

INTERSTATE 5 COLUMBIA RIVER CROSSING

Acquisitions Technical Report for the Final Environmental Impact
Statement



May 2011

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Cover Sheet

Interstate 5 Columbia River Crossing

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ACRONYMS

Acronym	Description
BNSF	Burlington Northern Santa Fe Railroad
BRAC	Defense Base Closure and Realignment Commission
CADD	Computer Aided Design and Drafting
CD	collector-distributor
CRC	Columbia River Crossing
CTR	Commute Trip Reduction (Washington)
C-TRAN	Clark County Public Transit Benefit Area Authority
DEIS	Draft Environmental Impact Statement
DNR	Washington State Department of Natural Resources
DOT	U.S. Department of Transportation
DSL	Oregon Department of State Lands
ECO	Employee Commute Options (Oregon)
FEIS	Final Environmental Impact Statement
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GIS	geographic information system
GMA	Growth Management Act
I-5	Interstate 5
JBMI	Jantzen Beach Moorage Inc.
LPA	Locally Preferred Alternative
LRV	light rail vehicle
MAX	Metropolitan Area Express
ODOT	Oregon Department of Transportation
OTC	Oregon Transportation Commission
ROD	Record of Decision
RTC	Regional Transportation Council
SB	southbound
SR	State Route
SPUI	single-point urban interchange
sq.ft.	square foot/square feet
TDM	transportation demand management
TriMet	Tri-County Metropolitan Transportation District
TSM	transportation system management

Uniform Act	Uniform Relocation and Real Property Acquisitions Policies Act of 1970
VNHR	Vancouver National Historic Reserve
WSDOT	Washington State Department of Transportation
WTC	Washington Transportation Commission

1. Summary

1.1 Introduction

This report presents the evaluation of permanent and temporary land acquisitions, building impacts, and relocations that would result from the proposed Interstate 5 (I-5) Columbia River Crossing (CRC) project. This report addresses the following questions based on the preliminary design of the Locally Preferred Alternative (LPA) described in Section 1.2):

- How much property would be acquired, temporarily, and permanently, to construct the project?
- How many parcels would be impacted by the project, and to what degree (e.g., entire parcel, portion of parcel, etc.)?
- What type of uses would be displaced by the project?
 - How many businesses would be displaced?
 - How many residences would be displaced?
 - What other types of uses would be displaced (e.g., public use)?
- Are there comparable business and housing opportunities in the area to accommodate displaced businesses and residences?

This report identifies the likely impacts from the LPA as designed at the publishing date of this report. Further changes and refinements of the LPA design between now and construction may result in impacts that differ from those described in this report. Potential measures to reduce the impacts, including possible options for avoiding, minimizing, or mitigating impacts are also described.

1.2 Description of Alternatives

This technical report evaluates the CRC project's locally preferred alternative (LPA) and the No-Build Alternative. The LPA includes two design options: The preferred option, LPA Option A, which includes local vehicular access between Marine Drive and Hayden Island on an arterial bridge; and LPA Option B, which does not have arterial lanes on the light rail/multi-use path bridge, but instead provides direct access between Marine Drive and the island with collector-distributor (CD) lanes on the two new bridges that would be built adjacent to I-5. In addition to the design options, if funding availability does not allow the entire LPA to be constructed in one phase, some roadway elements of the project would be deferred to a future date. This technical report identifies several elements that could be deferred, and refers to that possible initial investment as 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. The LPA and the No-Build Alternative are described in this section.

1.2.1 Adoption of a Locally Preferred Alternative

Following the publication of the Draft Environmental Impact Statement (DEIS) on May 2, 2008, the project actively solicited public and stakeholder feedback on the DEIS during a 60-day comment period. During this time, the project received over 1,600 public comments.

During and following the public comment period, the elected and appointed boards and councils of the local agencies sponsoring the CRC project held hearings and workshops to gather further public input on and discuss the DEIS alternatives as part of their efforts to determine and adopt a locally preferred alternative. The LPA represents the alternative preferred by the local and regional agencies sponsoring the CRC project. Local agency-elected boards and councils determined their preference based on the results of the evaluation in the DEIS and on the public and agency comments received both before and following its publication.

In the summer of 2008, the local agencies sponsoring the CRC project adopted the following key elements of CRC as the LPA:

- A replacement bridge as the preferred river crossing,
- Light rail as the preferred high-capacity transit mode, and
- Clark College as the preferred northern terminus for the light rail extension.

The preferences for a replacement crossing and for light rail transit were identified by all six local agencies. Only the agencies in Vancouver – the Clark County Public Transit Benefit Area Authority (C-TRAN), the City of Vancouver, and the Regional Transportation Council (RTC) – preferred the Vancouver light rail terminus. The adoption of the LPA by these local agencies does not represent a formal decision by the federal agencies leading this project – the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) – or any federal funding commitment. A formal decision by FHWA and FTA about whether and how this project should be constructed will follow the FEIS in a Record of Decision (ROD).

1.2.2 Description of the LPA

The LPA includes an array of transportation improvements, which are described below. When the LPA differs between Option A and Option B, it is described in the associated section. For a more detailed description of the LPA, including graphics, please see Chapter 2 of the FEIS.

1.2.2.1 Multimodal River Crossing

Columbia River Bridges

The parallel bridges that form the existing I-5 crossing over the Columbia River would be replaced by two new parallel bridges. The eastern structure would accommodate northbound highway traffic on the bridge deck, with a bicycle and pedestrian path underneath; the western structure would carry southbound traffic, with a two-way light rail guideway below. Whereas the existing bridges have only three lanes each with virtually no shoulders, each of the new bridges would be wide enough to accommodate three through-lanes and two add/drop lanes. Lanes and shoulders would be built to full design standards.

The new bridges would be high enough to provide approximately 95 feet of vertical clearance for river traffic beneath, but not so high as to impede the take-offs and landings by aircraft using Pearson Field or Portland International Airport to the east. The new bridge structures over the

Columbia River would not include lift spans, and both of the new bridges would each be supported by six piers in the water and two piers on land.

North Portland Harbor Bridges

The existing highway structures over North Portland Harbor would not be replaced; instead, they would be retained to accommodate all mainline I-5 traffic. As discussed at the beginning of this chapter, two design options have emerged for the Hayden Island and Marine Drive interchanges. The preferred option, LPA Option A, includes local vehicular access between Marine Drive and Hayden Island on an arterial bridge. LPA Option B does not have arterial lanes on the light rail/multi-use path bridge, but instead provides direct access between Marine Drive and the island with collector-distributor lanes on the two new bridges that would be built adjacent to I-5.

LPA Option A: Four new, narrower parallel structures would be built across the waterway, three on the west side and one on the east side of the existing North Portland Harbor bridges. Three of the new structures would carry on- and off-ramps to mainline I-5. Two structures west of the existing bridges would carry traffic merging onto or exiting off of I-5 southbound. The new structure on the east side of I-5 would serve as an on-ramp for traffic merging onto I-5 northbound.

The fourth new structure would be built slightly farther west and would include a two-lane arterial bridge for local traffic to and from Hayden Island, light rail transit, and a multi-use path for pedestrians and bicyclists. All of the new structures would have at least as much vertical clearance over the river as the existing North Portland Harbor bridges.

LPA Option B: This option would build the same number of structures over North Portland Harbor as Option A, although the locations and functions on those bridges would differ, as described below. The existing bridge over North Portland Harbor would be widened and would receive seismic upgrades.

LPA Option B does not have arterial lanes on the light rail/multi-use path bridge. Direct access between Marine Drive and the island would be provided with collector-distributor lanes. The structures adjacent to the highway bridge would carry traffic merging onto or exiting off of mainline I-5 between the Marine Drive and Hayden Island interchanges.

1.2.2.2 Interchange Improvements

The LPA includes improvements to seven interchanges along a 5-mile segment of I-5 between Victory Boulevard in Portland and SR 500 in Vancouver. These improvements include some reconfiguration of adjacent local streets to complement the new interchange designs, as well as new facilities for bicyclists and pedestrians along this corridor.

Victory Boulevard Interchange

The southern extent of the I-5 project improvements would be two ramps associated with the Victory Boulevard interchange in Portland. The Marine Drive to I-5 southbound on-ramp would be braided over the I-5 southbound to the Victory Boulevard/Denver Avenue off-ramp. The other ramp improvement would lengthen the merge distance for northbound traffic entering I-5 from Denver Avenue. The current merging ramp would be extended to become an add/drop (auxiliary) lane which would continue across the river crossing.

Potential phased construction option: The aforementioned southbound ramp improvements to the Victory Boulevard interchange may not be included with the CRC project. Instead, the

existing connections between I-5 southbound and Victory Boulevard could be retained. The braided ramp connection could be constructed separately in the future as funding becomes available.

Marine Drive Interchange

All movements within this interchange would be reconfigured to reduce congestion for motorists entering and exiting I-5 at this location. The interchange configuration would be a single-point urban interchange (SPUI) with a flyover ramp serving the east to north movement. With this configuration, three legs of the interchange would converge at a point on Marine Drive, over the I-5 mainline. This configuration would allow the highest volume movements to move freely without being impeded by stop signs or traffic lights.

The Marine Drive eastbound to I-5 northbound flyover ramp would provide motorists with access to I-5 northbound without stopping. Motorists from Marine Drive eastbound would access I-5 southbound without stopping. Motorists traveling on Martin Luther King Jr. Boulevard westbound to I-5 northbound would access I-5 without stopping at the intersection.

The new interchange configuration changes the westbound Marine Drive and westbound Vancouver Way connections to Martin Luther King Jr. Boulevard and to northbound I-5. These two streets would access westbound Martin Luther King Jr. Boulevard farther east. Martin Luther King Jr. Boulevard would have a new direct connection to I-5 northbound.

In the new configuration, the connections from Vancouver Way and Marine Drive would be served, improving the existing connection to Martin Luther King Jr. Boulevard east of the interchange. The improvements to this connection would allow traffic to turn right 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 would be replaced with a new connection farther east.

A new multi-use path would extend from the Bridgeton neighborhood to the existing Expo Center light rail station and from the station to Hayden Island along the new light rail line over North Portland Harbor.

LPA Option A: Local traffic between Martin Luther King Jr. Boulevard/Marine Drive and Hayden Island would travel via an arterial bridge over North Portland Harbor. There would be some variation in the alignment of local streets in the area of the interchange between Option A and Option B. The most prominent differences are the alignments of Vancouver Way and Union Court.

LPA Option B: With this design option, there would be no arterial traffic lanes on the light rail/multi-use path bridge over North Portland Harbor. Instead, vehicles traveling between Martin Luther King Jr. Boulevard/ Marine Drive and Hayden Island would travel on the collector-distributor bridges that would parallel each side of I-5 over North Portland Harbor. Traffic would not need to merge onto mainline I-5 to travel between the island and Martin Luther King Jr. Boulevard/Marine Drive.

Potential phased construction option: The aforementioned flyover ramp could be deferred and not constructed as part of the CRC project. In this case, rather than providing a direct eastbound Marine Drive to I-5 northbound connection by a flyover ramp, the project improvements to the interchange would instead provide this connection through the signal-controlled SPUI. The flyover ramp could be constructed separately in the future as funding becomes available.

Hayden Island Interchange

All movements for this interchange would be reconfigured. The new configuration would be a split tight diamond interchange. Ramps parallel to the highway would be built, lengthening the ramps and improving merging speeds. Improvements to Jantzen Drive and Hayden Island Drive would include additional through, left-turn, and right-turn lanes. A new local road, Tomahawk Island Drive, would travel east-west through the middle of Hayden Island and under the I-5 interchange, improving connectivity across I-5 on the island. Additionally, a new multi-use path would be provided along the elevated light rail line on the west side of the Hayden Island interchange.

LPA Option A: A proposed arterial bridge with two lanes of traffic, one in each direction, would allow vehicles to travel between Martin Luther King Jr. Boulevard/ Marine Drive and Hayden Island without accessing I-5.

LPA Option B: With this design option there would be no arterial traffic lanes on the light rail/multi-use path bridge over North Portland Harbor. Instead, vehicles traveling between Martin Luther King Jr. Boulevard/Marine Drive and Hayden Island would travel on the collector-distributor bridges that parallel each side of I-5 over North Portland Harbor.

SR 14 Interchange

The function of this interchange would remain largely the same. Direct connections between I-5 and SR 14 would be rebuilt. Access to and from downtown Vancouver would be provided as it is today, but the connection points would be relocated. Downtown Vancouver I-5 access to and from the south would be at C Street rather than Washington Street, while downtown connections to and from SR 14 would be made by way of Columbia Street at 4th Street.

The multi-use bicycle and pedestrian path in the northbound (eastern) I-5 bridge would exit the structure at the SR 14 interchange, and then loop down to connect into Columbia Way.

Mill Plain Interchange

This interchange would be reconfigured into a SPUI. The existing “diamond” configuration requires two traffic signals to move vehicles through the interchange. The SPUI would use one efficient intersection and allow opposing left turns simultaneously. This would improve the capacity of the interchange by reducing delay for traffic entering or exiting the highway.

