

INTERSTATE 5 COLUMBIA RIVER CROSSING

Parks and Recreation Technical Report for the Final Environmental
Impact Statement



May 2011



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Cover Sheet

Interstate 5 Columbia River Crossing

Parks and Recreation Technical Report for the Final Environmental Impact Statement:

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ACRONYMS

Acronym	Description
ALEA	Aquatic Lands Enhancement Account
API	Area of potential impact
BFP	Boating Facility Program
BNSF	Burlington Northern Santa Fe Railroad
CD	collector distributor
CRC	Columbia River Crossing
C-TRAN	Clark County Public Transportation
CTR	Commute Trip Reduction (Washington)
dBA	A-weighted decibel
DEIS	Draft Environmental Impact Statement
DOI	Department of the Interior
DOT	U.S. Department of Transportation
ECO	Employee Commute Options (Oregon)
FEIS	Final Environmental Impact Statement
FHWA	Federal Highway Administration
FLP	Federal Lands to Parks
ft.	foot/feet
FTA	Federal Transit Administration
GSA	General Services Administration
HBC	Hudson Bay Company
I-5	Interstate 5
l.f.	linear feet
LCREP	Lower Columbia River Estuary Partnership
LCRWT	Lower Columbia River Water Trail
LGGP	Local Government Grant Program
LPA	Locally Preferred Alternative
LRV	Light rail vehicle
LWCF	Land and Water Conservation Fund
MAX	Metropolitan Area Express
NAVD88	North American Vertical Datum 1988
NEPA	National Environmental Policy Act
ODOT	Oregon Department of Transportation
OPRD	Oregon Parks and Recreation Department
PDC	Portland Development Commission
PP&R	Portland Parks and Recreation
RCO	Washington Recreation and Conservation Office
ROD	Record of Decision

RTC	Regional Transportation Commission
SEPA	Washington State Environmental Policy Act
SPUI	single-point urban interchange
SRFB	Salmon Recovery Funding Board
TDM	transportation demand management
TriMet	Tri-county Metropolitan Transportation District
TSM	transportation system management
UGB	Urban Growth Boundary
VCPRD	Vancouver-Clark Park and Recreation Department
VNHR	Vancouver National Historic Reserve
VSD	Vancouver School District
WFL	Western Federal Lands
WSDOT	Washington Department of Transportation
WTC	Washington Transportation Commission

1. Summary

1.1 Introduction

This report provides an evaluation of the potential long-term and temporary direct effects of the proposed Interstate 5 (I-5) Columbia River Crossing (CRC) Locally Preferred Alternative (LPA; see section 1.2 for description) on parks and recreation resources. The analysis is based on conceptual design for the LPA that was selected following the public comment period for the Draft Environmental Impact Statement (DEIS). This report focuses on park and recreation resources that are open to the public, which could include school facilities, wildlife refuges, interpretative and community centers, etc., in addition to traditional open space parks. In addition, this technical report analyzes any potential effects (long-term or temporary) to major recreational events in the project area as a result of the LPA.

The two overall questions guiding this analysis are:

- Will the LPA have any long-term direct effects on existing or planned future public parks or recreation areas, or events?
- Will any public parks or recreation areas, or events be affected temporarily during construction of the LPA?

Effects to park or recreation areas could include permanent or temporary acquisition of land, airspace or subsurface easements, permanent or temporary changes in access, changes to the visual quality to or from the resource, and modified noise levels, air quality, and/or water conditions.

Potential cumulative effects from this project are evaluated in the Cumulative Effects Technical Report. Potential indirect effects to park and recreation resources resulting from changes in land use are discussed in the Indirect Effects Technical Report.

This analysis was developed to comply with National Environmental Policy Act (NEPA) and the Washington State Environmental Policy Act (SEPA) and will be used, in addition to the Historic Built Environment Technical Report and Archaeology Technical Report, to inform the Final Section 4(f) Evaluation.

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 Methods

The project team collected data for this report in phases, the methods of which are described in greater detail in Chapter 2 of this report. The project team reviewed information on parks and recreational resources with the City of Vancouver, Clark County, City of Portland, National Park Service (NPS), and published research. Windshield surveys were conducted and initial existing conditions analyses prepared of a large area called the area of potential impact (API). This provided a broad basis from which to identify parks and recreational resources in the project area.

The project team surveyed the primary APE by mapping, photographing, and describing each resource. The parks and recreation resources team compared the information gathered regarding recreational resources with project maps and potential right-of-way acquisitions to determine what resources could be affected.

For a complete discussion of data gathering and analytical methods, please refer to Chapter 2 of this report.

1.4 Long-term Direct Effects

Under the No-Build Alternative there would be no planned acquisition of parks or recreation resources. There are no specific or known long-term direct effects, uses or occupancy of recreational resources. However, the No-Build Alternative would result in substantial traffic congestion along the I-5 corridor. The increased traffic would impede the ability of community members to access and/or enjoy their park and recreation resources. Remedial and short-term roadway system improvements developed in response to increased congestion could result in loss of park property. Large events such as the Wine and Jazz Festival, Hot July Nights, Uptown Village Street Festival, Vancouver Farmers Market, and Hoops on the River would continue to have limited traffic and transit access, particularly from Portland. Connections between the Marine Drive and Waterfront Renaissance Trails would not be improved and bicycle and pedestrian paths on the river crossing would remain narrow and considerably less accessible.

