally Funded Programs

Many state-funded and implemented programs have property conversion and replacement requirements similar to the federal LWCF program. These programs include the Oregon Local Government and the County Opportunity Grant Programs through OPRD in Oregon, and the Aquatic Lands Enhancement Account Program, Boating Facilities Program, and the Washington Wildlife and Recreation Program in Washington (OPRD 2021).

A small number of local funding programs include the Clark County Conservation Future Program in Washington and the Metro Nature in Neighborhoods Capital Grants Program. The specific requirements associated with these programs are not outlined here.

Of the resources identified in the study area, Vancouver Landing at Terminal 1 was funded through the Boating Facilities Program and Leverich Community Park received a combination of state bonds from different sources for its development (CRC 2011).

3.6 Future Planned Parks and Recreation Resources in the Study Area

3.6.1 City of Portland

The Bridgeton Trail would be a paved, multiuse path paralleling NE Bridgeton Road and would travel along the levee and underneath I-5 connecting to the Marine Drive Trail on the west side of I-5. In winter 2009, the commission and PP&R began acquiring trail easements from property owners. After these acquisitions are complete, work will begin to refine the trail design for construction.

Per the Portland Citywide Systems Plan, a large portion of Hayden Island west of I-5 is mapped as a parks deficient area; future park acquisitions are needed to serve residents in the area. The 2009 Hayden Island Plan also recommends future park spaces and increased recreational opportunities and conceptually identifies an area west of I-5.

3.6.2 City of Vancouver

The City of Vancouver Parks, Recreation & Cultural Services Comprehensive Plan identifies parks standards and establishes policies. One goal is to maintain and enhance parks, trails, natural areas, culture and heritage spaces, recreation facilities, and community assets to meet identified standards. Section 7 of the plan provides an overview of standards and shows the current status by geographic planning areas. Area A, where the project is located, is identified as having a deficit in acquired and developed park acres. The City of Vancouver is therefore seeking to acquire new parks and expand current parks in the study area; currently, no specific sites have been identified (COV n.d.).

3.6.3 Clark College

Clark College previously planned to develop athletic facilities on a parcel located immediately east of I-5 north of McLoughlin Boulevard. This parcel, now owned by the State of Washington and

maintained by Clark College, is currently used for college purposes such as parking for the athletic fields and is not open to the public.

3.6.4 National Park Service

In addition to improvements directly within the VNHR, the NPS is coordinating with the City of Vancouver to improve connections between the VNHR and downtown Vancouver. These plans include a possible pedestrian overpass between E Evergreen Boulevard and 7th Street.

Within the study area, planned Fort Vancouver NHS park and recreation facilities include a partially complete replica historic village (HBC Village) and associated extensions to the existing trail system. The planned facilities would be tied to the historic village and the Confluence Land Bridge in the southwestern portion of the Fort Vancouver NHS near the I-5/SR 14 interchange, as well as a proposed new pedestrian crossing over I-5 connecting E 7th Street and Hathaway Road. This development would occur on land previously owned by the U.S. Army Reserve, which was transferred to the NPS in 2012.

For more information regarding the VNHR and Fort Vancouver NHS, refer to the IBR Program's Historic and Built Environment Technical Report and Archaeology Technical Report.

3.6.5 Vancouver School District

At Kiggins Bowl Sports Fields and Stadium, the Vancouver School District plans to construct a new 4,000-square-foot fieldhouse at the north end of the field to house secondary concessions, new team rooms, public restrooms, and officials' locker rooms. A second press box was constructed for the school district's student-led video production team, and the roof of the grandstand was replaced. Weatherproofing was applied to concrete throughout the grandstand area, and seismic upgrades were made to the roof of the stadium. The artificial turf field was also replaced. As a secondary part of the improvements, a second turf athletic field and a six-lane track were constructed on the north side of the complex, replacing the previous grass athletic field (Martinez 2022).

3.6.6 Lower Columbia Estuary Partnership

There is no expected expansion or redevelopment of the LCRWT within the study area.

3.6.7 Port of Vancouver

The Port of Vancouver developed a plan that emphasizes visual and physical connections to the river and new amenity spaces on the waterfront, and to support new buildings, streetscape, and pedestrian connections, including an important connection of the regional Columbia River Renaissance Trail. The initial phases of development began with design and permitting in 2019, including the Vancouver Landing, and the first connection for the Renaissance Trail along the upper bank. This catalyst project aimed to set the stage for future work and established a design concept that celebrated the industrial history of the site while greening the existing amphitheater, restoring the shoreline, and making

connections to the adjacent Vancouver Waterfront Park, and existing trail to the east.[11] This expansion, while outside the study area, is planned to tie into the regional Columbia River Renaissance Trail within the study area.

3.7 Recreational Events

Prior to the COVID-19 pandemic in 2020, recreational events taking place within the study area included several large ongoing events and festivals in the Fort Vancouver NHS. Although several previously ongoing events have not resumed, events that took place in 2022 included the Vancouver Summer Fest, a day-long festival that included live music, games, food and marketplace vendors, and a beer garden. The Fort Vancouver NHS also hosts ongoing interpretive events such as military history talks, cultural demonstrations, and a Junior Ranger program for children (Fort Vancouver NHS 2023). Esther Short Park, while located outside the study area, is a venue for numerous downtown festivals and events throughout the year, including the Vancouver Farmers Market, the Vancouver Brewfest, and the Vancouver Wine and Jazz Festival. In addition to the organized events taking place in parks within the study area, recreational fishing and boating occur in the Columbia River portion of the study area throughout the year.

[11] https://greenworkspc.com/ourwork/port-of-vancouver-terminal-1-waterfront

4. LONG-TERM DIRECT EFFECTS

4.1 No-Build Alternative

There are no specific or known long-term direct effects on recreational resources under the No-Build Alternative. However, the No-Build Alternative would result in substantial traffic congestion along the I-5 corridor and would not provide transit, bicycle, and pedestrian improvements. The substantial traffic congestion and lower transit, bike, and walking access would reduce, or not improve, the ability of community members to access or enjoy park and recreation resources. Large events in downtown Vancouver, such as festivals and events at the Fort Vancouver NHS, Vancouver Farmers Market, Vancouver Brewfest, and Vancouver Wine and Jazz Festival, would continue to have limited transit and active transportation access, particularly from Portland. Connections between the Marine Drive and Waterfront Renaissance Trails would not be improved, and bicycle and pedestrian paths on the river crossing would remain narrow and considerably less accessible.

4.2 Modified Locally Preferred Alternative

Long-term direct effects are those as a result of the permanent facilities included with the Modified LPA, and operations that are permanent in nature. Examples of long-term effects include tree removal, realignment and rebuilding of trails, permanent right of way acquisitions, changes in access and accessibility, changes in visual quality to or from the resource, as well as changes in noise levels or air quality. Chapter 6 discusses proposed mitigation for long-term effects.

This section discusses the long-term direct effects on the parks and recreation resources in the study area from the Modified LPA. None of the options for park-and-ride locations that are being considered as part of the Modified LPA would affect a park or recreation resource. Therefore, they are not discussed.

Long-term effects on existing, planned, and protected resources are discussed together. The discussion of effects is organized by geography because they occur on the Oregon mainland, Hayden Island, Downtown Vancouver (south of McLoughlin Boulevard), and Upper Vancouver (north of McLoughlin Boulevard). As described in Section 3.2, the recreation resources that exist in the Columbia River.

Regionally, the Modified LPA would be expected to decrease regional air pollutant emissions, which would result in a slight benefit to park users throughout the study area. For more information, see the IBR Program's Air Quality Technical Report. For parks within the study area, Table 4-1 provides a summary of the anticipated permanent acquisition, or parkland that would be required, due to proposed elements of the Modified LPA.

Table 4-1. Summary of the Modified Locally Preferred Alternative's Permanent Acquisitions and Easements from Parkland

Resource	Modified Locally Preferred Alternative Permanent Right of Way Acquisition
East Delta Park	Approximately 0.2 acres permanently acquired.
Fort Vancouver NHS	Approximately 0.4 acres permanently acquired.
Old Apple Tree Park (in Fort Vancouver NHS)	Approximately 0.1 acres permanently acquired. Less than 0.1 acres of airspace permanently acquired by easement.
Marshall Community Center and Park	Approximately 0.6 acres permanently acquired.
Kiggins Bowl Sports Fields and Stadium	Less than 0.01 acres permanently acquired.

4.2.1 East Delta Park

The Modified LPA would require the permanent acquisition of a small sliver of park land (approximately 0.1 acres) to construct a wall supporting the I-5 northbound to Marine Drive interchange ramp along the western edge of East Delta Park. This new wall may protect users of the control-line flying field from the effects of wind through this area, but it would also limit their westerly views.

Approximately 0.1 acres of additional PP&R-owned park land would be acquired to construct the roadway connection between Martin Luther King Jr. Boulevard and N Union Court. This area is a small parcel located northeast of the main park that is not used by PP&R.

A 2.1-acre area of ODOT-owned highway right of way north of N Union Court, which has previously been used as an off-leash dog area associated with East Delta Park, would be developed with a roadway connection between Oregon Route 99 E and N Union Court and a stormwater facility would be developed in place of the dog park (Figure 4-1). The off-leash dog area is currently closed. Because this area is highway right of way it is not included in calculations of parkland areas that would be acquired and converted.

The Modified LPA would alter connections between I-5 and NE Martin Luther King Jr. Boulevard. The Modified LPA would provide additional active transportation connections to East Delta Park, improving access for nonmotorized users. The Modified LPA would also shift traffic lanes and connections in the Marine Drive interchange area while functionally maintaining all of the current roadway movements. This could result in some local shifts in traffic patterns. As detailed in the IBR Program's Transportation Technical Report, intersection level of service (LOS) near park access points would be LOS C or better except at the Marine Drive/Martin Luther King, Jr. Boulevard and I-5 northbound/southbound on-/off-ramps; therefore, traffic congestion would not substantially affect local access to and from the park.

Figure 4-1. East Delta Park

Portions of East Delta Park experience noise levels that approach the FHWA noise abatement criteria, as shown in the IBR Program's Noise and Vibration Technical Report. Compared to the No-Build Alternative, the Modified LPA is predicted to somewhat increase noise levels in East Delta Park, due to the revisions to the I-5 northbound mainline and the N Marine Drive/NE Martin Luther King Jr. Boulevard interchange and roadways that would shift traffic noise slightly closer to East Delta Park. The portions of East Delta Park nearest to transportation noise sources are primarily ballfields, model aircraft flying areas, and other active recreation areas not dependent on a quiet environment.

4.2.2 Marine Drive Trail

The Modified LPA would realign and reconstruct Marine Drive, which would require approximately 3,000 feet of the 5-mile Marine Drive Trail to be demolished and rebuilt in a similar location. The rebuilt portion of the trail would be slightly widened to connect with a 16-foot-wide multiuse path along the north side of Marine Drive, which would replace the existing sidewalk. This multiuse path would extend through the Marine Drive interchange. The new trails proposed with the Modified LPA would provide safer and more direct bicycle and pedestrian connections than the circuitous paths that exist in and through the Marine Drive interchange today. Figure 4-2 shows the affected portion of the Marine Drive Trail.

Because the trail would be realigned in a similar location, traffic noise levels compared to the No-Build Alternative would be expected to be similar to the Modified LPA.