This interchange would also receive several improvements for bicyclists and pedestrians. These include bike lanes and sidewalks, clear delineation and signing, short perpendicular crossings at the ramp terminals, and ramp orientations that would make pedestrians highly visible.

Fourth Plain Interchange

The improvements to this interchange would be made to better accommodate freight mobility and access to the new park and ride at Clark College. Northbound I-5 traffic exiting to Fourth Plain would continue to use the off-ramp just north of the SR 14 interchange. The southbound I-5 exit to Fourth Plain would be braided with the SR 500 connection to I-5, which would eliminate the non-standard weave between the SR 500 connection and the off-ramp to Fourth Plain as well as the westbound SR 500 to Fourth Plain Boulevard connection.

Additionally, several improvements would be made to provide better bicycle and pedestrian mobility and accessibility, including bike lanes, neighborhood connections, and access to the park and ride.

SR 500 Interchange

Improvements would be made to the SR 500 interchange to add direct connections to and from I-5. On- and off-ramps would be built to directly connect SR 500 and I-5 to and from the north, connections that are currently made by way of 39th Street. I-5 southbound traffic would connect to SR 500 via a new tunnel underneath I-5. SR 500 eastbound traffic would connect to I-5 northbound on a new on-ramp. The 39th Street connections with I-5 to and from the north would be eliminated. Travelers would instead use the connections at Main Street to connect to and from 39th Street.

Additionally, several improvements would be made to provide better bicycle and pedestrian mobility and accessibility, including sidewalks on both sides of 39th Street, bike lanes, and neighborhood connections.

Potential phased construction option: The northern half of the existing SR 500 interchange would be retained, rather than building new connections between I-5 southbound to SR 500 eastbound and from SR 500 westbound to I-5 northbound. The ramps connecting SR 500 and I-5 to and from the north could be constructed separately in the future as funding becomes available.

1.2.2.3 Transit

The primary transit element of the LPA is a 2.9-mile extension of the current Metropolitan Area Express (MAX) Yellow Line light rail from the Expo Center in North Portland, where it currently ends, to Clark College in Vancouver. The transit element would not differ between LPA and LPA with highway phasing. To accommodate and complement this major addition to the region's transit system, a variety of additional improvements are also included in the LPA:

- Three park and ride facilities in Vancouver near the new light rail stations.
- Expansion of Tri-County Metropolitan Transportation District's (TriMet's) Ruby Junction light rail maintenance base in Gresham, Oregon.
- Changes to C-TRAN local bus routes.
- Upgrades to the existing light rail crossing over the Willamette River via the Steel Bridge.

Operating Characteristics

Nineteen new light rail vehicles (LRV) would be purchased as part of the CRC project to operate this extension of the MAX Yellow Line. These vehicles would be similar to those currently used by TriMet's MAX system. With the LPA, LRVs in the new guideway and in the existing Yellow Line alignment are planned to operate with 7.5-minute headways during the "peak of the peak" (the two-hour period within the 4-hour morning and afternoon/evening peak periods where demand for transit is the highest) and 15-minute headways during off-peak periods.

Light Rail Alignment and Stations

Oregon Light Rail Alignment and Station

A two-way light rail alignment for northbound and southbound trains would be constructed to extend from the existing Expo Center MAX station over North Portland Harbor to Hayden Island. Immediately north of the Expo Center, the alignment would curve eastward toward I-5, pass beneath Marine Drive, then rise over a flood wall onto a light rail/multi-use path bridge to cross North Portland Harbor. The two-way guideway over Hayden Island would be elevated at approximately the height of the rebuilt mainline of I-5, as would a new station immediately west of I-5. The alignment would extend northward on Hayden Island along the western edge of I-5, until it transitions into the hollow support structure of the new western bridge over the Columbia River.

Downtown Vancouver Light Rail Alignment and Stations

After crossing the Columbia River, the light rail alignment would curve slightly west off of the highway bridge and onto its own smaller structure over the Burlington Northern Santa Fe (BNSF) rail line. The double-track guideway would descend on structure and touch down on Washington Street south of 5th Street, continuing north on Washington Street to 7th Street. The elevation of 5th Street would be raised to allow for an at-grade crossing of the tracks on Washington Street. Between 5th and 7th Streets, the two-way guideway would run down the center of the street. Traffic would not be allowed on Washington between 5th and 6th Streets and would be two-way between 6th and 7th Streets. There would be a station on each side of the street on Washington between 5th and 6th Streets.

At 7th Street, the light rail alignment would form a couplet. The single-track northbound guideway would turn east for two blocks, then turn north onto Broadway Street, while the single-track southbound guideway would continue on Washington Street. Seventh Street will be converted to one-way traffic eastbound between Washington and Broadway with light rail operating on the north side of 7th Street. This couplet would extend north to 17th Street, where the two guideways would join and turn east.

The light rail guideway would run on the east side of Washington Street and the west side of Broadway Street, with one-way traffic southbound on Washington Street and one-way traffic northbound on Broadway Street. On station blocks, the station platform would be on the side of the street at the sidewalk. There would be two stations on the Washington-Broadway couplet, one pair of platforms near Evergreen Boulevard, and one pair near 15th Street.

East-west Light Rail Alignment and Terminus Station

The single-track southbound guideway would run in the center of 17th Street between Washington and Broadway Streets. At Broadway Street, the northbound and southbound alignments of the couplet would become a two-way center-running guideway traveling east-west on 17th Street. The guideway on 17th Street would run until G Street, then connect with McLoughlin Boulevard and cross under I-5. Both alignments would end at a station east of I-5 on the western boundary of Clark College.

Park and Ride Stations

Three park and ride stations would be built in Vancouver along the light rail alignment:

- Within the block surrounded by Columbia, Washington 4th and 5th Streets, with five floors above ground that include space for retail on the first floor and 570 parking stalls.
- Between Broadway and Main Streets next to the stations between 15th and 16th Streets, with space for retail on the first floor, and four floors above ground that include 420 parking stalls.
- At Clark College, just north of the terminus station, with space for retail or C-TRAN services on the first floor, and five floors that include approximately 1,910 parking stalls.

Ruby Junction Maintenance Facility Expansion

The Ruby Junction Maintenance Facility in Gresham, Oregon, would need to be expanded to accommodate the additional LRVs associated with the CRC project. Improvements include additional storage for LRVs and other maintenance material, expansion of LRV maintenance bays, and expanded parking for additional personnel. A new operations command center would also be required, and would be located at the TriMet Center Street location in Southeast Portland.

Local Bus Route Changes

As part of the CRC project, several C-TRAN bus routes would be changed in order to better complement the new light rail system. Most of these changes would re-route bus lines to downtown Vancouver where riders could transfer to light rail. Express routes, other than those listed below, are expected to continue service between Clark County and downtown Portland. The following table (Exhibit 1-1) shows anticipated future changes to C-TRAN bus routes.

Exhibit 1-1. Proposed C-TRAN Bus Routes Comparison

C-TRAN Bus Route	Route Changes
#4 - Fourth Plain	Route truncated in downtown Vancouver
#41 - Camas / Washougal Limited	Route truncated in downtown Vancouver
#44 - Fourth Plain Limited	Route truncated in downtown Vancouver
#47 - Battle Ground Limited	Route truncated in downtown Vancouver
#105 - I-5 Express	Route truncated in downtown Vancouver
#105S - I-5 Express Shortline	Route eliminated in LPA (The No-Build runs articulated buses between downtown Portland and downtown Vancouver on this route)

Steel Bridge Improvements

Currently, all light rail lines within the regional TriMet MAX system cross over the Willamette River via the Steel Bridge. By 2030, the number of LRVs that cross the Steel Bridge during the 4-hour PM peak period would increase from 152 to 176. To accommodate these additional trains, the project would retrofit the existing rails on the Steel Bridge to increase the allowed light rail speed over the bridge from 10 to 15 mph. To accomplish this, additional work along the Steel Bridge lift spans would be needed.

1.2.2.4 Tolling

Tolling cars and trucks that use the I-5 river crossing is proposed as a method to help fund the CRC project and to encourage the use of alternative modes of transportation. The authority to toll the I-5 crossing is set by federal and state laws. Federal statutes permit a toll-free bridge on an interstate highway to be converted to a tolled facility following the reconstruction or replacement of the bridge. Prior to imposing tolls on I-5, Washington and Oregon Departments of Transportation (WSDOT and ODOT) would have to enter into a toll agreement with U.S. Department of Transportation (DOT). Recently passed state legislation in Washington permits WSDOT to toll I-5 provided that the tolling of the facility is first authorized by the Washington legislature. Once authorized by the legislature, the Washington Transportation Commission (WTC) has the authority to set the toll rates. In Oregon, the Oregon Transportation Commission (OTC) has the authority to toll a facility and to set the toll rate. It is anticipated that prior to tolling I-5, ODOT and WSDOT would enter into a bi-state tolling agreement to establish a cooperative process for setting toll rates and guiding the use of toll revenues.

Tolls would be collected using an electronic toll collection system: toll collection booths would not be required. Instead, motorists could obtain a transponder that would automatically bill the vehicle owner each time the vehicle crossed the bridge, while cars without transponders would be tolled by a license-plate recognition system that would bill the address of the owner registered to that license plate.

The LPA proposes to apply a variable toll on vehicles using the I-5 crossing. Tolls would vary by time of day, with higher rates during peak travel periods and lower rates during off-peak periods. Medium and heavy trucks would be charged a higher toll than passenger vehicles. The traffic-related impact analysis in this FEIS is based on toll rates that, for passenger cars with transponders, would range from \$1.00 during the off-peak to \$2.00 during the peak travel times (in 2006 dollars).

1.2.2.5 Transportation System and Demand Management Measures

Many well-coordinated transportation demand management (TDM) and transportation system management (TSM) programs are already in place in the Portland-Vancouver Metropolitan region and supported by agencies and adopted plans. In most cases, the impetus for the programs is from state-mandated programs: Oregon's Employee Commute Options (ECO) rule and Washington's Commute Trip Reduction (CTR) law.

The physical and operational elements of the CRC project provide the greatest TDM opportunities by promoting other modes to fulfill more of the travel needs in the project corridor. These include:

- Major new light rail line in exclusive right-of-way, as well as express bus and feeder routes;
- Modern bicycle and pedestrian facilities that accommodate more bicyclists and pedestrians, and improve connectivity, safety, and travel time;
- Park and ride lots and garages; and
- A variable toll on the highway crossing.

In addition to these fundamental elements of the project, facilities and equipment would be implemented that could help existing or expanded TSM programs maximize capacity and efficiency of the system. These include:

- Replacement or expanded variable message signs or other traveler information systems in the CRC project area;
- Expanded incident response capabilities;
- Queue jumps or bypass lanes for transit vehicles where multi-lane approaches are provided at ramp signals for entrance ramps;
- Expanded traveler information systems with additional traffic monitoring equipment and cameras, and
- Active traffic management.

1.2.3 LPA Construction

Construction of bridges over the Columbia River is the most substantial element of the project, and this element sets the sequencing for other project components. The main river crossing and immediately adjacent highway improvement elements would account for the majority of the construction activity necessary to complete this project.

1.2.3.1 Construction Activities Sequence and Duration

The following table (Exhibit 1-2) displays the expected duration and major details of each element of the project. Due to construction sequencing requirements, the timeline to complete the initial phase of the LPA with highway phasing is the same as the full LPA.

Exhibit 1-2. Construction Activities and Estimated Duration

Element	Estimated Duration	Details
Columbia River bridges	4 years	<ul style="list-style-type: none"> • Construction is likely to begin with the bridges. • General sequence includes initial preparation, installation of foundation piles, shaft caps, pier columns, superstructure, and deck.
Hayden Island and SR 14 interchanges	1.5 - 4 years for each interchange	<ul style="list-style-type: none"> • Each interchange must be partially constructed before any traffic can be transferred to the new structure. • Each interchange needs to be completed at the same time.
Marine Drive interchange	3 years	<ul style="list-style-type: none"> • Construction would need to be coordinated with construction of the southbound lanes coming from Vancouver.
Demolition of the existing bridges	1.5 years	<ul style="list-style-type: none"> • Demolition of the existing bridges can begin only after traffic is rerouted to the new bridges.
Three interchanges north of SR 14	4 years for all three	<ul style="list-style-type: none"> • Construction of these interchanges could be independent from each other or from the southern half of the project. • More aggressive and costly staging could shorten this timeframe.
Light rail	4 years	<ul style="list-style-type: none"> • The river crossing for the light rail would be built with the bridges. • Any bridge structure work would be separate from the actual light rail construction activities and must be completed first.
Total Construction Timeline	6.3 years	<ul style="list-style-type: none"> • Funding, as well as contractor schedules, regulatory restrictions on in-water work, weather, materials, and equipment, could all influence construction duration. • This is also the same time required to complete the smallest usable segment of roadway – Hayden Island through SR 14 interchanges.