A summary of long-term direct effects to park and recreation resources and activities as a result of constructing either option of the LPA, or the potential phased construction option of the LPA, is described below and are discussed in more detail in Section 4, Long-term Direct Effects, of this technical report.

Exhibit 1-3. Summary of Potential Long-term Direct Effects to Park and Recreation Resources

Resource	Location	Description of Facilities	Description of Effect from Locally Preferred Alternative		Alternatives 2 and 3	Alternatives 4 and 5
			Option A	Option B	Replacement Crossing	Supplemental Crossing
Kiggins Sports Fields and Stadium	North of 39th Street, west of I-5, Vancouver	3.0-acre sports venue for Vancouver Public Schools and public	Acquires less than 0.1 acre portion of parcel used to access fields and additional 0.3 acre of subsurface easement in same area. Temporary occupancy of less than 0.1 acre.	Same as Option A	Relocate 50 linear ft. of trail; up to 0.4 acre landscaped area.	Relocate 50 linear ft. of trail; up to 0.4 acre landscaped area.
Burnt Bridge Creek Trail	N of SR 500 interchange Vancouver	5.0-mile paved multi-use trail	No long-term direct effect.	Same as Option A	Same as LPA	Same as LPA
Leverich Community Park	39th and M Street Vancouver	30.0-acre regional park with disc golf course, picnic areas	0.3 acre of parkland permanently acquired; trees displaced.	Same as Option A	0.3 acre of park border, berms and landscaping. Airspace over park entrance road.	0.2 acre of park border, berms and landscaping. Airspace over park entrance road. Impacts are deferred
Leach Neighborhood Park	28th and K Streets Vancouver	0.25-acre neighborhood park with play equipment	No long-term direct effect.	Same as Option A	Same as LPA	Same as LPA
Clark College Recreation Fields	1500 East Mill Plain Vancouver	14.0-acre community park used by Clark College and public with soccer fields, baseball fields, tennis courts	1.0 acre of passive recreational border permanently acquired, trees displaced; change in views.	Same as Option A	0.1-acre strip of landscaped area adjacent to Clark College recreation fields. Also 1.2-acre strip with portions of ball field, batting cage, park path, grass field.	1.2-acre strip with portions of ball field, batting cage, park path, grass field.
Marshall Community Center, Luepke Senior Center, and Marshall Park	1009 E McLoughlin Boulevard Vancouver	19.0-acre community park and community center with community garden, play equipment, fields, gym, senior center	0.6 acre of park buffer along I-5 and landscaped parcel corner permanently acquired; 1 parking space, 4 horseshoe pits and trees displaced.	Same as Option A	1.2-acre strip of landscaped passive recreation area adjacent to parking and fields. Could displace up to 3 horseshoe courts.	1.2-acre strip of landscaped passive recreation area adjacent to parking and fields. Could displace up to 3 horseshoe courts.

Resource	Location	Description of Facilities	Description of Effect from Locally Preferred Alternative		Alternatives 2 and 3	Alternatives 4 and 5
			Option A	Option B	Replacement Crossing	Supplemental Crossing
Esther Short Park	W Columbia and 8th Streets Vancouver	5.0-acre community park with event pavilion, play equipment, fountain, Bell Tower and glockenspiel	No long-term direct effect.	Same as Option A	Same as LPA	Same as LPA
Vancouver Landing at Terminal One	River mile 106 on north shore of the Columbia River	Public transient moorage facility/dock, amphitheater	Substantial change in easterly views; no impact to recreational use expected.	Same as Option A	Same as LPA	Same as LPA
Discovery Historic Loop Trail (includes portion of Waterfront Trail)	Columbia River Waterfront, VNHR Downtown Vancouver	2.3-mile trail on paved multi-use paths and local streets	Possible realignment of up to 450 l.f. of Waterfront Park/Trail.	Same as Option A	Same as LPA	Same as LPA
Memory/Mill Plain Park	Mill Plain Boulevard east of I-5	14.0-acre park with little league baseball and soccer fields	No long-term direct effect.	Same as Option A	No long-term direct effect.	No long-term direct effect.
Vancouver National Historic Reserve (VNHR)	Between Columbia River and Mill Plain Boulevard east of I-5	366.0-acre congressionally established culturally significant landscape, historic interpretive sites and replica structures, multi-use trails, confluence land bridge	1.8 acres of cultural and recreational landscape permanently acquired or in permanent easement along Vancouver Barracks, FHWA and Army property, and in Village area.	Same as Option A	Acquires 1.76 to 2.70 acres of park land; possible impacts to Federal Lands Building and a storage garage owned by Army.	0.31 acre of park land and buffer between VNHR and I-5. No building displacements.
Old Apple Tree Park (in VNHR)	112 Columbia Way Vancouver	1.3-acre community park with possibly oldest apple tree in the Pacific Northwest, entrance to confluence land bridge	Less than 0.1 acre airspace rights permanently acquired by easement; no long-term direct effect on Heritage Apple Tree.	Same as Option A	Same as LPA	Same as LPA
Waterfront Renaissance Trail (part of Discovery Historic Loop Trail)	115 Columbia Way Vancouver	4.0-mile long, 14.0-ft wide, shared-use concrete trail	Possible realignment of up to 450 l.f. of Waterfront Park/Trail.	Same as Option A	Same as LPA	Same as LPA
Waterfront Park (in VNHR)	115 Columbia Way Vancouver	5.0-acre regional park with recreational park shoreline, public plaza/view areas, Boat of Discovery monument	0.4 acre of parkland permanently acquired; displacement of Waves Plaza and Boat of Discovery Monument.	Same as Option A	Same as LPA	Same as LPA
Lewis and Clark National Historic Trail	Columbia River	Recreational waterway	Reduced navigational hazard with reduced number of in-water piers.	Same as Option A	Same as LPA	Same as LPA

