Columbia River CROSSING

Memorandum

September 25, 2013

TO: Phillip Ditzler, Division Administrator—Oregon, FHWA
Daniel Mathis, Division Administrator—Washington, FHWA
R.F. Krochalis, Regional Administrator—Region 10, FTA

FROM: Heather Wills, CRC Environmental Manager

SUBJECT: CRC Phased Construction NEPA Re-evaluation

COPY: Kris Strickler, CRC Project Director
Project Controls

CRC Phased Construction NEPA Re-evaluation

Background

In June 2013, the Washington Legislature adjourned without passing a transportation funding package. Transportation projects that were not already under construction did not receive funding to continue and included in that the Washington State Department of Transportation (WSDOT) suspended financial involvement in the Columbia River Crossing (CRC) project. Subsequently, Oregon Department of Transportation (ODOT) has assumed responsibility for financing and delivery of the project and has proposed to phase the construction of the project with fewer initial improvements in Washington. The Tri-County Metropolitan Transportation District of Oregon (TriMet) has assumed the role of grantee for the transit portion of the project.

Consistent with the Final Environmental Impact Statement (FEIS) and Record of Decision (ROD), the full CRC project, as described in the FEIS as the Locally Preferred Alternative (full LPA), is proposed to be constructed in phases. The first phase of the LPA (referred to in this document as "LPA first phase") would build roadway improvements in Oregon, the river crossing bridge, the SR 14 interchange, and extend light rail to Vancouver, but would defer many highway improvements in Washington. Construction would begin in 2014 for the LPA first phase and would end in 2022.

The FEIS disclosed the potential for phasing construction, that is, building part of the project in an initial phase and constructing the remaining elements of the project at a later date when funding became available. Specifically, the FEIS stated on page 2-4:

It has become increasingly evident that there may not be adequate funding to construct all elements of the LPA in a single phase and it is common for large projects to be built in phases. Possible phasing options for the CRC project are numerous, and the actual phasing cannot be known until the precise timing and availability of funding are finalized, which will occur sometime after the Record of Decision (ROD). However, the project team, working with stakeholder groups, identified several highway elements of the LPA that could be reasonably postponed to reduce initial construction costs. This Final Environmental Impact Statement (FEIS) identifies these potentially phased elements, and refers to that possible initial investment as the "LPA with highway phasing." The LPA with highway phasing option would build most of the LPA in the first phase, but would defer construction of specific elements of the project, including:

- *Construction of the I-5 braided on- and off-ramps at Victory Boulevard.*

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- *Construction of the Marine Drive interchange flyover.*
- *Construction of the northern half of the I-5/SR 500 interchange…*

…The phasing scenario evaluated in this FEIS is a reasonable expectation of what could be constructed in the first phase if full funding is not available. Reasonable phasing options are not likely to result in any new significant adverse impacts beyond those described in this FEIS. The primary result of construction phasing would be to delay some of the benefits that the full LPA would provide.

Purpose

Based upon the technical memos that can be found as Appendix C to this document, the purpose of this re-evaluation is to identify and describe any changes in environmental impacts created by construction phasing of the LPA, compared to the impacts from constructing the full build-out of the LPA as described in the FEIS and ROD, and to determine whether any of those changes result in significant environmental impacts that were not evaluated in the FEIS.

The Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) completed their National Environmental Policy Act (NEPA) requirements for the Columbia River Crossing Project with a FEIS[1] in September 2011 and a Record of Decision (ROD)[2] in December 2011.

23 CFR 771.129(c) allows FHWA and FTA to re-evaluate project changes and new information to determine if there are any new significant environmental impacts that were not evaluated in the previous NEPA documents. The regulation states:

(c) After approval of the ROD, FONSI, or CE designation, the applicant shall consult with the Administration prior to requesting any major approvals or grants to establish whether or not the approved environmental document or CE designation remains valid for the requested Administration action. These consultations will be documented when determined necessary by the Administration.

To determine whether or not the designation remains valid, 23 CFR § 771.130 describes how to determine whether a supplemental EIS is required if there are new significant environmental impacts. The regulation states:

(a) A draft EIS, final EIS, or supplemental EIS may be supplemented at any time. An EIS shall be supplemented whenever the Administration determines that: (1) Changes to the proposed action would result in significant environmental impacts that were not evaluated in the EIS; or (2) New information or circumstances relevant to environmental concerns and bearing on the proposed action or its impacts would result in significant environmental impacts not evaluated in the EIS. (b) However, a supplemental EIS will not be necessary where: (1) The changes to the proposed action, new information, or new circumstances result in a lessening of adverse environmental impacts evaluated in the EIS without causing other environmental impacts that are significant and were not evaluated in the EIS; or (2) The Administration decides to approve an alternative fully evaluated in an approved final EIS but not identified as the preferred alternative. In such a case, a revised ROD shall be prepared and circulated in accordance with § 771.127(b).

[1] The CRC FEIS can be found at http://columbiarivercrossing.org/Library/Type.aspx?CategoryID=35

[2] The CRC ROD can be found at http://columbiarivercrossing.org/Library/Type.aspx?CategoryID=37

Project Construction Phasing

While the construction phasing option was explicitly disclosed in the FEIS/ROD, this NEPA re-evaluation includes an evaluation of the change in environmental impacts related to building the LPA first phase in contrast to building the full LPA at one time.

The deferred improvements will be built once funding is available. Funding could become available during project construction, in which case the deferred improvements could be incorporated into the existing construction schedule. It is also possible that funding could become available after completion of construction of the LPA first phase, and at that time a re-evaluation or other NEPA determination may be necessary.

This re-evaluation also includes design refinements to the full LPA as described in the FEIS to make the first phase operate better. For example, the Hayden Island interchange has been modified in the LPA first phase to reduce the number of new bridges over North Portland Harbor and to reduce cost while still improving the interchange performance.

The following section describes the LPA first phase and how it compares to the full LPA.

Description of the LPA First Phase

Summary

The CRC Locally Preferred Alternative (full LPA) is described in the FEIS and ROD. The description of the LPA first phase, a subpart of the full LPA, is described below.

Generally, on the Oregon side, the LPA first phase is substantially the same as the full LPA. The LPA first phase will rebuild the Marine Drive Interchange to Hayden Island in a slightly different configuration. Over the North Portland Harbor and the main Columbia River crossing, the LPA first phase would build the same bridge as described in the NEPA Vertical Clearance reevaluation dated December 28, 2012. On the Washington side, the LPA first phase will rebuild the SR 14 Interchange and defer improvements to the Mill Plain, Fourth Plain, and SR 500 interchanges. The light rail alignment and improvements under the LPA first phase are all the same, with the exception of the Hayden Island station which would be located slightly south of where it was described in the FEIS, and one park and ride facility, the Columbia Park and Ride, would be built with a smaller footprint than originally described in the full LPA.

The LPA first phase is described in further detail below.

Maps of the LPA first phase are included as appendices to this document. Appendix A shows a map of the LPA first phase, and Appendix B shows the footprint of the LPA first phase overlaid onto the full LPA.

The LPA first phase includes the following multimodal elements in regular font *[throughout this section, italicized font indicates where the LPA first phase differs from the full LPA]:*

- The new river crossing over the Columbia River and the I-5 highway improvements to six interchanges including extensive improvements to three interchanges and minor improvements to three interchanges, as well as associated enhancements to the local street network. *The full LPA improved a seventh interchange at SR 500.*
- Over North Portland Harbor, two new structures associated with I-5, and one new multimodal bridge carrying LRT, local traffic, pedestrians and bicyclists. *The LPA first phase built one less structure associated with I-5 than the full LPA.*

- Extension of light rail from the Expo Center in Portland to a terminus near Clark College in Vancouver, and associated transit improvements, including transit stations *(with the location of the Hayden Island station moving approximately 300 to 400 feet south)*, park and rides, bus route and station changes, and expansion of a LRT maintenance facility.
- Upgrades and modifications to the Steel Bridge track and signals and transit command center. *No change.*
- Purchase of 19 light rail vehicles, public art and other transit-related procurements. *No change.*
- Bicycle and pedestrian improvements throughout the project corridor that connect to the transit system. *No change.*
- Toll system for the river crossing. *No change.*
- Transportation demand and system management measures to be implemented with the project. *No change.*
- Deconstruction of the existing Columbia River structures. *No change.*

Project Area

The full LPA project area is defined as the area that will be directly impacted by the project, including the footprint of the permanent and temporary structures, widened highway segments, new interchanges, city street realignments, associated excavation and fill areas, stormwater facilities, areas contributing runoff to the stormwater facilities, wetland mitigation areas, and staging and access areas, including areas in the Columbia River and North Portland Harbor where work will occur from barges and temporary structures.

The project area of the first phase of the LPA is defined as the area that will be directly impacted by the first phase of the LPA. Along the I-5 corridor, the main portion of the LPA first phase area extends 3.5 miles from north to south, beginning at the I-5/Fourth Plain Boulevard interchange in Vancouver, Washington, and extending to the I-5/Victory Boulevard interchange in Portland, Oregon. At its northern end, the project area extends west into downtown Vancouver and east to near Clark College to include high-capacity transit alignments, transit stations, park and ride locations, and city road improvements included as part of this project. Heading south along the existing overwater bridge alignments, the LPA first phase area extends 0.25 mile on either side of the bridges to include the new Columbia River and North Portland Harbor bridges, as well as the adjacent areas where construction and demolition activities will occur.

The LPA first phase area includes potential construction staging and casting yards at the Port of Vancouver, Alcoa/Evergreen, Sundial, Red Lion at the Quay, and Thunderbird Hotel sites.

Along the Sandy River in Oregon and along the Lewis River in Washington, the LPA first phase area includes compensatory mitigation sites, though the Lewis River site will be covered under a separate permitting process.

The LPA first phase area described here includes all associated cut and fill slopes and stormwater treatment facilities.

Light Rail, Stations and Park-And-Ride Lots

The light rail alignment and all but one station of the LPA first phase will be the same as the full LPA. The Hayden Island station would be now be located between Jantzen Drive and I-5, which is approximately 300-400 feet south from the Tomahawk Island Drive location identified in the full LPA.

The Central and Mill Park and Rides will be substantially the same as the full LPA. The Columbia Park and Ride will have the same number of stalls and will be the same height as the full LPA, but the footprint will be smaller.

Highway Improvements

The LPA first phase constructs improvements at six of the seven identified interchanges in the full LPA, Of the six interchanges, there will be extensive improvements to three interchanges and minor improvements to three interchanges. The seventh interchange, SR 500 interchange improvements, will no longer be constructed under the LPA first phase. The three interchanges with minor improvements will be fully built under the full LPA, as will the seventh interchange, SR 500. The following section describes what is planned to be constructed under the LPA first phase at the six interchanges.

Mainline I-5

The I-5 mainline will be carried by two new bridges over the Columbia River with 5 lanes in each direction at the middle of the river. At the south end of the project, the northbound and southbound lanes match into the existing I-5 lane configuration near Victory Boulevard.

At the north end of the project in Vancouver, the northbound and southbound lanes match into the existing I-5 lane configuration near Mill Plain Boulevard.

Victory Boulevard Interchange

Please see Exhibit 1 for maps of Victory Boulevard interchange under the full LPA and LPA first phase.

The existing interchange configuration will be retained. The ramps on the north side of the interchange will be reconnected similar to the existing configuration. *With the exception of minor road widening, this is the same as the full LPA.*

Marine Drive Interchange

Please see Exhibit 2 for maps of Marine Drive interchange under the full LPA and LPA first phase.

All movements within this interchange will be reconfigured to reduce congestion and improve safety for trucks and other motorists entering and exiting I-5. The proposed configuration is a single-point urban interchange (SPUI). *Functionality of the LPA first phase interchange will be the same as the full LPA, however, the Interchange will be shifted north approximately 100 to 150 feet compared to the full LPA. The flyover ramp from the full build of the LPA would be deferred in the LPA first phase.*

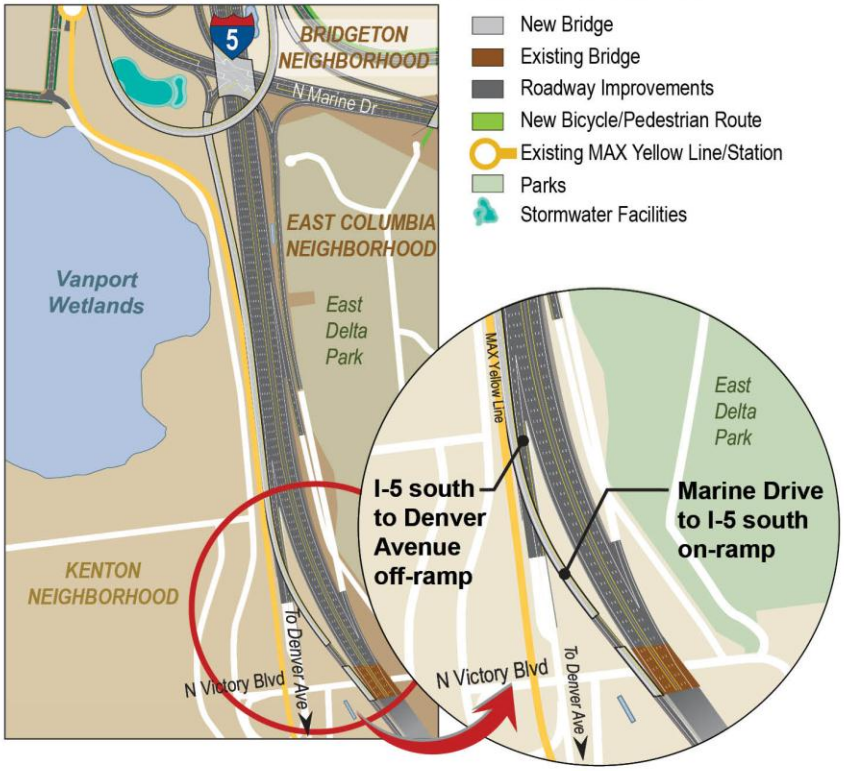
Local traffic traveling between the Marine Drive interchange and Hayden Island will be eliminated from the I-5 mainline and moved to a local multimodal bridge. The on- and off-ramps between Marine Drive and Hayden Island will be braided.

Compared to the existing interchange, the new interchange configuration changes the westbound Marine Drive (east of I-5) and westbound Vancouver Way connections to Martin Luther King Jr. Boulevard. These two streets will instead access westbound Martin Luther King Jr. Boulevard farther east. This connection will allow traffic to turn from Vancouver Way and accelerate onto Martin Luther King Jr. Boulevard. On the south side of Martin Luther King Jr. Boulevard, the existing loop connection to Union Court will be retained. *Some local street improvements would be reconfigured in the first phase of the LPA compared to the full build out of the LPA, including types of structures and grade separated crossings. All vehicle movements would be the same in the LPA first phase and the full build of the LPA.*

Exhibit 1.