1.2.3.2 Major Staging Sites and Casting Yards

Staging of equipment and materials would occur in many areas along the project corridor throughout construction, generally within existing or newly purchased right-of-way or on nearby vacant parcels. However, at least one large site would be required for construction offices, to stage the larger equipment such as cranes, and to store materials such as rebar and aggregate. Suitable sites must be large and open to provide for heavy machinery and material storage, must have waterfront access for barges (either a slip or a dock capable of handling heavy equipment and material) to convey material to the construction zone, and must have roadway or rail access for landside transportation of materials by truck or train.

Three sites have been identified as possible major staging areas:

1. Port of Vancouver (Parcel 1A) site in Vancouver: This 52-acre site is located along SR 501 and near the Port of Vancouver's Terminal 3 North facility.
2. Red Lion at the Quay hotel site in Vancouver: This site would be partially acquired for construction of the Columbia River crossing, which would require the demolition of the building on this site, leaving approximately 2.6 acres for possible staging.
3. Vacant Thunderbird hotel site on Hayden Island: This 5.6-acre site is much like the Red Lion hotel site in that a large portion of the parcel is already required for new right-of-way necessary for the LPA.

A casting/staging yard could be required for construction of the over-water bridges if a precast concrete segmental bridge design is used. A casting yard would require access to the river for barges, including either a slip or a dock capable of handling heavy equipment and material; a large area suitable for a concrete batch plant and associated heavy machinery and equipment; and access to a highway and/or railway for delivery of materials.

Two sites have been identified as possible casting/staging yards:

1. Port of Vancouver Alcoa/Evergreen West site: This 95-acre site was previously home to an aluminum factory and is currently undergoing environmental remediation, which should be completed before construction of the CRC project begins (2012). The western portion of this site is best suited for a casting yard.
2. Sundial site: This 50-acre site is located between Fairview and Troutdale, just north of the Troutdale Airport, and has direct access to the Columbia River. There is an existing barge slip at this location that would not have to undergo substantial improvements.

1.2.4 The No-Build Alternative

The No-Build Alternative illustrates how transportation and environmental conditions would likely change by the year 2030 if the CRC project is not built. This alternative makes the same assumptions as the build alternatives regarding population and employment growth through 2030, and also assumes that the same transportation and land use projects in the region would occur as planned. The No-Build Alternative also includes several major land use changes that are planned within the project area, such as the Riverwest development just south of Evergreen Boulevard and west of I-5, the Columbia West Renaissance project along the western waterfront in downtown Vancouver, and redevelopment of the Jantzen Beach shopping center on Hayden Island. All traffic and transit projects within or near the CRC project area that are anticipated to be built by 2030 separately from this project are included in the No-Build and build alternatives.

Additionally, the No-Build Alternative assumes bridge repair and continuing maintenance costs to the existing bridge that are not anticipated with the replacement bridge option.

1.3 Long-term Effects

Approximately 91.8 acres of property would have to be permanently acquired, including approximately 4.2 acres in permanent easements for the construction and long-term operations and maintenance of Option A of the LPA (Exhibit 1-3). A total of 214 parcels would be permanently impacted by Option A, with 73 full acquisitions and 141 partial acquisitions. Option B would require slightly less property than Option A (91.1 acres), including approximately 4.5 acres in permanent easements, and would impact fewer parcels – 202 total, with 73 fully acquired and 129 partially acquired.

In terms of total acreage acquired, more than one-half of the total permanent property acquisitions occur on Hayden Island with either option, which includes 32 of the 57 residential displacements and 39 to 40 of the 69 to 70 commercial displacements. Nearly one-quarter of the property acquisitions occur in Vancouver, with the other impacts occurring around the Marine Drive interchange, and in Gresham, Oregon, for the light rail maintenance facility expansion. The light rail expansion area accounts for a little more than fifteen percent of the total acreage permanently acquired for the LPA. Public Use Properties displaced include the Oregon Department of Transportation (ODOT) permit center on Hayden Island and the Clark County Public Utilities Energy Conservation office in downtown Vancouver.

Exhibit 1-3. Summary of Permanent Property Acquisitions and Displacements for LPA

Impact Type	Impact	LPA Totals ^{a,b,c}	
		Option A	Option B
Parcel Impacts (count)	Full Parcel Acquisitions	73	73
	Partial Parcel Acquisitions	141	129
	Total Parcels Impacted	214	202
Displacement of Use (count)	Residential Displacements	Total: 57	Total: 57
	<i>Single-family</i>	53	53
	<i>Multi-family</i>	4	4
	Commercial Displacements	Total: 69	Total: 70
	<i>Retail/Services</i>	50	51
	<i>Office/Professional/Healthcare</i>	15	15
	<i>Lodging</i>	1	1
	<i>Other^d</i>	3	3
	Public Use Displacements	Total: 2	Total: 2
	<i>Public Service w/ Employees</i>	2	2
	<i>Religious/Community Center</i>	0	0
<i>Park/Historic Site/Museum</i>	0	0	
<i>School</i>	0	0	
Permanent Easements (acres)	Airspace Easements	0.9 acre	0.9 acre
	Subsurface Easements	3.2 acres	3.3 acres
	Property Easements	Less than 0.1 acre	0.3 acre
Area required (acres)	Total Area Acquired	91.8 acres	91.1

a Does not double- or triple-count parcel impacts, displacements, or total acreage, when more than one mode (highway, transit, or bicycle and pedestrian) result in the same or overlapping acquisition.

b Does not include ODOT or WSDOT-owned property or right-of-way or City-owned right-of-way.

c Property impacts described in this table assume a 17th Street transit alignment.

d Includes the displacement of two cellular phone towers on Hayden Island and a billboard near the Marine Drive interchange.

Differences in property acquisitions with the LPA with highway phasing: The impacts described above would occur with the full build out of the LPA. Certain components of the project may be phased and be constructed at a later unknown date. Delaying the construction of these components would result in minor decreases in the amount of property acquired by the project in total, but would not change the number of displacements. Approximately 0.5 acre of permanent property acquisitions would be avoided, including the property impacts at Leverich Neighborhood Park.

1.4 Temporary Effects

In order to accommodate the construction of the LPA Option A, approximately 16.8 acres from 200 parcels would need to be temporarily acquired in construction easements. Option B would require slightly less property, 11.0 acres, from fewer parcels (166 parcels). These temporary construction easements most often occur immediately adjacent to the project improvements and could be used for the staging of equipment for construction, location of contractor offices, laydown areas for materials, the reconstruction of sidewalks, and the construction of retaining walls.

In addition to temporary construction easements adjacent to project improvements, constructing the LPA would also require one or more large staging area for the storing of materials, contractor offices, etc., and potentially a casting yard for pre-casting of concrete segments for construction of the bridge and ramp structures. Three sites have been identified as possible staging areas: a Port of Vancouver site (52 acres), the Red Lion Hotel at the Vancouver Quay site (2.6 acres), and the vacant Thunderbird Hotel site (5.6 acres). Another site at the Port of Vancouver, Alcoa/Evergreen West (94.5 acres), as well as the Sundial site in Troutdale, Oregon (50.5 acres), have been identified as possible casting yards.

Differences in property acquisitions with the LPA with highway phasing: Delaying the construction of certain highway components of the LPA, and specifically the north legs of the SR 500/I-5 interchange, would avoid the 1.3 acre temporary acquisition from Leverich Park.

1.5 Proposed Mitigation

Where property acquisition and residential or business displacements are unavoidable, mitigation measures will apply. These mitigation measures are addressed by federal and state regulations, which require that property be purchased at fair market value, and that individuals living in a residence displaced by the project be provided decent, safe, and sanitary replacement housing. Households and businesses qualifying for relocation assistance will be accommodated per the Uniform Relocation and Real Property Acquisitions Policies Act of 1970 as amended (Uniform Act).

Federal and state guidelines determine the standards and procedures for providing replacement housing, based on the characteristics of individual households. Eligibility for relocation benefits would be determined following the publication of the Final Environmental Impact Statement (FEIS) and issuance of the Record of Decision (ROD), and once the project is granted approval to begin right-of-way acquisition. Relocation assistance could include replacement housing for owners and renters, moving costs, and assistance in locating replacement housing. Similarly, relocation assistance for businesses can include moving costs, site search expenses, business re-establishment expenses, and assistance in locating a replacement business site. The specifics of relocation assistance are determined on an individual basis, based upon ownership or tenant status.

The displacement of publicly owned facilities, such as the ODOT permit center, could be mitigated by functionally replacing the property acquired with another facility that would provide equivalent utility. Alternately, such facilities could be provided relocation assistance in a similar fashion as displaced businesses, as assumed for the Clark Public Utilities Energy Conversation Office.

2. Methods

2.1 Introduction

This report evaluates the potential land acquisitions and displacements, and necessary relocations that would result from the construction of the proposed CRC project. A property acquisition differs from a displacement in the following way:

- **Acquisition** – An acquisition occurs if part or all of a property or a legal right to the property is purchased or otherwise acquired for temporary or permanent use by the project. An acquisition can be fee title, where all property rights are acquired or an easement when certain rights, but not ownership are obtained.
- **Displacement** – A displacement occurs if a use, such as a building or parking lot, is demolished or moved as a result of the project, or if people or a business is no longer able to occupy the building as a result of the project. Individuals or businesses that are displaced from their real or private property would be eligible to receive relocation benefits.

Where the project requires new or additional right-of-way, there is potential for acquisitions, displacements, and relocations. The property acquisitions analysis in this technical report identifies properties, including residences, businesses, and public facilities, that would be acquired for the construction of the LPA. Federal, state, and local laws require that acquisition and relocation effects of projects be assessed and that property acquisitions and relocation for federally funded projects conform to standards established by the Uniform Act. To the extent that it is necessary, this analysis evaluates potential mitigation measures for displaced businesses and residences.

This report addresses the following questions, based on the preliminary design of the LPA:

- How much land would be acquired, temporarily and permanently, to construct the LPA?
- How many parcels would be impacted by the LPA, and to what degree (e.g., entire parcel, portion of parcel, etc.)?
- What type of uses would be displaced by the LPA?
- Are there comparable business and residential opportunities in the area to accommodate these displaced businesses and households?

2.2 Study Area

The study area for the property acquisitions analysis includes all areas directly affected by the footprint of the project, including new or improved highway, transit, and bicycle and pedestrian facilities, fee title and permanent easement acquisitions required to construct the facilities, staging areas, casting yards, and the expansion of the Ruby Junction maintenance facility in Gresham (Exhibit 2-1).

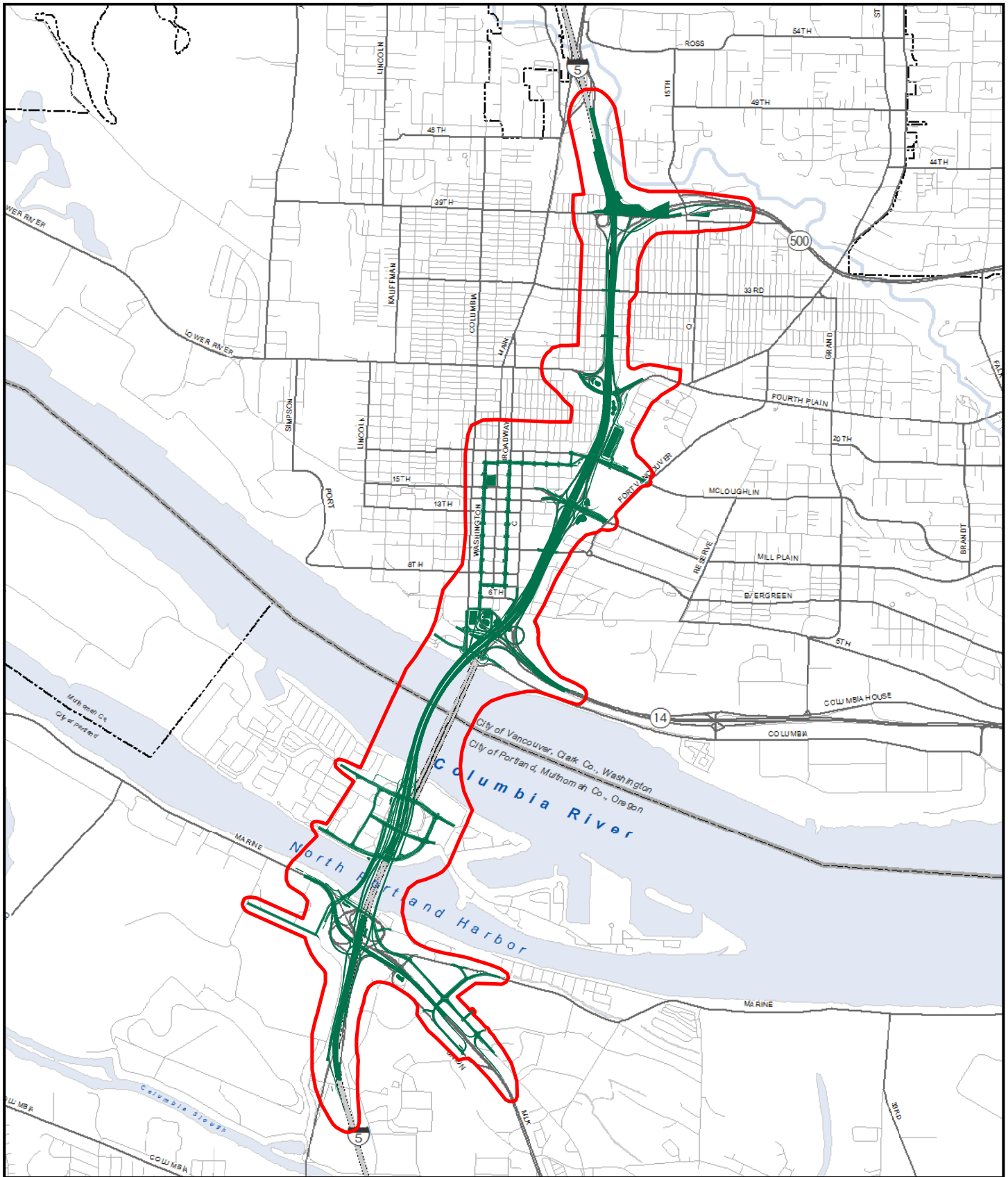
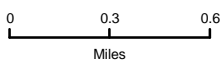


Exhibit 2-1. Primary Study Area



- Primary Study Area
- Project Footprint



The direct improvements occur along a 5-mile segment of I-5, between approximately SR 500 in Washington and Columbia Boulevard in Oregon, as well as in downtown Vancouver west and east of I-5. Temporary construction easements would occur directly adjacent to the improvements, while larger staging areas and casting yards could be located upstream or downstream of the I-5 bridges. The Ruby Junction Maintenance Facility is located in Gresham, Oregon, and is also included in the study area.