Resource	Location	Description of Facilities	Description of Effect from Locally Preferred Alternative		Alternatives 2 and 3 Replacement Crossing	Alternatives 4 and 5 Supplemental Crossing
			Option A	Option B		
Lower Columbia River Water Trail (LCRWT)	Columbia River	146.0-mile recreational waterway from Bonneville Dam to Pacific Ocean	Reduced navigational hazard with reduced number of in-water piers.	Same as Option A	Same as LPA	Same as LPA
Lotus Isle Park	N Tomahawk Island Drive Portland	Paved paths, picnic tables, playground	No long-term direct effect.	Same as Option A	Same as LPA	Same as LPA
Marine Drive multi-use trail	I-5 to Kelley Point Park	5.0-mile paved multi-use path that connects to Marine Drive Interchange and North Portland Harbor bridges	Improved connections within and to Marine Drive interchange; widening existing sidewalks along Marine Drive and portion of trail as it widens onto North Portland Harbor Levee. 130 l.f. of trail will be temporarily closed, demolished and rebuilt in the same location.	Same as Option A	Same as LPA	Same as LPA
Bridgeton Trail (planned)	Between I-5 and N Bridgeton Road along river levee	Planned multimodal trail connection linking N Bridgeton Road to I-5	No long-term direct effect. LPA could provide connection from CRC improvements to planned trail.	Same as Option A	Same as LPA	Same as LPA
East Delta Park	N Denver and MLK Jr. Boulevard Portland	85.0-acre neighborhood/regional park, softball and soccer fields, control-line flying field, sand volleyball courts, playground, and off-leash area on ODOT property	No long-term direct effect to Park property. Approx. 1.0 acre of off-leash area located in ODOT ROW permanently acquired.	Same as Option A	Same as LPA	Same as LPA

1.5 Temporary Effects

The No-Build Alternative would not result in any known temporary impacts to park and recreation resources in the project area during construction. A summary of the temporary effects constructing either option of the LPA, or the potential phased construction option of the LPA is described in Exhibit 1-4.

1.6 Proposed Mitigation

Mitigation for certain impacts would be dictated by local, state, and federal regulation, with specific requirements associated with converting parkland for transportation use, removing trees, protecting trees during construction, relocating public art, constructing noise mitigation, and other actions. Additional mitigation measures are proposed that are not prescribed by government regulation but attempt to address the concerns of the local park jurisdictions whose properties are being affected. These could include:

- The CRC project includes constructing the Evergreen Community Connector. The City of Vancouver initiated a Community Connector Design Competition in order to develop a design for a LID across the Interstate facility immediately south of the Evergreen Boulevard crossing. The result was a compelling design for a pedestrian crossing at Evergreen. An exhibit showing the winning design is provided as part of the Visual Technical Report for the CRC FEIS. The change would be generally positive. The design has already been modified based on adopted engineering standards, and with the intent of avoiding the impacts related to the ventilation of tunnels. While the Evergreen Community Connector is not proposed as mitigation for impacts to VNHR, design of the top of the LID provides opportunities for mitigation during construction and landscaping.
- Work with the City of Vancouver to utilize vacated state right-of-way beneath the existing I-5 bridge landings in Vancouver, to include this area as an expansion of Waterfront Park as part of the Historic Vancouver Waterfront project. Also provide access across new state right-of-way beneath the new bridge alignment, in order to provide a connection between the expanded Waterfront Park and future waterfront uses west of the new bridge as envisioned in City plans and Vancouver Waterfront Vision. Replant displaced trees in the same or similar location to serve the same function as those removed. Explore different ways to replace the lost function served by the trees.
- Mitigate for loss of off-street parking via restriping the existing parking lot or developing a shared-use agreement for park visitor use of the proposed Clark College Park and Ride or other suitable options that provide sufficient parking capacity and proximity to facilities.
- Restore landscaping to original condition following construction and protect remaining trees close to construction areas.
- Provide adequate signage for any limited or closed access points and detour routes. Adopt a public information campaign for some of the longer closures.
- Maintain safety for bicyclists and pedestrians traveling on trails and between facilities with temporary enclosures, additional signage and lighting, etc.

Additionally, the Final Section 4(f) Evaluation in the FEIS includes more detailed mitigation measures for a number of the impacted park and recreation facilities.

Exhibit 1-4. Summary of Potential Temporary Effects to Park and Recreation Resources