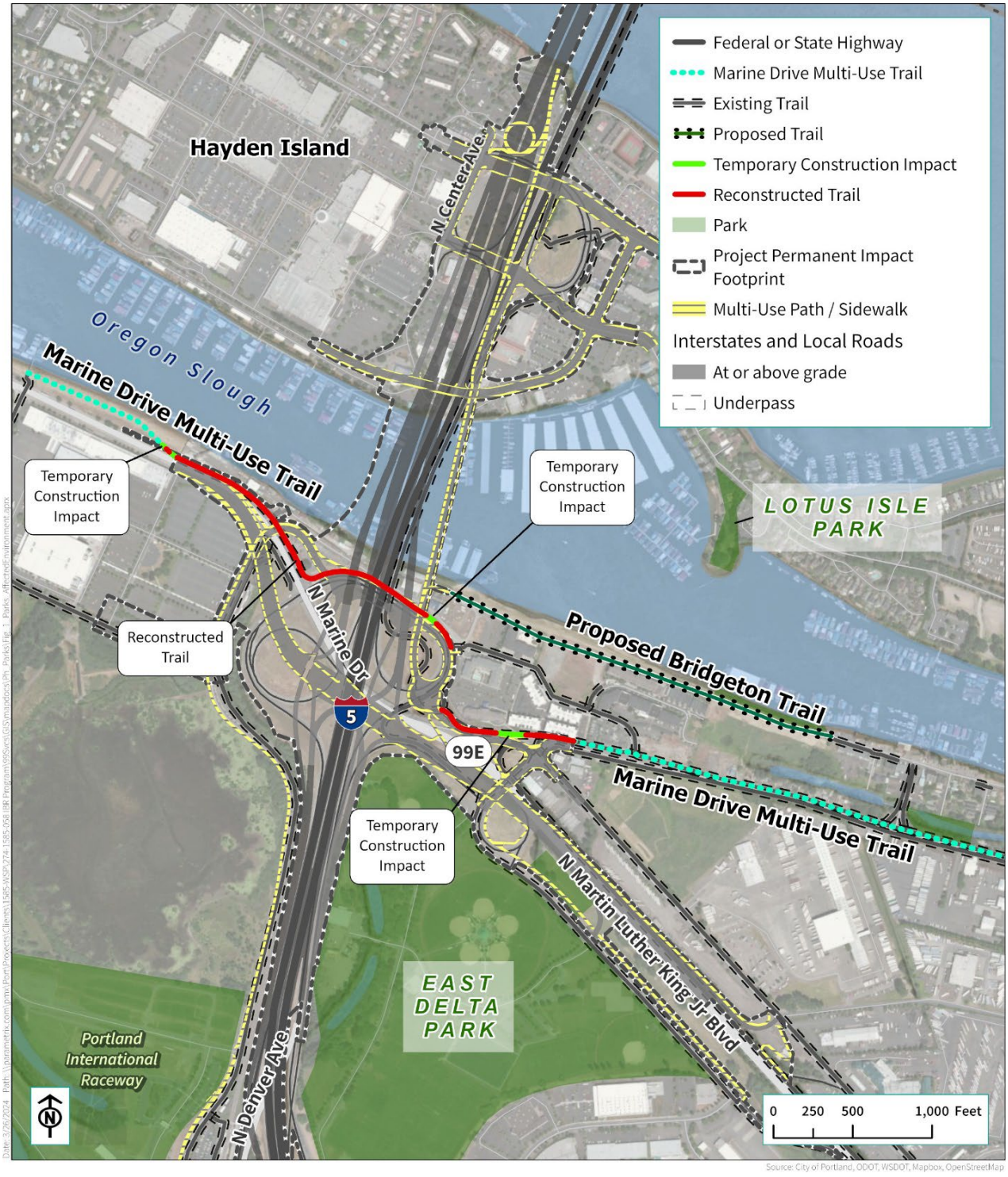
4.2.3 Proposed Bridgeton Trail

The proposed Bridgeton Trail can be implemented with the Modified LPA and a connection to the trail is included in the design to allow for future development of the trail with an extension through the I-5 right of way. The new improvements to bicycle and pedestrian facilities provided by the Modified LPA within the Marine Drive interchange area would be connected to the proposed Bridgeton Trail.

The Modified LPA would provide a connection of the proposed Bridgeton Trail to the Marine Drive Trail within and west of the Marine Drive interchange. This connection would not occur along the levee, as proposed in some early concept plans for the trail, because there would be only 5 to 7 feet of clearance between I-5 and the levee. Instead, the proposed Bridgeton Trail would connect to the bicycle and pedestrian improvements provided by the Modified LPA by cutting across the parcel immediately east of I-5, traveling southwest to the new multiuse path provided on the north side of the new local street beneath the Marine Drive interchange. Figure 4-2 shows these potential connections. Because the design of the Modified LPA considers the proposed Bridgeton Trail, the Modified LPA would not adversely affect the trail.

Since the proposed Bridgeton Trail would be in the same proposed location, traffic noise levels along the future trail, compared to the No-Build Alternative, would be expected to be the same or similar with the Modified LPA.

Figure 4-2. Marine Drive Trail and Proposed Bridgeton Trail



4.2.4 Gresham/Fairview Trail

The expansion of the Ruby Junction Maintenance Facility in Gresham is not expected to affect the Gresham/Fairview Trail. Through the study area the Gresham/Fairview Trail runs along the east side of the existing Ruby Junction Maintenance facility, which would not be affected by the expansion to the west of the existing maintenance facility (Figure 4-3).

Compared to the No-Build Alternative, traffic noise levels along the Gresham/Fairview Trail are expected to be the same or similar with the Modified LPA because the trail runs along the east side of the facility.

4.2.5 Wy'East Way Trail

The expansion of the Ruby Junction Maintenance Facility in Gresham is expected to require the reconstruction of approximately 140 linear feet of the Wy'East Way Trail, where it currently crosses the existing LRT tracks, once the new tracks and pavement for the Ruby Junction Maintenance Facility is constructed. The existing alignment of the trail is not expected to change.

Compared to the No-Build Alternative, traffic noise levels along the Wy'East Way Trail are expected to be the same or similar with the Modified LPA because the trail runs along the north side of the existing facility.

4.2.6 Lower Columbia River Water Trail

Users traveling through the study area using the LCRWT would likely benefit from the replacement of the Interstate Bridge over the Columbia River; the Modified LPA would reduce the number of pier sets in the water from nine to six. The bridge piers can pose a navigational hazard to those using the LCRWT for recreation and commercial purposes; therefore, fewer bridge piers would reduce navigation hazards. Figure 4-4 provides an illustration of the reduction in navigation hazard. The Modified LPA with the double-deck fixed-span configuration and one auxiliary lane would result in approximately 173 linear feet of shading and coverage effects to the LCRWT. The demolition of the existing I-5 bridges would remove approximately 136 linear feet of existing shading. Therefore, the Modified LPA with the double-deck fixed-span configuration and one auxiliary lane would result in a net increase of 37 linear feet of shading to the LCRWT.

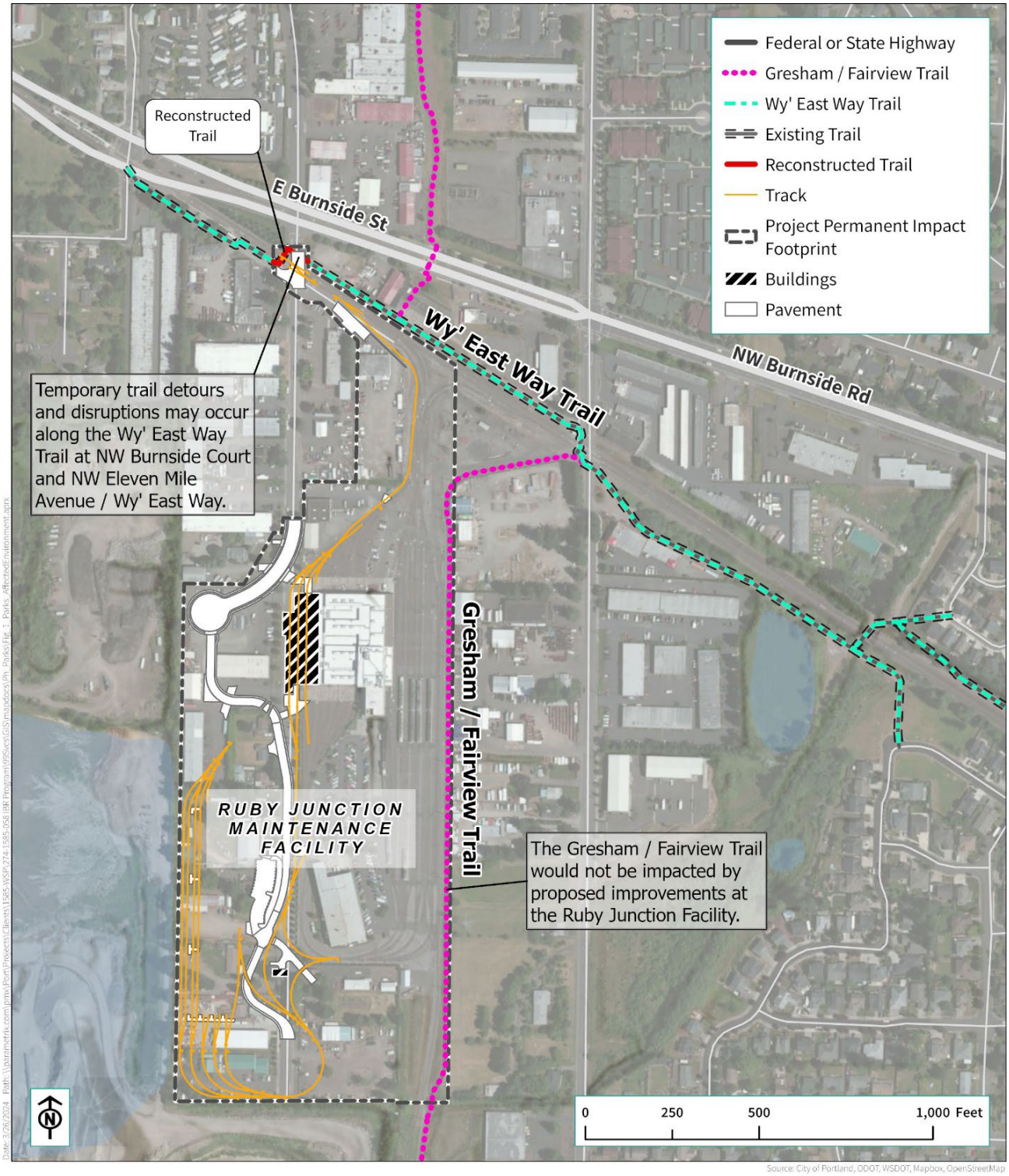
Compared to the No-Build Alternative, traffic noise levels along the LCRWT are expected to decrease with the Modified LPA because the highway facility would be higher in elevation from the trail than it currently is.

4.2.6.1 Design Options

TWO AUXILIARY LANES

The LCRWT would undergo approximately 189 linear feet of shading and coverage effects under the two auxiliary lanes design option—an additional 16 linear feet compared to one auxiliary lane.

Figure 4-3. Gresham/Fairview Trail



SINGLE-LEVEL FIXED-SPAN CONFIGURATION

The LCRWT would experience approximately 253 linear feet of shading and coverage effects under the single-level fixed-span configuration, an additional 80 feet compared to the Modified LPA with the double-deck fixed-span configuration.

SINGLE-LEVEL MOVABLE-SPAN CONFIGURATION

The LCRWT would experience approximately 272 linear feet of shading and coverage effects at the movable span and 252 linear feet at the fixed span under the single-level movable-span configuration, an addition of 79 to 99 linear feet compared to the Modified LPA with the double-deck fixed-span configuration.

SR 14 INTERCHANGE WITHOUT I-5 C STREET RAMPS

Long-term direct effects would be the same as the Modified LPA with the C Street ramps.

I-5 MAINLINE WESTWARD SHIFT

Long-term direct effects would be the same as the Modified LPA that does not shift the I-5 mainline.

PARK AND RIDES

No long-term adverse direct effects on this trail are expected from the design options of potential park-and-ride sites in downtown Vancouver because the park-and-ride areas are not near the LCRWT.