This report determines the potential for relocating displaced residences or businesses by exploring vacancy rates and other measures of availability throughout the project area. This information is reported by third party firms, such as Regional Multiple Listing Services, and is usually summarized for specific geographies, e.g., West Vancouver, downtown Vancouver, and North East Portland. For the purposes of this report, this information is reported for those geographies in the project area. A description of the boundary for each geography can be found with the vacancy rate information in Section 3, Affected Environment.

2.3 Effects Guidelines

This analysis addresses two types of direct impacts: the acquisition of additional right-of-way to construct the LPA and the potential displacement of the following types of uses:

- Residential
 - Single-family
 - Multi-family
- Commercial
 - Retail/Services
 - Office/Professional/Healthcare
 - Lodging
 - Parking
- Public Use
 - Public Service with Employees
 - Park/Historic Site/Museum
 - Religious/Community Center
 - School

The analysis considered permanent acquisition needs, as well as temporary acquisitions or displacements associated with construction easements and larger staging and casting areas.

The secondary impacts of acquisitions and displacements in relation to specific environmental conditions were assessed separately in the Land Use, Environmental Justice, Section 4(f), Neighborhoods, and Economics technical reports.

2.4 Data Collection Methods

Right-of-way estimates were developed by the CRC engineering team using computer aided design and drafting (CADD) drawings of the project. The engineering data provided the

approximate size and shape of permanent right-of-way requirements, permanent airspace and subsurface easements, and temporary construction easements. From this information, the project team estimated whether an impact would require only a portion of the parcel (a partial acquisition), or the entire parcel (a full acquisition), and whether an impact would displace the use of the property. The Washington and Oregon real estate teams¹ reviewed and concurred with the determinations of level of impact for each parcel and possibility of displacement. The CADD drawings and impact information were translated into a database using geographic information system (GIS) technology. Temporary construction easements, staging areas, and casting yards required to construct the LPA were also estimated.

2.4.1 Business and Residential Survey

Residents who were identified as being potentially displaced by the construction of the LPA were surveyed to determine the characteristics of the household and the occupancy status of the residence. This information was collected primarily for the Environmental Justice Technical Report, as well as to inform the Relocation Study that will be conducted by the two State real estate teams following the publication of the FEIS. Most surveys were distributed by mail, though some in downtown Vancouver were hand-delivered. The Ruby Junction surveys were completed via interview for a separate TriMet undertaking. The project team also worked with the impacted communities in multiple ways to encourage surveys to be returned. For example, special meetings were held to discuss the survey and property impacts, and, in some cases, additional surveys were sent or dropped off by hand. The information collected through these surveys provided this report with information about whether potentially displaced residences were single-family or multi-family homes, and whether the residences contained businesses as a primary or secondary use.

In addition to conducting a survey of displaced residents, businesses potentially displaced by the LPA were also surveyed. Information gathered in these surveys was primarily used to inform the Economics and Environmental Justice Technical Reports. The information also helped to confirm the existing uses of each displacement for this report.

For more information about how these surveying efforts were conducted, see the Environmental Justice Technical Report.

2.5 Analysis Methods

There were five basic steps in the property acquisition analysis. This section outlines the steps of data collection that were required for the analysis.

Potential cumulative effects of property acquisitions from past projects and the LPA are evaluated in the Cumulative Effects Technical Report. Please refer to this report for an evaluation of possible cumulative effects.

¹ The analysis of acquisitions in Washington, including those caused by highway, transit, and bicycle and pedestrian improvements, was completed by the WSDOT real estate team. WSDOT Real Estate will also perform the acquisitions for both WSDOT and C-TRAN. The analysis of acquisitions in Oregon, including those caused by highway, transit, and bicycle and pedestrian improvements, was completed by a consultant representing both ODOT and TriMet.

2.5.1 Step 1: Determine Right-of-Way Requirements

General requirements for right-of-way for the highway, transit, and bicycle and pedestrian components of the LPA² were determined by the project team. The engineering team determined the general dimensions of the required right-of-way by parcel to enable the project team to estimate the extent of the permanent impacts and determine the type of acquisition – full or partial acquisition of the parcel, with or without the displacement of the use – that may be required. The project team also identified the temporary construction easements that would be needed to construct the LPA, as well as a set of possible large staging areas and casting yards that could also be required depending on construction methods.

Project staff identified additional supporting facilities for the LPA, which are included in the footprint used in the acquisitions analysis. For example, arterial widening at interchanges, local street improvements, and transit maintenance facilities are included in the summary of acquisitions for the LPA.

2.5.2 Step 2: Identify Ownership and Land Use of Parcels

Tax assessors' records for Multnomah and Clark Counties, and other information gathered through contacts with local agency staff, property owners, and community meetings were used to determine the ownership and use of properties required for the LPA.

Public facilities potentially affected by the LPA were also identified during this step. Public facilities include offices, recreation centers, warehouse or storage buildings, parking lots, and parks, etc., operated and maintained by public agencies. This would include any public agency function housed on property leased from private parties. The location, type, and condition of any such facilities have been verified for this analysis.

2.5.3 Step 3: Verify Findings through Research, Field Investigation, and Surveys

To the extent possible, property information and impacts were verified through field investigation by the project team. The location and type of use of existing buildings and other improvements were checked. Notations were made concerning the operating characteristics of particular properties subject to acquisition. Additionally, properties identified as potentially having residential or business displacements were surveyed to determine use (e.g., multi-family versus single-family, number of businesses operating, etc.).

2.5.4 Step 4: Assess Mitigation Potential

Vacancy and rental rates of residential, commercial, and industrial properties are an indication of the potential for finding viable sites for relocating displaced residents and businesses. Higher vacancy rates generally indicate greater potential for relocating a displaced use to a location that is desirable to the property owner or tenants. The supply of homes for sale, average length of time that single-family homes are on the market prior to sale, and median single-family home sale price also indicate the potential for finding viable sites for relocating residents of single-family homes.

² The bicycle and pedestrian facilities associated with the main river crossing, alignment over Hayden Island, and the North Portland Harbor bridge are folded into the footprint of the transit component of the project. Bicycle and pedestrian improvements associated with interchanges are folded in the footprint of the highway component of the LPA.

Additionally, the project team strove to meet with all of the businesses that would likely be displaced by the LPA. The relocation potential of the displaced businesses was discussed at these meetings, with owners providing additional information about the specific operating characteristics of their business. This information was also used by the real estate teams to determine, for this report, whether successful relocation would be likely. A final determination will be made during the relocation planning process expected after the ROD.

2.6 Coordination

The CRC project team conducted extensive outreach to neighborhood groups, business groups, and other potentially affected parties, as summarized in the FEIS. Prior to publication of the Draft Environmental Impacts Statement (DEIS), property owners potentially affected by project alternatives were notified directly via mail, and six meetings specifically focused on potential right-of-way needs were held in September of 2007. Any property owner concerned about impacts to their property could contact the project team to either talk by phone or set up a meeting at the project office to discuss potential impacts, the property acquisition and relocation process, and schedule for property acquisitions, among other topics. As of November 2010, approximately 360 conversations with property owners have been conducted regarding potential right-of-way impacts, many of which were conducted in person. Additionally, right-of-way staff was on hand at every public open house to discuss these issues.

In preparation for the FEIS analysis, project staff conducted a survey of owners and tenants of residential properties potentially displaced by the LPA. This survey determined the characteristics of the households displaced and how each residence is used. The development and distribution of this survey required coordination with property owners, as well as floating home moorage management and boards. The process by which surveys were developed and distributed, as well as the follow-up activities that were undertaken to encourage a high rate of return, are described in detail in the Environmental Justice Technical Report.

Following the publication of the DEIS, the project formed working groups composed of public stakeholders to provide recommendations on design and alignment decisions for various components of the project. These groups, such as the Vancouver Working Group and Marine Drive Working Group, considered property impacts and potential residential and business displacements, among many other criteria, before making their recommendations. While these recommendations did not always support the design option with the least impact to property, they did identify important properties to avoid or provide options to minimize impacts. Project staff worked to incorporate these recommendations where feasible.

Project staff met with the Washington and Oregon Real Estate teams on a monthly basis to provide updates on changes in property requirements, discuss and coordinate the property acquisition process, and identify likely residential and business displacements. These discussions form the basis for much of this report.

Coordination meetings with both the Oregon Department of State Lands (DSL) and Washington State Department of Natural Resources (DNR) were held to identify the process by which the project would obtain permanent and temporary leases over and in the Columbia River and North Portland Harbor.

3. Affected Environment

3.1 Introduction

This section provides a brief overview of the affected environment. More detail regarding acquisitions, and the effects of acquisitions on neighborhoods, land use planning, and regional economics, is available in the Neighborhoods and Populations, Land Use, and Economics technical reports.

3.2 Regional Conditions

3.2.1 Regional Land Use

Oregon's statewide planning laws and Washington's Growth Management Act (GMA) agree on general principles of compact urban form, preservation of rural areas, use of urban growth boundaries, and multimodal transportation systems. The proposed project is near the core of a bi-state metropolitan area that functions largely as one economy and one housing market. Land supply is balanced with land needs. This balance is maintained through the growth management legislative processes in both states.

3.2.2 Existing Land Uses in Project Area

This section gives a very brief overview of the existing land uses in the project area, specifically those surrounding the proposed improvements. See the Land Use Technical Report for greater detail.

3.2.2.1 Oregon Mainland

The south end of the project area is surrounded by a large wetland mitigation site and large park on either side of I-5. There are a variety of uses surrounding the Marine Drive interchange, including marine businesses along North Portland Harbor, the Portland Exposition Center west of I-5, and lodging and small businesses on the east side. A small residential neighborhood is located further east of I-5.

3.2.2.2 Hayden Island

Hayden Island has a substantial amount of single- and multi-family residences, including floating home moorage communities on both sides of I-5 in North Portland Harbor. The Jantzen Beach SuperCenter is located on the west side of I-5, and includes retail in the mall itself, and big-box retail stores and restaurants in the surrounding area. Additional smaller retail and service businesses occur along I-5 outside of the mall property, and includes banks, gas stations, and restaurants, among other uses. The island's only grocery store, Safeway, is located on the east side of I-5. The vacant Thunderbird Hotel is located on the west side of I-5 along the Columbia River.

Hayden Island has completed a master planning process, which could result in proposed land use and business structure changes on the island. For more information about this plan, see the Land Use Technical Report.

3.2.2.3 Ruby Junction Maintenance Facility

The existing TriMet Ruby Junction Maintenance Facility is located in Gresham, Oregon and is surrounded by a mix of single-family residences and light industrial businesses. In many cases, these uses are combined on a single parcel.

3.2.2.4 Downtown Vancouver

In downtown Vancouver, south of McLoughlin Boulevard, the project area includes a mix of commercial, retail, and high-to-medium density residential development. A hotel is located on the Columbia River adjacent to I-5, as are two large restaurants. The Vancouver National Historic Reserve (VNHR), as well as large parks and public facilities, occur along the east side of I-5. Opposite the VNHR in downtown Vancouver is a 12-screen cinema, and the location of a proposed large multi-use development that will contain the Vancouver Public Library among other uses.