Resource	Location	Description of Facilities	Description of Effect from Locally Preferred Alternative		Alternatives 2 and 3 Replacement Crossing	Alternatives 4 and 5 Supplemental Crossing
			Option A	Option B		
Kiggins Sports Fields/Stadium	North of 39th Street west of I-5 Vancouver	3.0-acre sports venue for Vancouver Public Schools and public	0.07 acres temporarily acquired by easement for construction. Construction-related noise, vibration with retaining wall installation.	Impacts are deferred	Same as LPA	Same as LPA
Burnt Bridge Creek Trail	N of SR 500 interchange Vancouver	5.0-mile paved multi-use trail	Construction-related noise beneath and around I-5 overcrossing.	Impacts are deferred	Same as LPA	Same as LPA
Leverich Community Park	39th and M Streets Vancouver	30.0-acre regional park with disc golf course, picnic areas	1.26 acre temporarily acquired by easement for construction; potential temporary closures to 39th St access, alternate access is available.	Impacts are deferred	Same as LPA	Same as LPA
Leach Neighborhood Park	28th and K Streets Vancouver	0.25-acre neighborhood park with play equipment	No temporary effect.	Same as Option A	Same as LPA	Same as LPA
Clark College Recreation Fields	1500 East Mill Plain Boulevard Vancouver	14.0-acre community park used by Clark College and public with soccer fields, baseball fields, tennis courts	0.20 acre temporarily acquired by easement for transit construction.	Same as Option A	Same as LPA	Same as LPA
Marshall Community Center, Luepke Senior Center, and Marshall Park	1009 E McLoughlin Boulevard Vancouver	19.0-acre community park and community center with community garden, play equipment, fields, gym, senior center	0.55 acre temporarily acquired by easement for transit construction and realignment of accesses; 30-40 parking spaces temporarily displaced.	Same as Option A	Same as LPA	Same as LPA
Esther Short Park	W Columbia and 8th Streets Vancouver	5.0-acre community park with event pavilion, play equipment, fountain, Bell Tower and glockenspiel	Potential delays accessing big events during construction.	Same as Option A	Same as LPA	Same as LPA
Vancouver Landing at Terminal One	River mile 106 on north shore of the Columbia River	Public transient moorage facility/dock, amphitheater	Construction-related noise.	Same as Option A	Same as LPA	Same as LPA
Discovery Historic Loop Trail (includes portion of Waterfront Trail)	Columbia River Waterfront, VNHR Downtown Vancouver	2.3-mile trail on paved multi-use paths and local streets	Closure at Evergreen Boulevard (9 to 12 months) will require detour; construction-related noise, vibration, dust associated predominately with I-5 bridge construction.	Same as Option A	Same as LPA	Same as LPA

Resource	Location	Description of Facilities	Description of Effect from Locally Preferred Alternative		Alternatives 2 and 3 Replacement Crossing	Alternatives 4 and 5 Supplemental Crossing
			Option A	Option B		
Memory/Mill Plain Park	Mill Plain Boulevard east of I-5	14.0-acre park with little league baseball and soccer fields	No temporary effects expected, except for possible minor delays in access during Mill Plain Interchange construction.	Same as Option A	Same as LPA	Same as LPA
Vancouver National Historic Reserve (VNHR)	Between Columbia River and Mill Plain Boulevard east of I-5	366.0-acre congressionally established culturally significant landscape, historic interpretive sites and replica structures, multi-use trails, confluence land bridge	0.17 acre temporarily acquired by easement; construction-related noise, vibration, dust.	Same as Option A	Potential for use to 0.54 acre of temporary construction easements.	Potential for up to 0.13 acre of temporary construction easements.
Old Apple Tree Park (in VNHR)	112 Columbia Way Vancouver	1.3-acre community park with possibly oldest apple tree in the Pacific Northwest, entrance to confluence land bridge	Demolition and construction of elevated SR-14 interchange ramps 5 to 10 feet away from Heritage Apple Tree.	Same as Option A	Same as LPA	Same as LPA
Waterfront Renaissance Trail (part of Discovery Historic Loop Trail)	115 Columbia Way Vancouver	4.0-mile long, 14.0-ft. wide, shared-use concrete trail	Construction-related noise, vibration, dust primarily beneath bridge landing.	Same as Option A	Same as LPA	Same as LPA
Waterfront Park, (in VNHR)	115 Columbia Way Vancouver	5.0-acre regional park with recreational park shoreline, public plaza/view areas, Boat of Discovery monument	Construction-related noise, vibration, dust for parts of park closest to bridge landing.	Same as Option A	Same as LPA	Same as LPA
Lewis and Clark National Historic Trail	Columbia River	Recreational waterway	Construction of near shore piers would impede movement of small recreational boats, such as kayaks, canoes, and waverunners.	Same as Option A	Same as LPA	Same as LPA
Lower Columbia River Water Trail (LCRWT)	Columbia River	146.0-mile recreational waterway from Bonneville Dam to Pacific Ocean	Construction of near shore piers would impede movement of small recreational boats, such as kayaks and canoes.	Same as Option A	Same as LPA	Same as LPA
Lotus Isle Park	N Tomahawk Island Drive Portland	Paved paths, picnic tables, playground	No temporary effect.	Same as Option A	Same as LPA	Same as LPA
Marine Drive multi-use trail	I-5 to Kelley Point Park Portland	5.0-mile paved multi-use path that connects to Marine Drive Interchange and North Portland Harbor bridges	Detour though Marine Drive interchange and at connections to trail on North Portland Harbor Levee.	Same as Option A	Same as LPA	Same as LPA

Resource	Location	Description of Facilities	Description of Effect from Locally Preferred Alternative		Alternatives 2 and 3 Replacement Crossing	Alternatives 4 and 5 Supplemental Crossing
			Option A	Option B		
Bridgeton Trail (planned)	Between I-5 and N Bridgeton Road along river levee	Planned multimodal trail connection linking N Bridgeton Road to I-5	No temporary effect to Bridgeton Trail, though connections to and through Marine Drive interchange would be detoured.	Same as Option A	Same as LPA	Same as LPA
East Delta Park	N Denver and MLK Jr. Boulevard Portland	85.0-acre neighborhood/regional park, softball and soccer fields, control-line flying field, sand volleyball courts, playground	Less than 0.1 acre temporarily acquired by easement for construction; grass and landscaping damaged.	Same as Option A	Same as LPA	Same as LPA

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2. Methods

2.1 Introduction

This section identifies the approach for data collection and impacts analysis used to identify effects to park and recreation resources. Impacts caused by the LPA were determined for those resources within the study area, in coordination with federal, local, and state agencies. Park and recreation resources could be affected by temporary or permanent acquisitions resulting from LPA Option A or B, or the potential phased construction option, as well as temporary or permanent changes in noise, vibration, views, air quality, traffic, or access.