Victory Boulevard Interchange

Victory Boulevard Interchange—LPA as Shown in the FEIS



Victory Boulevard Interchange—LPA First Phase

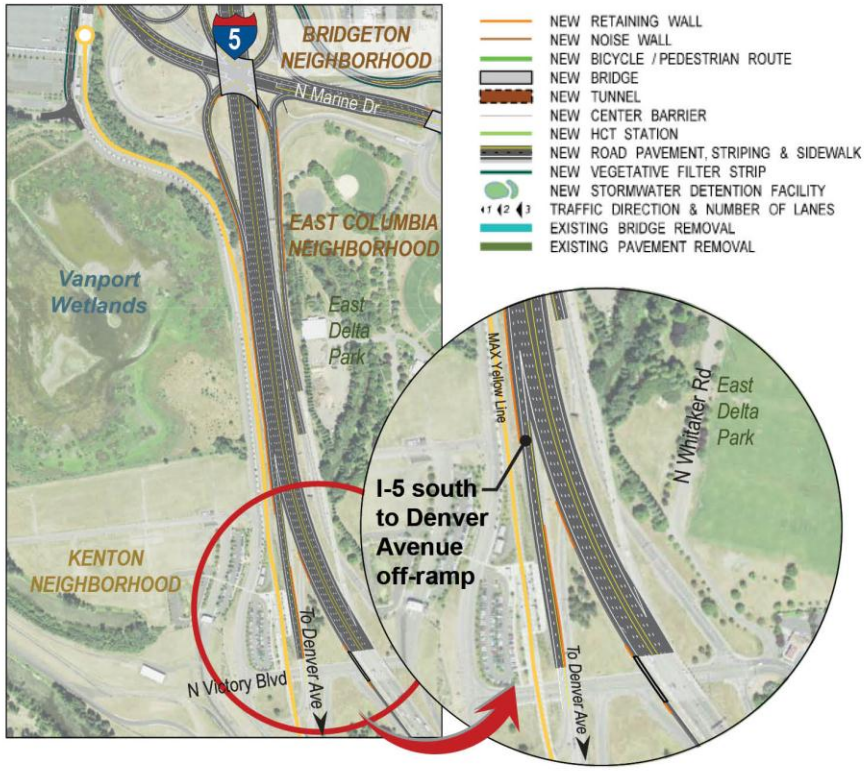
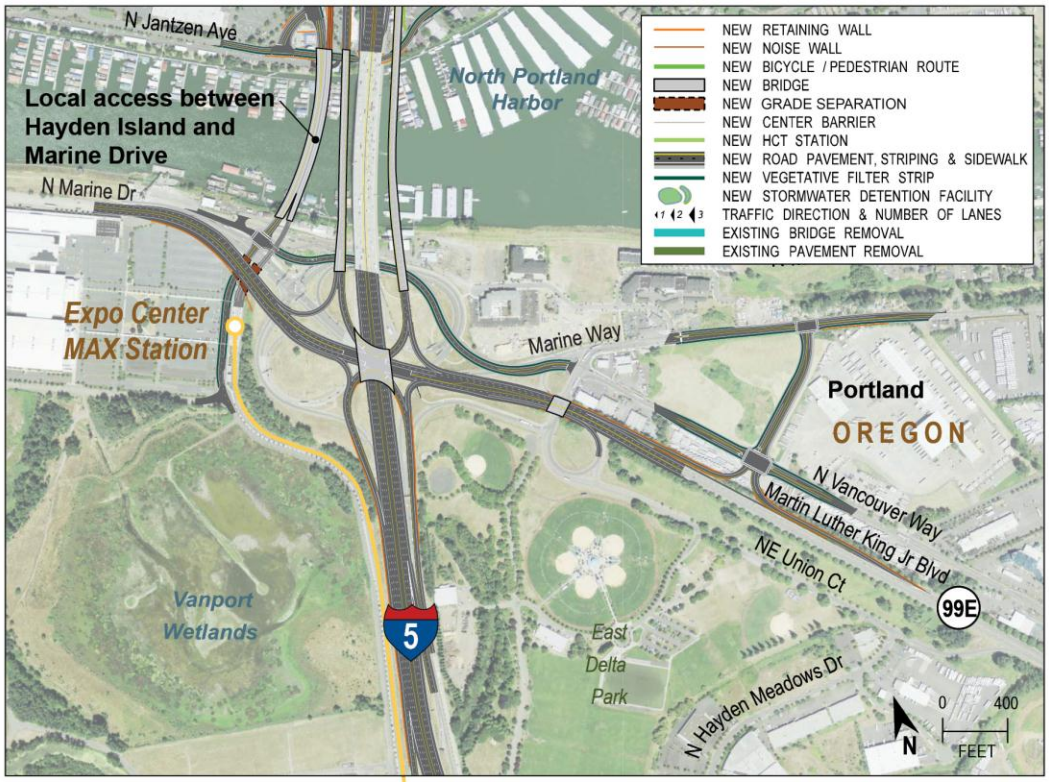


Exhibit 2.

Marine Drive Interchange

Marine Drive Interchange—LPA as Shown in the FEIS

Marine Drive Interchange—LPA First Phase



The LPA first phase includes improvements to the local street system around the interchange, including: an extension of Vancouver Way under I-5 to connect to the new north-south street adjacent to the Expo Center; extension of Expo Road to the new multimodal bridge; a street connection between Vancouver Way and Marine Drive (east of I-5); and, improvements on Union Ct., Marine Way, Marine Drive (east of I-5) and Vancouver Way for the new connections in this area. *Improvements to local streets east of the interchange will be smaller in scope for the LPA first phase compared to the full LPA, but the same turning movements will be allowed.*

Hayden Island Interchange

Please see Exhibit 3 for maps of Hayden Island interchange under the full LPA and LPA first phase.

The Hayden Island Interchange will be reconstructed with an interchange of similar form to the existing Hayden Island Interchange. The need for improvement is due to the increased elevation of the bridges over the Columbia River and the horizontal shift of I-5 over Hayden Island. The southbound ramp terminal will be shifted to the west and the northbound ramp terminal will be reconstructed with a connection to Hayden Island Drive. *The full LPA proposed on- and off-ramps parallel to I-5. The LPA first phase would build modified loop ramps, which (similar to the full LPA) would have increased lengths for vehicles to come up to speed and merge, and decelerate and exit.*

Additional changes at this interchange, will include:

- Improvements to Jantzen Drive from Tomahawk Island Drive (east of I-5) under I-5 and to the west of I-5 to include improved connectivity for local traffic, pedestrians, and bicyclists. *The full LPA extended improvements to Jantzen Drive further west than the LPA first phase and extended the improvements to connect to Hayden Island Drive.*
- Improvements to Hayden Island Drive for a realigned street to the southbound ramp terminal and the multimodal bridge; and reconfigured intersection at the northbound ramp terminal. *The full LPA extended improvements to Hayden Island Drive further west than the LPA first phase. The full LPA did not connect on- and off- ramps directly to Hayden Island Drive.*
- Improvements to Tomahawk Island Drive west of the southbound ramp terminal. The full LPA improved Tomahawk Island Drive from the west side of I-5 to the east side, providing a link under I-5. The LPA first phase would provide connection under I-5 via Hayden Island Drive and Jantzen Drive.
- A realigned frontage road connection north of Hayden Island Drive. The full LPA did not provide this improvement, but provided access to/from the Red Lion Hotel via the intersection of Hayden Island Drive and Jantzen Drive.
- A connection street between the multimodal bridge street and Jantzen Drive. The full LPA did not provide this improvement, but provided access to Jantzen Drive via Tomahawk Island Drive and a new north-south street.
- Grade separated Shared Use Path (SUP) with connections to Hayden Island Drive, Tomahawk Island Drive and Jantzen Drive. The SUP terminates with the connections to the local street improvements on Hayden Island. *The full LPA provided a SUP that was grade separated from vehicle traffic. The LPA first phase would have bicycle and pedestrian at-grade intersections on Hayden Island.*

Exhibit 3.

Hayden Island Interchange

Hayden Island Interchange—LPA as Shown in the FEIS

Hayden Island Interchange—LPA First Phase

SR 14 Interchange

Please see Exhibit 4 for maps of SR 14 interchange under the full LPA and LPA first phase.

Overall, the interchange will remain in the same location as it exists today. The need for improvements is due to the increased elevation of the bridge over the Columbia River and its touchdown of mainline I-5 in Vancouver. The reconstructed interchange will be above the existing BNSF rail alignment. All ramps between I-5 and SR 14 will be reconstructed. Ramps connecting SR 14 to downtown Vancouver will be reconstructed, terminating at Columbia Street. C Street to southbound I-5 will also be reconstructed, but the ramp from I-5 northbound to C Street will not be reconstructed in this phase. *The full LPA would reconstruct I-5 northbound to C Street (east) loop ramp, but the LPA first phase would not. Vehicles traveling from I-5 north to downtown Vancouver would take the Mill Plain exit that would take additional time but no significant new environmental impact.*

Mill Plain Interchange

Please see Exhibit 5 for maps of Mill Plain interchange under the full LPA and LPA first phase.

The existing interchange configuration will be retained. The ramps on the south side of the interchange will be reconnected similar to the existing configuration. *The full LPA would reconfigure the interchange as a tight diamond. The LPA first phase would defer major improvements to this interchange.*

Fourth Plain Interchange

Please see Exhibit 6 for maps of Fourth Plain interchange under the full LPA and LPA first phase.

The Fourth Plain Interchange will be modified to provide for a connection to the Central Park and Ride. Lane configurations at both ramp terminals will be modified to accommodate increased traffic destined to the Central Park and Ride. *The full LPA would braid the southbound I-5 exit to Fourth Plain under the 39th Street exit. The braided exit ramp would eliminate the direct connection between westbound SR 500 and Fourth Plain. The LPA first phase would defer these improvements to this interchange.*

SR 500 Interchange

The LPA first phase would not make any improvements to the SR 500 interchange.

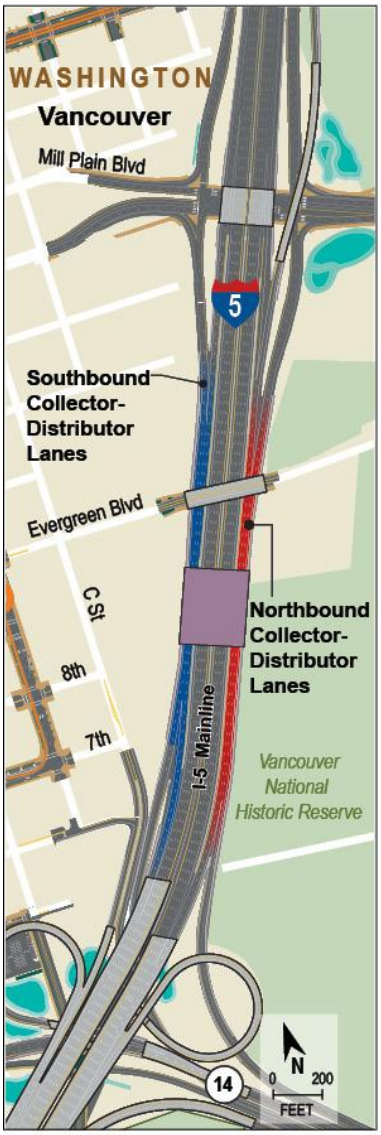
Exhibit 4.

SR 14 Interchange

SR 14 Interchange—LPA as Shown in the FEIS

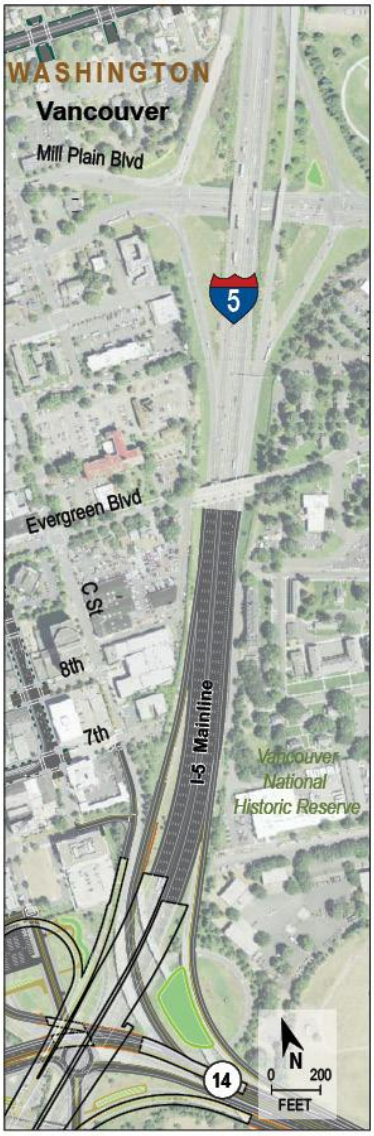
SR 14 Interchange—LPA First Phase

SR 14 Interchange—
LPA as Shown in the FEIS



- New Bridge
- Roadway Improvements
- New Transit Alignment
- New Transit Station
- Community Connector
- New Park and Ride
- New Bicycle/Pedestrian Route
- Parks
- Stormwater Facilities
- Planter Strip
- Northbound Traffic
- Southbound Traffic
- New Surface Parking Lot

SR 14 Interchange—
LPA First Phase



- NEW RETAINING WALL
- NEW NOISE WALL
- NEW BICYCLE / PEDESTRIAN ROUTE
- NEW BRIDGE
- NEW TUNNEL
- NEW CENTER BARRIER
- NEW HCT STATION
- NEW ROAD PAVEMENT, STRIPING & SIDEWALK
- NEW VEGETATIVE FILTER STRIP
- NEW STORMWATER DETENTION FACILITY
- TRAFFIC DIRECTION & NUMBER OF LANES
- EXISTING BRIDGE REMOVAL
- EXISTING PAVEMENT REMOVAL

Exhibit 5.

Mill Plain Interchange

Mill Plain Boulevard Interchange—LPA as Shown in the FEIS

Mill Plain Boulevard Interchange—LPA First Phase

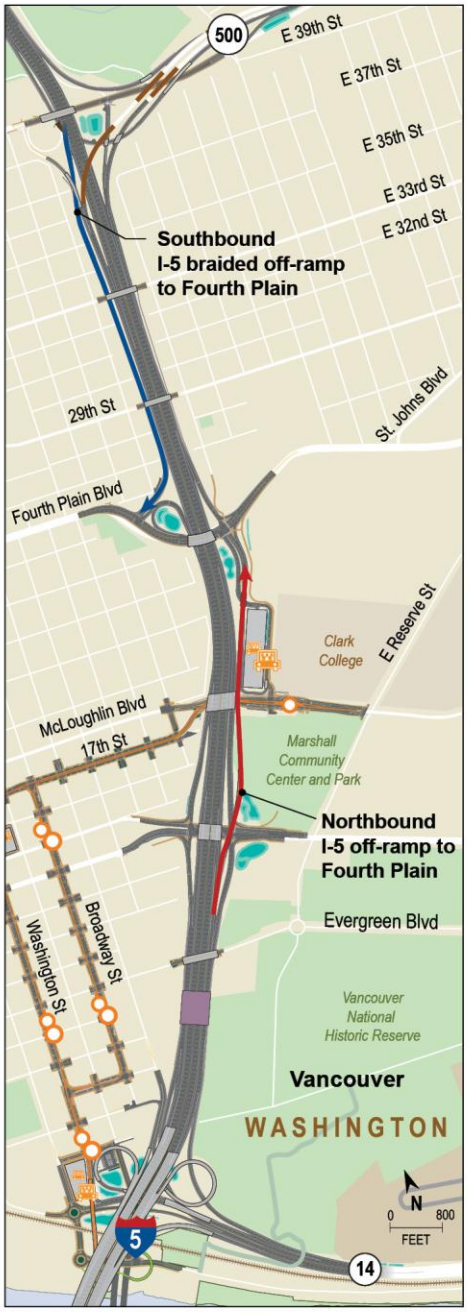
Exhibit 6.

Fourth Plain Interchange

Fourth Plain Boulevard—LPA as Shown in the FEIS

Fourth Plain Boulevard—LPA First Phase

Fourth Plain Boulevard Interchange—
LPA as Shown in the FEIS



New Bridge
Roadway Improvements
New Transit Alignment
New Transit Station
Community Connector
New Park and Ride
New Bicycle/Pedestrian Route
Parks
Stormwater Facilities
Planter Strip
Northbound Traffic
Southbound Traffic
New Surface Parking Lot

Fourth Plain Boulevard Interchange—
LPA First Phase

NEW RETAINING WALL
NEW NOISE WALL
NEW BICYCLE / PEDESTRIAN ROUTE
NEW BRIDGE
NEW TUNNEL
NEW CENTER BARRIER
NEW HCT STATION
NEW ROAD PAVEMENT, STRIPING & SIDEWALK
NEW VEGETATIVE FILTER STRIP
NEW STORMWATER DETENTION FACILITY
TRAFFIC DIRECTION & NUMBER OF LANES
EXISTING BRIDGE REMOVAL
EXISTING PAVEMENT REMOVAL

Existing Permits and Approvals

Following publication of the ROD, project staff proceeded with submitting the necessary Federal, state and local permit applications. At the time of writing of this document, the following permits have been obtained:

- Oregon DEQ 401 Water Quality Certification
- Washington Department of Ecology 401 Water Quality Certification

Additionally, the following permits have been submitted and are currently in review:

- U.S. Coast Guard General Bridge Permit

The checklist below indicates whether changed conditions or new information would result in revised documentation or determination under the following federal regulations:

Endangered Species Act	☐ Yes	☒ No
Magnuson-Stevens Act	☐ Yes	☒ No
Farmland Preservation Act	☐ Yes	☒ No
Section 404-Clean Water Act	☐ Yes	☒ No
Floodplain Management Act	☒ Yes	☐ No
CERCLA (Hazardous Materials)	☐ Yes	☒ No
Section 106 National Historic Preservation Act	☒ Yes	☐ No
Uniform Relocation Act	☐ Yes	☒ No
Section 4(f) Lands	☐ Yes	☒ No
Section 6(f) Lands	☐ Yes	☒ No
Wild & Scenic Rivers	☒ Yes	☐ No
Coastal Barriers	☐ Yes	☒ No
Coastal Zone	☐ Yes	☒ No
Sole Source Aquifer	☐ Yes	☒ No
National Scenic Byways	☐ Yes	☒ No
Marine Mammal Protection Act	☒ Yes	☐ No

Regarding the boxes checked above, they are evaluated as follows:

Endangered Species Act and the Magnuson-Stevens Act: Changes due to the LPA first phase do not require reinitiation. A recent reinitiation document addressed updated designs, and a phased approach to the project. Benefits from improved stormwater treatment would be deferred, but no deadline for completion of treatment improvements was given by National Marine Fisheries Service (NMFS) or United States Fish and Wildlife Service (USFWS). On August 30, 2013, NMFS issued a supplemental biological opinion to their biological opinion on January 19, 2011. The supplemental opinion confirms the conclusions in the 2011 opinion, and adds a new conclusion that the modified proposed action will not result in destruction or adverse modification of critical habitat designated for eulachon or proposed for Lower Columbia River coho salmon.