3.2.2.5 Upper Vancouver

McLoughlin Boulevard, west of I-5, is comprised by a mix of residential and office uses, with a number of business-to-residential conversions. A city-owned park and Clark College facilities surround the proposed transit terminus on McLoughlin Boulevard east of I-5. Clark College and the Veteran's Administration facilities are located directly north of McLoughlin Boulevard on the east side of I-5. North of these facilities and along the west side of I-5 north of McLoughlin and up to the SR 500 interchange, the area consists of primarily single-family residences. North of the SR 500 interchange is a Vancouver public middle school and a large city-owned park.

3.2.3 Residential, Commercial, and Industrial Vacancy Rates

Vacancy and rental rates of residential, commercial, and industrial properties are an indication of the potential for finding viable sites for relocating displaced residents and businesses. Higher vacancy rates generally indicate greater potential for relocating a displaced use to a location that is desirable to the property owner or tenants. The supply of homes for sale, average length of time that single-family homes are on the market prior to sale, and median single-family home sale price also indicate the potential for finding viable sites for relocating residents of single-family homes. The supply of homes on the market is calculated by dividing the Active Listings at the end of the month in question by the number of closed sales for that month.

3.2.3.1 Portland/Vancouver Area

In March 2011, the Portland area (including Oregon suburbs but excluding communities in Washington) had a 7.1 month supply of homes for sale and a year-to-date median home sale price of \$215,000. In the same month, Clark County had a 8.3 month home supply and a year-to-date median home sale price of \$190,000. Year-to-date median home prices, but not the supply of homes, are also available for smaller geographic areas for 2011, up to and including the month of March 2011. For the seven subareas relevant to the CRC project, year-to-date median sale prices and approximate locations are summarized in Exhibit 3-1.

Exhibit 3-1. Year-to-date Median Home Prices

Subarea	Year-to-date Median Sale Price	Northern Boundary	Western Boundary	Southern Boundary	Eastern Boundary
Downtown Vancouver	\$125,000	39th Street	Vancouver Lake	Columbia River	I-5
Lincoln – SW Hazel Dell	\$170,000	78th Street	Vancouver Lake	39th Street	I-5
SW Heights	\$252,300	Mill Plain Blvd	I-5	Columbia River	Andresen Blvd
NW Heights	\$104,400	SR 500	I-5	Mill Plain Blvd	Andresen Blvd
E Hazel Dell/ Minnehaha	\$141,800	78th Street	I-5	SR 500	Andresen Blvd
North Portland	\$190,000	Columbia River	Willamette River	Willamette River	Williams Ave
NE Portland ^a	\$217,000	Columbia River	Williams Ave	East Burnside	182nd Ave

Source: Regional Multiple Listing Service 2011.

a The "NE Portland" subarea includes Hayden Island east of I-5 and the Bridgeton Neighborhood on the south shore of the North Portland Harbor and east of I-5.

Industry reports for the first quarter of 2011 showed that West Vancouver, which includes the Vancouver portion of the project area, had a similar vacancy rate but lower costs per square foot for multi-family residential units than the North Portland/St. Johns area (Metro Multifamily Housing Association 2011). Despite having lower average costs per square foot when considering all multi-family residential units, rents for 1-bedroom/1-bathroom apartments are similar in West Vancouver than in North Portland/St Johns. These rates are listed in the Exhibit 3-2.

Exhibit 3-2. Portland/Vancouver Area Multi-family Vacancy and Rental Rates

Subarea	Vacancy Rates	Monthly Rental Rate per sq.ft.	Monthly Rental Rate for 1-bedroom Apt	Northern Boundary	Western Boundary	Southern Boundary	Eastern Boundary
West Vancouver ^a	3.8%	\$0.83	\$648.00	159th Street	Columbia River	Columbia River	117th Avenue
N Portland/ St. Johns ^b	3.6%	\$0.93	\$647.00	Columbia River	Willamette River	I-84	Williams Ave

Source: Metro Multifamily Housing Association 2011.

a Corresponds to zip codes 98660-98666, 98685, 98656, and 98668.

b Corresponds to zip codes 97203, 97217, 97227, and 97283.

Office space in the greater Portland/Vancouver metropolitan area is more available (14.4 percent vacancy rate) than either retail (6.3 percent) or industrial (8.9 percent) space (Norris, Beggs & Simpson 2011; Grubb & Ellis 2011). As shown in Exhibit 3-3, this is also true for the office, retail and industrial submarkets that overlap with the main project area.

Exhibit 3-3. Office, Retail, and Industrial Vacancy Rates

Subarea	Vacancy Rates	Monthly Office Space Rental Rates per sq.ft.		Northern Boundary	Western Boundary	Southern Boundary	Eastern Boundary
		Class A	Class B				
Office Space^a							
Portland-Vancouver	14.4%	\$24.68	\$19.59		Both Metropolitan areas		
Vancouver Central Business District/West Vancouver	10.4%	\$25.95	\$21.54	Burnt Bridge Creek Greenway	Columbia River	Columbia River	I-5
Retail Space^b							
Eastside Portland	3.6%	N/A	N/A	Columbia River	Willamette River	Northern Clackamas County/Milwaukie City Limits	1-205
Vancouver	8.2%	N/A	N/A	Northern Ridgefield/Battleground City Limits	Columbia River	Columbia River	Western Camas/Washougal City Limits
Industrial Space^c							
Portland-Vancouver	8.9%	N/A	N/A		Both Metropolitan areas		
NE/Columbia Corridor	8.3%	N/A	N/A	Columbia River	I-5	Burnside Street	Sandy River
Rivergate	8.9%	N/A	N/A	Columbia River/Willamette River	Willamette River	Lombard Street	I-5

a Grubb & Ellis Research, First Quarter 2011.

b Norris, Beggs & Simpson, First Quarter 2011.

c Grubb & Ellis Research, First Quarter 2011.

Retail vacancy information on a submarket level was also available from Norris, Beggs & Simpson, a market research firm. In the first quarter of 2011, the North Portland/Jantzen Beach submarket of the Eastside Portland Market experienced an estimated 6.4% vacancy rate while the Vancouver submarket of the larger Vancouver market experienced an estimated vacancy rate of 8.1%.

Industry research data show vacancy rates for office and retail in the region are now decreasing with recent gains in employment. Although industrial vacancy rates increased in the first quarter of 2011, industry research suggest that these vacancy rates will also decrease with expected improvements in the local economy (Grubb & Ellis 2011).

3.2.3.2 Floating Homes in North Portland Harbor, Portland, Oregon

The LPA will require the displacement of floating homes in the North Portland Harbor. Information regarding floating home availability in North Portland Harbor is not provided in the reports that informed the above discussion, though some information can be gleaned from the Regional Multiple Listings Service. A search of the active listings in April 2011 showed there

were approximately 109 housing units listed in the project area. Of that number, there were 40 floating homes, 38 condos, and 31 conventional homes. This does not include private listings.

3.2.3.3 Gresham, Oregon

TriMet’s Ruby Junction Maintenance Facility in Gresham, Oregon, will be expanded to accommodate the additional light rail vehicles required by the CRC and Portland-Milwaukie Light Rail projects. This expansion will result in the displacement of some residences and retail/services and industrial uses. As this area is relatively removed from the project area, an additional analysis of vacancy rates in this area is appropriate.

In the first quarter of 2011, industry reports showed a 3.8 percent multi-family residential vacancy rate for rentals in the Portland-Vancouver Metro Area with a rental rate averaging \$0.94 per square foot per month. Multi-family residential vacancy rates and rental rate averages are also available for the Gresham/Troutdale/Fairview/Wood Village subarea, within which the Ruby Junction Maintenance Facility is located. Two other subareas are within one-half of a mile of the maintenance facility, the Outer NE (Portland) and Outer SE (Portland) subareas. The boundaries of the subareas correspond to zip code boundaries. The average multi-family vacancy rates and rental rates for each subarea, as well as boundary information for each subarea, is included in Exhibit 3-4. As shown, multi-family units near Ruby Junction tend to have slightly higher vacancy rates, and lower rents per square foot, than found in the metro area as a whole.

Exhibit 3-4. Gresham, Oregon Multi-family Vacancy and Rental Rates

Subarea	Multi-family Average		Approximate Boundaries				
	Vacancy Rate	Rental Rate per sq.ft.	Zip Codes	Northern	Western	Southern	Eastern
Gresham	4.4%	\$0.81	97024, 97030, 97060, 97080	Columbia River	202nd Avenue	Clackamas County	Sandy River
Outer NE	4.5%	\$0.83	97220, 97230	Columbia River	82nd Avenue	Burnside Street	202nd Avenue
Outer SE	4.1%	\$0.87	97216, 97233, 97266, 97236	Burnside Street	82nd Avenue	Sunnyside Road	190th Avenue

Vacancy rates in the office market was 14.4 percent in the Portland-Vancouver area in the first quarter of 2011, with an estimated asking rent of \$23.09 per square foot for Class A office space and \$18.57 per square foot for Class B office space. Office vacancy rates and estimated asking rents are also available for the Eastside submarket, within which the Ruby Junction maintenance facility is located. In the first quarter of 2011, office vacancy rates in the Eastside submarket were 10.6 percent with an estimated asking rent of \$19.58 per square foot for Class A office space and \$16.23 per square foot for Class B office space. The boundary of the Eastside submarket is roughly I-84 (east of I-205) and Lombard Street (west of I-205) to the north; the Willamette River to the west; Clackamas County to the south; and unincorporated Multnomah County to the east. The Eastside submarket does not include Portland’s Lloyd District.

Retail vacancy rates in the Portland Metropolitan area were 6.3 percent in the first quarter of 2011. During this same period, vacancies were greater in the 122nd/Gresham Submarket where the Ruby Junction facility is located, at 8.1 percent. The 122nd/Gresham Submarket boundaries are the Columbia River to the north, I-205 to the west, the border of Multnomah and Clackamas

County in the south, and the east edge of the Gresham city limits. The vacancy rate in the Gresham portion of the 122nd/Gresham Submarket, where the Ruby Junction Maintenance Facility is located, is even higher, at 9.9 percent.

Industrial vacancy rates were 8.9 percent in the Portland-Vancouver area in the first quarter of 2011, with an estimated asking rent of \$0.41 per square foot per month for warehouse/distribution space and \$0.69 per square foot per month for research and development/flex space. Industrial vacancy rates and estimated asking rents are also available for the Gresham/Outer SE submarket, within which the Ruby Junction maintenance facility is located. In the first quarter of 2011, industrial vacancy rates were 7.7 percent with an estimated asking rent of \$0.40 per square foot per month for warehouse/distribution space. First quarter per square foot per month rental rate information for research and development/flex space was not available. The boundary of the Gresham/Outer SE submarket is roughly Burnside Street (west of 182nd Avenue) and I-84 (east of 182nd Avenue) to the north; 181st Avenue (north of Burnside Street) and I-205 (south of Burnside Street) to the west; the Multnomah and Clackamas County border to the south; and the region's urban growth boundary to the east.

In March 2011, single-family residences took an average of 147 days to sell, and had a median year-to-date sale price of \$174,900, in the Gresham/Troutdale subarea within which the Ruby Junction maintenance facility is located. The boundaries of the Gresham/Troutdale subarea is the Columbia River to the north; 182nd Avenue to the west; Highway 212 to the Mount Hood Highway, excluding Boring, and including Sandy to the south; and a line extending south from the Columbia River along Saltzman Road to Langensand Road at the Mount Hood Highway to the east.

4. Long-term Direct Effects

4.1 Introduction

The following sections describe the permanent property acquisitions and displacements required for the project improvements. New facilities could include the adjusted and widened highway alignment, new or widened local streets, new light rail alignment across Hayden Island and into downtown Vancouver, transit stations and park and rides, and new bicycle and pedestrian accesses and pathways. Property impacts are described for both Options A and B of the LPA, and are summarized by geography: Oregon Mainland, Hayden Island, Ruby Junction Maintenance Facility Expansion Area, Downtown Vancouver, and Upper Vancouver. These areas of property impacts do not differentiate between impacts caused by the various components of the project. A description of how the highway, transit, and bicycle and pedestrian components impact property can be found in the narrative below each table.

Additionally, acquisition of land, or space underground (subsurface), or in the air (airspace), could be required for the long-term maintenance of the new or improved facilities. These impacts could be a permanent acquisition, where the agency obtains complete ownership of the property, or a permanent easement, where the agency would obtain some rights to the land, subsurface, or airspace, but not ownership.

A list of all anticipated property acquisitions, including the parcel identification number, address, and primary use of each property, can be found in Appendix A of this report. Mitigation for these permanent impacts is discussed in Section 6.2.

As stated in Section 1.3, approximately 91.8 acres of property would be permanently acquired, including approximately 4.2 acres in permanent easements, for the construction and long-term operations and maintenance of Option A of the LPA. A total of 214 parcels would be permanently impacted by Option A, with 73 full acquisitions and 141 partial acquisitions. Option B would require slightly less property than Option A (91.1 acres), including approximately 4.5 acres in permanent easements. Option B would also impact fewer parcels – 202 total, with 73 fully acquired and 129 partially acquired.