Potential cumulative effects from this project are evaluated in the Cumulative Effects Technical Report. Potential indirect effects to park and recreation resources resulting from changes in land use are discussed in the Indirect Effects Technical Report. Both of these reports can be found as electronic appendices to the FEIS.

2.2 Study Area

The area most likely to experience direct impacts from right-of-way acquisition or construction and operation of the LPA includes the direct footprint of improvements, as well as temporary construction easements, staging areas, and maintenance areas adjacent to or separated from the project footprint (Exhibit 2-1). Most physical project changes would occur in this area, though mitigation could occur outside of it.

Temporary effects may be subject to the differing temporary use and occupancy allowances provided in Section 4(f) of the 1966 Department of Transportation (DOT) Act, Section 6(f)(3) of the Land and Water Conservation Fund Act, and similar state regulations or guidance, variously depending on duration and impact magnitude of “use” or “occupancy,” among other criteria.

2.3 Effects Guidelines

Publicly owned parks and recreational lands, as well as planned facilities, that are within the project area and accessible to the public are included in this analysis.

The magnitude of adverse effects to parks and recreation areas (such as trails) was determined by evaluating the degree to which the LPA would impact the resources with respect to acreage, changes in access, and enjoyment of the resource functions. Factors considered typically included:

- The size of the use relative to the overall size of the resource (e.g., acres of a park or linear feet (l.f.) of a recreational trail).
- The type of occupancy (e.g., using an edge of a property rather than dividing it).
- The effect of removing compared to altering the context surrounding a structure or use area.
- The rate of occupancy of unused or highly used portions of the resource.

Increased traffic volumes, changes in traffic routes and patterns, changes in noise levels, changes in views or air quality, access restrictions or improvements, or changes in vibration could affect park and recreation resources. This analysis relied on the Noise and Vibration, Traffic, Visual and Aesthetics, Water Quality and Hydrology, and Air Quality technical reports to identify these impacts.

The opinion of the federal, state, or local official having jurisdiction is also an important consideration in determining impacts resulting from the project. The ultimate determination of magnitude of effect is made by FHWA and FTA, or NPS, in the case of parks funded by the Land and Water Conservation Fund (LWCF) or the Federal Lands to Parks program (FLP).

2.4 Data Collection

Data collection for this report was conducted in two stages due to the project size and complexity, and builds off of work done for the Park and Recreation Technical Report prepared for the CRC Draft Environmental Impact Statement (May 2008).

2.4.1 Stage I

Project staff collected basic information regarding the character of the resources and important features within the resource (such as individual park features) that might be affected by the project. Supplemental field investigations were conducted to refine information. Staff contacted local officials having jurisdiction over the recreational resources to obtain information about the character of the sites.

Project staff contacted the Oregon Parks and Recreation Department (OPRD), Vancouver-Clark Parks and Recreation Department (VCPRD), the Washington Recreation and Conservation Office (RCO), and the Portland Parks and Recreation Bureau (PP&R) to identify the funding sources of park and recreational sites in the project. Funds received from programs such as the LWCF, the Local Government Grant Program (LGGP) and County Opportunity Grant Program (COGP) in Oregon, or Washington state programs such as the Washington Wildlife and Recreation Program (WWRP) or the Aquatic Lands Enhancement Account (ALEA), are subject to the protection procedures associated with each of these programs. Information about the grant and the availability of potential replacement properties meeting the requirements of the respective regulations was requested from the local official having jurisdiction over any park or recreational property.

2.4.2 Stage II

Stage II involved more focused research of park and recreation resources affected by the LPA. For the Stage II analysis, project staff:

- Incorporated new information provided by public and agency comments made on the DEIS.
- Conducted detailed consultation with the National Park Service (NPS) and other local park jurisdictions.
- Mapped sites with specific use areas in each park or recreation area (e.g., access points, playgrounds, etc.).
- Conducted additional site visits as necessary.