4.2.7 Lewis and Clark National Historic Trail

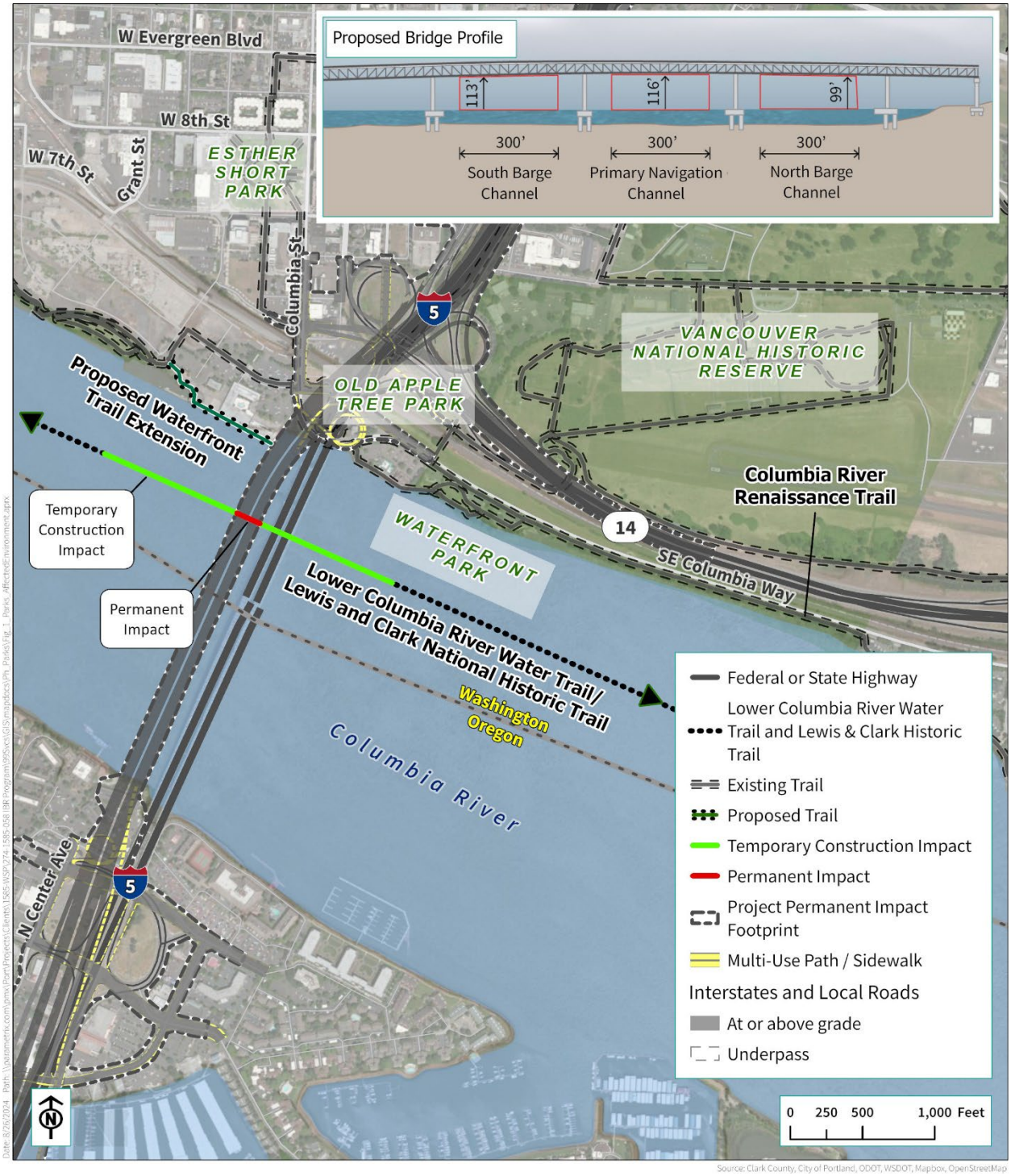
As with the LCRWT, users of the Lewis and Clark National Historic Trail along the Columbia River would benefit from the reduced navigational hazard as a result of the reduction in pier sets with the Modified LPA (Figure 4-4), and traffic noise levels would be expected to decrease. The Modified LPA with the double-deck fixed-span configuration and one auxiliary lane would result in approximately 173 linear feet of shading and coverage effects on the Lewis and Clark National Historic Trail. The demolition of the existing I-5 bridges would remove approximately 136 linear feet of existing shading. Therefore, the Modified LPA with the double-deck fixed-span configuration and one auxiliary lane would result in a net increase of approximately 37 linear feet of shading to the Lewis and Clark National Historic Trail.

4.2.7.1 Design Options

TWO AUXILIARY LANES

The Lewis and Clark National Historic Trail would experience approximately 189 linear feet of shading and coverage effects under the two auxiliary lanes design option, This would be an additional 16 linear feet compared to one auxiliary lane and a net increase of approximately 53 linear feet of shading once the existing I-5 bridges were removed.

Figure 4-4. Lower Columbia River Water Trail and Lewis and Clark National Historic Trail



SINGLE-LEVEL FIXED-SPAN CONFIGURATION

The Lewis and Clark National Historic Trail would undergo approximately 252 linear feet of shading and coverage effects under the single-level fixed-span configuration. This would be an additional approximately 80 feet compared to the Modified LPA with the double-deck fixed-span configuration and a net increase of approximately 117 linear feet of shading once the existing I-5 bridges were removed.

SINGLE-LEVEL MOVABLE-SPAN CONFIGURATION

The Lewis and Clark National Historic Trail would undergo approximately 272 linear feet of shading and coverage effects at the movable span and 252 linear feet at the fixed span under the single-level movable-span configuration. This would be an addition of approximately 80 to 100 linear feet compared to the Modified LPA with the double-deck fixed-span configuration and a net increase of 117 to 137 linear feet of shading once the existing I-5 bridges were removed.

SR 14 INTERCHANGE WITHOUT I-5 C STREET RAMPS

Long-term direct effects would be same as the Modified LPA with the C Street ramps.

I-5 MAINLINE WESTWARD SHIFT

Long-term direct effects would be the same as the Modified LPA that does not shift the I-5 mainline.

PARK AND RIDES

No long-term adverse direct effects on this trail are expected from the design options of potential park-and-ride sites in downtown Vancouver because the park-and-ride areas are not near the Lewis and Clark National Historic Trail.

4.2.8 Columbia River Renaissance Trail

The Modified LPA would permanently realign approximately 1,000 feet of the Columbia River Renaissance Trail with the new Columbia River bridges and demolition of the Interstate Bridge (Figure 4-4). The portion of the Columbia River Renaissance Trail beneath the existing bridges, and what would be beneath the new bridges, would be realigned along the realigned Columbia Way.

Steep or circuitous paths extending from the north ends of the Interstate Bridge to Columbia Way provide access to the Columbia River Renaissance Trail from I-5. Users must cross Columbia Way before accessing the trail. The Modified LPA would include a new multiuse path within the northbound Columbia River bridge via a looped path that would travel underneath the bridges to connect directly to the trail along the realigned Columbia Way. Although the Modified LPA would reduce the number of connections from the Columbia River bridges to the waterfront from two to one, the connection would be wider and safer than what exists and would directly benefit the Columbia River Renaissance Trail and the parks it connects to, which include Port of Vancouver's Terminal 1, Vancouver Waterfront Park, Old Apple Tree Park, and the Fort Vancouver NHS (including the Confluence Land Bridge and Waterfront Park). The Modified LPA would create a net benefit in connectivity for trail users.

As detailed in the IBR Program's Transportation Technical Report, intersection LOS at the SR 14 interchange that provides access to Columbia Way and the I-5 interchange with Mill Plain Boulevard could reach E or F during peak periods; therefore, traffic congestion could affect ease of driving access to parks along the north shoreline of the Columbia River during peak traffic periods.

4.2.8.1 Design Options

TWO AUXILIARY LANES

Long-term direct effects would be the similar to those of the Modified LPA with one auxiliary lane. Compared to the No-Build Alternative, traffic noise levels along the Columbia River Renaissance Trail may increase as a result of the wider bridge span.

SINGLE-LEVEL FIXED-SPAN CONFIGURATION

Long-term direct effects would be the similar to those of the Modified LPA with the double-deck fixed-span configuration. Compared to the No-Build Alternative, traffic noise levels along the Columbia River Renaissance Trail may increase as a result of the wider single-level configuration.

SINGLE-LEVEL MOVABLE-SPAN CONFIGURATION

Long-term direct effects would be the similar to those of the Modified LPA with the double-deck fixed-span configuration. Compared to the No-Build Alternative, traffic noise levels along the Columbia River Renaissance Trail may increase as a result of the wider single-level configuration.

SR 14 INTERCHANGE WITHOUT I-5 C STREET RAMPS

Long-term direct effects would be the same as the Modified LPA with the C Street ramps.

I-5 MAINLINE WESTWARD SHIFT

Long-term direct effects would be the same as the Modified LPA that does not shift the I-5 mainline.

PARK AND RIDES

No long-term adverse direct effects on this trail are expected from the design options of potential park-and-ride sites in downtown Vancouver because the park-and-ride areas are not near the Columbia River Renaissance Trail.

4.2.9 Discovery Historic Loop Trail

The Modified LPA would permanently realign approximately 2,750 feet of the Discovery Historic Loop Trail with the new Columbia River bridges and demolition of the existing bridges. The affected portions of the Discovery Historic Loop Trail include approximately 1,000 feet of impacts to the Columbia River Renaissance Trail and, therefore, would experience the same long-term direct effects as described in Section 4.2.8.

In addition, users of the Discovery Historic Loop Trail through downtown Vancouver streets would benefit from new and improved intersections, sidewalks, and bike lanes associated with the Modified LPA, which would result in an overall improvement in safety and enjoyment for users. Additionally, trail users would benefit from the Community Connector that would be constructed south of Evergreen Boulevard. This Community Connector would include off-street pathways for active transportation modes including pedestrians, bicyclists, and other micro-mobility modes, and public space and amenities to support the active transportation facilities – improving connections between downtown Vancouver and the VNHR and adding to the network of public spaces in the area. The Community Connector, which would span over I-5, would provide some reduction in highway noise when compared to existing sidewalks and bike lanes, which would further enhance the user experience when traveling this section of the Discovery Historic Loop Trail.

As detailed in the IBR Program's Transportation Technical Report, intersection LOS at the SR 14 interchange that provides access to Columbia Way and the I-5 interchange with Mill Plain Boulevard could reach E or F during peak periods; therefore, traffic congestion could affect ease of driving access to parks along the north shoreline of the Columbia River during peak traffic periods.

4.2.9.1 Design Options

TWO AUXILIARY LANES

Long-term direct effects would be the similar to those of the Modified LPA with one auxiliary lane. Compared to the No-Build Alternative, traffic noise levels along the portion of the Discovery Historic Loop Trail that includes the portion of the Columbia River Renaissance Trail may increase as a result of the wider bridge span.

SINGLE-LEVEL FIXED-SPAN CONFIGURATION

Long-term direct effects would be the similar to those of the Modified LPA with the double-deck fixed-span configuration. Compared to the No-Build Alternative, traffic noise levels along the portion of the Discovery Historic Loop Trail that includes the portion of the Columbia River Renaissance Trail may increase as a result of the wider single-level configuration, which would be shifted closer to the trail.

SINGLE-LEVEL MOVABLE-SPAN CONFIGURATION

Long-term direct effects would be similar to those of the Modified LPA with the double-deck fixed-span configuration. Compared to the No-Build Alternative, traffic noise levels along the portion of the Discovery Historic Loop Trail that includes the portion of the Columbia River Renaissance Trail may increase as a result of the wider single-level configuration.

SR 14 INTERCHANGE WITHOUT I-5 C STREET RAMPS

SR 14 interchange without I-5 C Street ramps would permanently realign approximately 2,579 feet of the Discovery Historic Loop Trail; a reduction of approximately 174 square feet from the option that does include the C Street Ramp.

I-5 MAINLINE WESTWARD SHIFT

Long-term direct effects would be the same as the Modified LPA that would not shift the I-5 mainline.

PARK AND RIDES

No long-term adverse direct effects on this trail are expected from the design options of potential park-and-ride sites in downtown Vancouver because the park-and-ride areas are not near the Discovery Historic Loop Trail.

4.2.10 Vancouver Waterfront Park

The Modified LPA would change views from Vancouver Waterfront Park toward the east and south with the new Columbia River bridges; however, no long-term adverse direct effects on this park are expected. These changes in views are not expected to adversely affect the function or enjoyment of Waterfront Park. Figure 4-5 shows the Vancouver Waterfront Park.

Compared to the No-Build Alternative, traffic noise levels at Vancouver Waterfront Park are expected to decrease with the Modified LPA because the highway facility would be higher in elevation from the park than it is currently.

As detailed in the IBR Program's Transportation Technical Report, intersection LOS at the SR 14 interchange that provides access to Columbia Way and the I-5 interchange with Mill Plain Boulevard could reach E or F during peak periods; therefore, traffic congestion could affect ease of driving access to parks along the north shoreline of the Columbia River during peak traffic periods.

4.2.10.1 Design Options

TWO AUXILIARY LANES

Long-term direct effects would be similar to those of the Modified LPA with one auxiliary lane. Compared to the No-Build Alternative, traffic noise levels along the Columbia River Renaissance Trail may increase as a result of the slightly wider bridge span.

SINGLE-LEVEL FIXED-SPAN CONFIGURATION

Long-term direct effects would be similar to those of the Modified LPA with the double-deck fixed-span configuration. Compared to the No-Build Alternative, traffic noise levels along the Columbia River Renaissance Trail may increase as a result of the wider single-level configuration.

SINGLE-LEVEL MOVABLE-SPAN CONFIGURATION

Long-term direct effects would be similar to those of the Modified LPA. Compared to the No-Build Alternative, traffic noise levels along the Columbia River Renaissance Trail may increase as a result of the wider single-level configuration.