Floodplain Management Act: Hydraulics and hydrology documentation will be required, and potential for a Conditional Letter of Map Revision from FEMA or mitigation might be needed to address the Floodplain Management Act. Any additional documentation or determination is part of the permitting process is not associated solely with the phasing of the project, but would occur with the full LPA or LPA first phase to account for recently updated project details.

Section 106: The Section 106 Memorandum of Agreement (MOA) would likely need to be modified to address changes in timing of the improvements.

Section 4(f): Use of some 4(f) resources would be deferred with the LPA first phase, but this does not result in revised documentation, and will by definitions will be a lessened impact.

Wild & Scenic Rivers Act: With the inclusion of project mitigation at Dabney State Park on the Sandy River (a Wild and Scenic River), analysis and documentation to Oregon Parks and Recreation Department (OPRD) will be required. As a participant in the mitigation project, approval by OPRD for work on the Sandy River is expected. Any additional documentation or determination is not associated only with the LPA first phase, but would occur only to account for recently updated project details that would occur with either the full LPA or the LPA first phase.

Marine Mammal Protection Act (MMPA): Additional documentation or determination is not associated solely with the LPA first phase, but would occur with the LPA full-build or LPA first phase to account for recently updated project details common to both. The project team is preparing an update to the MMPA Letter of Authorization (LOA) request to address these modifications. It is anticipated that any new impacts would be within the scope of the original LOA request.

Based upon the analysis above, any changes or updates to permits and approvals will not result in any significant impacts.

Analysis of Change in Impacts

The following section describes the impacts of the full LPA as initially disclosed in the FEIS and ROD, the impacts from the LPA first phase, and any change in impacts that would result from the specific construction phasing that has been identified for delivery of the project. Each environmental discipline included in the FEIS is addressed, and the relevant environmental metrics within each discipline are analyzed.

Methodology

In order to complete the technical analysis of the change in environmental impacts, information about the LPA first phase was provided to technical experts in each of the environmental disciplines. Project staff provided a LPA first phase footprint, project description, and the necessary Computer Aided Drafting files to the technical experts. Additionally, some disciplines (e.g. Noise and Air Quality), required traffic data for their analysis, so that information was provided from the traffic experts to the requisite disciplines. The technical experts produced technical memos for each environmental discipline, which are included as Appendix C to this re-evaluation document. The technical memos are summarized in this “Analysis of Change in Impacts” section.

The impacts from the LPA first phase were compared to the impacts from the alternative that was selected in the ROD--the full LPA with the design option A.

The FEIS evaluated the potential for phasing construction, that is, building part of the project in an initial phase and constructing the remaining elements of the project at a later date. The FEIS recognized that it is common for large projects to be built in phases, and in the case of the CRC,

construction of all elements of the full LPA in a single phase might not be possible due to funding limitations. The FEIS also recognized that possible phasing options for the CRC project were numerous, and the actual phasing could not be known until the precise timing and availability of funding was finalized. This was predicted to occur sometime after the Record of Decision (ROD). The FEIS identified several highway elements of the full LPA that could be reasonably postponed to reduce initial construction costs. The FEIS identified these potentially phased elements, and referred to that possible initial investment as the "LPA with highway phasing.

The full LPA with highway phasing option would build most of the full LPA in the first phase, but would defer construction of specific elements of the project, including:

- Construction of the I-5 braided on- and off-ramps at Victory Boulevard.
- Construction of the Marine Drive interchange flyover.
- Construction of the northern half of the I-5/SR 500 interchange.

The "LPA with highway phasing" as described in the FEIS has some of the same deferred improvements as the LPA first phase, but it is not the same as the LPA first phase analyzed in this re-evaluation.

Transportation—Transit

Summary of Change in Transit Impacts

There are no new significant impacts from the construction of the LPA first phase which were not evaluated in the FEIS with regards to transit. The light rail structure and alignment proposed under the LPA first phase will be substantially the same as under the full LPA. There are only two changes to the project improvements: the modification of the location of the light rail station on Hayden Island to approximately 300 to 400 feet south; and the modification to the Columbia Park-and-Ride facility which will have a smaller footprint but same parking capacity. There would be a slight reduction in bus transit throughput due to reduced congestion benefits associated with deferring project highway improvements. In the future when full build out of the full LPA occurs, there may be temporary service disruptions to the light rail transit due to construction activity on Hayden Island and at McLoughlin Boulevard, but these service disruptions will be mitigated by the contractor and CRC as much as practicable.

Long-term Effects as Described in the FEIS and Effects from the LPA First Phase

The FEIS described long-term transit impacts for the full build-out of the LPA in terms of transit ridership, mode split, transit travel times and transit safety and security. Exhibit 7 compares the impacts of the LPA first phase with the impacts of the full build-out of the LPA. Transit travel times and transit safety and security would be the same for the LPA first phase as the full LPA, because the light rail portion of the project would not change. Transit mode split would be increased slightly with the LPA first phase compared to the full LPA. Transit throughput during the peak period would be reduced compared to the full LPA due to the reduction in congestion improvements from deferring some project improvements (described in further detail in the Transportation-Traffic section below).

Temporary Effects

Construction of the LPA first phase would defer improvements to structures where McLoughlin Boulevard passes under I-5. Future construction phases must consider impacts to light rail operations.

Once the first phase of the LPA is built on Hayden Island, construction of the full LPA will have to consider impacts to light rail service operations.

Mitigation

No new transit mitigation identified for the LPA first phase.

Transportation—Traffic

Summary of Change in Traffic Impacts

The construction of the LPA first phase will not result in any new significant environmental impacts, because the LPA first phase will improve congestion, vehicle and person throughput, traffic safety, and intersection performance as compared to the No-Build. Because some project improvements would be deferred with the LPA first phase, some of the traffic benefits would also be deferred compared to the full LPA, as shown in Exhibit 7 below.

Long-term Effects as Described in the FEIS and Effects from the LPA First Phase

Exhibit 7.

Comparison of 2030 Direct Effects to Transportation

Metric	LPA First Phase	Full LPA[a]	No-Build Alternative
Vehicles over the I-5 crossing each weekday	178,500	178,500	184,000
Vehicles over the I-205	214,500	214,500	210,000
People over the I-5 crossing northbound, during peak period[b]			
In vehicles	28,300	35,300 (35,200)	26,500
On transit	5,850	6,100	2,200
Hours of congestion per day (northbound and southbound)	6.5	3.5-5.5 hours	15.0 hours
Pedestrian and bicycle connections[c]	Improvements but has at-grade crossings on Hayden Island.	Provide continuous grade-separated multi-use path between Marine Drive and downtown Vancouver.	No improvement in comparison with existing deficient conditions.
Transit mode split in p.m. peak[d]	17%	15%	8%
Transit travel time from Mill Park and Ride to Expo Center	6 min	6 min	13 min
Annual transit operations and maintenance costs ($ million)[e,f]	Similar to full LPA	$76.3	$70.0
Traffic safety	Reduced congestion and improved highway design would reduce crashes, but not as much as the full LPA.	Reduced congestion and improved highway design would reduce crashes.	No improvement in comparison with existing conditions.
Transit safety and security	Same as full LPA	Light rail stations provide higher level of visibility and lighting than on-street bus stops. Stations would have additional safety measures incorporated into design.	No improvement in comparison with existing conditions.

a Information in parentheses indicates impacts if the full LPA Option A or B is constructed with highway phasing.

b Total number of people in cars and on transit vehicles using the I-5 crossing traveling north during the afternoon/evening peak period. For the full LPA, LPA first phase, and No-Build Alternatives the data reflects the volumes expected to be served based on capacity limitations for the I-5 crossing, and not the expected demand as it was estimated by the regional travel demand model.

c Only bicycle and pedestrian improvements that differ between alternatives are described. A substantial number of additional bicycle and pedestrian improvements will be provided as part of the CRC project, including those at each interchange in the main project area.

d Percentage of people traveling over the I-5 crossing on transit vehicles in the afternoon/evening peak period, in the northbound direction.

e Total annual cost to run C-TRAN local and express routes, TriMet North Portland local buses, MAX Yellow Line, and high-capacity transit service.

f All costs are shown in 2007 dollars.

I-5 and I-205 Traffic Levels

I-5 Traffic Congestion - Travel Times and Speeds

The FEIS reported that 2030 southbound congestion in the vicinity of the I-5 crossing for the full LPA would be 3.5 hours. The LPA first phase would have 2.75 hours of southbound congestion in the vicinity of the I-5 crossing. The reduction in the duration of congestion at the I-5 crossing compared to the 3.5 hours forecast for the full LPA is caused by the existing bottleneck located between SR 500 and Fourth Plain Boulevard. The LPA first phase would defer improvements to this bottleneck, therefore keeping some congestion north of the I-5 crossing. This bottleneck meters the amount of traffic that can get to the I-5 crossing thereby limiting the duration of congestion. Similar to the full LPA, traffic congestion remaining at the I-5 crossing would result from the existing downstream bottleneck on I-5 just north of the I-405 split backing up congestion into the CRC main project area. The LPA first phase would not exacerbate or worsen this existing bottleneck near the I-405 split.

The duration of 2030 northbound congestion at the I-5 crossing under the full LPA would be reduced to less than 2 hours of delay. The LPA first phase would have 3.75 hours of northbound congestion in the vicinity of the I-5 crossing. Although traffic congestion is forecast for the I-5 crossing, it is caused by a downstream bottleneck located between SR 14 and SR 500. The amount of geometric freeway and interchange improvements in the northern portion of the CRC project under the LPA first phase has been reduced compared to the full LPA, resulting in more congestion between SR 14 and SR 500.

Vehicle travel time estimates were developed for peak travel directions. Compared to the No-Build Alternative, southbound trips along I-5 from 179th Street to I-84 would experience a 17 percent decrease in travel time during the morning peak with the full LPA, and LPA first phase, from 46 minutes under No-Build conditions to 38 minutes. Although the LPA first phase has a new southbound bottleneck located between SR 500 and Fourth Plain the southbound travel times remain similar to the full LPA during the peak period for the southbound travel direction due to the large downstream bottleneck located on I-5 just north of the I-405 split.

Vehicles traveling northbound along I-5 from I-84 to 179th Street during the afternoon/evening peak would experience a 45 percent decrease in travel time, from 44 minutes under 2030 No-Build conditions to 24 minutes with the full LPA. The LPA first phase would also experience a reduction in travel time from 44 minutes under 2030 No-Build conditions to 35 minutes (20 percent). The LPA first phase reduction is not as large as the full LPA due to the bottleneck between SR 14 and SR 500.

Summary of I-5 Traffic Congestion

The LPA first phase would have 6.5 hours of congestion per day, compared to 3.5-5.5 with the full LPA, and 15 for No-Build, in the vicinity of the I-5 crossing as described in the FEIS.

I-5 Peak Traffic and Person Throughput

During the 4-hour morning peak, southbound vehicle throughput across the I-5 bridge with the full LPA is forecast to be 25,600 vehicles, an increase of 16 percent over 2030 No-Build

conditions of 22,000 vehicles. For the LPA first phase southbound vehicle throughput across the I-5 bridge is forecast to be 25,100 vehicles, an increase of 14 percent compared to 2030 No-Build conditions.

During the 4-hour afternoon/evening peak, northbound vehicle throughput across the I-5 bridge with the full LPA is forecast to be 29,400 vehicles, an increase of 45 percent over 2030 No-Build conditions of 20,300 vehicles. Elimination of the northbound bottleneck at the bridge would result in higher vehicle throughput for I-5 in the northbound direction. Under the LPA first phase northbound vehicle throughput would increase to 23,600 vehicles, an increase of 16 percent over 2030 No-Build but less than the full LPA. This is caused by the bottleneck located between SR 14 and SR 500 causing congestion across the I-5 crossing.

With the full LPA, total person throughput on the I-5 Columbia River bridges is expected to be 36,750 persons in the southbound direction during the morning peak period in 2030, an increase of 32 percent over No-Build conditions (27,850 persons). An expected total of 29,200 persons or 80 percent of total person trips would be made in private vehicles, an increase of 18 percent over No-Build conditions. With the provision of light rail transit, up to 7,550 persons or 20 percent of all southbound person trips are forecast to use transit to cross the bridge under the full LPA compared to 3,050 persons traveling on bus under the No-Build Alternative. With the LPA first phase, total southbound a.m. peak period person throughput would increase to 36,100 persons, a 30 percent increase over No-Build conditions.

With the full LPA, during the afternoon/evening peak period, total northbound person trips making the I-5 Columbia River crossing are expected to reach 41,400, an increase of 44 percent over No-Build conditions (28,700 persons). With the provision of light rail transit, up to 6,100 persons or 15 percent of all northbound person trips are forecast to use transit to cross the bridge under the full LPA compared to 2,200 person trips travelling on bus under the No-Build Alternative. The total transit trips under the LPA first phase is slightly less (5,850 persons) than the full LPA (6,100) due to busses being caught in the northbound bottleneck between SR 14 and SR 500. During the afternoon/evening peak, the LPA first phase peak person throughput would increase to 34,150 persons (19 percent increase) over No-Build conditions.

Summary of I-5 Peak Traffic and Person Throughput

The LPA first phase total peak period person throughput (southbound a.m. and northbound p.m.) would be 70,250. With the full build-out of the LPA it is expected to be 78,150. The No-Build is expected to be 56,550.

Traffic Safety

The full LPA and the LPA first phase would improve non-standard geometric and safety design features on the I-5 mainline and ramps within the project area. Improvements would be made to the existing short on-ramp merges/acceleration lanes and off-ramp diverges/deceleration distances, short weaving areas, substandard lane widths, vertical and horizontal curves that limit sight distance, and narrow or non-existent shoulders. The full LPA and LPA first phase remove both Interstate Bridge lift spans and would reduce traffic congestion compared to No-Build conditions.

The number of vehicular collisions in the main project area is related to the presence of non-standard geometric design and safety features, which is exacerbated when traffic levels are at or near congested conditions. The full LPA and LPA first phase would improve traffic safety in the area. It is estimated that the full LPA would reduce average annual yearly collisions in the main project area from 750 under the No-Build Alternative to between 210 and 240. The LPA first phase would also reduce the average annual yearly collisions in the main project area compared to the No-Build Alternative, but it would not be as much as the full LPA. The reason the reduction in collisions would be less under the LPA first phase would be the additional

bottlenecks identified for both northbound and southbound traffic between Mill Plain and SR 500 in Washington.

Summary of Traffic Safety

The LPA first phase would reduce the average annual yearly collisions in the main project area compared to the No-Build Alternative, but not as much as the full LPA.

Local Street Circulation Changes

Vancouver Local Streets

With 2030 No-Build conditions, local street congestion is most intense near the I-5 ramps and is influenced by the travel direction and length of time that I-5 is congested each day. When I-5 is congested, major arterials that provide east/west connectivity are also congested. Of the 86 intersections evaluated for the No-Build condition, seven would not meet acceptable operational standards during the morning peak. During the afternoon/evening peak period, seven intersections would not meet acceptable operational standards.

The addition of light rail transit in the full LPA and LPA first phase would have the same changes to the local street system in downtown Vancouver as described in the FEIS.

The transit alignment includes park and ride facilities. Since the park and rides would have the same number of parking spaces with the LPA first phase as the full LPA, trip generation for the LPA first phase is expected to be similar as the full LPA.

With the full LPA, the number of intersections analyzed increases to 92. During the 2030 morning peak under the full LPA, 91 of these intersections would operate acceptably with improved, similar, or slightly degraded conditions. The one intersection that would degrade from acceptable under No-Build conditions and would operate unacceptably under the full LPA is 29th Street at Main/Broadway Street.