4.2 Permanent Property Acquisitions and Easements

4.2.1 Oregon Mainland

Impacts summarized in this section include those between the southern terminus of the project at Victory Boulevard and the south shore of North Portland Harbor. The permanent acquisition of property would be required in this area to accommodate the reconstruction of the Marine Drive interchange, and the extension of light rail from its current terminus at Portland Exposition Center over North Portland Harbor. For Option A of the LPA, approximately 17.4 acres of property would need to be permanently acquired in this area, including 0.1 acre of permanent subsurface easement, impacting a total of 32 different parcels. Option B would be less impactful in this area, requiring 10.6 acres property acquisitions, including 0.1 acre of permanent subsurface easement and 0.3 acre of permanent property easement, impacting 22 different parcels.

These permanent property impacts are summarized in Exhibit 4-1 and are displayed in exhibits B-1a, B-1b, B-2a, B-2b, B-3a, and B-3b in Appendix B of this report.

Exhibit 4-1. Summary of Permanent Property Acquisitions and Displacements on the Oregon Mainland

Impact Type	Impact	LPA Totals ^{a,b}	
		Option A	Option B
Parcel Impacts (count)	Full Parcel Acquisitions	1	1
	Partial Parcel Acquisitions	31	21
	Total Parcels Impacted	32	22
Displacement of Use (count)	Residential Displacements		
	<i>Single-family</i>	3	3
	<i>Multi-family</i>	2	2
	Commercial Displacements		
	<i>Retail/Services</i>	4	4
	<i>Office/Professional/Healthcare</i>		
	<i>Lodging</i>		
	<i>Other^c</i>	1	1
	Public Use Displacements		
	<i>Public Service w/ Employees</i>		
<i>Religious/Community Center</i>			
<i>Park/Historic Site/Museum</i>			
<i>School</i>			
Permanent Easements (acres)	Airspace Easements		
	Subsurface Easements	0.1 acre	0.1 acre
	Property Easements		0.3 acre
Area required (acres)	Total Area Acquired	17.4 acres	10.6 acres

a Does not double- or triple-count parcel impacts, displacements, or total acreage, when more than one mode (highway, transit, or bicycle and pedestrian) result in the same or overlapping acquisition.

b Does not include ODOT-owned property or right-of-way or City-owned right-of-way.

c Includes a billboard at Marine Drive interchange.

Most of the permanent property impacts in this portion of the project area are due to the highway portion of project, specifically, the realignment of Marine Drive and the addition of local street connections near the Marine Drive interchange. These roadway improvements impact parcels on both sides of the interchange, and results in the displacement of some parking and the parking attendant booth at the Portland Exposition Center. The realignment of I-5 at the Marine Drive interchange and over North Portland Harbor results in the displacement of five businesses along the harbor, including four marine businesses, two east of I-5 and two west of I-5, and one billboard.

The transit alignment over North Portland Harbor would result in the displacement of one floating home associated with the parcel adjacent to and west of I-5. The remaining portion of this parcel, not impacted by transit, would be permanently acquired for the highway alignment, which would displace a single-family home on land and two additional floating homes in the harbor. The single-family home consists of two separate households. A total of five households would be displaced in this portion of the project area. See Exhibit D-1 in Appendix D to locate those parcels where these displacements occur.

Option A and Option B would not differ in the displacements they would require, but Option A would require more property from the Portland Exposition Center parcel for the realignment of Expo Road, and from industrial and residential properties on the east side of the interchange due to a different design of local street connections in this area.

Permanent subsurface easements would be required for both options on both sides of I-5 near bridge abutments. These subsurface easements would be required in order to decrease the seismic vulnerability of the structures by mechanically stabilizing the below-ground sediments, a method referred to as ground improvements. Once construction is complete, the property owner would regain access to the areas above the subsurface easements, but would be prevented from certain activities in these areas, such as excavating below a certain depth. In addition to permanent subsurface easements, a property easement for the location and operation of a local road connection through TriMet property would also be required in this area, though not necessarily on the same parcels.

Most of the bicycle and pedestrian facilities in this area would be associated with the transit alignment and the local roadway improvements, both of which require permanent property impacts. The option of connecting the Bridgeton Trail to the Marine Drive interchange would require additional property acquisition at a parcel already impacted by highway improvements.

An ODOT-owned parcel currently leased by a marine business along North Portland Harbor would need to be used for local street connections and the transit alignment. The marine business would no longer have access to the parcel for the storage and staging that the parcel is currently used for.

Permanent easements would need to be obtained from the DSL for any permanent structures in the North Portland Harbor.

Differences in property acquisitions with the LPA with highway phasing: If construction of the Victory Braid ramp were delayed, a 0.2 acre permanent acquisition of TriMet property would be deferred.

4.2.2 Hayden Island

Impacts summarized in this section include those on Hayden Island and associated portions of North Portland Harbor. The permanent acquisition of property would be required in this area to accommodate the reconstruction of the Hayden Island interchange and the extension of light rail over Hayden Island. For Option A of the LPA, approximately 42.2 acres of property would need to be permanently acquired in this area, including 0.3 acre of permanent subsurface easement, impacting a total of 42 different parcels. Option B would require more permanent property acquisitions on Hayden Island (48.3 acres), including slightly more in permanent subsurface easement (0.4 acre), from fewer parcels overall (40 parcels).

These permanent property impacts are summarized in Exhibit 4-2 and are displayed on exhibits B-4a, B-4b, B-5a, and B-5b in Appendix B of this report.

Exhibit 4-2. Summary of Permanent Property Acquisitions and Displacements on Hayden Island

Impact Type	Impact	LPA Totals ^{a,b}	
		Option A	Option B
Parcel Impacts (count)	Full Parcel Acquisitions	20	20
	Partial Parcel Acquisitions	22	20
	Total Parcels Impacted	42	40
Displacement of Use (count)	Residential Displacements		
	<i>Single-family</i>	32	32
	<i>Multi-family</i>		
	Commercial Displacements		
	<i>Retail/Services</i>	33	34
	<i>Office/Professional/Healthcare</i>	4	4
	<i>Lodging</i>		
	<i>Other^c</i>	2	2
	Public Use Displacements		
	<i>Public Service w/ Employees</i>	1	1
<i>Religious/Community Center</i>			
<i>Park/Historic Site/Museum</i>			
<i>School</i>			
Permanent Easements (acres)	Airspace Easements		
	Subsurface Easements	0.3 acre	0.4 acre
	Property Easements		
Area required (acres)	Total Area Acquired	42.2 acres	48.3

a Does not double- or triple-count parcel impacts, displacements, or total acreage, when more than one mode (highway, transit, or bicycle and pedestrian) result in the same or overlapping acquisition.

b Does not include ODOT-owned property or right-of-way or City-owned right-of-way.

c Includes two cellular phone towers.

Property impacts on Hayden Island are due in large part to the realignment of I-5 over the Island, as well as the reconstruction of N Jantzen and N Hayden Island Avenues and extension of N Tomahawk Island Drive. Option B would require more property than Option A due to different right-of-way assumptions on the Jantzen Beach SuperCenter parcel (i.e., Option B proposes to acquire all area permanently, while Option A indicates that some could be acquired only temporarily), and a different alignment of N Jantzen Drive.

The roadway improvements for either option would result in the displacement of all the 17 retail/service businesses and the ODOT Permit Center currently located between I-5 and N Center Avenue, as well as a restaurant, cigar shop, and a mailing service business at the south end of the island. A bank, car wash, and gas station on the east side of I-5 may also be displaced by similar improvements. In this same area, Option A would displace one fast-food restaurant, while Option B would displace two, due to a differing alignment of N Jantzen Drive between the two options. The Safeway grocery store, and adjacent restaurant and cellular array, would also be displaced due to the redesign of the Hayden Island interchange, which is shifted slightly to the east to accommodate the retention of the existing bridges over North Portland Harbor. The displacement of an inflatable marine craft business along N Jantzen Avenue would be required to accommodate the redesign of N Jantzen Drive.

The light rail alignment, in combination with the highway realignment, would displace an office supply store and restaurant from the Jantzen Beach SuperCenter property, as well as a small complex of four retail/services at the intersection of N Hayden Island Drive and N Center Avenue.

Twelve of the 32 residential displacements on Hayden Island would be from Row 9 of the Columbia Crossings Jantzen Bay moorage in North Portland Harbor east of I-5. Two of the homes were identified by survey as also containing businesses that would be displaced, as would an additional floating home in this moorage that is used solely for a business. The westernmost ramp access to the moorage would also be eliminated, though no floating homes would remain in this moorage following construction.

The remaining 20 residential displacements on Hayden Island would occur at rows A, B, and the east side of row C in the Jantzen Beach Moorage, Inc. located in North Portland Harbor west of I-5. Additionally, one marine consulting business located in one of the displaced floating homes and two businesses and a cell phone tower located on the upland parcel associated with the Jantzen Beach Moorage would also be displaced. The highway alignment would also eliminate the Jantzen Beach Moorage's eastern access point. All traffic would have to be re-routed to the western end of the property, and a vehicle turn-around would be constructed to allow traffic to navigate this narrow parcel. In addition to the floating homes displaced from North Portland Harbor, eight boathouses (e.g., shelters for boat storage) would also be displaced, some of which contain seasonal apartments.

The vacant Thunderbird Hotel would need to be partially demolished to accommodate the construction of the I-5 bridges. See exhibits D-1, D-2, and D-3 in Appendix D to locate those parcels where the displacements discussed above occur.

Subsurface easements would be required for ground improvements on the site of the vacant Thunderbird Hotel, the Jantzen Beach Moorage, Inc.-owned upland parcel, and the Safeway store property. For a description of ground improvements, see Section 4.2.1.

Permanent easements would need to be obtained from the DSL for any permanent structures in the North Portland Harbor or the Columbia River.

4.2.3 Ruby Junction Maintenance Facility Expansion Area, Gresham, OR

Impacts summarized in this section include those located at TriMet's Ruby Junction Maintenance Facility in Gresham, Oregon. The permanent acquisition of property would be required in this area to expand the existing maintenance facility to accommodate the additional light rail vehicles generated by the LPA and the Portland-Milwaukie Light Rail Project in Oregon. Approximately 10.5 acres of property would need to be permanently acquired in this area impacting a total of 15 different parcels. Impacts of Option A and Option B would be the same in this area.

These permanent property impacts are summarized in Exhibit 4-3 and are displayed on Exhibit B-6 in Appendix B of this report.

Exhibit 4-3. Summary of Permanent Property Acquisitions and Displacements at Ruby Junction Maintenance Facility Expansion Area in Gresham, OR

Impact Type	Impact	Total ^{a,b}
Parcel Impacts (count)	Full Parcel Acquisitions	14
	Partial Parcel Acquisitions	1
	Total Parcels Impacted	15
Displacement of Use (count)	Residential Displacements	
	<i>Single-family</i>	9
	<i>Multi-family</i>	
	Commercial Displacements	
	<i>Retail/Services</i>	8
	<i>Office/Professional/Healthcare</i>	
	<i>Lodging</i>	
	<i>Other</i>	
	Public Use Displacements	
	<i>Public Service w/ Employees</i>	
	<i>Religious/Community Center</i>	
	<i>Park/Historic Site/Museum</i>	
<i>School</i>		
Permanent Easements (acres)	Airspace Easements	
	Subsurface Easements	
	Property Easements	
Area required (acres)	Total Area Acquired	10.5 acres

a Does not double- or triple-count parcel impacts, displacements, or total acreage, when more than one mode (highway, transit, or bicycle and pedestrian) result in the same or overlapping acquisition.

b Does not include ODOT-owned property or right-of-way or City-owned right-of-way.

Surveys conducted of the impact area indicated that nine single-family residences and eight light industrial businesses would be displaced as a result of the expansion.

See Exhibit D-4 in Appendix D to locate those parcels where the displacements discussed above occur.

4.2.4 Downtown Vancouver

Impacts summarized in this section include those from the Columbia River north to 17th Street, though not including impacts on 17th Street. The permanent acquisition of property would be required in this area to accommodate the reconstruction of the SR 14 and Mill Plain interchanges, the realignment of I-5 between those two interchanges, the construction of the Columbia Park and Ride, and the extension of light rail through downtown Vancouver. Approximately 11.7 acres of property would need to be permanently acquired in this area, including 0.9 acre of permanent airspace easement and less than 0.1 acre of property easement and subsurface easement, impacting a total of 54 different parcels. Impacts of Option A and Option B would be the same in this area.

These permanent property impacts are summarized Exhibit 4-4 and are displayed on exhibits B-7, B-8, B-9, and B-10 in Appendix B of this report.