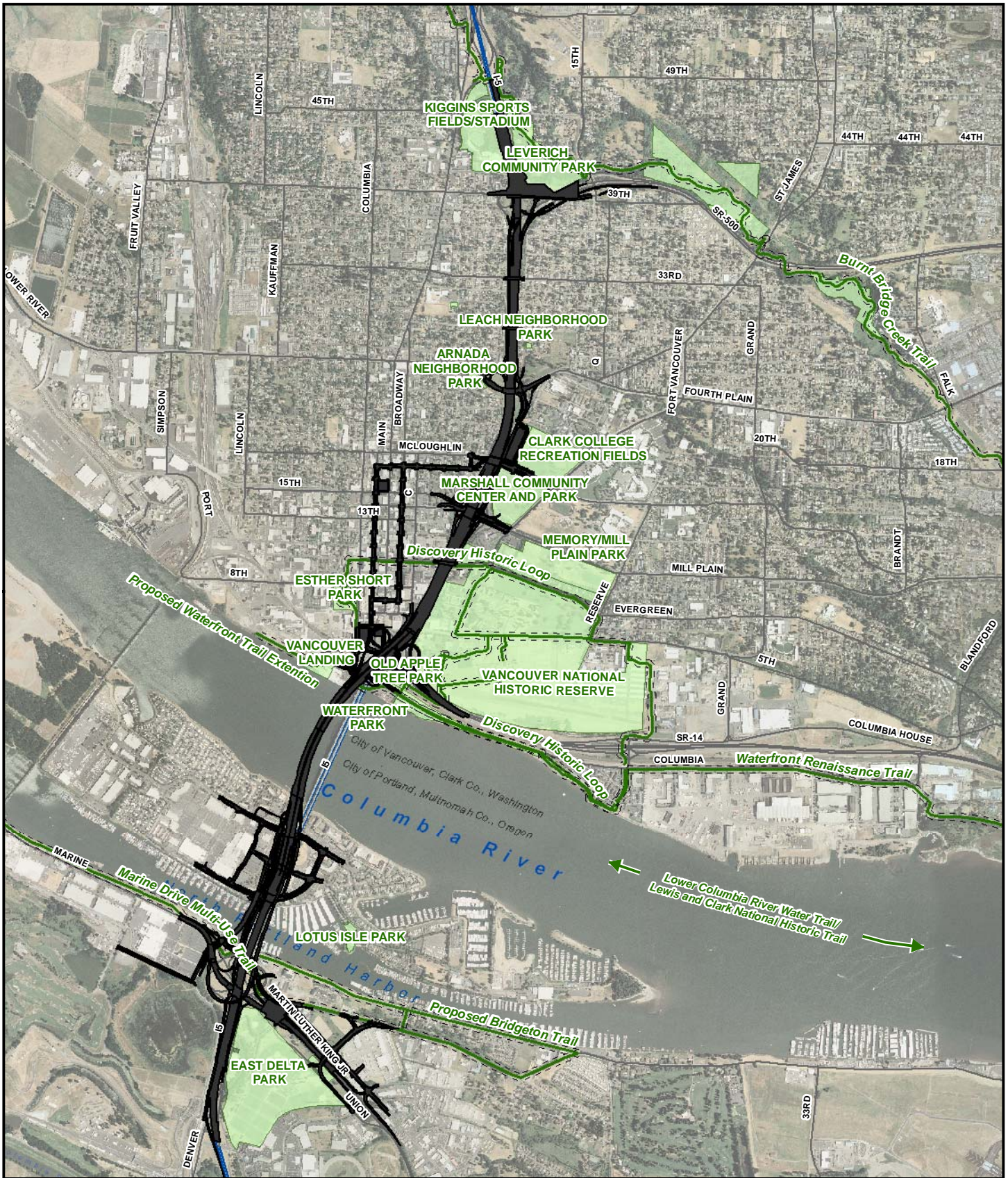
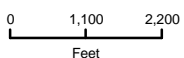
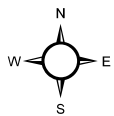


Exhibit 2-1. Park and Recreation Facilities in Project Area*

- Parks
- Trails
- Project Footprint



*Not existing all park and recreation facilities within the map extent shown - only those potentially affected by the CRC project construction or operation.

Because no wildlife or waterfowl refuge has been identified in the project area, the focus of this analysis is on park and recreation areas. Wetlands and other resources that may provide habitat to sensitive species but are not managed as “wildlife refuges”, have been addressed in the Ecosystems and Wetlands and Jurisdictional Waters Technical Reports.

2.5 Effects Analysis and Mitigation Development

Once research and data collection were complete, potential effects to each park and recreation area were identified. This report identifies several types of potential effects to parks and recreation areas. These effects include:

- Acquisition of parkland for permanent use by the roadway or transit facilities, or during construction;
- Changes in traffic volume, routes and patterns that would affect access to or enjoyment of resources; and
- Aesthetic effects from changes in noise, air, or visual quality.

The evaluation also considered beneficial impacts, such as new or increased public access, including new and improved bicycle and pedestrian connections, reduced congestion, or increased service by public transit.

New information provided by local park jurisdictions, as well as in agency and public comment on the DEIS, informed the design of the LPA by providing opportunities to either avoid recreational resources or minimize the potential effects identified in the above process.

When park and recreation resources could not be avoided, mitigation measures were developed in coordination with the appropriate jurisdiction.

2.6 Coordination

Early coordination with federal, state, and local park and recreation providers occurred to obtain information about the potential affected resources. Project staff contacted the OPRD, the VCPRD, the RCO, PP&R, Vancouver Public Schools (VPS), as well as Clark College, to identify all existing and planned park and recreation facilities. In order to determine the ownership of the Marine Drive Multi-use Trail, project staff also had to contact the 40-Mile Loop Land Trust and the Metropolitan Regional Government (Metro).

Frequently, and since 2007, project staff met bi-weekly with the NPS, which manages the Fort Vancouver National Historic Site (NHS), to discuss potential impacts to the Fort Vancouver NHS, and the larger Vancouver National Historic Reserve (VNHR), as well as the feasibility and appropriateness of various avoidance, minimization, and mitigation measures. These meetings assisted in the effective transmittal of ideas and technical information between project staff and NPS, and provided the VNHR with the opportunity to voice their concerns in an immediately responsive environment. Starting in 2008, NPS became involved in the archaeological investigations on the VNHR and these regular meetings were replaced with ad hoc discussions.