With the LPA first phase, the number of intersections analyzed increases to 93 intersections. During the 2030 morning peak under the LPA first phase 91 of these intersections would operate acceptably with improved, similar, or slightly degraded conditions. With the LPA first phase, the two intersections that would degrade from acceptable under No-Build conditions and would operate unacceptably are 29th Street at Main/Broadway Street (same as full LPA) and Fourth Plain Boulevard at I-5 Southbound Ramp Terminal. This is attributed to additional volume being able to access Fourth Plain Boulevard from SR 500 due to the elimination of the southbound I-5 braid between SR 500 and Fourth Plain Boulevard under the LPA first phase compared to the full LPA. The Fourth Plain at the I-5 Southbound Ramp Terminal is predicted to perform just below City of Vancouver standards in 2030 with the LPA first phase. The project proposes monitoring this intersection and, if needed, mitigation to address intersection operations. See the Mitigation section for more information.

During the 2030 afternoon/evening peak with the full LPA, 89 of the 92 intersections would operate acceptably with improved, similar, or slightly degraded conditions. With the full LPA, three intersections would degrade from acceptable under No-Build conditions and would operate unacceptably. The three intersections include Mill Plain Boulevard at C Street, 15th Street at C Street, and 39th Street at the I-5 Southbound Ramp Terminal.

During the 2030 afternoon/evening peak with the LPA first phase, 90 of the 93 intersections would operate acceptably with improved, similar, or slightly degraded conditions when compared to the No-Build. With the LPA first phase, three intersections would degrade from acceptable under No-Build conditions and would operate unacceptably. These include the intersections of Mill Plain Boulevard at C Street (same as full LPA), 39th Street at H Street (same as full LPA), and 39th Street at I-5 Southbound Ramp Terminal (same as full LPA). The full LPA builds the

full direct connect ramps from SR 500 to I-5 while the LPA first phase both leave the existing interchange configuration at 39th Street. Additionally, with the LPA first phase, vehicles from SR 500 accessing Fourth Plain Boulevard will not need to re-route onto 39th Street instead they can access their final destination along I-5.

Summary of Vancouver Local Streets

Overall, the full LPA, and LPA first phase would improve local street operations in Vancouver in comparison with 2030 No-Build conditions, as shown in the exhibit below. Intersections in Vancouver with the LPA first phase would perform better than No-Build, but not as well as the full LPA.

Environmental Metric	LPA First Phase	Full LPA	No-Build
Vancouver intersections operating unacceptably			
AM	2	1	7
PM	3	3	7

Portland Local Streets

Under 2030 No-Build conditions, 25 intersections were analyzed, one of which would not meet applicable performance standards during the morning peak hour - the intersection of Fremont Street with Martin Luther King Jr. Boulevard. During the afternoon/evening peak hour, five intersections would not meet applicable performance standards: Martin Luther King Jr. Boulevard with Fremont and Alberta Streets, Interstate Avenue with Argyle and Going Streets, and Marine Way with Vancouver Avenue.

With the full LPA, the total number of intersections analyzed increased to 38, primarily as a result of additional intersections associated with the local roads in the Hayden Island and Marine Drive interchange areas. During the 2030 morning peak, 37 of these 38 intersections would be expected to operate within acceptable standards, while one would fail to meet standards. The intersection of Interstate Avenue with Going Street is expected to fail to meet applicable performance standards and to require mitigation. During the 2030 afternoon/evening peak hour, with the full LPA, all intersections would operate within acceptable standards.

With the LPA first phase, the total number of intersections analyzed increased from 25 under No-Build conditions to 36 intersections, primarily as a result of additional intersections associated with the local roads in the Hayden Island and Marine Drive interchange areas. Similar to the full LPA the one intersection of Interstate Avenue at Going Street is expected to fail to meet applicable performance standards during the AM peak period and all 36 intersections would operate within acceptable standards during the PM peak period.

Summary of Portland Local Streets

Intersections in Portland with the LPA first phase would perform better than No-Build and the same as the full LPA, as shown in the exhibit below.

Environmental Metric	LPA First Phase	Full LPA	No-Build
Portland intersections operating unacceptably			
AM	1	1	1
PM	0	0	5

Pedestrians and Bicycles

The FEIS reported that several pedestrian and bicycle forecasting scenarios predict that pedestrian and bicycle travel demands would increase substantially if a new I-5 bridge is constructed with sufficient multimodal facilities. Pedestrian travel across the bridge would be expected to increase from 80 daily pedestrians today to between 600 and 1,000 daily walkers in 2030, an increase of 650 to 1,150 percent. The number of bicyclists predicted to use the crossing would increase from 370 today to between 900 and 6,400 riders in 2030, an increase of between 150 and over 1,600 percent.

The bicycle and pedestrian improvements for the LPA first phase would be similar to the full LPA as reported in the FEIS, with the exception that the LPA first phase would require travel through at- least one at-grade intersections to cross Hayden island.

Temporary Effects

Construction of the full LPA and the LPA first phase would result in temporary impacts to local and regional traffic operations for all modes of travel, as described in the FEIS. It is expected that temporary impacts would be similar between the full LPA and LPA first phase, with the extent of impacts being less in the full LPA first phase, because of the deferred improvements.

Road Closures and Detours

Typical construction methods would require road closures and/or detours in several locations for the full LPA and LPA first phase. For I-5, it is anticipated that three southbound and three northbound lanes would be maintained during all weekdays, except when the final changeover occurs between the old bridges and the new bridges. During construction, I-5 traffic would be shifted onto temporary alignments, lanes and shoulders would be narrowed to accommodate equipment and workers, merge and exit distances would be shortened, posted speed limits reduced, and some traffic movements would be closed or detoured. When temporary lane closures are needed to accommodate construction and ensure safety, they would typically occur at night and on weekends. For the most part, it is expected that all of the current movements at each interchange would remain open during construction.

It is expected that road closures and detours would be similar between the full LPA and LPA first phase, with some road closures and detours not happening with the LPA first phase, due to deferred improvements.

Long-Term Mitigation

The two areas where long-term mitigation would change between the full LPA and LPA first phase are in the Fourth Plain Boulevard and Mill Plain Boulevard interchange areas. The differences in mitigation are described below.

Local Street Mitigation - Fourth Plain Boulevard Interchange Area

Monitor traffic operations and pursue the following mitigation measures recommended under the full LPA:

- Monitor and adjust ramp meter rates at Fourth Plain Boulevard ramps, if/when these are installed in the future. When queuing from the ramp causes either ramp terminal to fail to meet the operational standard, ramp meter rates should be adjusted. Due consideration, but not equal weight, will be given to the local system to minimize queuing from the ramp meter. Emphasis will be on avoiding significant adverse impacts and traffic operational failures on the freeway system.

Evaluate traffic operations and pursue the following mitigation measures recommended under the LPA first phase:

- Monitor and adjust ramp meter rates at Fourth Plain Boulevard ramps, if/when these are installed in the future. When queuing from the ramp causes either ramp terminal to fail to meet the operational standard, ramp meter rates should be adjusted. Due consideration, but not equal weight, will be given to the local system to minimize queuing from the ramp meter. Emphasis will be on avoiding significant adverse impacts and traffic operational failures on the freeway system.
- Monitor and adjust either the southbound ramp terminal lane geometry or replace the Fourth Plain overcrossing when needed to address intersection operations for the ramp terminal intersections. Possible adjustments to the southbound ramp terminal include adding turn lanes or converting the westbound approach from a single through lane and a right turn lane to a through and a through/right turn lane. Replacing the Fourth Plain overcrossing would allow both the northbound and southbound ramp terminals to be configured in a way consistent with the full LPA and would result in improved intersection operations.

Local Street Mitigation - Mill Plain Boulevard Interchange Area

Monitor traffic operations and pursue the following mitigation measures recommended under the full LPA:

- Add a third lane westbound on 15th Street between Washington Street and Columbia Street. Adding the third through lane will allow the drop lane at 15th Street and Washington Street to become a left/through lane adding additional capacity to the 15th Street corridor. This should be completed at such time as it is necessary to achieve the operational standards along the 15th Street corridor.
- Add a southbound right turn lane at 15th Street and Columbia Street. This should be completed at such time as it is necessary to achieve the operational standards at the intersection of 15th Street and Columbia Street.
- Add a third eastbound left turn at the Mill Plain interchange when needed in the future. The third eastbound left-turn lane should be added when eastbound left-turn volumes have increased to a level that causes the interchange to fail to meet acceptable operational standards. Monitor and adjust ramp meter rates at Mill Plain Boulevard on-ramps, if/when these are installed in the future. When queuing from the ramp causes either ramp terminal to fail to meet the operational standard, ramp meter rates should be adjusted. Due consideration, but not equal weight, will be given to the local system to minimize queuing from the ramp meter. Emphasis will be on avoiding significant adverse impacts and traffic operational failures on the freeway system.

Monitor traffic operations and pursue the following mitigation measures recommended under the LPA first phase:

- Add a second northbound left-turn lane changing the configuration from two lanes (northbound left/through and right-turn lane) to three lanes (northbound left, left/through, and right-turn lane). This should be completed at such time as it is necessary to achieve the operational standards at the ramp terminal. This improvement can be made within the existing right-of-way.
- At the southbound ramp terminal, modify westbound approach from a single left-turn lane and three through lanes to a single left-turn lane and two through lanes. Add the southbound right-turn lane into 3rd lane westbound eliminating the merge on Mill Plain Boulevard. This should be completed at such time as it is necessary to achieve the operational standards at the ramp terminal. This improvement can be made within the existing right-of-way.

- At the same time as the southbound ramp terminal improvements, modify the westbound approach at the northbound ramp terminal configuration from three through lanes and a right-turn lane to two through lanes and a right-turn lane. This improvement can be made within the existing right-of-way.
- Add a westbound left-turn lane on 15th Street at C Street. Adding the left-turn lane will allow the left-turning vehicles to get out of the through lane and not block traffic coming from the interchange. This should be completed at such time as it is necessary to achieve the operational standards along the 15th Street corridor.
- Add a third lane westbound on 15th Street between Washington Street and Columbia Street. Adding the third through lane will allow the drop lane at 15th Street and Washington Street to become a left/through lane adding additional capacity to the 15th Street corridor. This should be completed at such time as it is necessary to achieve the operational standards along the 15th Street corridor.

Short-Term Mitigation

All short-term mitigation (traffic, bicycle and pedestrian, and travel demand management) for the LPA first phase would be the same as described in the FEIS for the full LPA.

Land Use and Economics

Summary of Changes in Land Use and Economic Impacts

The impact on the regional economy of the LPA first phase will be highly beneficial, but would be slightly less than the full LPA, due to the deferment of some improvements that would reduce congestion.

The LPA first phase, like the full LPA, would be consistent with the state, regional, and local plans in the project area.

Similar to the full LPA, the LPA first phase is likely to promote Transit-Oriented Development (TOD) and is unlikely to promote sprawl.

Because the cost of the LPA first phase is estimated to be lower than the full LPA, job creation in the region will be lessened, as shown in the tables above. However, it will still have positive economic impacts, and greater positive economic impacts than the no-build.

As all the indirect, direct and cumulative impacts (and benefits) derived from LPA first phase construction are a subset of the full LPA construction impacts, there is no new significant environmental impacts that will result. Rather the only consequence is that certain impacts and project benefits will result later in time, but were fully evaluated in the FEIS/ROD.

Long-term Effects as Described in the FEIS and Effects from the LPA First Phase

Economics

Because of improvements to traffic operations in the project area, both the full LPA and LPA first phase would have positive impacts on the regional economy. Benefits from the LPA first phase would be lower than the full LPA, due to the deferring of improvements that improve traffic operations.

Land Use

The LPA first phase will have fewer property acquisitions than the full LPA, it will have comparable or less Direct Land Use and Commercial impacts.

The LPA first phase, like the full LPA, would be consistent with the state, regional, and local plans in the project area, as described in the FEIS. The LPA first phase is consistent with and would support, among other plans, the following:

- Oregon's Statewide Planning Goals
- Washington's GMA policies pertaining to transportation and infrastructure improvements
- Metro 2040 Growth Concept and the Regional Framework Plan
- City of Portland Comprehensive Plan
- City of Vancouver Comprehensive Plan
- Vancouver City Center Vision Plan

The two regional transportation planning agencies, Metro and RTC, adopted the full LPA into their financially constrained Regional Transportation Plan and financially constrained Metropolitan Transportation Plan, respectively, in 2008 (Metro 08-3960B; RTC 07-08-10).

Metro describes the full LPA in their resolution as follows:

> "[Metro] Supports a Columbia River Crossing locally preferred alternative:
>
> a) a replacement bridge with three northbound and three southbound through lanes, with tolls used both for finance and for demand management, as the preferred river crossing option,
>
> b) light rail as the preferred high capacity transit option, extending light rail from the Expo Center in Portland, Oregon across Hayden Island adjacent to I-5 to Vancouver, Washington,
>
> c) a light rail terminus in Vancouver, Washington.

RTC describes the full LPA in their resolution as follows:

> "…RTC Board supports a locally preferred alternative for the Columbia River Crossing project as follows:
>
> a) I-5 replacement bridge with three through lanes in each direction. The number of auxiliary lanes (two or three) are to be determined through further analysis. The project also includes reconstructed interchanges within the bridge influence area.
>
> b) Light rail transit as the high capacity transit mode.
>
> c) Clark College terminus with a Vancouver alignment that travels south/north on the Washington-Broadway couplet, then turns east on McLoughlin with a terminus at the Clark College vicinity

The CRC project is in the Oregon 2012-2015 Statewide Transportation Improvement Program (STIP) and the Washington 2013-2016 STIP, and the LPA first phase would still provide the improvements described in the respective STIPs.

Indirect Effects

The LPA first phase will still have a moderate TOD potential due to the introduction of light rail to Hayden Island and downtown Vancouver. The TOD potential in downtown Vancouver will be the same as the full LPA, because light rail alignment and stations will be the same. TOD potential on Hayden Island will be reduced compared to the full LPA, because the Tomahawk Island Drive would not be built with the LPA first phase, the light rail station would be built farther from developable parcels, and the Hayden Island to I-5 south on-ramp would surround the station. These changes to local improvements would reduce the TOD potential with the LPA first phase compared to the full LPA.

Temporary Effects

Because the cost of the LPA first phase is estimated to be lower than the full LPA, job creation in the region will be proportionately lessened. However, the LPA first phase will still have positive economic impacts, and greater positive economic impacts than the no-build.

Mitigation

The LPA first phase would have the same mitigation as the full LPA as described in the FEIS.

Acquisitions, Displacements and Relocations

Summary of Changes in Acquisitions, Displacements and Relocations Impacts

The LPA first phase would have fewer residential and commercial displacements, impact fewer parcels, acquire less property in fee and by easement, and have the same number of public use displacements as the full LPA.

As all the indirect, direct and cumulative impacts (and benefits) derived from LPA first phase construction are a subset of the full LPA construction impacts, there is no new significant environmental impacts that will result. Rather the only consequence is that certain impacts and project benefits will result later in time, but were fully evaluated in the FEIS/ROD.

Long-term Effects as Described in the FEIS and Effects from the LPA First Phase

Exhibit 8.

Comparison of Long-term Effects on Property Acquisitions and Displacements

Environmental Metric	LPA First Phase	Full LPA
Residential Displacements	45	59
Commercial Displacements	47	69

Note: The impacts for the full LPA are relative to No-Build and existing conditions.

Exhibit 9.

Summary of Permanent Property Acquisitions and Displacements for the LPA First Phase

Impact Type	Impact	LPA First Phase	Full LPA
Parcel Impacts (count)	Full Parcel Acquisitions	63	74
	Partial Parcel Acquisitions	55	143
	Total Parcels Impacted	118	217
Displacement of Use (count)	Residential Displacements	Total: 45	Total: 59
	Single-family	47	55
	Multi-family	0	4
	Commercial Displacements	Total: 47	Total: 69
	Retail/Services	42	50
	Office/Professional/Healthcare	1	15
	Lodging	1	1
	Other[b]	3	3
	Public Use Displacements	Total: 2	Total: 2
	Public Service w/ Employees	2	2
	Religious/Community Center	0	0
	Park/Historic Site/Museum	0	0
	School	0	0
Permanent Easements (acres)	Airspace Easements	Less than 1 acre	2.3 acres
	Subsurface Easements	Less than 1 acre	3 acres
	Property Easements[d]	Less than 2 acres	Less than 1 acre
Area required (acres)	Total Area Acquired	Less than 73 acres	91 acres

As illustrated in the tables above, the LPA first phase would have fewer residential and commercial displacements, impact fewer parcels, acquire less property in fee and by easement, and have the same number of public use displacements as the full LPA.