Figure 4-5. Vancouver Waterfront Park

SR 14 INTERCHANGE WITHOUT I-5 C STREET RAMPS

Long-term direct effects would be the same as the Modified LPA with the C Street ramps.

I-5 MAINLINE WESTWARD SHIFT

Long-term direct effects would be the same as the Modified LPA that does not shift the I-5 mainline.

PARK AND RIDES

No long-term adverse direct effects on this park are expected from the design options of potential park-and-ride sites in downtown Vancouver because the park-and-ride areas are not near Vancouver Waterfront Park.

4.2.11 Old Apple Tree Park

As currently designed, the Modified LPA would permanently acquire approximately 0.08 acres from Old Apple Tree Park for a new shared-use path that would link Main Street and downtown Vancouver (Figure 4-6). Users of the Confluence Land Bridge, which extends over SR 14 and connects the Vancouver waterfront with the VNHR, would benefit from this new path as they travel through Old Apple Tree Park. This acquisition may require providing replacement parkland, pending coordination between the IBR Program and NPS. Coordination and final approvals of replacement land would occur after completion of the supplemental NEPA process, as the project design is further developed.

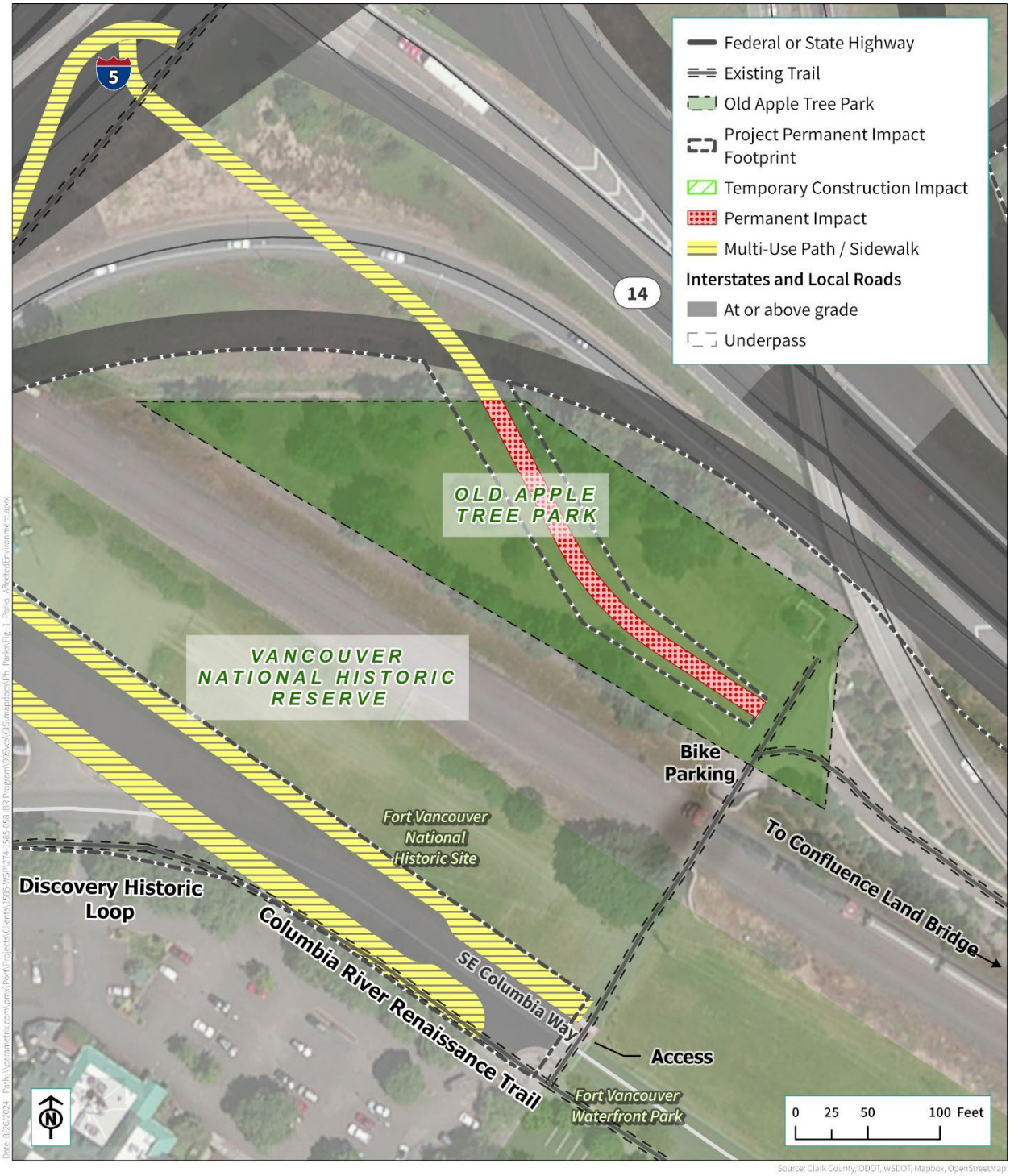
The Modified LPA would also require a permanent airspace easement (less than 0.1 acres) over the northwest corner of Old Apple Tree Park for maintenance of the I-5 northbound to SR 14 elevated ramp. This easement would provide WSDOT with the right to enter Old Apple Tree Park with equipment to perform routine inspections of the ramp structure. This easement is not expected to affect landscaping on the park property. The new I-5 northbound to SR 14 interchange ramp would be located closer to Old Apple Tree Park than the existing ramp, coming within 5 to 10 feet of its northern boundary. It is not expected that the ramp would adversely affect user experience because the forested buffer along the northern edge of the park would remain.

Traffic noise levels in Old Apple Tree Park are predicted to decrease slightly with the Modified LPA compared to the No-Build Alternative, because the new SR 14 ramp would either be higher in elevation than the existing ramp (reducing noise levels at grade within the park) or be eliminated.

The direct impacts from the Modified LPA to Old Apple Tree Park are not expected to detract from the experience of users traveling through or visiting the park.

As detailed in the IBR Program's Transportation Technical Report, intersection LOS at the SR 14 interchange that provides access to Columbia Way and the I-5 interchange with Mill Plain Boulevard could reach E or F during peak periods; therefore, traffic congestion could affect ease of driving access to parks along the north shoreline of the Columbia River during peak traffic periods.

Figure 4-6. Old Apple Tree Park



4.2.11.1 Design Options

TWO AUXILIARY LANES

Long-term direct effects would be the same as the Modified LPA with one auxiliary lane.

SINGLE-LEVEL FIXED-SPAN CONFIGURATIONS

Long-term direct effects would be the same as the Modified LPA with the double-deck fixed-span configuration.

SINGLE-LEVEL MOVABLE-SPAN CONFIGURATION

Long-term direct effects would be the same as the Modified LPA with the double-deck fixed-span configuration.

SR 14 INTERCHANGE WITHOUT I-5 C STREET RAMPS

Long-term direct effects would be the same as the Modified LPA with the C Street ramps.

I-5 MAINLINE WESTWARD SHIFT

Long-term direct effects would be the same as the Modified LPA that does not shift the I-5 mainline.

PARK AND RIDES

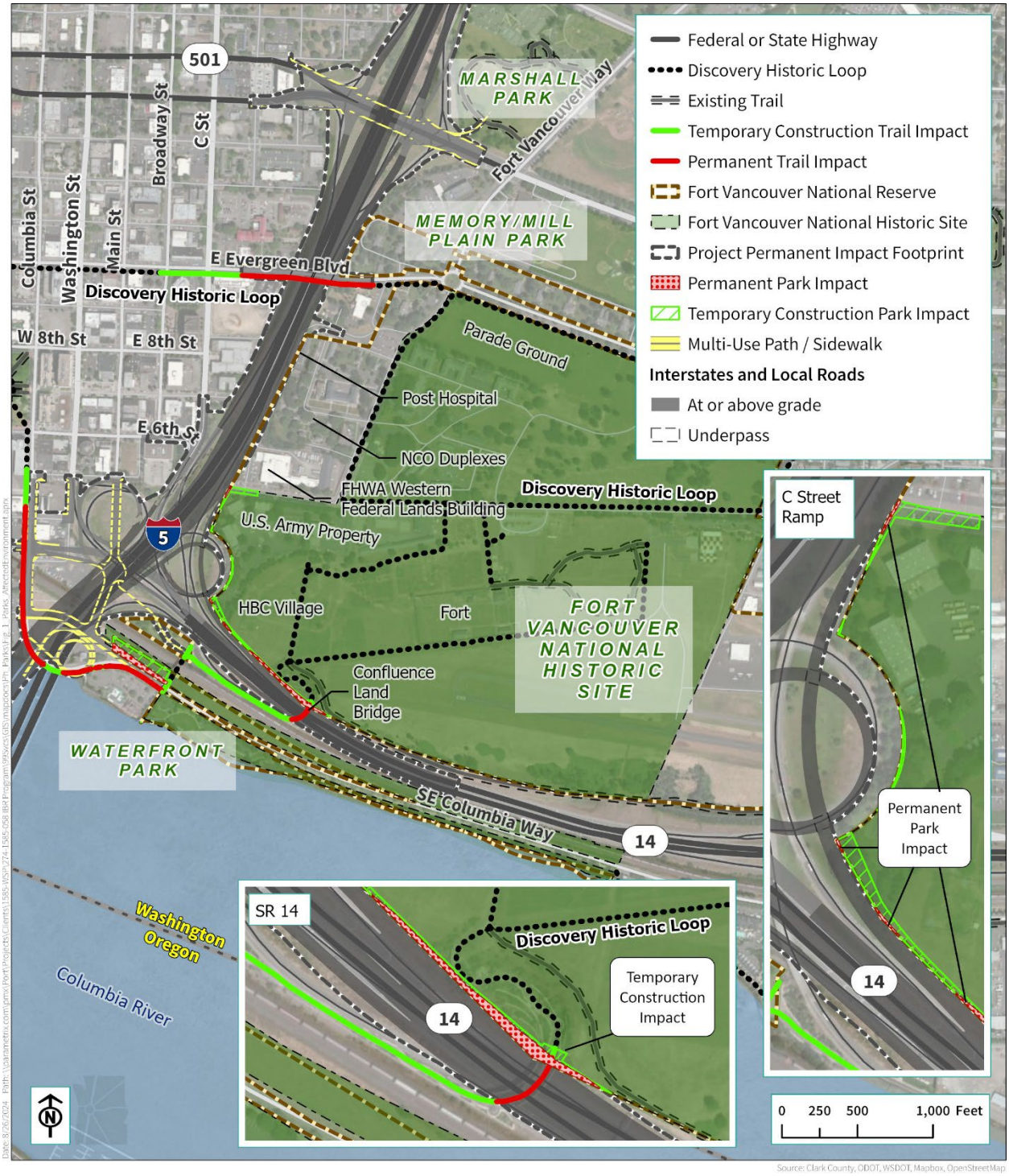
No long-term adverse direct effects on this park are expected from the design options of potential park-and-ride sites in downtown Vancouver because the park-and-ride areas are not near Old Apple Tree Park.

4.2.12 Fort Vancouver National Historic Site

The Modified LPA would require an approximately 0.4 acres permanent acquisition from the Fort Vancouver NHS (Figure 4-7. These permanent impacts would comprise less than 1% of the Fort Vancouver NHS and would be predominantly the result of the modifications to the I-5/SR 14 interchange and the widening of I-5.

With the Modified LPA, acquired land from the Fort Vancouver NHS would be narrow strips along its southern and western edges. Specifically, Fort Vancouver NHS land would be acquired along SR 14 west of the Confluence Land Bridge. The Modified LPA would also require the acquisition of a small permanent airspace easement of the Fort Vancouver NHS to maintain the elevated ramp structures. At this time, no recreation facilities are expected to be displaced.

Figure 4-7. Fort Vancouver National Historic Site – Modified LPA



Although the Modified LPA would require the acquisition of land near the partial reconstruction of the HBC Village, it is not expected to substantially interfere with the NPS plans for further reconstruction. The area that would be acquired would be limited to existing and planned landscaping along SR 14 and the I-5/SR 14 interchange, as well as changes in views from the village area. The Confluence Land Bridge would not be physically affected by reconstruction of the I-5/SR 14 interchange, although views from the Confluence Land Bridge to the east would change due to the increased heights of the interchange ramps and the bridges crossing the Columbia River.

Traffic noise levels in the recreational portion of the Fort Vancouver NHS near the I-5/SR 14 interchange could increase slightly with the Modified LPA compared to the No-Build Alternative.