Based on these meetings, a Memorandum of Agreement is being developed to outline expectations of all parties. A completed/signed Section 106 MOA will be referenced in the FEIS.

The MOA will document which effects are mitigated, who will implement which measures, how they will implement them (e.g., funding mechanisms or provision of staff or documents), time

frames for mitigation phasing and completion, and where mitigation measures shall occur. As a continuing element of the Section 106 consultation process, FHWA should be in consultation with the NPS with respect to the VNHR.

In late 2008 and throughout 2011, project staff coordinated directly with the Pacific West Regional Office of the NPS Federal Lands to Park (FLP) program to determine the location of FLP resources within the project area, as well as the requirements for conversion of these lands to a non-park or recreation use.

In 2009, the project team met with the lead grant managers for the OPRD and RCO office to determine funding sources for the park and recreation resources within the project area. As described in section 3.5, the source of funding for park and recreational facilities can affect the process by which property can be acquired from these resources, as well as the mitigation requirements for these impacts.

Starting in mid-2009 and going through the Summer of 2011, project staff met with the local park jurisdictions – PP&R, VCPRD, VPS, and Clark College – to discuss possible impacts to their facilities. Local jurisdictions identified specific areas of concern at the impacted facilities and the likely magnitude of such impacts. This information was employed in an effort to minimize harm to the function and use of these facilities and develop possible measures to mitigate for unavoidable adverse effects.

Additionally, the City of Vancouver, City of Portland, and the United States Department of the Interior (DOI) submitted comments during the 60-day DEIS comment period related to park and recreational resources. These comments included corrections to park names and boundaries, information on funding sources, and clarification regarding the use of the parks and recreation facilities under their jurisdiction. These comments were incorporated into this report and report's exhibits, and helped to inform additional coordination.

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3. Affected Environment

3.1 Introduction

This section provides an overview of the parks and recreational facilities, and the jurisdictions responsible for them, that fall within the project area. A substantial number of regionally valued park and recreation resources are located throughout the project area in both Oregon and Washington, but mostly exist immediately adjacent to the current I-5 corridor.

Descriptions of each resource are organized by geography, as they fall on the Oregon Mainland, Hayden Island, Downtown Vancouver (south of McLoughlin Boulevard), and Upper Vancouver (north of McLoughlin Boulevard). Those resources protected by federal and state funding programs are also identified, as well as plans for future park and recreation facilities in the area. The locations of existing park and recreation facilities possibly affected by the project are shown on Exhibit 2-1 in Chapter 2.

3.2 Regional Conditions

This section describes the policies, goals, and objectives of the various jurisdictions that own, operate, and/or manage park and recreation facilities within or adjacent to the project area.

3.2.1 City of Portland

Initiated in 1999 and completed in 2001, the City of Portland's Parks 2020 Vision serves as a comprehensive master plan for Portland's parks and recreation system. It presents the vision, guiding principles, issues, opportunities, and recommendations for Portland parks and recreation through 2020. The plan covers parks, open space, natural areas, facilities (e.g., community centers and swimming pools), and identifies programs, partnerships, and funding.

Parks 2020 Vision does not specifically address the Columbia River Crossing Project. However, it does identify many issues facing the city's parks and recreation system, including:

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

The plan also describes opportunities to provide the parks, open spaces, natural areas, programs, and recreation services that the city needs, including:

- Working with public agencies and private developers to enhance the beauty of the city with parks and urban plazas, and to realize historic dreams of connecting parks to each other with trails, paths, and boulevards;

- Strengthening partnerships between parks and schools to provide the public with the greatest benefit from the existing resources; and
- Creating recreation corridors along the rivers and streams that define and bring life to the city.

3.2.2 City of Vancouver

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

In 1995 and 1996, the City of Vancouver and Clark County adopted a joint parks plan for the Vancouver urban area. Park impact fees were adopted to help provide funding for acquisition and development of community and neighborhood parks, and for acquisition of urban open space, both inside the city and in the unincorporated urban area. For those park development deficits that could not be addressed by impact fees, the County and City adopted, and dedicated to urban parks for six years, a 0.25 percent real estate excise tax. Under these funding programs, 54 park sites have been acquired and 16 community and neighborhood parks have been developed. Thirteen of these park sites have also been funded through the real estate excise tax and are scheduled for development within the near future (Vancouver-Clark Parks and Recreation Department 2007).

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

The Vancouver-Clark park system classifies its facilities as either urban or regional parks. All urban parks are located within the City of Vancouver urban growth boundary (UGB). These properties make up all of the VCPRD facilities included within the project area. These facilities include neighborhood parks (3 to 5 acres in size), community parks (15 to 100 acres in size), and open spaces (e.g., forested areas, wetlands). Developed park sites within the urban system offer space for active and intensive recreation, including sports fields, play equipment, and ball courts.

The VCPRD's ability to provide adequate open space and recreation opportunities to residents of the county is, in part, measured against the adopted urban park standards:

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

3.2.3 National Park Service

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

National parks are governed by federal regulation that instruct the proper use, management, government, and protection of persons, property, and natural and cultural resources within areas

under the jurisdiction of the NPS. These regulations support the statutory purposes of the National Park System: "...to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations" (NPS 2006).