In the LPA first phase the Columbia Park and Ride has been redesigned, so it will no longer acquire the Lucky Lager building, and will not displace the 11 small professional offices located in the building.

Temporary Effects

The FEIS stated that an estimated 20 acres of temporary easements from approximately 200 parcels would also be required for full LPA Option A compared to 14 acres from 171 parcels with full LPA Option B. The LPA first phase would require an estimated 10 acres of temporary easements from approximately 118 parcels.

Mitigation

Mitigation and compensation for acquisitions and displacements caused by the LPA first phase will be the same as described in the FEIS and will meet all requirements of the Uniform Relocation and Real Property Acquisitions Policies Act of 1970, as amended.

Neighborhoods and Environmental Justice

Summary of Change in Neighborhoods and Environmental Justice Impacts

Most metrics within the Neighborhoods and Environmental Justice discipline would have the same or very similar impacts for the LPA first phase as the full LPA. The metrics that would have a change in impacts are:

- Residential displacements. The LPA first phase has fewer displacements than the full LPA.
- Business displacements. The LPA first phase has fewer displacements than the full LPA.
- Local traffic. The LPA first phase would perform better than the No-Build on local intersections, but not as well as the full LPA, due to the deferment of improvements in Washington. For more information, see the Transportation section.
- Noise impacts. The LPA first phase would have fewer noise impacts than the full LPA, because the scope of the project is smaller. However, some noise walls would be deferred with the LPA first phase, due to the deferral of the highway improvements that called for noise wall mitigation, deferring noise reduction benefits of the full LPA.

As all the indirect, direct and cumulative impacts (and benefits) derived from LPA first phase construction are a subset of the full LPA construction impacts, there is no new significant environmental impacts that will result. Rather the only consequence is that certain impacts and project benefits will result later in time, but were fully evaluated in the FEIS/ROD.

Long-term Effects as Described in the FEIS and Effects from the LPA First Phase

Exhibit 10.

Comparison of Direct Effects to Neighborhoods and Environmental Justice Populations

Environmental Metric	LPA First Phase	Full LPA	No-Build
Residential displacements	45	59	0
Business displacements	47	69	0
Separation from community resources	Same as full LPA	Displacement of Safeway on Hayden Island (and bottle return center).	None
Increased local traffic or decreased access to transit, bike, or pedestrian facilities	More intersections meet standards than under No-Build, but fewer than the full LPA. Increased access to transit, bike and pedestrian facilities. Local multimodal bridge and street improvements improve access to Hayden Island.	More intersections meet standards than under No-Build. Increased access to transit, bike and pedestrian facilities. Local multimodal bridge and street improvements improve access to Hayden Island.	Increased local traffic and no improved access to transit, bike or pedestrian facilities.
Impacts to community cohesion	Same as full LPA	Improved cohesion in neighborhoods with light rail stations and transit oriented development.	None
Consistency with neighborhood plans	Highly Consistent	Highly consistent	Inconsistent with plans that call for increased access to transit.
Noise impacts	Fewer residential noise impacts, reduced through mitigation. Fewer noise walls would be built, deferring some benefits.	56 (44) residential noise impacts after mitigation.	159 residences now exceed noise impact criteria with an additional 15 impacts in the No-Build because no new sound walls would be constructed.

Environmental Metric	LPA First Phase	Full LPA	No-Build
Air quality	Emissions 25 to 90% lower than existing. No violations.	Emissions 25 to 90% lower than existing. No violations.	Slightly increased emissions as congestion delays increase over time.
Potentially disproportionate, adverse impacts specific to low-income or minority populations	Same as full LPA	Minority and low-income percentage of displaced households is less than or equal to that of study area. No disproportionate, adverse impacts to low-income or minority populations.	No displaced businesses, but also no construction-related economic stimulus. No improved access to transit, bike, or pedestrian facilities for low-income residents.
Tolling	Same as full LPA	Tolls require higher share of income for low-income populations, but impact is offset by other factors. Impacts from transponders will be mitigated for low-income individuals.	No tolling impacts to EJ populations.

Temporary Effects

The FEIS described the temporary impacts to neighborhoods, including the following:

- Noise and vibration from construction
- Dust and emissions from construction
- Traffic delays, detours, and traffic spillover into neighborhoods
- Property easements for temporary construction staging areas
- Sidewalk disruptions and closures (which could impede access and mobility for disabled persons)

The LPA first phase would have similar temporary impacts as the full LPA. There would be less construction in the first phase, so the scale of temporary impacts to neighborhoods would be deferred.

Mitigation

Mitigation for neighborhood effects and mitigation for tolling impacts on Environmental Justice Populations would be the same as the full LPA.

Visual Resources and Aesthetics

Summary of Change in Visual Resource and Aesthetics Impacts

Visual impacts would be very similar between the full LPA and LPA first phase, with the reduced scope deferring some visual impacts compared to the full LPA.

As all the indirect, direct and cumulative impacts (and benefits) derived from LPA first phase construction are a subset of the full LPA construction impacts, there is no new significant environmental impacts that will result. Rather the only consequence is that certain impacts and project benefits will result later in time, but were fully evaluated in the FEIS/ROD.

Long-term Effects as Described in the FEIS and Effects from the LPA First Phase

Exhibit 11.

Comparison of Long-term Effects on Visual Resources

Landscape Unit	LPA First Phase	Full LPA
Burnt Bridge Creek	No visual effects, because project improvements in the unit would be deferred.	Visual effects in the landscape unit would be minor. (No Change in Visual Impact)
Greater Central Park	No SR 14 eastern loop ramp. No community connector. Impact would be minor.	Impact from SR 14 structures, other views improve with the Evergreen Community Connector.
Vancouver Downtown	Same as full LPA	Replace views of bridge towers with new bridges
Columbia River	Same as full LPA	Visual change from higher bridges, removal of bridge towers
Columbia Slough	Same as full LPA	Visual effects in the landscape unit and Scenic Corridor would be minor

Note: The impacts for the full LPA are relative to No-Build Alternative and existing conditions.

a Information in parentheses indicates impacts if the full LPA is constructed with highway phasing.

The FEIS described the general visual and aesthetics impacts as follows:

"The primary elements of the LPA that would affect visual quality and character are the new bridge structures across North Portland Harbor and the Columbia River, transit stations, park and ride facilities, and guideways. The visual quality of the entire length of the corridor and all landscape units would be at least slightly affected. Visual impacts would occur from:

- The greater heights and widths of the new structures across the Columbia River;
- The wider or higher ramps for reconfigured interchanges at Marine Drive, Hayden Island, SR 14, Mill Plain Boulevard, and SR 500;
- The effective widening of the I-5 corridor due to the addition of auxiliary lanes along I-5; and
- The heights, massing, and architectural treatment of the three planned park and ride facilities."

The main changes in impacts from the LPA first phase are listed below:

- Deferment of most highway improvements north of SR 14 interchange, causing a decrease in visual impacts in those areas.
- Deferment of construction of the Evergreen Community Connector would remove a visually positive aspect of the project that helped to minimize impacts to the VNHR and especially the Post Hospital.
- Deferment of construction of the SR 14 eastern loop ramp would greatly reduce visual impacts to the Village area of the VNHR. Deferring that ramp with the LPA first phase would remove the adverse visual impact disclosed in the FEIS.

As shown in Exhibit 11 above, changes in impact to specific landscape units are as follows:

- Burnt Bridge Creek. LPA first phase would be similar to the No-Build.
- Greater Central Park. LPA first phase would defer construction of the Evergreen Community Connector and widening of I-5 adjacent to the Post hospital. The SR 14 eastern loop ramp would also be deferred. Because of these changes, visual impacts to the VNHR are decreased compared to the full LPA, however the Community Connector would not be built and therefore would not help to minimize visual impacts. Overall, impacts are within the range of impacts disclosed in the FEIS.

- Vancouver Downtown. Light rail station and alignment impacts would be the same as the full LPA. The Columbia Park and Ride would be taller than described in the full LPA, however, it is located in downtown Vancouver, where mid to high rise buildings are common and the proposed park and ride would fit within the scale and context of downtown buildings.
- Columbia River. The river crossing would be the same as the full LPA, but higher than described in the FEIS (impacts based on height were addressed in the Vertical Clearance Re-evaluation in December 2012). The LPA first phase would build one less bridge across North Portland Harbor, but since that bridge is between two proposed new bridges, changes in visual impacts would be minimal. The LPA first phase would utilize loop ramps on Hayden Island, making the Project have a footprint more similar to the existing conditions, however mainline heights would be the same as the full LPA.
- Columbia Slough. LPA first phase would be similar to the full LPA; local road improvements and therefore impacts would be reduced.

Temporary Effects

Construction methods for the LPA first phase would be the same as the full LPA, but to a slightly smaller scale due to deferred improvements. Construction impacts to Evergreen Boulevard, a designated scenic roadway, would be deferred.

Mitigation

Mitigation would be the same for the LPA first phase as for the full LPA, in areas that are affected under the LPA first phase.

Air Quality

Summary of Changes in Air Quality Impacts

Regional, subarea, and intersection level impacts for the full LPA, and LPA first phase scenarios are well below the national standards for the various Clean Air Act criteria pollutants and the LPA first phase does not change the air quality transportation conformity for the area. Accordingly, there are no changes in compliance from the FEIS.

As all the indirect, direct and cumulative impacts (and benefits) derived from LPA first phase construction are a subset of the full LPA construction impacts, there is no new significant environmental impacts that will result. Rather the only consequence is that certain impacts and project benefits will result later in time, but were fully evaluated in the FEIS/ROD.

Long-term Effects as Described in the FEIS and Effects from the LPA First Phase

The FEIS Air Quality section compared the long-term air quality impacts of the full LPA to the No-Build Alternative and build alternatives considered in the DEIS. Air quality was analyzed at the regional, subarea and intersection levels.

For the regional and subarea impacts, the FEIS showed decreases in criteria pollutant (carbon monoxide [CO], nitrogen oxides [NO_x], volatile organic compounds [VOCs] and particulate matter) and Mobile Source Air Toxics (MSAT) emissions over time for all build alternatives and for the No-Build Alternative. These declines are primarily driven by advances in cleaner fuels

and emission control technologies for vehicles, advances that are independent of the CRC project.[3]

In addition to evaluating emissions at the regional and subarea levels, the project team analyzed carbon monoxide concentrations at the intersections that would be most affected by the full LPA. This intersection analysis, also referred to as hotspot analysis, is part of demonstrating conformity with federal standards. The project team performed a quantitative analysis for the worst congestion conditions at three intersections in Vancouver and three intersections in Portland.

The analysis showed that the predicted CO concentrations at the six intersections would not exceed the national standards for existing conditions, the full LPA, or No-Build options. The full LPA had similar or lower 1-hour and 8-hour concentrations than exist today or would be expected in 2030 with the No-Build Alternative. The Mill Plain Boulevard and I-5 interchange had the highest modeled 1-hour and 8-hour concentrations of any of the hot spot intersections under the full LPA, 6.5 and 5.4 ppm – still well below the standards of 35 and 9 ppm, respectively.

As reported in the FEIS, the differences in 2030 MSAT emissions between the full LPA and No-Build alternatives were extremely low (no greater than 1.5% difference between full LPA and No-Build). From the air quality standpoint, much of the LPA first phase is contained within the footprint of the full LPA, with a few interchange modifications. Therefore, the LPA first phase can be assumed to be similar to the full LPA scenario. As a result, the difference in the regional and subarea full LPA and LPA first phase traffic and emissions is projected to be very small. Accordingly, no additional analysis was conducted on the regional and subarea scale.

Based on the deferred roadway improvements and other changes associated with the LPA first phase design, the project team reconsidered the selection of intersections for hot spot analysis. This reconsideration identified the same three intersections on the Portland side: Lombard at Interstate, Fremont at Martin Luther King, and Lombard at Martin Luther King. Since the LPA first phase volumes at these intersections were identical to the full LPA volumes, the impacts can be assumed to be identical to the full LPA and therefore no re-modeling is required. The findings of the re-evaluation are shown in the below table.

On the Vancouver side, the same three intersections were also identified: Main and East 39th, Mill Plain and C Street, and Mill Plain at the I-5 interchange. However, the LPA first phase differs from the full LPA in that the proposed single point urban interchange (SPUI) would not be built. Rather, the north- and southbound ramps remain two separate intersections with only a modification to the southbound ramp. Since the southbound interchange had a higher volume, it was re-evaluated for the LPA first phase. Since this ramp has a better Level of Service (LOS = D) than the No-Build scenario (LOS = F), this intersection should have concentrations comparable to or better than the No-Build scenario. The Proposed Project volume at the Mill Plain and C-Street intersection remained the same as the full LPA and thus this intersection was not re-evaluated. The Proposed Project volume for the Main and 39th Street intersection was about 5% larger than the full LPA, but was still less than the No-build scenario. Since the volume changed, the intersection was re-modeled for the LPA first phase. However, since the volume change is small, the anticipated change in CO is predicted to be small and comparable to the No-Build scenario.

The two intersections that were re-modeled used a different method than was used in the FEIS. These intersections were evaluated using MOVES2010b for emissions and CAL3QHC for the

[3] This is demonstrated by the fact that differences in 2030 MSAT emissions among the build alternatives were extremely low—1 percent or less. In the context of the very large reductions relative to existing conditions, and given the potential error in best available modeling methods, these differences between the scenarios are minor.

roadway impact, as per FHWA and EPA guidance. Regardless, all intersections will be well under the national standards.

Exhibit 12.

Comparison of LPA first phase and full LPA Intersection Impacts

Intersection	Full LPA TEV[a]	1-hour CO	8-hour CO	LPA first phase TEV	CO Concentration
Vancouver					
Mill Plain Blvd. @ I-5	6,231[b]	6.5	5.4	5,529[c]	Lower
39th St. @ Main St.	3,297	5.1	4.5	3,462	~5% higher
Mill Plain Blvd. @ C St.	3,407	5.0	4.4	3,407	Same as full LPA
Portland					
Lombard and MLK Jr.	4,260	5.0	4.5	4,260	Same as full LPA
Lombard and Interstate	3,950	4.8	4.4	3,950	Same as full LPA
Fremont and MLK Jr.	3,785	5.4	4.8	3,785	Same as full LPA

a TEV = Total Entering Volume

b LPA as SPUI intersection

c LPA first phase as SB ramp intersection only

Temporary Effects

Construction of any of the full LPA or LPA first phase would involve activities that could temporarily affect air quality, such as demolishing existing structures and pavement, operating a wide variety of heavy construction equipment, operating concrete plants, and operations at staging sites where construction materials are temporarily stored or prepared. Traffic congestion would occur on some roadways during construction, and potentially along detour or construction haul routes. Construction would cause short-term increases in air pollutant emissions and odors. However, as noted in the FEIS, results of the Dan Ryan Expressway study suggests that full LPA construction activities would not be likely to result in any violations of the air quality standards and should not pose an undue health risk to the neighboring communities. Since construction methods will be the same for the LPA first phase as the full LPA, temporary air quality impacts from the LPA first phase would be the same as the full LPA.

Mitigation

Air pollutant emissions are expected to be substantially lower in the future than under existing conditions. The phased construction of the full LPA is not expected to result in any measurable change. Accordingly, mitigation for long-term impacts is not proposed for the full LPA or LPA first phase.

Electric and Magnetic Fields

Summary of Changes in Electric and Magnetic Fields Impacts

The EMF impacts from the LPA first phase would be the same as for the full LPA because the light rail alignment would be the same.

As all the indirect, direct and cumulative impacts (and benefits) derived from LPA first phase construction are a subset of the full LPA construction impacts, there is no new significant environmental impacts that will result. Rather the only consequence is that certain impacts and project benefits will result later in time, but were fully evaluated in the FEIS/ROD.

Long-term Effects as Described in the FEIS and Effects from the LPA First Phase

The EMF impacts from the LPA first phase would be the same as for the full LPA because the light rail alignment would be the same.

Temporary Effects

No temporary effects from EMF are expected.

Mitigation

The levels of anticipated EMF are below exposure standards for both the workplace and general public. Thus, mitigation is not necessary.

Noise and Vibration

Summary of Changes in Noise Impacts

Noise impacts and proposed mitigation in the LPA first phase project area (in Oregon and south of Fourth Plain in Washington) would be similar to the full LPA. Since most project improvements north of Fourth Plain Boulevard would be deferred, the LPA first phase would not impact receivers in that area and therefore would have fewer overall noise impacts than the full LPA.