As detailed in the IBR Program's Transportation Technical Report, intersection LOS at the SR 14 interchange that provides access to Columbia Way and the I-5 interchange with Mill Plain Boulevard could reach E or F during peak periods; therefore, traffic congestion could affect ease of driving access to parks along the north shoreline of the Columbia River during peak traffic periods.

As shown in Figure 4-7, the Modified LPA would not result in long-term direct effects on the Waterfront Park component of the Fort Vancouver NHS, beyond changes in western and southern views from the new Columbia River bridges. These changes in views are not expected to adversely affect the function or enjoyment of Waterfront Park.

Compared to the No-Build Alternative, traffic noise levels at the Waterfront Park component of the Fort Vancouver NHS are expected to decrease with the Modified LPA because the highway facility would be higher in elevation and shifted further to the west from the park than it currently is.

As detailed in the IBR Program's Transportation Technical Report, intersection LOS at the SR 14 interchange that provides access to Columbia Way and the I-5 interchange with Mill Plain Boulevard could reach E or F during peak periods; therefore, traffic congestion could affect ease of driving access to parks along the north shoreline of the Columbia River during peak traffic periods.

4.2.12.1 Design Options

Figure 4-8 compares the difference in impacts between the Modified LPA and the SR 14 interchange without I-5 C Street ramps design option and the I-5 mainline westward shift design option.

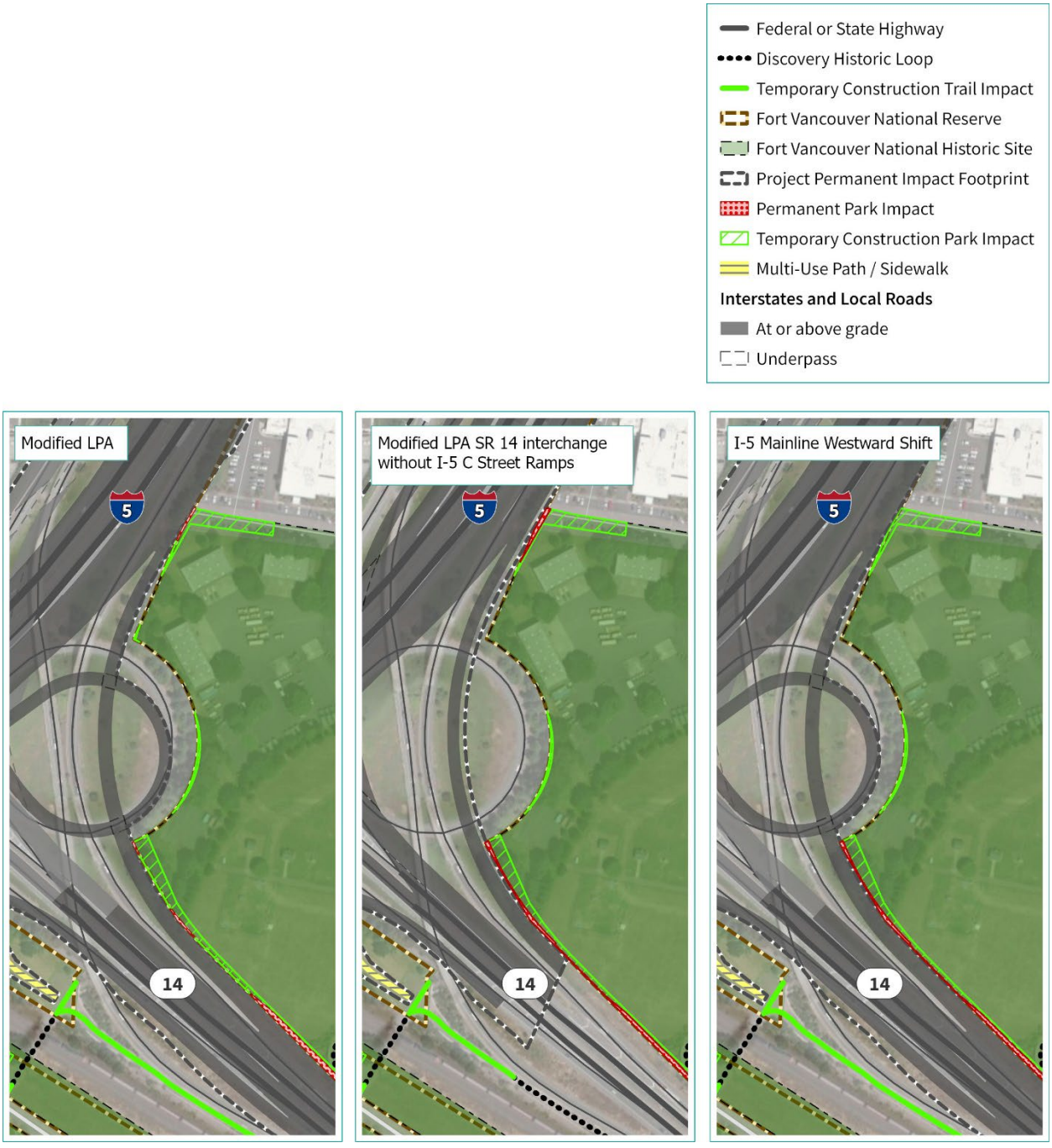
TWO AUXILIARY LANES

The two auxiliary lane design option would require permanent acquisition of approximately 20,000 square feet of park land (approximately 0.03-acre increase from the Modified LPA with one auxiliary lane) at the Fort Vancouver NHS.

SINGLE-LEVEL FIXED-SPAN CONFIGURATION

The single-level fixed-span configuration would require permanent acquisition of approximately 19,000 square feet of park land (approximately 0.02-acre increase from the Modified LPA with the double-deck fixed-span configuration) at the Fort Vancouver NHS.

Figure 4-8. Fort Vancouver National Historic Site – Impact Comparison



SINGLE-LEVEL MOVABLE-SPAN CONFIGURATION

The single-level movable-span configuration would require permanent acquisition of approximately 19,000 square feet of park land (approximately 0.02-acre increase from the Modified LPA with the double-deck fixed-span configuration) at the Fort Vancouver NHS.

SR 14 INTERCHANGE WITHOUT I-5 C STREET RAMPS

Long-term direct effects would be the same as the Modified LPA with the C Street ramps, as shown in Figure 4-9.

I-5 MAINLINE WESTWARD SHIFT

As shown in Figure 4-10 the westward shift of I-5 would require an approximately 0.4-acre permanent easement from the Fort Vancouver NHS; a reduction of approximately 200 square feet from the option that does not shift the I-5 mainline.

PARK AND RIDES

No long-term adverse direct effects on this park are expected from the design options of potential park-and-ride sites in downtown Vancouver because the park-and-ride areas are not near the Fort Vancouver NHS.

Figure 4-9. Fort Vancouver National Historic Site – SR 14 Interchange without I-5 C Street Ramps

Figure 4-10. Fort Vancouver National Historic Site – I-5 Mainline Westward Shift

4.2.13 Vancouver Landing at Terminal 1

The Modified LPA would not result in long-term direct effects on the Vancouver Landing at Terminal 1 other than changes in eastern and southern views toward the new Columbia River bridges (Figure 4-11). These changes in views are not expected to adversely affect the function or enjoyment of the Vancouver Landing at Terminal 1. The improved active transportation connections provided by the Modified LPA could result in more recreational users of the park.

As detailed in the IBR Program's Transportation Technical Report, intersection LOS at the SR 14 interchange that provides access to Columbia Way and the I-5 interchange with Mill Plain Boulevard could reach E or F during peak periods; therefore, traffic congestion could affect ease of driving access to parks along the north shoreline of the Columbia River during peak traffic periods.

4.2.13.1 Design Options

TWO AUXILIARY LANES

Long-term direct effects would be the same as the Modified LPA with one auxiliary lane.

SINGLE-LEVEL FIXED-SPAN CONFIGURATION

Long-term direct effects would be the same as the Modified LPA with the double-deck fixed-span configuration.

SINGLE-LEVEL MOVABLE-SPAN CONFIGURATION

Long-term direct effects would be the same as the Modified LPA with the double-deck fixed-span configuration.

SR 14 INTERCHANGE WITHOUT I-5 C STREET RAMPS

Long-term direct effects would be the same as the Modified LPA with the C Street ramps.

I-5 MAINLINE WESTWARD SHIFT

Long-term direct effects would be the same as the Modified LPA that would not shift the I-5 mainline.

PARK AND RIDES

No long-term adverse direct effects on this park are expected from the design options of potential park-and-ride sites in downtown Vancouver because the park-and-ride areas are not near the Vancouver Landing at Terminal 1.

Figure 4-11. Vancouver Landing at Terminal 1

4.2.14 Marshall Community Center, Luepke Senior Center, and Marshall Park

As currently designed, the Modified LPA would require the permanent use of approximately 0.6 acres of land from the parcel that includes the Marshall Community Center, the Luepke Senior Center, and Marshall Park. The area needed would be for a fill wall for the I-5 northbound to Fourth Plain Boulevard elevated exit ramp. Figure 4-12 shows this permanent property acquisition occurring along the western edge of the park parcel. The acquisition of 0.6 acres comprises approximately 3% of the 19-acre facility.

The permanent acquisition would displace up to four horseshoe pits and trees (both in state right of way and within the park boundary), including several large sequoia trees that serve as a buffer between the community center campus and I-5. The fill wall would be located along the border of the parking lot, with a height of up to 20 feet. The existing parcel also contains a few medium-sized trees and provides a partial vegetative buffer between the park and I-5. Specific tree replanting requirements would be determined by the City of Vancouver Urban Forester during the tree removal permitting process. Additionally, a new shared-use path would be constructed that would provide a southern access point off East Mill Plain Boulevard.

Traffic noise levels from I-5 are predicted to slightly increase at Marshall Community Center, the Luepke Senior Center, and Marshall Park with the Modified LPA compared to the No-Build Alternative. The addition of the light-rail transit (LRT) line along the west side of I-5 is not anticipated to result in an increase in noise levels.

With the reestablishment of a buffer between I-5 and the community center, the relatively small acquisition from the facility (approximately 3%) would not diminish the long-term character, use, or enjoyment of the current facility. See Section 7.1 for more information.

4.2.14.1 Design Options

TWO AUXILIARY LANES

Long-term direct effects would be the same as the Modified LPA with one auxiliary lane.

SINGLE-LEVEL FIXED-SPAN CONFIGURATION

Long-term direct effects would be the same as the Modified LPA with the double-deck fixed-span configuration.

SINGLE-LEVEL MOVABLE-SPAN CONFIGURATION

Long-term direct effects would be the same as the Modified LPA with the double-deck fixed-span configuration.

SR 14 INTERCHANGE WITHOUT I-5 C STREET RAMPS

Long-term direct effects would be the same as the Modified LPA with the C Street ramps.

Figure 4-12. Marshall Community Center, Luepke Senior Center, and Marshall Park

I-5 MAINLINE WESTWARD SHIFT

Long-term direct effects would be the same as the Modified LPA that would not shift the I-5 mainline.

PARK AND RIDES

No long-term adverse direct effects on this park are expected from the design options of potential park-and-ride sites in downtown Vancouver because the park-and-ride areas are not near the Marshall Community Center.

As detailed in the IBR Program's Transportation Technical Report, intersection LOS near park access points would be LOS C or better in Upper Vancouver; therefore, traffic congestion would not substantially affect local access to and from the parks in that area. The design option at the SR 14 interchange would not affect parks in Upper Vancouver.

4.2.15 Clark College Recreation Fields

Other than changes to westerly views, the Modified LPA would not result in a long-term direct effect on the Clark College Recreation Fields. These changes in views are not expected to adversely affect the function or enjoyment of this facility, as shown in Figure 4-13.

With I-5 somewhat closer in distance, traffic noise levels from I-5 could increase incrementally at the Clark College Recreation Fields with the Modified LPA compared to the No-Build Alternative. The addition of the LRT line along the west side of I-5 is not anticipated to result in an increase in noise levels.

4.2.16 Arnada Neighborhood Park

The Modified LPA would not result in a long-term direct effect on Arnada Neighborhood Park (Figure 4-14). This park is adjacent to Fourth Plain Boulevard and would not experience changes in views or noise levels associated with the Modified LPA. Trees and vegetation that serve as a buffer between Arnada Neighborhood Park and Fourth Plain Boulevard would remain. With E Fourth Plain Boulevard farther in distance, traffic noise levels could slightly decrease somewhat at Arnada Neighborhood Park with the Modified LPA compared to the No-Build Alternative.