Exhibit 4-4. Summary of Permanent Property Acquisitions and Displacements in Downtown Vancouver

Impact Type	Impact	Total ^{a,b}
Parcel Impacts (count)	Full Parcel Acquisitions	32
	Partial Parcel Acquisitions	22
	Total Parcels Impacted	54
Displacement of Use (count)	Residential Displacements	
	<i>Single-family</i>	
	<i>Multi-family</i>	2
	Commercial Displacements	
	<i>Retail/Services</i>	5
	<i>Office/Professional/Healthcare</i>	11
	<i>Lodging</i>	1
	<i>Other</i>	
	Public Use Displacements	
	<i>Public Service w/ Employees</i>	1
	<i>Religious/Community Center</i>	
	<i>Park/Historic Site/Museum</i>	
	<i>School</i>	
Permanent Easements (acres)	Airspace Easements	0.9 acre
	Subsurface Easements	Less than 0.1 acre
	Property Easements	Less than 0.1 acre
Area required (acres)	Total Area Acquired	11.7 acres

a Does not double- or triple-count parcel impacts, displacements, or total acreage, when more than one mode (highway, transit, or bicycle and pedestrian) result in the same or overlapping acquisition.

b Does not include WSDOT owned property or right-of-way or City-owned right-of-way.

Property impacts in downtown Vancouver are due in large part to the touch-down of the I-5 bridges over the Columbia River at the SR 14 interchange. The realignment of the bridge as it comes down to grade in Vancouver would result in the displacement of a hotel, and associated parking, on the Columbia River, as well as require the acquisition of permanent airspace rights over the Burlington Northern Santa Fe (BNSF) railway berm that parallels the river.

The bicycle and pedestrian facility located in the northbound (east) bridge will exit the structure at this location, spiraling down to Columbia Way and displacing the Clark Public Utilities Energy Conservation Office located in the southeast quadrant of the I-5/SR 14 interchange.

The reconstruction of the SR 14 interchange would require small permanent property acquisitions at the Old Apple Tree Park and VNHR. A permanent airspace easement and permanent property easement would be required at both locations, respectively, for the ongoing maintenance of SR 14 ramps. Additionally, the placement of the SR 14 eastbound to City Center exit at 4th and Columbia Streets would result in the displacement of a car repair business and electrician's business.

The construction of the Columbia Park and Ride would require the displacement of 11 professional offices that provide a variety of services in the fields of law, engineering, construction, architecture, land use, and energy, as well as a food cooperative. Most of these are very small professional offices located in one building.

As light rail moves out from beneath the replacement bridge to touch down on Washington Street, it would require the acquisition of permanent airspace rights over the BNSF berm, and permanent property acquisitions from the hotel and nearby parcels. Additional property would be permanently required for the Mill Park and Ride located between Washington Street and Main Street at 15th Street. This facility would permanently require six parcels currently being used as a paid parking lot. See Exhibit D-5 and D-6 in Appendix D to locate those parcels where the displacements discussed above occur.

Automobile access (i.e., driveways) to properties along the transit alignment through downtown Vancouver may be eliminated or modified. Accesses along the east side of Washington Street and the west side of Broadway between 7th and 17th Streets would be eliminated, as would accesses on the west side of Washington between 5th and 6th Streets. Most, but not all properties with such access impacts, have alternate access points on side streets that would allow the property to continue to function with little to no modification. Several properties have been identified as not having such alternate access nor is there an immediately obvious way to mitigate for this loss of access to these nine properties. One of these properties houses a funeral home that could be displaced, along with two apartments located in the building, as the business would no longer be able to function without access onto Broadway Street. Additionally, existing circulation within a bank parking garage and drive-thru teller would prevent it from functioning after the loss of the two access points on Washington unless some workaround were to be identified. The remaining properties would lose access to parking lots or garages, but these impacts would not likely result in the displacement of any businesses or residences.

Accesses located on the west side of Broadway Street would be modified to right-in-right-out only once the street is converted to one-way traffic. As Washington Street is already a one-way street, no changes in access are anticipated on the east side of the street (i.e., automobiles would still be limited to right-in-right out movements). Additionally, accesses on 7th Street between Washington and Broadway Streets would be converted to right-in-right-out to accommodate the center-running light rail track.

The highway realignment between the SR 14 and Mill Plain interchanges would require permanent partial acquisition from properties containing an apartment building and cinema on the west side of I-5, though the acquisitions would not result in the displacement of either use. Subsurface easements would also be required from both properties for the construction of a retaining wall. East of this location on the opposite side of I-5, additional permanent property acquisitions would be required from the VNHR and FHWA Western Federal Lands, though no uses would be displaced. Further north, past the Mill Plain interchange, property would need to be permanently acquired from Marshall Community Center and Park to accommodate the construction of a ramp connecting the Mill Plain and Fourth Plain interchanges.

WSDOT would extend access limitations near the I-5/SR 14 interchange to limit the number of access points located close to the new facilities. Many access points could increase the likelihood of safety hazards and traffic congestion which could overwhelm the project improvements soon after construction. Access control would be extended for 100 to 300 feet along C Street, Columbia Street, and 5th Street, and would not impact any existing private access points. Limits on the construction of new or relocation of existing access points would also be in place in these areas. Access into a City of Vancouver parking lot on 5th Street would be limited to one access, compared to the two existing. But, the project is planning to acquire this lot and use it to mitigate nearby parking impacts.

Waterway leases would need to be obtained from the DNR for any permanent structures in the Columbia River.

4.2.5 Upper Vancouver

Impacts summarized in this section include those occurring on 17th Street and McLoughlin Boulevard to the northern terminus of the project area, defined for the purposes of this report as Upper Vancouver. The permanent acquisition of property would be required in this area to accommodate the reconstruction of the Fourth Plain and SR 500 interchanges, the realignment of I-5 between these two interchanges, and the extension of light rail along I-5 to the new Clark Park and Ride. Approximately 10.0 acres of property would need to be permanently acquired in this area, including 2.7 acres of permanent subsurface easements. A total of 71 different parcels would be impacted.

These permanent property impacts are summarized Exhibit 4-5 and are displayed on exhibits B-10, B-11, B-12, B-13, and B-14 in Appendix B of this report.

Exhibit 4-5. Summary of Permanent Property Acquisitions and Displacements in Upper Vancouver

Impact Type	Impact	Total ^{a,b,c}
Parcel Impacts (count)	Full Parcel Acquisitions	6
	Partial Parcel Acquisitions	65
	Total Parcels Impacted	71
Displacement of Use (count)	Residential Displacements	
	<i>Single-family</i>	9
	<i>Multi-family</i>	
	Commercial Displacements	
	<i>Retail/Services</i>	
	<i>Office/Professional/Healthcare</i>	
	<i>Lodging</i>	
	<i>Parking</i>	
	Public Use Displacements	
	<i>Public Service w/ Employees</i>	
<i>Religious/Community Center</i>		
<i>Park/Historic Site/Museum</i>		
<i>School</i>		
Permanent Easements (acres)	Airspace Easements	
	Subsurface Easements	2.7 acres
	Property Easements	
Area required (acres)	Total Area Acquired	10.0 acres

- a Does not double- or triple-count parcel impacts, displacements, or total acreage, when more than one mode (highway, transit, or bicycle and pedestrian) result in the same or overlapping acquisition.
- b Does not include WSDOT-owned property or right-of-way or City-owned right-of-way.
- c Property impacts described in this table assume a 17th Street transit alignment. See the below discussion for a description of how property acquisitions would differ with the McLoughlin transit alignment.

Permanent property impacts in Upper Vancouver are due in large part to the necessary widening of 17th Street and McLoughlin Boulevard to accommodate light rail and the new Clark Park and Ride. The 17th Street transit alignment would require the displacement of five single-family homes where the light rail track must cross over from 17th Street to McLoughlin Boulevard immediately west of I-5.

The Clark Park and Ride would acquire an entire parcel currently owned by Clark College, as well as a passive portion of the Clark College Recreational Fields. A building used for athletic

storage by Clark College would be displaced by this acquisition. See Exhibit D-6 and D-7 in Appendix D to locate those parcels where the displacements discussed above occur.

Property would need to be permanently acquired from Marshall Community Center, Luepke Senior Center, and Marshall Park to accommodate the construction of a highway ramp connecting the Mill Plain and Fourth Plain interchanges, and to accommodate the widened cross-section of McLoughlin Boulevard at Fort Vancouver Way. A small permanent acquisition would be required from the parcel that the Veteran's Administration is located on to accommodate the widening of Fourth Plain; no uses would be displaced. Properties located further north at the west and east ends of the 29th and 33rd Streets overpasses would be impacted by small permanent property acquisitions for reconstruction of these overpasses and associated sidewalks. Additionally, all residential properties on the east side of I-5 from 26th Street to 33rd Street, and on the west side of I-5 from 31st Street to 37th Street, and then north of 39th Street, would be impacted by permanent subsurface easements for the construction of a retaining wall. Four residences located between 31st and 32nd, 33rd and 34th, and 35th and 36th Streets on the west side of I-5 would be displaced due to severe access restrictions that result from the placement of a ramp from SR 500 or direct building impacts from retaining wall construction. See Exhibit D-7 in Appendix D to locate those parcels where the displacements discussed above occur.

North of the SR 500 interchange, the parcel occupied by the Discovery Middle School would be impacted by a minor permanent property acquisition and a larger subsurface easement for the construction of a retaining wall. On the opposite side of I-5, property would have to be permanently acquired from Leverich Park for the construction of the SR 500 westbound to I-5 northbound elevated ramp.

WSDOT would also institute access control on the western end of the 39th Street overpass to limit the number of access points located close to the new facility. Access control would extend 100 feet in all directions from the intersection of 39th Street and H Street. Existing accesses in this area would remain, but the construction of future access points would not be allowed.

Differences in property acquisitions with the LPA with highway phasing: The property acquisitions at Leverich Park would be avoided by deferring the construction of the north legs of the SR 500/I-5 interchange as recommended under highway phasing.

5. Temporary Effects

5.1 Introduction

The following sections describe the temporary acquisitions required to construct the highway, transit, and bicycle and pedestrian features of the LPA. These temporary acquisitions could be obtained via easement or lease, where the project would obtain certain rights, such as the right to access or store materials on the property, but not ownership of the property. There are three types of temporary acquisitions that will likely be required: construction easements, staging areas, and casting yards. Mitigation for these temporary impacts is discussed in Section 6.3.

Construction easements include areas directly along the highway, transit, and bicycle and pedestrian improvements that could be temporarily acquired from adjacent properties for construction access and limited storage. These construction easements could be on land, underground (subsurface), or in the air (airspace), depending on construction needs, and are typically determined by putting a standard buffer of 5- to 15-feet along all improvements.

Construction easements are included in Appendix A, Comprehensive List of all Property Acquisitions and Easements. For the purposes of this analysis, the next two types of temporary impacts are not included in Appendix A. A selection of potential large staging areas and casting yards has been identified for analysis in the FEIS. This selection of sites presents a reasonable range of sites that could feasibly be employed for the construction of the LPA. Any one or more of these sites may be chosen by a contractor to complete the construction of the LPA. It is also possible that a contractor could choose a site that has not been identified in this analysis. If this were to occur, the contractor would be responsible for the necessary environmental evaluation and permitting.

Staging areas include areas outside of the state or city right-of-way that could be temporarily acquired to store materials or equipment, stockpile soil, or provide employee parking or temporary construction offices, among other things. The project would likely require at least one staging area greater than 15-acres in size, and could include property adjacent to or separate from the improvements. It is likely that there will also be smaller staging areas within the interstate right-of-way, specifically at the SR 14 and Mill Plain interchanges, that are not included in acquisition requirements.

Casting yards include areas outside the state or city right-of-way that could be temporarily acquired for pre-casting of concrete segments for construction of the bridge and ramp structures. This area would require barge access, in addition to road and/or rail access, and could also be used for storage of materials or equipment.

5.2 Temporary Construction Easements

5.2.1 Oregon Mainland

In order to accommodate the construction of the southern end of the project, a temporary construction easement would need to be acquired from 28 parcels, totaling 1.9 acre with Option A, and from nine parcels, totaling 1.1 acres with Option B. Option A involves a different local street configuration in the Bridgeton Neighborhood (east of I-5), requiring more temporary

acquisitions from more parcels than in Option B. Both options would require temporary construction easements from East Delta Park.

Please see Exhibit C-1a and C-1b in Appendix C for maps showing these temporary property impacts by parcel.

5.2.2 Hayden Island

To accommodate the construction of the Hayden Island interchange, associated local roadway improvements, and the extension of light rail over Hayden Island, temporary construction easements would need to be acquired from 15 parcels, totaling approximately 8.1 acres from commercial properties east of I-5 for Option A. Option B would require 3.1 acres of temporary construction easements from 6 parcels.

Please see exhibits C-2a, C-2b, and C-3 in Appendix C for maps showing these temporary property impacts by parcel.

5.2.3 Ruby Junction Maintenance Facility Expansion Area, Gresham, OR

No additional land, outside of the permanent property impacts, is expected to be required for the expansion of the Ruby Junction Maintenance Facility.

5.2.4 Downtown Vancouver

Approximately 2.8 acres from 63 parcels would need to be temporarily acquired to accommodate the construction of the bridge landing in downtown Vancouver, retaining walls along I-5, and reconstruction of sidewalks along the transit alignment from where the light rail touches down and on north to McLoughlin Boulevard. Additionally, a vacant parcel on Washington Street currently owned by the City of Vancouver would be temporarily acquired as a materials staging location for the construction of light rail.

Please see exhibits C-4, C-5, C-6, and C-7 in Appendix C for maps showing these temporary property impacts by parcel.