Deferring construction of project improvements (including noise walls) north of Fourth Plain Boulevard would defer the noise reduction benefits that these walls would provide to sensitive receivers in the area.

As all the indirect, direct and cumulative impacts (and benefits) derived from LPA first phase construction are a subset of the full LPA construction impacts, there is no new significant environmental impacts that will result. Rather the only consequence is that certain impacts and project benefits will result later in time, but were fully evaluated in the FEIS/ROD.

Long-term Effects as Initially Disclosed in FEIS and Impacts of LPA First Phase

Exhibit 13.

Comparison of Long-term Noise and Vibration Impacts (Before Mitigation)

Environmental Metric	LPA First Phase[c]	Full LPA[a]	No-Build[b]
Number of Highway Noise Impacts	138	325 (312)	270
Number of Moderate Transit Noise Impacts	Same as full LPA Option A	31	0
Number of Severe Transit Noise Impacts	Same as full LPA	0	Same as full LPA
Number of Transit Vibration Impacts	Same as full LPA	15	0

Note: The impacts described above assume no mitigation. Impacts would be lessened with mitigation, as described below

a Information in parentheses indicates impacts if the full LPA is constructed with highway phasing.

b The No-Build study area is the same as under the full LPA.

c Figures stated for the LPA first phase represent only impacts in the LPA first phase study area only. That area extends from the southern boundary of the LPA project area in Oregon north to Fourth Plain Boulevard in Washington and includes the cemetery located at the I-5 northbound off-ramp at Fourth Plain Boulevard (represented by receiver VE-3). Results from the rest of the full LPA study area are not included in these figures.

Exhibit 14.

Comparison of Long-term Noise and Vibration Impacts (With Mitigation)

Environmental Metric	LPA First Phase[b]	Full LPA	No-Build[a]
Number of Highway Noise Impacts	101	110	270
Number of Moderate Transit Noise Impacts[d]	Same as full LPA	0	Same as full LPA
Number of Severe Transit Noise Impacts[d]	Same as full LPA	0	Same as full LPA
Number of Transit Vibration Impacts	Same as full LPA	0	Same as full LPA

a The No-Build study area is the same as under the full LPA.

b Figures stated for the LPA first phase represent only impacts in the LPA first phase study area only. That area extends from the southern boundary of the full LPA project area in Oregon north to Fourth Plain Boulevard in Washington and includes the cemetery located at the I-5 northbound off-ramp at Fourth Plain Boulevard (represented by receiver VE-3). Results from the rest of the full LPA study area are not included in these figures.

The following summarizes the noise analysis comparing the LPA first phase to the full LPA:

- In Oregon the noise and vibration impacts and mitigation are virtually the same as given for the CRC full LPA in the FEIS.
- In the downtown Vancouver area, the impacts and mitigation from the LPA first phase are similar to the full LPA with one noise wall for the Normandy Apartments
- For receivers north of Fort Vancouver, to and past SR 500, the only receiver identified with a project impact from the LPA first phase was the Cemetery north of Fourth Plain. Mitigation was considered, however the short length of the wall under the LPA first phase was not able to meet the WSDOT cost criteria and, therefore, was not recommended for construction. All other receivers north of this location that were considered in the CRC FEIS are north of the project and outside the study area.
- For the Fort Vancouver area, some of the noise impacts identified in the park area near SR 14 would not occur under the LPA first phase so no noise wall has been proposed for that area. However, a noise wall is recommended for the future phase of the project in that area. Furthermore, noise impacts were identified for the officers' quarters and the old hospital north of Martin Court and south of Evergreen Boulevard. The wall proposed in the LPA first phase would be constructed on top of the existing retaining wall along Anderson Street, and therefore, may need to be removed and reconstructed during the future phase of the project. A wall near the Officer's Quarters and the old hospital will be cost-effective.
- For the residential area north of McLoughlin Boulevard and south of Fourth Plain, due to the addition of the park-and-ride, a noise wall is recommended for the LPA first phase of the project between McLoughlin Boulevard and the Fourth Plain interchange along the west side of I-5. There is no noise wall proposed between Mill Plain and McLoughlin Boulevard because it will not meet WSDOT criteria. However, when I-5 is reconstructed there during a future phase of the project, a new noise wall would need to be built beginning at Mill Plain and ending at the Fourth Plain interchange, likely requiring removal and reconstruction of the wall between McLoughlin Boulevard and Fourth Plain that is proposed for the LPA first phase.
- North of Fourth Plain Boulevard, there are no noise walls proposed as part of the LPA first phase because there are no highway improvements north of Fourth Plain. Therefore, sound walls 4 through 11 identified under the FEIS would only need to be constructed when those highway improvements are constructed during a future phase of the project. Deferring construction of these noise walls would defer the noise reduction benefits that these walls would provide to sensitive receivers in the area.

Temporary Effects

Temporary effects from noise and vibration would be the same in the LPA first phase as described in the FEIS. Since the LPA first phase is smaller in scope than the full LPA, the extent of impacts would be smaller. Noise and vibration impacts from construction of future phases would be deferred to the time when those improvements are built.

Mitigation

Mitigation was recommended with the full LPA in the FEIS and it is recommended with the LPA first phase. Mitigation for traffic impacts is primarily noise walls. Exhibits 3.11-15, 3.11-16, and 3.11-17 from the FEIS show the recommended noise wall locations for the full LPA (please see figures on the following pages). Figures 1 and 2 show revised noise walls, as recommended for the LPA first phase (please see figures on pages following FEIS exhibits).

As illustrated in these maps, the LPA first phase would build some of the noise walls between SR 14 and Fourth Plain, recommended in the FEIS for the full LPA, but not all of the walls, and the walls built may be a different height. The LPA first phase would defer all noise walls north of Fourth Plain.

Light rail noise and vibration mitigation with the LPA first phase would be the same as the full LPA.

Construction noise and vibration mitigation for the LPA first phase would be the same as described in the FEIS for the full LPA.

Exhibit 15.

Traffic Noise Impacts After Mitigation - VNHR

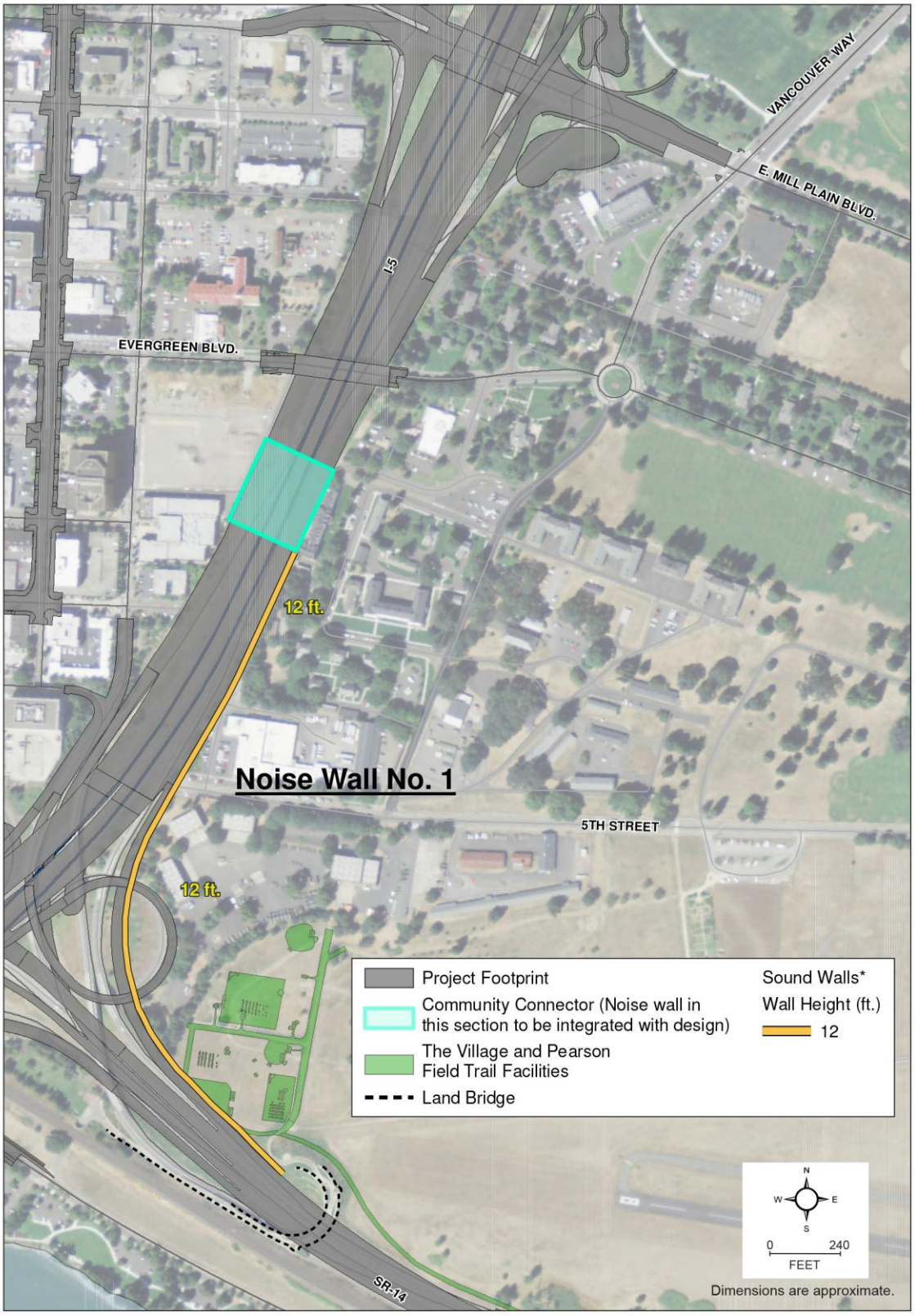


Exhibit 16.

Traffic Noise Impacts After Mitigation - Downtown Vancouver

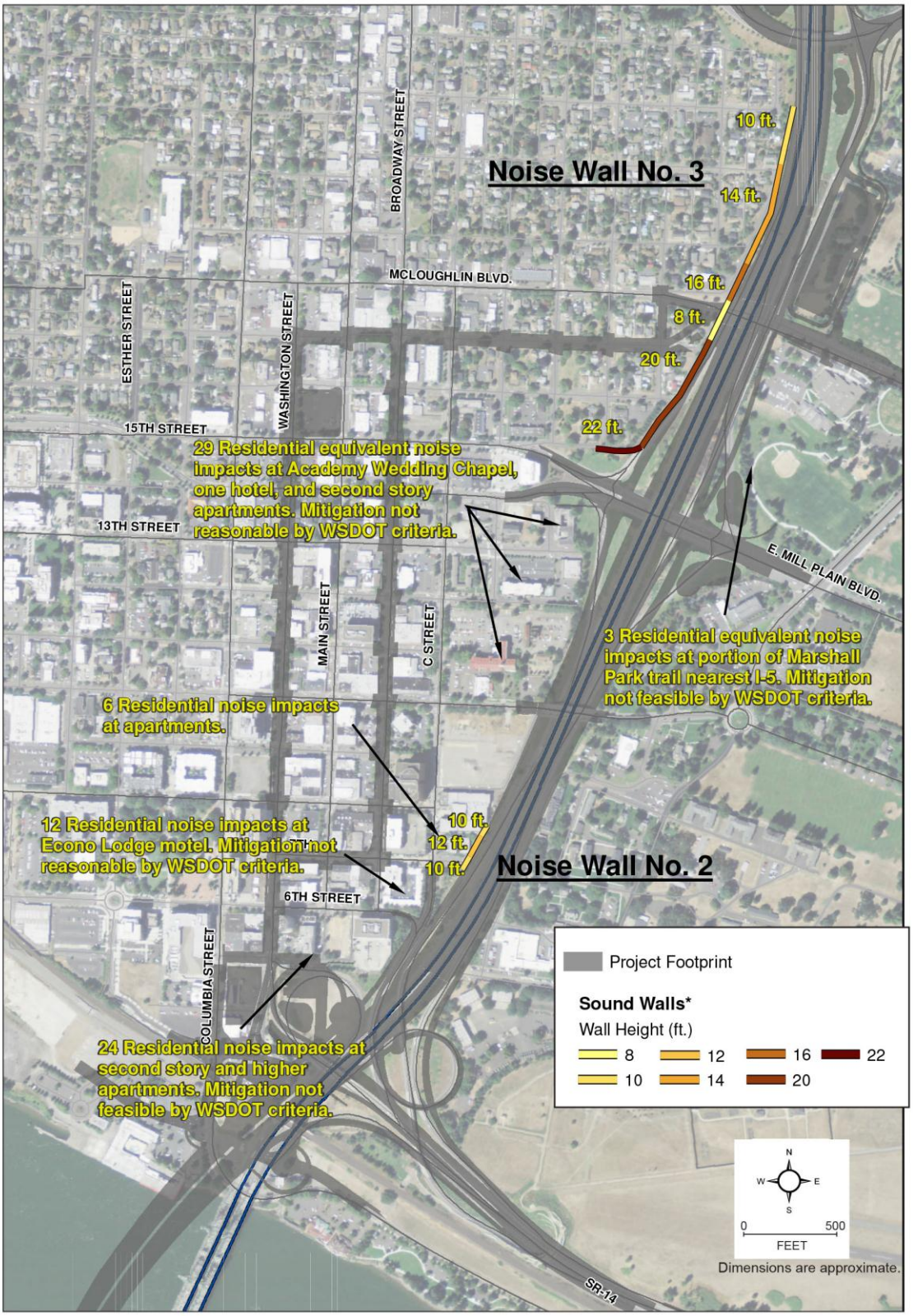


Exhibit 17.

Traffic Noise Impacts After Mitigation - North Vancouver

Exhibit 18.