Figure 4-13. Clark College Recreation Fields

Figure 4-14. Arnada Park

4.2.17 Leverich Community Park

Beyond the changes in westerly views, the Modified LPA would not result in a long-term direct effect on Leverich Community Park. The changes in views are not expected to adversely affect the function or enjoyment of Leverich Community Park (Figure 4-15).

Traffic noise levels are predicted to increase slightly with the Modified LPA compared to the No-Build Alternative. Leverich Community Park is largely a recreation-oriented facility where the need for quiet is not necessary for its enjoyment. Therefore, minor changes in noise levels would not adversely affect public use of the park.

4.2.18 Burnt Bridge Creek Trail

The Modified LPA would not result in a long-term direct effect on Burnt Bridge Creek Trail. The Burnt Bridge Creek Trail travels through Leverich Community Park and across I-5 via a bicycle and pedestrian-only overcrossing outside of the study area and south of the I-5/Main Street interchange (Figure 4-16). The ramp from 39th Street to I-5 northbound would tie into mainline I-5 south of the trail overpass; no adverse impacts to the trail are expected. Noise levels along the portions of Burnt Bridge Creek Trail within the study area are predicted to increase slightly with the Modified LPA compared to the No-Build Alternative.

4.2.19 Kiggins Bowl Sports Fields and Stadium

The Modified LPA would require the acquisition of less than 0.01 acres of the Kiggins Sports Fields and Stadium property for a retaining wall near the southern access, along the east side of Discovery Middle School. and would not affect recreational use. A permanent subsurface easement, totaling approximately 0.3 acres, would extend from the retaining wall to under the access road for the installation of long ties that would anchor the wall into the soil. This subsurface easement would not permanently affect the above-ground recreational use of this area, but would limit prevent excavation below a depth that would be determined based on the final design of the retaining wall.

Use of the road to access the Kiggins Sports Fields and Stadium, as well as the Discovery Trail, is not expected to be permanently affected by the retaining wall at this location. The permanent acquisition would comprise less than 1% of the recreational facility property, and the subsurface easement would comprise 1% of the 22-acre Kiggins Bowl Sports Fields and Stadium and Discovery Middle School Complex. These areas of acquisition, shown in Figure 4-16, would not diminish the long-term character or the use or enjoyment of the fields, stadium, or trail by the public.

Noise levels at the Kiggins Sports Fields and Stadium are expected to increase slightly with the Modified LPA compared to the No-Build Alternative.

Figure 4-15. Leverich Community Park and Burnt Bridge Creek Trail

Figure 4-16. Kiggins Bowl Sports Fields and Stadium

5. TEMPORARY EFFECTS

Temporary effects are short-term in nature and include temporary easements of parkland, temporary changes in access and accessibility, detours and delays that may impede access to the park during construction, and changes in noise levels or air quality caused by construction activities. Temporary effects on existing, planned, and protected resources are discussed and organized the same as in Chapter 4. Chapter 8 discusses mitigation for these temporary effects.

5.1 No-Build Alternative

Under the No-Build Alternative, construction and associated construction-phase impacts such as use of park lands; traffic detours; temporary closures; and noise, dust, and vibration would not occur. Overall, there would be no foreseeable temporary direct effects or benefits to park and recreation resources from the No-Build Alternative.

5.2 Modified Locally Preferred Alternative

5.2.1 East Delta Park

With the Modified LPA, highway construction would require a temporary construction easement from approximately 0.2 acres from the western, eastern, and northern edges of East Delta Park (see Figure 4-1). The temporarily affected area of East Delta Park is covered by grass that is mowed periodically. The temporary construction easement would be required to gain access to the I-5 right of way to build a fill wall that would support the northbound Columbia River bridge to the Marine Drive interchange ramp. The duration of the temporary construction easement is expected to be for less than six months

A small parking area and a concrete pad for flying control-line model airplanes are adjacent to this affected area. Construction activities would generate noise and damage the grass where construction equipment would operate. All landscaping would be restored after construction. Detours for bicycles and pedestrians would reflect the Portland Bureau of Transportation guidance for detours around construction sites and maintained regularly. Vehicle access would be maintained to East Delta Park but may require detours during some construction phases.

5.2.2 Marine Drive Trail

During construction, bicycles, pedestrians, and other trail users would be detoured to the other side of Marine Drive, and at times along the south side of the Portland Expo Center, for approximately 360 feet, depending on the stage of construction. Trail users would connect back to the existing alignment of the Marine Drive Trail at the signalized intersection with Force Avenue west of the construction area. The temporary detour during construction would cause a short-term inconvenience to trail users but would not diminish the long-term character, use, or enjoyment of the trail.

5.2.3 Proposed Bridgeton Trail

If the proposed Bridgeton Trail obtained funding and was constructed prior to construction of the Modified LPA, trail users would experience temporary detours and delays in connecting to the Marine Drive Trail and over North Portland Harbor during reconstruction of the Marine Drive interchange. Safe connections for nonmotorized users in the construction zone would be established; it is expected that these temporary impacts would be minor.

5.2.4 Gresham/Fairview Trail

The Gresham/Fairview Trail is not expected to be affected by the construction of the Modified LPA.

5.2.5 Wy'East Way Trail

The Wy'East Way Trail could experience detours and disruptions at NW Burnside Court and NW Eleven Mile Avenue / Wy'East Way.

5.2.6 Lower Columbia River Water Trail

During construction of the new Columbia River bridges and the demolition of the existing bridges, both recreational and commercial marine travel along the Columbia River would be limited. Users of the LCRWT would be provided with a safe passage route or detours, if necessary, through the construction zone. It is possible that recreational travel through the study area would be limited at times; users may not be able to access some areas. For example, during construction or demolition of the shallow-water piers, near-shore areas may be closed to recreational use due to safety considerations. Users in kayaks or canoes may not be able to venture into the mid-river detour routes that involve faster flowing water and possible interactions with motorized boats.

5.2.6.1 Design Options

TWO AUXILIARY LANES

The two auxiliary bridges design option would require temporary disturbance of approximately 1,889 linear feet at the Lewis and Clark National Historic Trail (approximately 80 linear feet more than the Modified LPA with one auxiliary lane).

SINGLE-LEVEL FIXED-SPAN CONFIGURATION

The single-level fixed-span configuration would require temporary disturbance of approximately 1,906 linear feet at the LCRWT (approximately100 linear feet more than the Modified LPA with the double-deck fixed-span configuration).

SINGLE-LEVEL MOVABLE-SPAN CONFIGURATION

The single-level movable-span configuration would require temporary disturbance of approximately 1,906 linear feet at the LCRWT (approximately 100 linear feet more than the Modified LPA with the double-deck fixed-span configuration).

SR 14 INTERCHANGE WITHOUT I-5 C STREET RAMPS

Temporary effects would be the same as the Modified LPA with the C Street ramps.

I-5 MAINLINE WESTWARD SHIFT

Temporary effects would be the same as the Modified LPA that does not shift the I-5 mainline.

PARK AND RIDES

No temporary effects on this trail are expected from the design options of potential park-and-ride sites in downtown Vancouver because the park-and-ride areas are not near the LCRWT.

5.2.7 Lewis and Clark National Historic Trail

Temporary impacts to the Lewis and Clark National Historic Trail would be the same as those described in Section 5.2.6 for the LCRWT.

5.2.8 Columbia River Renaissance Trail

Access under I-5 between downtown Vancouver and the Columbia River would be maintained throughout the duration of construction, although temporary detours and trail realignments would occur. The Columbia River Renaissance Trail would extend directly beneath the construction of the new Columbia River bridges and demolition of the existing bridges. Trail users would experience increased levels of noise, changes in views of the Columbia River, glare from construction lighting, emissions from construction equipment, and possibly additional dust from construction activities.

Additionally, during construction at the I-5/SR 14 interchange, connections between downtown Vancouver and SR 14 would be closed for long periods of time. Drivers and bicyclists attempting to make this movement would be detoured to enter and exit SR 14 at Exit 1 and would be required to travel along Columbia Way to reach downtown Vancouver. This would temporarily increase traffic levels on this street, which is adjacent to the Columbia River Renaissance Trail. This increase in traffic levels could pose a risk to trail users crossing into Old Apple Tree Park or crossing Columbia Way for another reason.

5.2.8.1 Design Options

TWO AUXILIARY LANES

The two auxiliary bridges design option would require temporary disturbance of approximately 100 linear feet at the Columbia River Renaissance Trail.

SINGLE-LEVEL FIXED-SPAN CONFIGURATION

Temporary effects would be the similar to those of the Modified LPA with the double-deck fixed-span configuration.

SINGLE-LEVEL MOVABLE-SPAN CONFIGURATION

Temporary effects would be similar to those of the Modified LPA with the double-deck fixed-span configuration.

SR 14 INTERCHANGE WITHOUT I-5 C STREET RAMPS

Temporary effects would be the similar to those of the Modified LPA with the C Street ramps.

I-5 MAINLINE WESTWARD SHIFT

Temporary effects would be the similar to those of the Modified LPA that would not shift the I-5 mainline.

PARK AND RIDES

No temporary effects on this trail are expected from the design options of potential park-and-ride sites in downtown Vancouver because the park-and-ride areas are not near the trail.

5.2.9 Discovery Historic Loop Trail

Trail users traveling the portion of the Discovery Historic Loop Trail that overlaps with Columbia River Renaissance Trail would experience the same temporary effects as described in Section 5.2.8, including the increased traffic levels along Columbia Way.

5.2.9.1 Design Options

TWO AUXILIARY LANES

Temporary effects would be the similar to those of the Modified LPA with one auxiliary lane.

SINGLE-LEVEL FIXED-SPAN CONFIGURATION

Temporary effects would be the similar to those of the Modified LPA with the double-deck fixed-span configuration.

SINGLE-LEVEL MOVABLE-SPAN CONFIGURATION

Temporary effects would be the similar to those of the Modified LPA with the double-deck fixed-span configuration.

SR 14 INTERCHANGE WITHOUT I-5 C STREET RAMPS

Temporary effects would be the same as the Modified LPA with the C Street ramps.

I-5 MAINLINE WESTWARD SHIFT

Temporary effects would be the same as the Modified LPA that would not shift the I-5 mainline.

PARK AND RIDES

No temporary effects on this trail are expected from the design options of potential park-and-ride sites in downtown Vancouver because the park-and-ride areas are not near the trail.

5.2.10 Vancouver Waterfront Park

Vancouver Waterfront Park is not expected to be affected by the construction of the Modified LPA.

5.2.10.1 Design Options

TWO AUXILIARY LANES

Temporary effects would be the same as those of the Modified LPA with one auxiliary lane.

SINGLE-LEVEL FIXED-SPAN CONFIGURATIONS

Temporary effects would be the same as the Modified LPA with the double-deck fixed-span configuration.

SINGLE-LEVEL MOVABLE-SPAN CONFIGURATIONS

Temporary effects would be the same as the Modified LPA with the double-deck fixed-span configuration.

SR 14 INTERCHANGE WITHOUT I-5 C STREET RAMPS

Temporary effects would be the same as the Modified LPA with the C Street ramps.

I-5 MAINLINE WESTWARD SHIFT

Temporary effects would be the same as the Modified LPA that would not shift the I-5 mainline.

PARK AND RIDES

No temporary effects on this park are expected from the design options of potential park-and-ride sites in downtown Vancouver because the park-and-ride areas are not near the park.

5.2.11 Old Apple Tree Park

The Modified LPA would require a temporary construction easement that would affect approximately 0.2 acres of Old Apple Tree Park during construction of the new I-5 northbound to SR 14 westbound ramp. Demolition of the existing ramp and construction of the new ramp would result in increased levels of noise, glare from construction lighting, additional dust, and possibly debris entering the park. Temporary increases in traffic levels along Columbia Way, as described above, may make it more challenging for trail users to leave or enter Old Apple Tree Park.

5.2.11.1 Design Options

TWO AUXILIARY LANES

Temporary effects would be the same as those of the Modified LPA with one auxiliary lane.

SINGLE-LEVEL FIXED-SPAN CONFIGURATION

Temporary effects would be the same as the Modified LPA with the double-deck fixed-span configuration.

SINGLE-LEVEL MOVABLE-SPAN CONFIGURATION

Temporary effects would be the same as the Modified LPA with the double-deck fixed-span configuration.

SR 14 INTERCHANGE WITHOUT I-5 C STREET RAMPS

Temporary effects would be the same as the Modified LPA with the C Street ramps.

I-5 MAINLINE WESTWARD SHIFT

Temporary effects would be the same as the Modified LPA that would not shift the I-5 mainline.