5.2.5 Upper Vancouver

Approximately 4.0 acres from 94 parcels would need to be temporarily acquired to accommodate the reconstruction of sidewalks, the construction of the terminal transit station and park and ride on McLoughlin east of I-5, as well as the construction of retaining walls along I-5 and ramps associated with the SR 500 interchange.

Please see exhibits C-8, C-9, C-10, C-11, and C-12 in Appendix C for maps showing these temporary property impacts by parcel.

5.3 Temporary Staging Areas

Three sites have been identified as possible major staging areas. See Appendix E for maps of these sites.

Port of Vancouver site: This 52 acre site is along SR 501 and near the Port of Vancouver's Terminal 3 North facility. Most of the property has an asphalt concrete surface. For staging purposes, any improvements would most likely be on top of this surface and would not extend

beyond the boundaries of the property. Activities could consist of material storage, material fabrication, equipment storage and repair, and temporary buildings.

Red Lion Hotel site in Vancouver: This 2.6 acre site would be partially acquired as a result of this project, requiring the demolition of most of the building on this site. As such, it could make an ideal staging area due to its proximity to construction, large size, access to the river, and because the project may already need to acquire the entire parcel. This site could be used for staging materials and equipment, and some small fabrication. Temporary buildings such as trailers or other mobile units could be used as construction offices.

Vacant Thunderbird Hotel site on Hayden Island: This 5.6 acre site is much like the Red Lion hotel site in that a large portion of the parcel is required for new right-of-way necessary for the LPA. It is also a relatively large parcel and adjacent to the river and the construction zone. The same types of activities could occur on this site as on the Red Lion hotel site.

One or more of these sites could be temporarily acquired or leased for the construction of the LPA. A site may be obtained by the state DOT, or, if a contractor chooses to use a different site, they would become responsible for obtaining the site and conducting all environmental evaluation and permitting necessary to use the site.

5.4 Temporary Casting Yards

Two sites have been identified as possible major staging areas, one of which could be temporarily acquired or leased for the construction of the LPA. See Appendix E for a map of these sites.

Alcoa/Evergreen West site: This 95 acre site was previously used as an aluminum factory. The western portion of this site, which is best suited for a casting yard, currently contains two large settling ponds that would have to be worked around. However, long-term plans call for acquisition of nearby land and relocation of these ponds. A barge slip would need to be constructed into the existing bank for loading of precast sections. In addition, the property would require grading, drainage and surfacing work to support the materials and equipment needed for a casting yard.

Sundial site: This 50 acre site is between Fairview and Troutdale, just north of the Troutdale Airport, and has direct access to the Columbia River. Recently, it has been used by Gresham Sand and Gravel as an aggregate quarry.

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6. Proposed Mitigation for Adverse Effects

6.1 Introduction

Mitigation for property acquisitions, easements, and displacements includes compensation for the property acquired and relocation assistance for displaced residents or businesses. This analysis does not report how each individual property owner or tenant will be compensated for the impacts to their property, or how or where residences and businesses will be relocated. Compensation and relocation assistance is determined individually and depends in large part on the property appraisal. As this information is currently unknown, vacancy rates, housing supply, and median prices are used in the following sections to assess the potential for relocating displaced residences and businesses. Specific compensation and benefit packages are also unknown. However, the process by which compensation for property acquired and relocation assistance would be provided is outlined below.

After the issuance of the ROD, the project team must, by law, produce a Relocation Plan that contains a detailed analysis of available replacement properties and means for providing replacement housing for and residential occupants displaced by the project. This plan must be reviewed and approved by the Federal Transit Administration (FTA) before the project team will be authorized to acquire property. Similar review and approval is not required of the Federal Highway Administration (FHWA), per DOT written guidance. Once this authorization is given, affected property owners would be notified that the project is planning to acquire their property and the process discussed below will begin.

After property acquisition funding is achieved, the acquiring agency will appraise the property needed for construction of the LPA. The appraiser will contact the property owners directly, and give them an opportunity to accompany them during the appraisal inspection. During this time, relocation agents will contact and interview any occupants or business owners who would be displaced by the required property acquisition to determine the individual needs of each displacee. Once the appraisal and the relocation study are complete, the agent will provide the property owner with a written offer for purchase of the property. If the owner or a tenant were to be displaced from the property, they would also receive the summary of relocation benefits available. The displaced occupants would not have to move from the property for at least 90 days from the date of the Notice of Eligibility for relocation benefits, or 30 days after payment for the property, whichever is later, and will have sufficient time to consider the offer. During this time the relocation agent will be working with the displaced occupant or business and providing relocation assistance (e.g., helping to find a replacement home or business).

6.2 Proposed Mitigation for Long-term Adverse Effects

During the planning and LPA refinement process, the project engineers have attempted to avoid and minimize potential acquisition impacts by selecting less impactful design options, modifying highway and transit alignments, and shifting highway and transit alignments. These changes were made to minimize acquisition needs and to avoid undesirable building and access impacts.

Most aspects of mitigation for property acquisition and residential and business relocations are addressed by federal and state regulations, which require that property be purchased at fair market value and that all residential displaces be provided decent, safe, and sanitary replacement housing. Federal and state guidelines, such as the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended), determine the standards and procedures for providing such replacement housing, based on the characteristics of individual households.

Relocation assistance usually includes replacement housing for owners and renters, moving costs, and assistance in locating replacement housing. Similarly, relocation assistance for businesses includes moving costs, site search expenses and business re-establishment expenses. In general, attempts are made to minimize relocation impacts to residences, businesses, and public facilities. Additionally, because the project straddles two states and multiple city and county jurisdictions, the project team will work to reduce or eliminate possible discrepancies between the state and local practices on acquisition and relocation activities. During this process, the team will also strive to ensure uniformity and equity to all affected owners and occupants.

The U.S. General Services Administration may be involved in any property acquisition related to the acquisition of federally-owned property, such as the property owned by FHWA Western Federal Lands. Additionally, the acquisition of property owned by the US Army, such as that near the SR 14 interchange, would require consultation with the Defense Base Closure and Realignment Commission (BRAC).

6.2.1 Relocation: Residential Properties

As illustrated in Section 3, housing is available throughout the Portland-Vancouver metropolitan area, including Gresham. Although the nine single-family residential displacements that would occur in Vancouver are located in an area (identified in the RMLS as “downtown Vancouver”) with a lower median sale price than greater Clark County, the greater area has an 8.3 month supply of homes. The nine residential displacements that would occur in Gresham, Oregon are located in an area with where single-family residences took an average on 147 days to sale, and had a year-to-date median-sale price lower than that of the Portland metro area. It is reasonable to assume that there will be sufficient relocation possibilities for residents who would be affected by the proposed project, with the possible exception of some of the residents of floating homes on Hayden Island.

Based on the current design of the LPA, up to 35 floating homes in the Portland Harbor would be displaced. Floating homes will be treated as real property unless it is determined there are sufficient replacement sites to which the floating homes can be economically relocated. If the Relocation Study determines that sufficient replacement sites are not available, the floating homes will be purchased at fair market value and the occupants will be provided relocation assistance which may include payments, if necessary, to acquire decent, safe and sanitary replacement housing. As mentioned in Section 3.2.3, a search of the active listings in April 2011 showed there were approximately 109 housing units listed in the project area. Of that number, there were 44 floating homes, 38 condos, and 31 conventional homes. This does not include private listings. Considering that some of the occupants will choose to leave the project area, it appears there is a sufficient supply of replacement housing in the project area.

6.2.2 Relocation: Commercial Properties

Up to 70 businesses would be displaced by the LPA. Nearly two-thirds of these displacements would occur on Hayden Island. As mentioned above, Hayden Island has completed a master planning process, which could result in proposed land use and business structure changes on the

Island. It is not known if this redevelopment will occur prior to the construction of the LPA. Though there are multiple vacant buildings on the Island, including those in and around the Jantzen Beach SuperCenter, the Island is limited in its capacity to support the 39 to 40 businesses that would be displaced by the LPA. As a result, many of these businesses may have to find replacement locations outside the project area.

The displacement of the Safeway store may prove most challenging to mitigate. The CRC project may suggest replacement sites for this business, but it is entirely up to the store owners to choose their replacement location, if any. Safeway store officials have indicated that it would be difficult for the store to relocate to another site on Hayden Island or in the Delta Park area, because of the lack of available sites. They may be able to locate a replacement store in either the North Portland area or South Vancouver. Alternately, Safeway, Inc. may choose to remodel or expand existing stores in Vancouver or Portland, which would not directly serve residents of Hayden Island.

In addition to the Safeway store displacement, up to six of the additional displaced businesses on Hayden Island are large chain restaurants. Considering the unique and desirable interchange location, it is likely that some of the chains will be able to reestablish on Hayden Island, or nearby. However, many of the small restaurants and taverns will not be able to find replacement sites on or near Hayden Island. The LPA may displace one of the two existing banks on Hayden Island. It is possible that this bank could be relocated to a stand-alone replacement site on Hayden Island or as a tenant of the Jantzen Beach Supercenter.

The marine businesses displaced from the south shore of North Portland Harbor may be difficult to relocate, given the limited waterfront space available and the necessary in-water infrastructure needed to support these businesses. These businesses may have to relocate to available sites farther upstream or downstream on the Columbia, or on the Willamette River.

A billboard and two cellular arrays, considered individual businesses, would be displaced by the LPA. Cell towers and outdoor advertising signs are relocated under the Uniform Act as personal property. It is likely that the cellular arrays will need to be replaced in the immediate area to maintain cell service for the area. Cellular arrays are usually relatively easy to relocate. Because of visual restrictions a replacement array may need to be camouflaged or disguised. It may be possible to relocate the outdoor advertising sign to the remainder parcel. If not locating a replacement site may be problematic. Restrictive zoning makes it difficult to find a replacement site with comparable traffic exposure. However, the sign company should be able to relocate the permit to another location in the Metropolitan area.

Given the current vacancy rates in the Vancouver area as described in Section 3, it is reasonable to assume that replacement properties could be found the retail/services and professional offices displaced by the LPA in Vancouver. The potential relocation of the large hotel and conference center may be more challenging to mitigate potential impacts. Once the final design is approved the potential mitigation measures will be discussed in more detail.

Eight light-industrial businesses would be displaced by the Ruby Junction Maintenance Facility expansion. Though there is available replacement industrial property in the Gresham area, as indicated in Section 3, many of these businesses are also associated with residences either sharing the same building or located nearby. Relocation assistance will be provided to assist the owners in a search for suitable residential/industrial properties. However, some of these displacees may have to locate in separate residential and commercial sites.

6.2.3 Relocation: Public Use Properties

The displacement of the ODOT permit center could be mitigated by functionally replacing the property acquired with another facility that would provide equivalent utility. Providing functional replacements could occur in lieu of paying the fair market value of the property. It is assumed that the Clark Public Utilities Energy Conservation Office would be provided relocation assistance in a similar fashion as displaced businesses.

6.2.4 Access impacts

Property owners would be compensated for the permanent closure of one or multiple access points to their property, if the resulting damages cannot be cured by modifying the property or access to it. The value of this compensation would be determined during the appraisal process by comparing the value of the property with and without these access point(s). Restrictions on the development of future additional access points, as would occur under access control, would not be compensable if the existing access and use are determined by appraisal to be the highest and best use for the property. The modification of access points from unrestricted to right-in-right-out only would not be compensable, unless the deed explicitly states that the property owner has the right to full, unrestricted access.

6.3 Proposed Mitigation for Adverse Effects during Construction

Mitigation for temporary effects will apply for those properties where construction easements are required, or where large staging areas or casting yards are located.

Mitigation for construction easements could include payment to property owners in exchange for the use of their property during construction. For example, one method for compensation would be to pay the equivalent of a “rental” based on the property appraisal. Temporary or permanent impacts to improvements on-site, due to temporary construction uses, are compensated according to fair-market or contributory value.

Potential mitigation related to access issues would also be needed for the project. Construction of the LPA could block access or make access to some locations difficult. The provision of continued access to properties during construction would be maximized to the extent possible.

7. Permits and Approvals

7.1 Federal

FTA has to review and approve a Relocation Plan prepared for the CRC project before the acquiring agencies are authorized to begin acquiring right-of-way. Similar review and approval is not required of the Federal Highway Administration (FHWA), per DOT written guidance.

7.2 State

The authority to grant easement rights to the Columbia River in Washington is held by the DNR. An easement for portions of the Columbia River would be required for placement of the new I-5 bridge structures. The Columbia River has been designated a Harbor Area by the Washington State Harbor Line Commission. Any uses, other than those related to navigation and commerce, such as a highway facility, must obtain approval from the Harbor Lines Commission. Project staff will have to work with the DNR to conduct a “Public Place” process, for which public hearings are required, to gain this approval.

Potential DSL or other Oregon state agency permits/approvals would be needed to locate highway piers in North Portland Harbor or Columbia River.

7.3 Local

Temporary street vacations or easements may be needed from local jurisdictions to accommodate the construction of the LPA.

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