Revised Noise Walls - Downtown Vancouver and Fort Vancouver

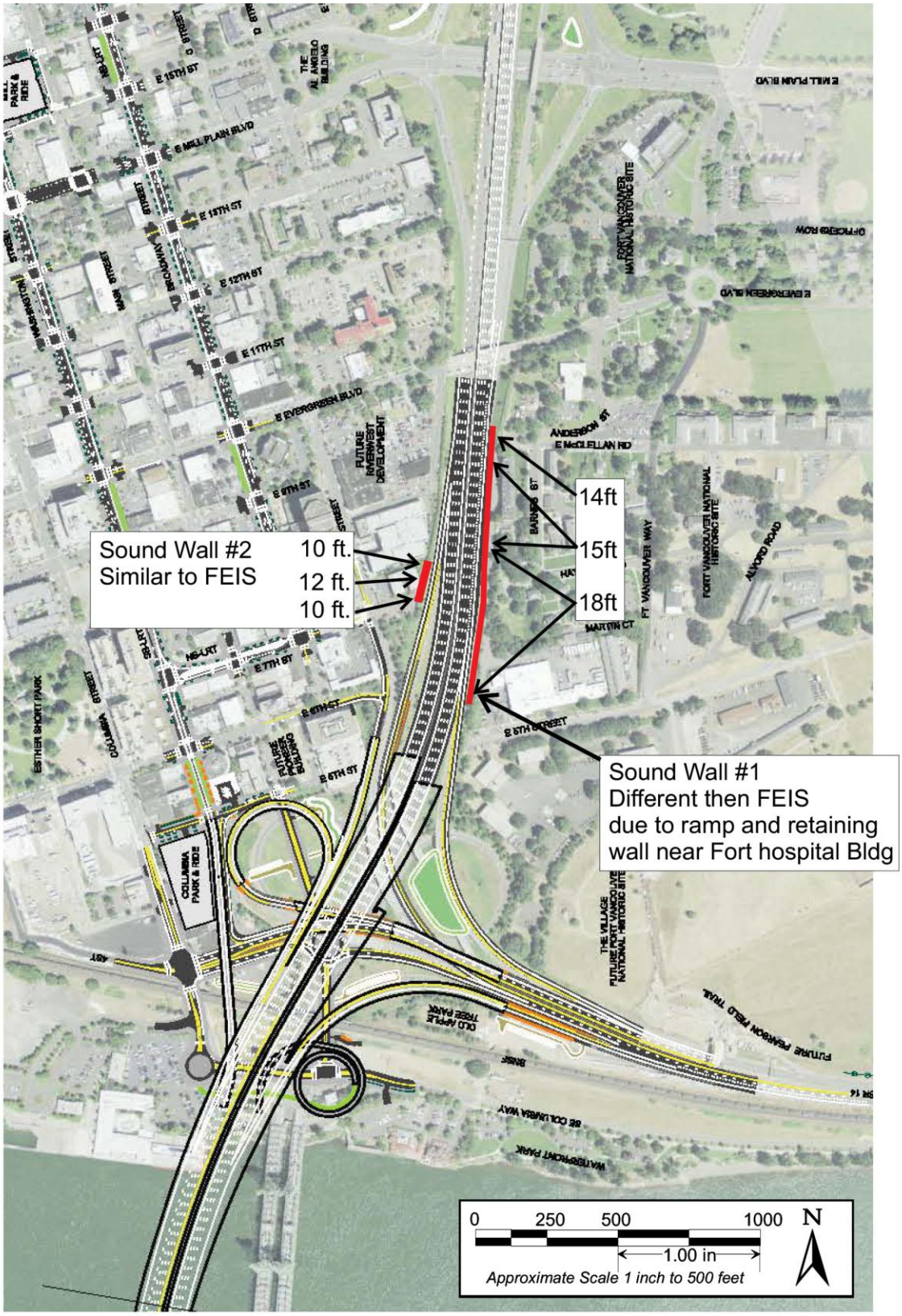
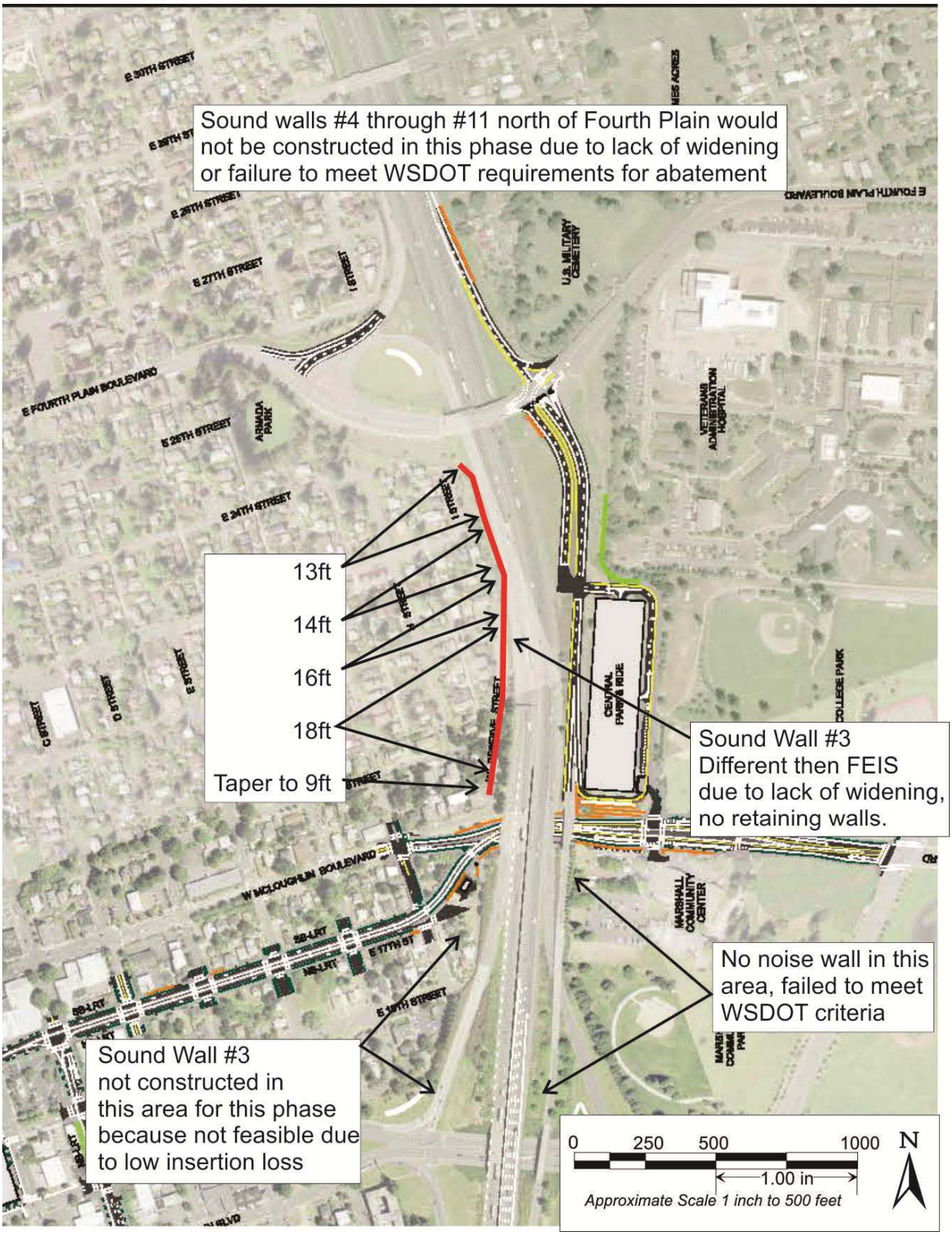


Exhibit 19.

Revised Noise Walls - North of Downtown



Ecosystems

Summary of Change in Ecosystems Impacts

The LPA first phase, with two exceptions, would have impacts to jurisdictional resources similar to those of the full LPA. The two differences are deferred Impacts in the vicinity of Burnt Bridge Creek, and additional fill as part of a new design for the North Portland Harbor bridges. The additional fill is needed to meet seismic safety standards, and is not attributable to the phasing of construction.

As all the indirect, direct and cumulative impacts (and benefits) derived from LPA first phase construction are a subset of the full LPA construction impacts, there is no new significant environmental impacts that will result. Rather the only consequence is that certain impacts and project benefits will result later in time, but were fully evaluated in the FEIS/ROD.

Long-term Effects as Described in the FEIS and Effects from the LPA First Phase

Exhibit 20.

Ecosystems Comparison of Long-term Effects to Ecosystems

Environmental Metric	LPA First Phase	Locally Preferred Alternative[a]	No-Build
Water Quality of Aquatic Habitat	Same as full LPA	Greatest beneficial effects from improvements to stormwater conveyance and treatment (similar to full LPA, with greater beneficial stormwater improvements affecting the Columbia Slough).	Continued adverse effects from untreated stormwater.
Fish Predation	Same as full LPA	Fewer, but larger, piers would continue to provide cover for predatory fish.	Existing piers would continue to provide cover for predatory fish.
Peregrine Habitat	Same as full LPA	Existing bridge habitat would be removed; new bridges may provide replacement habitat.	No impacts to peregrine habitat.
Washington Priority Habitat Impacted (total acres)	14.3	33.7	29.5
City of Vancouver Critical Areas Impacted (total acres)	100.3	117.7 (116.1)	108.8
Metro Title 13 Lands Impacted (total acres)	61.9	52.6 (52.4)	25.8
City of Portland E-zone Impacted (total acres)	36.9	41.5 (41.1)	27.9

a Information in parentheses indicates impacts if the full LPA is constructed with highway phasing.

The LPA first phase, with two exceptions, would have impacts to jurisdictional resources similar to those of the full LPA: 1) Impacts in the vicinity of Burnt Bridge Creek would be deferred with the LPA first phase. 2) Increased impacts to waterways are anticipated under the current designs for the LPA first phase because additional fill is required as part of a new design for the North Portland Harbor bridges to meet seismic safety standards. The new design requires the installation of oversized cofferdams and the placement of concrete seals. Additional impacts are due to refined designs rather than related to the differences between the full LPA and the LPA first phase.

Deferring improvements to existing impervious surfaces in the project area would result in untreated stormwater runoff continuing to flow to biological receptors in Burnt Bridge Creek, the Columbia River, and the Columbia Slough. Additional impacts would not be anticipated, but the benefits of treating stormwater runoff would be deferred.

Temporary Effects

Changes in temporary effects are limited to the amount of activity associated with temporary work structures in the water. Additional impacts are due to refined designs rather than related to the differences between the full LPA and the LPA first phase. Impacts in the vicinity of Burnt Bridge Creek would be deferred.

Mitigation

Mitigation for impacts to jurisdictional resources would be as described for the full LPA, with one exception--for mitigation in Oregon, CRC is planning to use the Dabney State Recreation Area. The off-site mitigation site will be changed to Dabney with either the full LPA or the LPA first phase.The Dabney Habitat Restoration project objective is to create habitat credits and provide habitat uplift in Oregon to offset unavoidable impacts to jurisdictional waters from construction and operation of the project.

Changes in mitigation are related mainly to the change in location from the Hood River Off-Channel Reconnection Project site to the Dabney State Recreation Area site. Decreased impacts to City of Portland e-zones and wetland buffers in Washington will occur as part of the LPA first phase, but impacts as described in the FEIS might occur in later phases of the project.

Water Quality

Summary of Changes in Water Quality Impacts

The full LPA and LPA first phase would treat all Pollution Generating Impervious Surfaces (PGIS) in their respective project areas. The LPA first phase would defer treatment of PGIS that is not in the LPA first phase project area.

As all the indirect, direct and cumulative impacts (and benefits) derived from LPA first phase construction are a subset of the full LPA construction impacts, there is no new significant environmental impacts that will result. Rather the only consequence is that certain impacts and project benefits will result later in time, but were fully evaluated in the FEIS/ROD.

Impacts as Initially Disclosed in the FEIS and Impacts from the LPA First Phase

Exhibit 21.

Water Quality Annual Pollutant Load Estimates for the LPA and Other Project Alternatives

Environmental Metric	LPA First Phase	Locally Preferred Alternative[a]	No-Build
Approximate total PGIS area (acres)	174	267 (256)	239
Approximate untreated PGIS area (acres)[b]	0	0	219
Total Suspended Solids (lbs/year)	13,006	14,062 (13,578)	168,103
Dissolved copper (lbs/year)	4	5	9
Dissolved zinc (lbs/year)	21	22	68

a Text in parentheses indicates impacts if the full LPA Option A or B is constructed with highway phasing.

b The full LPA and LPA first phase would treat all PGIS within the associated project area. The LPA first phase would defer treatment of PGIS that is not in the LPA first phase project area.

The long-term effects, temporary effects, and mitigation for the full LPA are detailed in Section 3.14 of the FEIS. The table above summarizes the analysis of the FEIS and compares the LPA first phase to it.

Long-term Effects

Neither the full LPA nor LPA first phase results in discharge of untreated PGIS, thus there is no change in impact. In general, however, the PGIS and annual pollutant loading of TSS, dissolved copper and dissolved zinc of the LPA first phase are less than the full LPA because the area of the LPA first phase is smaller than the full LPA.

There will be no net rise in the water surface elevations with the full LPA or LPA first phase, and thus there are not potential impacts to floodplains. Increased stormwater runoff flows and pollution runoff from CIA will be mitigated through stormwater management facility best management practices (BMPs).

Currently there are few if any water quality treatment facilities within the project areas. The project will provide water quality treatment for all contributing impervious (CIA) within project areas. Proportionally, project size will determine total surface water pollution removal quantities, but all alternatives will provide water quality treatment for their respective CIAs. In other words, deferring project improvements will defer water quality treatment benefits that the project will provide.

Indirect Effects

The full LPA and LPA first phase would support development and redevelopment of property adjacent to or near light rail stations on Hayden Island and in downtown Vancouver. These development activities would adhere to local, state and federal regulations at the time of permitting and design and are not expected to differ between the full LPA and LPA first phase.

Temporary Effects

Temporary impacts include activities related to in-water construction, below-grade construction, and ground disturbance. The potential area of disturbance in the LPA first phase is 319 acres, which is 77% of the full LPA (415 acres).

Mitigation

The quantity and location of stormwater treatment facilities and re-vegetation areas will be proportionate to total PGIS and temporary disturbance areas during construction, respectively.

Otherwise, there are no changes between the full LPA and LPA first phase in relation to floodway impacts, both alternatives will be designed to avoid mitigation.

Energy

Summary of Changes in Energy Impacts

The LPA first phase is expected to consume less energy than the No-Build Alternative for both private and transit uses, However, the LPA first phase would not decrease congestion as much as the full LPA, so it is expected to have proportionately less of a benefit than the full LPA.

As all the indirect, direct and cumulative impacts (and benefits) derived from LPA first phase construction are a subset of the full LPA construction impacts, there is no new significant

environmental impacts that will result. Rather the only consequence is that certain impacts and project benefits will result later in time, but were fully evaluated in the FEIS/ROD.

Long-term Effects as Described in the FEIS and Effects from the LPA First Phase

Exhibit 22.

Comparison of Long-term Effects on Energy Use

Scale/Vehicle Type[a]	No-Build Energy Consumed (mBtu)	Locally Preferred Alternative[a] Energy Consumed (mBtu)	LPA first phase
Macro scale-Private (Daily Consumption)[b]	321,993	320,218	Greater than full LPA, but less than No-Build
Macro scale-Transit (Daily Consumption)[b]			
C-TRAN 40' Diesel Fleet	546	510	Same as full LPA
C-TRAN 40' Hybrid Fleet	32	28	Same as full LPA
C-TRAN 62' Articulated Fleet	34	0	Same as full LPA
TriMet 40' Diesel Fleet	3,325	3,325	Same as full LPA
LRT Vehicle Fleet	631	667	Same as full LPA
Bus Maintenance Facility Operation	147	147	Same as full LPA
LRT Maintenance Facility Operation	36	39	Same as full LPA
Park and Ride Operation	3	6	Same as full LPA
Macro scale-Transit Subtotal	**4,754**	**4,722**	Same as full LPA
Total	**326,747**	**324,940**	Greater than full LPA, but less than No-Build
Micro scale-Private (Peak Period Consumption)[c]	**5,107**	**4,825**	Greater than full LPA, but less than No-Build

Note: These estimates do not include the energy required to construct the project. Energy consumed by construction of the project is discussed in Section 3.12.4, Temporary Effects.

a Energy use reported for Private vehicles includes energy use by both automobiles and freight trucks.

b The macro scale is region-wide (Washington, Clackamas, Multnomah, and Clark Counties); daily energy consumption is reported.

c The micro scale focuses on a 12.2-mile segment of I-5; AM and PM peak period (8 hours) energy consumption is reported.

As described in the FEIS, the full LPA is expected to consume less energy than the No-Build Alternative for both private and transit uses. The full LPA uses less energy for the following reasons:

- The full LPA includes tolling the I-5 crossing, which is forecast to result in fewer cars using this crossing compared to the No-Build Alternative.
- The full LPA provides a light rail river crossing that is forecast to divert a portion of private vehicular travel demand to transit.
- The full LPA decreases congestion in this section of I-5, which is forecast to increase average speeds and reduce the duration of congested conditions. Since the fuel efficiency of passenger vehicles typically improves as congestion decreases, less fuel would be consumed.

The LPA first phase is expected to consume less energy than the No-Build because the reasons listed above apply to the LPA first phase also. However, the LPA first phase would not decrease congestion as much as the full LPA, so it is expected to have proportionately less of a benefit than the full LPA.

The reduction in energy use between the No-Build and the full LPA for Macro-scale private daily consumption is less than 1%, therefore a decrease in that reduction due to phasing the full LPA is, by definition, less that 1%, and is therefore not a new significant impact.

Temporary Effects

The FEIS reported that the method used to estimate energy use by construction is based on applying a factor to construction cost estimates. This provides a straightforward approach for comparing the relative energy demand of alternatives. Based on this estimating method, building the full LPA would require approximately 11,477,104 mBtus.

The LPA first phase is less expensive than the full LPA with highway phasing. Based on this methodology, building the LPA first phase would use less energy to build than the full LPA.

Mitigation

The full LPA and LPA first phase would reduce future transportation operations energy demand compared to the No-Build Alternative. No additional mitigation is required.

Geology and Soils

Summary of Changes in Geology and Soils Impacts

In general, impacts from geologic processes to the completed project and future impacts the completed project may have on geologic and groundwater resources differ little between the full LPA and the LPA first phase.

As all the indirect, direct and cumulative impacts (and benefits) derived from LPA first phase construction are a subset of the full LPA construction impacts, there is no new significant environmental impacts that will result. Rather the only consequence is that certain impacts and project benefits will result later in time, but were fully evaluated in the FEIS/ROD.

Long-term Effects as Described in the FEIS and Effects from the LPA First Phase

In general, impacts from geologic processes to the completed project and future impacts the completed project may have on geologic and groundwater resources differ little between the full LPA and the LPA first phase. There would be a general reduction in positive economic impacts associated with benefit to local resource companies and treatment of stormwater associated with new construction based on reduction in the scale of the project. More importantly, the impact of potential landslides and erosion potential associated with steep slopes (which would include the need for retaining walls or other stabilization techniques) in the Burnt Bridge Creek area would be deferred, as it is not included in the LPA first phase.