PARK AND RIDES

No temporary effects on this park are expected from the design options of potential park-and-ride sites in downtown Vancouver because the park-and-ride areas are not near the park.

5.2.12 Fort Vancouver National Historic Site

As shown in Figure 4-7, the Modified LPA would require a temporary construction easement that would affect approximately 1.0 acre (approximately 43,378 square feet) of the Fort Vancouver NHS, which would be adjacent to I-5 near the C Street ramp and E Fifth Street and near the Confluence Land Bridge (adjacent to the West Barracks and at the west end of Officer's Row) for construction of a retaining wall along I-5. One portion of this temporary construction easement would be along Anderson Street and adjacent to the Post Hospital. The other temporary construction easement would be at the west end of Officer's Row. This area is primarily a commercial area of the Fort Vancouver NHS where businesses are housed; construction is not expected to affect recreation.

Construction of the Modified LPA would require an easement on less than 0.1 acres of the Waterfront Park component of the Fort Vancouver NHS. In addition, the Waterfront Park component of the Fort Vancouver NHS may experience temporary construction impacts such as increased noise, changes in views of the Columbia River at I-5, and glare from construction lighting; however, users would be far enough away that they are not likely be affected by vehicle emissions and dust associated with construction.

Construction at the I-5/SR 14 interchange and along I-5 would temporarily increase noise, vibration, and dust that would distract from recreational activities, particularly for those seeking quiet.

5.2.12.1 Design Options

TWO AUXILIARY LANES

The two auxiliary lane design option would require temporary disturbance of 41,860 square feet (approximately 0.96 acres) of park land at Fort Vancouver NHS (an approximate 0.03-acre decrease from the Modified LPA). This approximately 0.03-acre decrease in temporary impacts from the Modified LPA with one auxiliary lane, because portions of the area of temporary impacts become permanent impacts with the addition of the second auxiliary lane.

SINGLE-LEVEL FIXED-SPAN CONFIGURATION

The single-level fixed-span configuration would require temporary disturbance of 42,616 square feet (approximately 0.97 acres) of park land at Fort Vancouver National Historic Site, resulting in a decrease of less than 0.1 acres of temporary impacts at Fort Vancouver NHS. Compared to the double-deck fixed-span configuration, the wider structure associated with the single-level fixed-span configuration would shift some of the temporary impacts to permanent, resulting in a decrease of less than 0.1 acres (approximately 762 square feet) of temporary impacts at Fort Vancouver NHS.

SINGLE-LEVEL MOVABLE-SPAN CONFIGURATION

The single-level movable-span configuration would require temporary disturbance of 42,616 square feet (approximately 0.97 acres) of park land at Fort Vancouver NHS, resulting in a decrease of less than 0.1 acres of temporary impacts at Fort Vancouver. Compared to the double-deck fixed-span configuration, the wider structure associated with the single-level movable-span configuration would shift some of the temporary impacts to permanent, resulting in a decrease of less than 0.1 acres (approximately 762 square feet) of temporary impacts at Fort Vancouver NHS.

SR 14 INTERCHANGE WITHOUT I-5 C STREET RAMPS

The SR 14 interchange without I-5 C Street ramps design option would require temporary disturbance of 42,914 square feet (approximately 0.98 acres) of park land at Fort Vancouver NHS (an approximate 0.02-acre decrease from the Modified LPA).

I-5 MAINLINE WESTWARD SHIFT

The I-5 mainline westward shift design option would require temporary disturbance of 42,862 square feet (approximately 0.98 acres) of park land at Fort Vancouver NHS (an approximate 0.02-acre decrease from the Modified LPA).

PARK AND RIDES

No temporary effects on this park are expected from the design options of potential park-and-ride sites in downtown Vancouver because the park-and-ride areas are not near the park.

5.2.13 Vancouver Landing at Terminal 1

The Modified LPA would temporarily affect less than 0.1 acres of land adjacent to the Vancouver Landing at Terminal 1 for construction of the Columbia River bridges. Users at the Vancouver Landing at Terminal 1 may experience increased noise during construction of the new bridges and demolition of the existing bridges. Access to the Vancouver Landing at Terminal 1 via Columbia Way is expected to remain open throughout the duration of construction.

5.2.13.1 Design Options

TWO AUXILIARY LANES

Temporary effects would be the same as the Modified LPA with one auxiliary lane.

SINGLE-LEVEL FIXED-SPAN CONFIGURATION

Temporary effects would be the same as the Modified LPA with the double-deck fixed-span configuration.

SINGLE-LEVEL MOVABLE-SPAN CONFIGURATION

Temporary effects would be the same as the Modified LPA with the double-deck fixed-span configuration.

SR 14 INTERCHANGE WITHOUT I-5 C STREET RAMPS

Temporary effects would be the same as the Modified LPA with the C Street ramps.

I-5 MAINLINE WESTWARD SHIFT

Temporary effects would be the same as the Modified LPA that would not shift the I-5 mainline.

PARK AND RIDES

No temporary effects on this park are expected from the design options of potential park-and-ride sites in downtown Vancouver because the park-and-ride areas are not near the park.

5.2.14 Marshall Community Center, Luepke Senior Center, and Marshall Park

The Modified LPA would require the realignment of the accesses to Marshall Community Center, Luepke Senior Center, and Marshall Park along McLoughlin Boulevard and a temporary construction easement on approximately 0.4 acres along the western boundaries of the parcel. Access to and from the Marshall Community Center would be maintained during the duration of construction. It is possible that one of the two accesses may need to be closed for short periods to complete construction. During potential access closures, the one-way access between the two main parking lots would likely be signed for two-way traffic to allow for full use of the parking facility, which would likely

require flaggers or other mitigation because this access is only one lane. Access closures would be coordinated with the VCPRD. Users of Marshall Community Center, Luepke Senior Center, and Marshall Park would likely experience increased levels of noise and glare from lighting for construction of the Fourth Plain exit ramp.

5.2.14.1 Design Options

TWO AUXILIARY LANES

Temporary effects would be the same as the Modified LPA with one auxiliary lane.

SINGLE-LEVEL FIXED-SPAN CONFIGURATION

Temporary effects would be the same as the Modified LPA with the double-deck fixed-span configuration.

SINGLE-LEVEL MOVABLE-SPAN CONFIGURATION

Temporary effects would be the same as the Modified LPA with the double-deck fixed-span configuration.

SR 14 INTERCHANGE WITHOUT I-5 C STREET RAMPS

Temporary effects would be the same as the Modified LPA with the C Street ramps.

I-5 MAINLINE WESTWARD SHIFT

Temporary effects would be the same as the Modified LPA that would not shift the I-5 mainline.

PARK AND RIDES

No temporary effects on this park are expected from the design options of potential park-and-ride sites in downtown Vancouver because the park-and-ride areas are not near the park.

5.2.15 Clark College Recreation Fields

Approximately 4.5 acres adjacent to the Clark College recreational fields would be temporarily affected by construction of the Modified LPA, which would affect landscaping (including grass and small trees) in this area. This temporary easement would occur west of the fields and is not expected to affect the recreational experience of users. Similar to Marshall Community Center and Park, users of this facility would likely experience increased levels of noise and glare from construction lighting. Additionally, users attempting to access this facility from McLoughlin Boulevard may run into delays as they navigate through the construction on this street.

5.2.16 Arnada Park

Less than 0.1 acre of Arnada Park would be used for a temporary construction easement during construction of the Modified LPA, which would temporarily disturb landscaping (including grass and small trees).

5.2.17 Leverich Community Park

Throughout construction of the SR 500/I-5 interchange, local traffic movements on 39th Street could be revised. Construction of the Modified LPA would not affect a large cedar tree located within Leverich Community Park, on the east side of the entrance, that has been identified as significant by the City of Vancouver Urban Forester. Additional trees located outside the boundary of Leverich Community Park and in state right of way serve as a buffer to I-5 and may be able to be preserved during construction. Construction activities would generate noise and would damage the grass and small plantings where construction equipment would operate.

5.2.18 Burnt Bridge Creek Trail

No temporary impacts are expected to the Burnt Bridge Creek Trail from construction of the Modified LPA.

5.2.19 Kiggins Bowl Sports Fields and Stadium

Construction of the retaining wall along the access to Kiggins Sports Fields and Stadium would require a construction easement on approximately 0.01 acres of the property. Construction is not expected to limit access by passenger vehicles, bicyclists, or pedestrians. The movement of heavier trucks, buses, etc., along this road could be restricted during installation of the underground tie backs for the wall. Every effort would be made to minimize closures of this access to large vehicles during times that have been identified by VPS as high use times (e.g., September 1 through November 15). If closures are unavoidable and access to the stadium or fields is needed, an appropriate detour route would be established. This detour would be signed and would direct users to the northern access point from Main Street. The contractor would be directed to coordinate with the VPS on planned access closures.

Construction along I-5 would temporarily increase noise, vibration, and dust that would distract from recreational activities, particularly for those seeking quiet.

6. INDIRECT EFFECTS

As described in detail in this report, numerous publicly owned parks and recreation facilities are within the study area. Over time, the I-5 access changes, the addition of LRT stations on Hayden Island and downtown Vancouver, and the active transportation facilities included with the Modified LPA may have an indirect effect on land use within the study area. Land use changes, which would occur in compliance with local land use plans, could result in beneficial or adverse effects on these facilities. Beneficial effects could include new parks and recreation facility construction and operation and maintenance funding contributed by development. Adverse effects could include the potential for additional residents and employees of new development to strain the capacity of existing and planned parks and recreation facilities.

The anticipated indirect effects of changes to development in the study area resulting from improved transportation access are described in the following sections. Although it is not possible to determine whether the beneficial effects of land use changes associated with the Modified LPA would outweigh the adverse effects, the beneficial effects, at minimum, would help offset adverse effects.

6.1 Beneficial Indirect Effects

The Cities of Vancouver and Portland have park impact fees that require new development, including development consistent with local land use plans that may indirectly occur because of the Modified LPA, to contribute funds for the construction of new parks and recreation facilities to offset the increased demand development has on existing facilities. In Vancouver, only residential development is assessed park impact fees, while in Portland, residential and commercial developments are assessed. In some cases, a developer may directly build parks and recreation facilities in lieu of an assessment. The City of Vancouver also has a real estate excise tax on all real estate transactions that helps fund the construction of parks.

Although construction revenue raised through the fees described previously generally may not cover the full cost of new facilities, the revenue could contribute to the local match for external grants. In both cities, new development also contributes to increased property tax revenues that help fund park and recreation facility operations and maintenance. New development is especially helpful in raising property tax revenue, because property tax increase caps that exist in Washington and Oregon do not constrain new development.

The Modified LPA would include improved bicycle, pedestrian, highway, and transit access to these resources in Portland and Vancouver, which could make access to parks easier and could result in additional park users. New LRT stations located within walking distance to VNHR would also improve access to nearby park and recreation facilities and reduce visitor reliance on motor vehicles.

6.2 Adverse Indirect Effects

The Modified LPA would include improved bicycle, pedestrian, highway, and transit access to these resources in Portland and Vancouver. Transit-oriented development that may occur along an LRT line, consistent with local land use plans, are frequently higher density with less space devoted to yards or

communal greenspace; residents of these developments may also have a greater per-capita demand for off-site facilities. The extent to which this increased use occurs at existing, overcrowded facilities would determine the extent to which individual resources experience adverse indirect impacts.

However, new transit-oriented development is not anticipated to create significant demand for the limited parking resources at or near parks and recreation facilities. In addition, parking throughout much of downtown Vancouver is metered, and additional residents and employees are not expected to compete with park users for parking spaces. Some competition for metered spaces could occur from those visiting offices or retail, while large mixed-use development normally includes off-street parking to meet their parking demand.

Although development—and new trips generated by development—can affect visual, noise, and air quality experienced by park users, higher density and mixed-use development that may indirectly occur because of the Modified LPA, consistent with land use plans, are not anticipated to have such negative impacts. Areas where development is expected to occur in Vancouver and Hayden Island are already urban environments. The new development would block the view primarily of other existing urban features and would not detract from the user experience of traveling through or visiting the parks for those parks and trail users who would be able to view the new development. Because the environments are urban and located near highways and highway interchanges, noise levels associated with the new development are not anticipated to increase. In addition, air quality is expected to improve for both the Modified LPA and the No-Build Alternative.

7. POTENTIAL AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES

7.1 Long-Term Effects

The following regulatory and Program-specific measures are proposed to address long-term and temporary effects to parks and recreation facilities.

7.1.1 Regulatory Requirements

- In the event that tree removal is unavoidable, replace trees on site and in kind at appropriate replacement ratios in compliance with applicable requirements of Portland and Vancouver city code.
- Evaluate the feasibility and reasonableness of noise mitigation in accordance with WSDOT or ODOT criteria to shield park visitors and trail users from increased noise levels.

7.1.2 Program-Specific Mitigation

- If the acquired park land includes play equipment or other amenities, replace those features either in the same park or at one nearby.
- Coordinate specific tree removal permitting process and tree replanting requirements (location and type) for each park with the appropriate jurisdiction.
- Screen portions of the transportation improvements from view with trees, vegetation, or built screens.
- Explore retaining wall façade treatments to improve the visual quality, where feasible.

7.2 Temporary Effects

7.2.1 Regulatory Requirements

- In compliance with the City of Vancouver's tree conservation requirements (VMC 20.770.090, Tree, Vegetation, and Soil Protection During Construction) or City of Portland preservation standards for trees in development situations (PCC 11.50.040,Tree Preservation Standards) and Tree Plan requirements (PCC 11.50.020), protect trees on park property that would be close to construction activities from adverse impacts as directed by the agency managing the park land (the cities of Vancouver, Portland, and Gresham; NPS; Clark College; and Vancouver Public School District).
- Employ best management practices, including those outlined in WSDOT and ODOT construction manuals, to minimize increased levels of noise, vibration, glare from construction lights, emissions from construction vehicles, or dust from demolition of existing structures.
- Comply with local ordinance requirements to provide additional protection for park users.

7.2.2 Program-Specific Mitigation

- Restore landscaping to its original condition and select plants that are resilient or adaptive to future climate conditions for new landscaping once construction is complete.
- Protect trees on park property that would be close to construction activities but not removed, as agreed to with the appropriate jurisdiction.
- Restore landscaping to as close as possible to its original condition once construction is complete.
- Establish detour routes based on Work Zone Transportation Management Plan.
- Schedule construction-related closures at public parks and recreation facilities to minimize effects on large events, as feasible.
- Provide notice to users of the recreational trails of the temporary limits on recreation in the Columbia River.
- Notify recreational anglers of temporary access restrictions to fishing areas and consider other coordination efforts, including working with the Washington Department of Fish and Wildlife and the Oregon Department of Fish and Wildlife to share closure information and distribute this information at locations that serve the fishing community.

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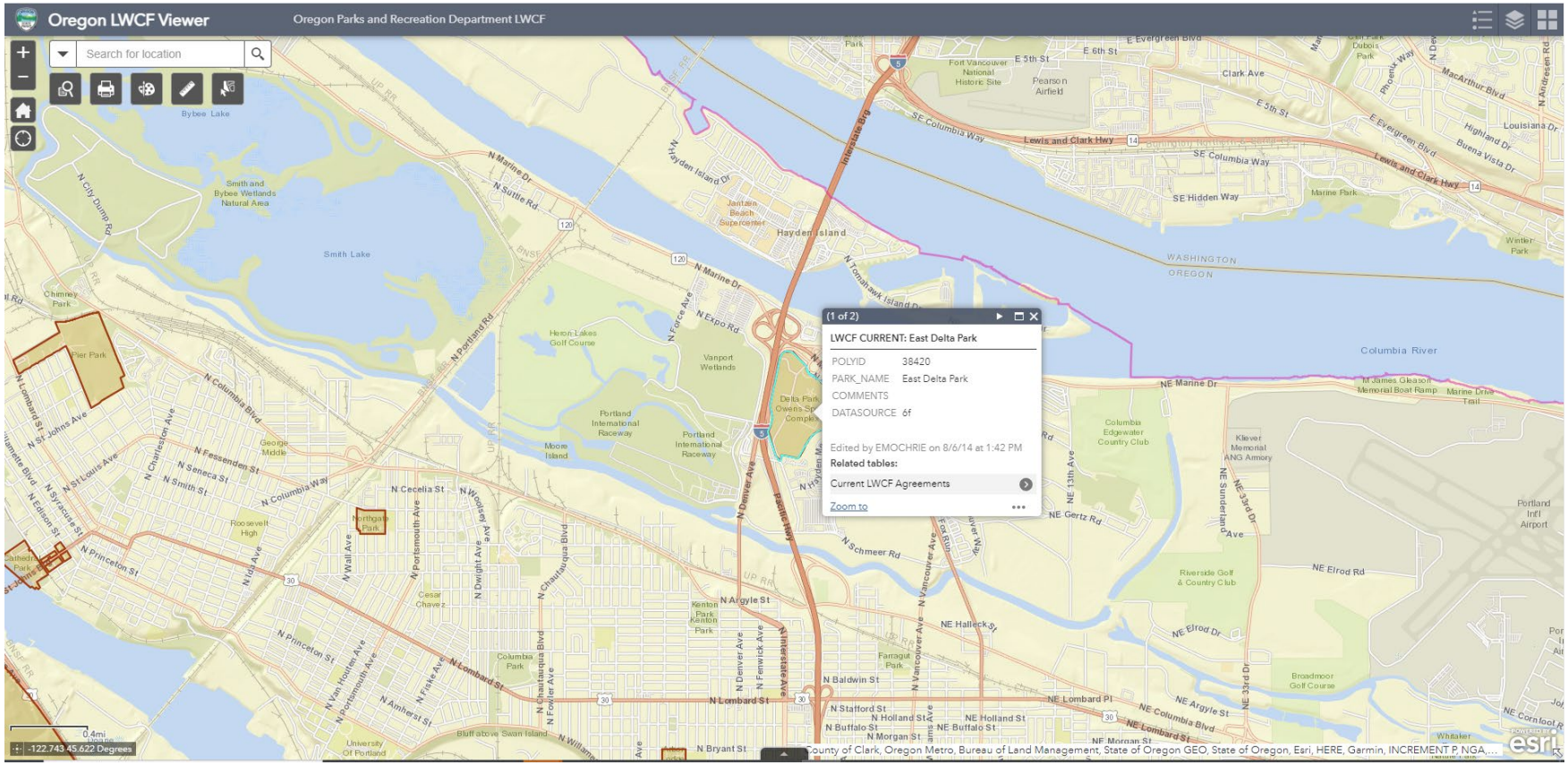
Appendix A. Section 6(f) Oregon and Washington Databases

The Oregon Parks and Recreation Department provides an Oregon Land and Water Conservation Fund (LWCF) Viewer ArcGIS map (OPRD 2023). Figure A-1 shows a screenshot of ArcGIS map in the Vicinity of the IBR Program.

Figure A-1. Oregon Land and Water Conservation Fund Projects



The Washington State Recreation and Conservation Office contains a database of projects. Table A-1 is a query of the database to show LWCF projects in Clark County where the IBR Program is located (Washington State Recreation and Conservation Office 2023).

Table A-1. Clark County Land Water Conservation Fund Projects

Number Type	Project Sponsor	Project Name	Status	End Date	Fund Source	Agency Funding	Sponsor Match	Total with Match
81-022 D	Battle Ground City of	Kiwanis Park 81	Completed	6/30/1984	Land and Water Conservation	$145,455	$48,485	$193,941
80-022 A	Battle Ground City of	Kiwanis Park 80	Completed	12/31/1980	Land and Water Conservation	$34,763	$11,588	$46,351
08-1249 A	Camas City of	Fallen Leaf Lake	Other	6/18/2009	Land and Water Conservation	$500,000	$1,500,000	$2,000,000
08-1205 A	Camas City of	Fallen Leaf Lake Park	Completed	10/31/2011	Land and Water Conservation	$1,500,000	$567,800	$2,067,800
05-1289 A	Camas City of	Lower Washougal River Greenway	Completed	9/30/2008	Land and Water Conservation	$226,758	$226,757	$453,515
05-1175 A	Clark County Parks Dept	Salmon Creek Greenspace	Completed	9/30/2010	Land and Water Conservation	$400,000	$1,252,000	$1,652,000
02-1214 D	Clark County Parks Dept	Frenchman's Bar Phase 2 Development	Other	12/31/2008	Land and Water Conservation	$500,000	$870,000	$1,370,000
96-1157 AD	Clark County Parks Dept	Lewis River Tr. (Bells Mountain Trail)	Completed	12/30/2003	Land and Water Conservation	$1,223,323	$1,375,301	$2,598,624
93-058 D	Clark County Parks Dept	Salmon Creek Trail	Completed	6/30/2000	Land and Water Conservation	$423,478	$424,094	$847,572

Number Type	Project Sponsor	Project Name	Status	End Date	Fund Source	Agency Funding	Sponsor Match	Total with Match
80-023 D	Clark County Parks Dept	Orchards Community Park	Completed	6/30/1982	Land and Water Conservation	$109,875	$36,625	$146,500
79-037 A	Clark County Parks Dept	Salmon Creek 79	Completed	12/31/1979	Land and Water Conservation	$65,060	$65,060	$130,120
78-042 D	Clark County Parks Dept	Lewisville Park	Completed	12/31/1979	Land and Water Conservation	$148,125	$49,375	$197,500
76-023 AD	Clark County Parks Dept	Salmon Creek 76	Completed	12/31/1977	Land and Water Conservation	$517,746	$317,746	$835,492
68-603 A	Fish & Wildlife Dept of	Statewide Water Access Stage 1 (17 sites	Completed	6/30/1972	Land and Water Conservation	$131,400	$0	$131,400
66-604 A	Fish & Wildlife Dept of	Statewide Water Access (45 sites)	Completed	6/30/1970	Land and Water Conservation	$172,205	$0	$172,205
22-1526 D	La Center City of	Holley Park Playground	Other		Land and Water Conservation	$383,036	$383,036	$766,072
84-701 D	Natural Resources Dept of	Woodland Camp Expansion	Completed	12/31/1988	Land and Water Conservation	$66,162	$0	$66,162
75-740 D	Natural Resources Dept of	Cold Creek	Completed	6/30/1977	Land and Water Conservation	$38,801	$0	$38,801
75-716 A	Natural Resources Dept of	Cold Creek Acquisition	Completed	2/7/1976	Land and Water Conservation	$8,327	$0	$8,327

Number Type	Project Sponsor	Project Name	Status	End Date	Fund Source	Agency Funding	Sponsor Match	Total with Match
70-701 A	Natural Resources Dept of	69-71 Rec. Sites Acquisition	Completed	12/31/1972	Land and Water Conservation	$111,265	$0	$111,265
69-713 D	Natural Resources Dept of	69-71 Recreation Sites Dev.	Completed	12/31/1974	Land and Water Conservation	$32,710	$0	$32,710
67-702 D	Natural Resources Dept of	DNR-Multiple Site Development 67	Completed	9/30/1968	Land and Water Conservation	$74,646	$31,025	$105,671
67-701 A	Natural Resources Dept of	DNR-Multiple Site Acquisitions	Completed	9/30/1968	Land and Water Conservation	$75,075	$0	$75,075
76-006 D	Ridgefield City of	Abrams Park	Completed	2/28/1978	Land and Water Conservation	$172,386	$57,462	$229,848
80-504 D	State Parks	Battleground Lake SP Parking	Completed	6/30/1982	Land and Water Conservation	$24,281	$0	$24,281
03-1029 D	Vancouver Parks, Rec & CS Dept	Burnt Bridge Creek Trail Phase 2	Completed	11/28/2008	Land and Water Conservation	$446,813	$523,681	$970,494
86-054 A	Vancouver Parks, Rec & CS Dept	Burnt Bridge Creek Acquisition	Completed	6/30/1988	Land and Water Conservation	$150,000	$205,750	$355,750
84-9015 D	Vancouver Parks, Rec & CS Dept	Waterworks Park #1	Completed	6/30/1989	Land and Water Conservation	$141,761	$231,294	$373,055
80-9041 D	Vancouver Parks, Rec & CS Dept	David Douglas Park	Completed	6/30/1983	Land and Water Conservation	$150,000	$50,000	$200,000
79-012 D	Washougal Parks Department	Hathaway Park	Completed	6/30/1981	Land and Water Conservation	$51,750	$51,750	$103,500

Number Type	Project Sponsor	Project Name	Status	End Date	Fund Source	Agency Funding	Sponsor Match	Total with Match
77-043 A	Washougal Parks Department	Hathaway Park Expansion	Completed	12/31/1977	Land and Water Conservation	$31,140	$10,380	$41,520
					Total	$8,056,341	$8,289,209	$16,345,550

Selection Criteria: Geographic Area: Clark; Land and Water Conservation, LWCF Legacy Program