There would be a general reduction in positive economic impacts associated with benefit to local resource companies and treatment of stormwater associated with new construction based on reduction in the scale of the project. Stormwater runoff to the Troutdale Sole Source Aquifer would continue to be untreated in those areas where project activities are deferred.

Temporary Effects

Temporary effects described above including temporary soil erosion, sedimentation, and impacts to stormwater, surface water, and groundwater quality due to excavation, fill, drilling, and grading activities during construction would be reduced by the difference in scale of the full LPA and LPA first phase.

Hazardous Materials

Summary of Changes in Hazardous Materials Impacts

The LPA first phase would have a smaller footprint than the full LPA, so long-term impacts are expected to be reduced.

As all the indirect, direct and cumulative impacts (and benefits) derived from LPA first phase construction are a subset of the full LPA construction impacts, there is no new significant environmental impacts that will result. Rather the only consequence is that certain impacts and project benefits will result later in time, but were fully evaluated in the FEIS/ROD.

Long-term Effects as Described in the FEIS and Effects from the LPA First Phase

Since the number of property acquisitions for the LPA first phase are substantially fewer than for the full LPA, the long-term impacts are also expected to be reduced. The long-term effects of the full LPA include the possibility for remediation of contaminated areas along with a moderate potential for adverse effects from acquiring hazardous materials sites, improved surface water quality from updates in stormwater conveyance and treatment systems, and reduced spill risk due to reduced congestion and collisions. There would be a reduction in the natural resources improvements, spill risk, and adverse effects from acquiring hazardous materials sites in the LPA first phase due to the smaller scope.

The potential to uncover and expose hazardous materials would likely be decreased by deferring portions of the project. However, benefits from remediating hazardous material sites that pose a risk to human health and the environment would also be deferred.

Temporary Effects

The temporary effects such as exacerbation of existing contamination, accidental releases, and generation of hazardous and non-hazardous waste during construction would also be reduced in the LPA first phase when compared to the full LPA.

Mitigation

Measures used to mitigate effects to the environment from construction activities and effects on construction from hazardous materials would be similar for the LPA first phase as for the full LPA

Public Services and Utilities

Summary of Changes in Public Services and Utilities Impacts

Most of the effects to public services and utilities from LPA first phase would be the same as for the full LPA, but with some deferment of construction along the northern end of the project area. Some improvements to traffic congestion would be deferred, therefore deferring improvements to mobile public services.

As all the indirect, direct and cumulative impacts (and benefits) derived from LPA first phase construction are a subset of the full LPA construction impacts, there is no new significant environmental impacts that will result. Rather the only consequence is that certain impacts and project benefits will result later in time, but were fully evaluated in the FEIS/ROD.

Long-term Effects as Described in the FEIS and Effects from the LPA First Phase

Most of the effects to public services and utilities from construction of the LPA first phase would be the same as for the full LPA, but with some deferment of construction along the northern end of the project area. Some improvements to traffic congestion would be deferred, therefore deferring improvements to mobile public services.

Temporary Effects

Temporary effects from the LPA first phase are expected to be the same as the full LPA, except the construction noise and vibration at Discovery Middle School would be deferred. Standard construction practices would minimize these impacts.

Mitigation

Mitigation for effects from the LPA first phase is expected to be the same as for the full LPA.

Historic, Cultural and Archaeological Resources

Summary of Changes in Historic, Cultural and Archaeological Resources Impacts

The LPA first phase would impact fewer NRHP-listed or eligible historic resources and significant archaeological sites than the full LPA. Both the full LPA and the LPA first phase have been determined to have an adverse effect on the northbound I-5 bridge, the VHNR, and the Pier 99 building. The LPA first phase would likely have less of an effect on the VNHR, but it would still have an adverse effect.

As all the indirect, direct and cumulative impacts (and benefits) derived from LPA first phase construction are a subset of the full LPA construction impacts, there is no new significant environmental impacts that will result. Rather the only consequence is that certain impacts and project benefits will result later in time, but were fully evaluated in the FEIS/ROD.

Long-term Effects as Described in the FEIS and Effects from the LPA First Phase

Exhibit 23.

Archaeological and Historic Comparison of Long-term Effects to Cultural Resources

Environmental Metric	LPA First Phase[a]	Locally Preferred Alternative[a]	No-Build
Number of NRHP-listed or eligible historic resources impacted[a]	23	25	0
Number of adverse direct effects to NRHP-listed or eligible historic resources	3	3	0
Number of significant archaeological sites affected	21	32	0

Note: The impacts for the LPA are relative to No-Build and existing conditions.

a This table is meant to show all historic properties where some change may occur. For many of these properties, there has been a determination that there will be “no effect.”

The full LPA would have an impact on 25 NRHP-listed or eligible historic resources, and the LPA first phase would impact 23 (Exhibit 3). The two resources not impacted by the LPA first phase are the Kiggins Bowl and the USS LCI-713. Both the full LPA and the LPA first phase have been determined to have an adverse effect on the northbound I-5 bridge, the VHNR, and the Pier 99 building.

The full LPA would impact 32 significant archaeological sites and the LPA first phase would impact up to 21 archaeological sites. The decrease in number of sites affected by the LPA first phase is due to the removal of construction along I-5 north of SR 14. The LPA first phase also includes one archaeological site within the APE that has been recorded since the FEIS and would be impacted by either alternative.

Temporary Effects

For the LPA first phase, the temporary effects will be the same or less as for the full LPA. No temporary effects are likely to result in adverse effects to historic properties.

Mitigation

Avoidance and Minimization

It is anticipated that the LPA first phase would also identify reasonable measures to minimize adverse effects on historic resources, similar to the full LPA. In particular, the three archaeological sites within the VNHR that have been determined to be Section 4(f) resources would be avoided where feasible and minimized where they could not be avoided. Any parts of the sites that would be impacted by project construction would be subject to data recovery excavations.

Memorandum of Agreement

A Section 106 MOA has already been signed by all signatories for the full LPA and is applicable to the LPA first phase since there are no new impacts. The Section 106 Memorandum of Agreement (MOA) would likely need to be modified to address changes in timing of the improvements.

Since most of the impacts described in the MOA will also occur with the LPA first phase, it is assumed that mitigation will be the same or less then was agreed upon for the full LPA. The LPA first phase will have less impact on the Post Hospital, so related mitigation should be revisited. In addition, fewer archaeological sites would be impacted and require data recovery excavation.

It is anticipated that mitigation for the LPA first phase will primarily be the same as listed for the full LPA, with two exceptions. The LPA first phase will not impact the Post Hospital, so related mitigation would need to be revisited. In addition, fewer archaeological sites would be impacted, so less data recovery excavations would be required.

Parks and Recreation

Summary of Changes in Parks and Recreation Impacts

The LPA first phase would impact fewer total acres of parks and recreation resources than the full LPA. Both the full LPA and the LPA first phase have been determined to have the same impact to the Vancouver National Historic Reserve (VNHR). The LPA first phase would not impact Federal Lands to Parks land that will be impacted by the full LPA.

As all the indirect, direct and cumulative impacts (and benefits) derived from LPA first phase construction are a subset of the full LPA construction impacts, there is no new significant environmental impacts that will result. Rather the only consequence is that certain impacts and project benefits will result later in time, but were fully evaluated in the FEIS/ROD.

Long-term Effects as Described in the FEIS and Effects from the LPA First Phase

Exhibit 24.

Comparison of Long-term Effects on Parks and Recreation Facilities

Environmental Metric	LPA First Phase	Locally Preferred Alternative	No-Build
Total Acres[a] of park and recreation resources acquired	3.2	4.0	0
Acres of acquired parkland within the VNHR	1.7	1.7	0
Linear feet of trails permanently realigned	Same as full LPA	580	0
Transit access to park and recreation resources in project area	Same as full LPA	Improved access to some large regional parks	Access not improved

Note: The impacts for the alternatives are relative to No-Build and existing conditions.

a Does not include 1.1 acres of property permanently acquired from an off-leash area associated with East Delta Park, but located in ODOT right-of-way.

No new impacts to Parks or Recreation facilities would be expected from the LPA first phase because the footprint of the LPA first phase is smaller than the full LPA. The total acres of parks and recreation resources acquired would be reduced with the LPA first phase, by deferring the impacts to Leverich Community Park and some impacts to Marshall Park.

The LPA first phase would not impact the Federal Lands to Parks (FLP) land, so a FLP land transfer would not be necessary with the LPA first phase.

Temporary Effects

Like temporary effects of the full LPA, those for the LPA first phase have been divided into on-site construction and off-site construction effects. On-site refers to construction-related activities within the main project area. Off-site refers to construction activities that will take place at major project casting and staging areas.

The LPA first phase footprint is smaller than the full LPA and makes improvements to the local street system around the interchange, including: an extension of Vancouver Way under I-5 to connect to the new north-south street adjacent to the Expo Center; extension of Expo Road to the new multimodal bridge; a street connection between Vancouver Way and Marine Drive (east of I-5); and, improvements on Union Ct., Marine Way, Marine Drive (east of I-5) and Vancouver Way for the new connections in this area.

The SR 14 interchange footprint under the LPA first phase is also smaller than the full LPA and will remain in nearly the same location as it exists today. The need for improvements is due to the increased elevation of the bridge over the Columbia River and its touchdown of mainline I-5 in Vancouver. The reconstructed interchange is above the existing BNSF rail alignment. All ramps between I-5 and SR 14 are reconstructed. Ramps connecting SR 14 to downtown Vancouver are reconstructed, terminating at Columbia Street. C Street to southbound I-5 is also reconstructed. The ramp from I-5 northbound to C Street is not reconstructed in this phase.

Mitigation

Mitigation for the LPA first phase would be the same as for the full LPA.

Aviation and Navigation

Summary of Changes in Aviation and Navigation Impacts

Impacts to Aviation and Navigation would be the same for the LPA first phase as for the full LPA.

As all the indirect, direct and cumulative impacts (and benefits) derived from LPA first phase construction are a subset of the full LPA construction impacts, there is no new significant environmental impacts that will result. Rather the only consequence is that certain impacts and project benefits will result later in time, but were fully evaluated in the FEIS/ROD.

Long-term Effects as Described in the FEIS and Effects from the LPA First Phase

The LPA first phase includes the same river crossing improvements over the Columbia River as the full LPA. Over North Portland Harbor one less structure would be built with the LPA first phase compared to the full LPA. No structures built in North Portland Harbor with the full LPA or the LPA first phase would reduce vertical or horizontal clearance. Therefore, impacts to Aviation and Navigation would be the same as for the full LPA.

Temporary Effects

The LPA first phase would defer building one bridge over North Portland Harbor compared to the full LPA, so temporary construction impacts may be slightly reduced during the first phase.

Mitigation

Mitigation for the LPA first phase would be the same as for the full LPA.

Indirect Effects

Indirect effects, where applicable, are described within the corresponding environmental discipline in this re-evaluation. Below is a summary of the expected indirect effects from the full LPA and LPA first phase:

Large transportation projects have the potential to have far reaching effects on travel and land use patterns. The CRC project, because of its context, its multimodal character, and the inclusion of a new toll, will have the most pronounced and predictable effects immediately surrounding the new infrastructure. Specifically, the project is expected to promote development on Hayden Island and in downtown Vancouver, particularly around the proposed new light rail stations. More generally, the project is not expected to induce automobile demand or development pressure on the urban periphery, but the project is likely to redistribute a very small amount of future job and housing growth within the region.

These indirect effects would be true for the LPA first phase as well, because it would still extend light rail into downtown Vancouver. The development around stations would still be expected.

Cumulative

Long-term Effects as Described in the FEIS and Effects from the LPA First Phase

Cumulative effects were described in the FEIS for the following disciplines.

Acquisitions	Noise and Vibration
Economics	Archaeological Resources
Environmental Justice	Historic Resources
Land Use	Parks and Recreation Areas
Neighborhoods	Visual Quality and Aesthetics
Public Services and Utilities	Ecosystems
Air Quality and Air Toxics	Geology and Soils
Climate Change	Water Quality and Hydrology
Electric and Magnetic Fields	Wetlands
Energy and Peak Oil	Hazardous Materials

All effects from the LPA first phase would be within the range reported in the FEIS between the No-Build and the full LPA for each topic area. Due to the deferment of the full build, the LPA first phase will have slightly worse performance in some areas compared to the full LPA for some topics.

For example, greenhouse gas emissions will likely be slightly higher temporarily than the full LPA because there would be less congestion reduction with the LPA first phase. However, emissions would still be lower than the No-Build and consistent with what was disclosed in the FEIS/ROD and its contemplation of phased construction.

Regarding Ecosystems, the LPA first phase would not implement all mitigation that was associated with the full LPA. For example, water quality facilities north of the LPA first phase area would be deferred, along with the deferral of roadway improvements in that area. However, the BO provided Reasonable and Prudent Measures to minimize the impact of incidental take of listed species, and listed Terms and Conditions under which the project must be implemented in order to ensure compliance with the ESA. The LPA first phase would still comply with all requirements of the BO. Overall, the ecosystems impacts resulting from the full LPA or the LPA first phase would be small, but historic development, expected growth, and increasing regulatory protections in the region will likely continue to have impacts on ecosystems. The mitigation measures that are included with the full LPA or LPA first phase will serve to reduce harmful effects, and may improve parts of the local ecosystem relative to existing conditions.

Conclusion

Exhibit 25

Summary of NEPA Determinations for LPA First Phase by Environmental Discipline[a]

Environmental Discipline	Change in Impacts between full LPA and LPA first phase	NEPA Determination
Transportation-Transit	No change in light rail. Slight reduction in bus transit throughput. See Exhibit 7.	No new significant impacts
Transportation-Traffic	Some traffic benefits deferred. See Exhibit 7	No new significant impacts
Land Use and Economics	Some deferment of benefits.	No new significant impacts
Acquisitions, Displacements and Relocations	Some deferment of impacts. See Exhibit 8.	No new significant impacts
Neighborhoods and Environmental Justice	Some deferment of impacts. See Exhibit 10.	No new significant impacts
Visual Resources and Aesthetics	Some deferment of impacts. See Exhibit 11.	No new significant impacts
Air Quality	No change in conformity. See Exhibit 12.	No new significant impacts
Electric and Magnetic Fields	No change in impacts.	No new significant impacts
Noise and Vibration	Some deferment of impacts and mitigation benefits. See Exhibits 13 and 14.	No new significant impacts
Ecosystems	Some deferment of impacts and stormwater treatment benefits. See Exhibit 20.	No new significant impacts
Water Quality	No change in impacts. Some deferment of stormwater treatment benefits. See Exhibit 21.	No new significant impacts
Energy	Very small change in impacts. See Exhibit 22.	No new significant impacts
Geology and Soils	No change in impacts.	No new significant impacts
Hazardous Materials	Some deferment of impacts.	No new significant impacts
Public Services and Utilities	Some deferment of benefits and impacts.	No new significant impacts
Historic, Cultural and Archaeological	Some deferment of impacts. See Exhibit 23.	No new significant impacts
Parks and Recreation	Some deferment of impacts. See Exhibit 24.	No new significant impacts
Aviation and Navigation	No change in impacts.	No new significant impacts
Indirect Effects	No change in impacts.	No new significant impacts
Cumulative Effects	Some deferment of impacts.	No new significant impacts

a Based on analysis in technical memos that are Appendix C to this document.

As shown in this re-evaluation, and summarized in Exhibit 25, the impacts associated with the full LPA and the LPA first phase are similar and within the range of impacts reported in the FEIS and ROD. There are therefore no new significant environmental impacts based upon design changes, new information and the contemplated LPA first phase construction process.

The changes in information and impacts do not affect any regulatory approvals already received. The changes will be incorporated into the on-going permitting process, best practices, and documentation for compliance with these permits and other environmental regulations.

Based on the foregoing information and independent review and evaluation by FTA and FHWA, the determination is made that the impacts presented herein and the deferment of improvements associated with the LPA first phase do not present new significant environmental impacts under NEPA which were not evaluated in the project NEPA documents and ROD and, therefore, pursuant to 23 CFR Section 771.130, no supplemental environmental impact statement is required.

Date: 9/26/13

for By: R. F. Krochalis, Regional Administrator
Federal Transit Administration, Region 10

Date: 9/26/2013

By: Phillip Ditzler, Division Administrator
Federal Highway Administration Oregon Division

Date: 9/26/2013

for By: Daniel Mathis, Division Administrator
Federal Highway Administration Washington Division

APPENDIX A

Map of LPA First Phase
(see separate .pdf)

APPENDIX B

Map of LPA First Phase Compared to Full LPA (see separate .pdf)

APPENDIX C

Technical Memoranda
(see separate .pdf)