Management Policies: A Guide to Managing the National Parks System NPS was updated in 2006. The key underlying principles in the development of management policies includes:

- preventing impairment of park resources and values;
- complying with current laws, regulations and executive orders;
- ensuring that conservation will be predominant when there is a conflict between the protection of resources and their use;
- maintaining NPS responsibility for making decisions and for exercising key authorities;
- emphasizing consultation and cooperation with local/state/tribal/federal entities;
- supporting pursuit of the best contemporary business practices and sustainability;
- encouraging consistency across the system, e.g., "one national park system"; reflect NPS goals and a commitment to cooperative conservation and civic engagement;
- employing a tone that leaves no room for misunderstanding the NPS's commitment to the public's appropriate use and enjoyment, including education and interpretation, of park resources, while preventing unacceptable impacts; and
- passing on to future generations natural, cultural, and physical resources that meet desired conditions better than they do today, along with improved opportunities for enjoyment.

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

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

In 1996, Congress established the VNHR. As a legislated VNHR partner with lead responsibilities in education and interpretation, the NPS works in partnership with the City of Vancouver, the Reserve Trust (the supporting non-profit organization), and other partners.

Partnership is one of the primary philosophies behind the management of the VNHR, and includes processes that define how the body of organizations make decisions and carry out recommended actions at the VNHR. The partnership includes a shared vision of where the VNHR will be in the future and how to best accomplish this vision. Under this umbrella of partnership, the VNHR, the legislated partners, and the non-profit Vancouver National Historic Reserve Trust

seek better ways to work together, set priorities, assign responsibilities, and foster public understanding of the VNHR's significance (NPS 2000).

3.2.4 Clark College

The Clark College Athletic Department manages the use of recreation and sports facilities on the Clark College Community College campus. The mission of the Athletic Department is to “enrich the greater community and the lives of student athletes by instilling in them a lifelong enjoyment of sports and physical activity.” Clark College has a wide variety of recreational facilities and although there for the primary use of college students, many are open to the public and are used for community activities at low or no cost. Most of the Clark College recreational fields, tennis courts, and multi-use fields are open to the public. The baseball field and select softball and soccer fields are closed to the public. The Fitness Center and Basketball/Volleyball gym are available for community use for a fee. The opening of recreational facilities for public use demonstrates the implementation of the stated Clark College belief that “we are committed to broad-based partnerships that support student learning, shared community resources and increased educational opportunities” (Clark College 2009).

3.2.5 Vancouver Public School District

The VPS has adopted policies for the public use of school related facilities including recreational fields. Although the facilities of the VPS are primarily for public school purposes, the district has stated in its policies, “Every possible opportunity will be provided for the after-school and evening use of school facilities and equipment by citizens of the Vancouver District, whether student groups, school district employee groups, or other community groups, provided that the purpose of the meeting is in harmony with the public interest and welfare, consistent with the goals and objectives of the public schools, and subject to the laws of the state of Washington and to the policies, rules, and regulations prescribed by the Board of Directors of the Vancouver School District” (Vancouver Public Schools 1989). Requests for use of any school facility and/or equipment are initiated at, submitted, and approved through the Department of Community Services. School or school related activities and activities which further district goals are accorded first priority. The district reserves the right to give preference to VPS residents' request for use of school facilities. The available facilities include gyms, aerobics/dance room, recreational fields, three auditoriums/theaters, and three stadiums the Columbia River Stadium, Propstra at Hudson's Bay Stadium, Kiggins Bowl Stadium. There are fees for the use of school facilities unless other agreements have been arranged. At several schools, VPS partnered with the Little League for the development, maintenance, and use of baseball fields.

3.2.6 Lower Columbia River Estuary Partnership

The Lower Columbia River Estuary Partnership (LCREP) coordinates the development and management of the water trail for use by non-motorized boats. Specifically, the Estuary Partnership works to identify and improve points of public access to the river, while promoting stewardship of the river, wildlife, and surrounding landscape.

3.3 Existing Park and Recreation Resources – Oregon Project Area

3.3.1 Oregon Mainland

3.3.1.1 East Delta Park

Protected by 6(f) of the LWCF Act (See section 3.4)

East Delta Park is an 85-acre neighborhood/regional park located adjacent to I-5 between Martin Luther King Jr. Boulevard and N Denver Avenue. The park is open from 6:00 a.m. to 10:00 p.m. and is managed by the PP&R. The park facilities include a sports complex with five lighted softball fields, a synthetic soccer field, seven grass soccer fields, six sand volleyball courts, a playground, picnic tables, restrooms, a parking lot, support buildings, nature trails, and off-leash dog area. The latter is located, by agreement, in ODOT owned right-of-way across Union Court. The park is also home to the Portland Parks and Recreation Urban Forestry Division Headquarters, located between I-5 and the Walker Slough. Please see Exhibit 3-1 at the end of this chapter for a map of this park.

3.3.1.2 Marine Drive Multi-use Trail

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

The multi-use trail is part of the 40-Mile Loop Trail, which includes all of Multnomah County and connects more than 30 parks. The Marine Drive portion of the loop was established predominately on private property through easements. The portion of the trail closest to the project area is located on Metro-owned property through an easement held by the City of Portland (Exhibit 3-2).

3.3.2 Hayden Island

3.3.2.1 Lotus Isle Park

Lotus Isle Park, located on Hayden Island east of I-5 on North Portland Harbor is close to, but outside of, the project area (Exhibit 3-2).

3.4 Existing Park and Recreation Resources – Washington Project Area

3.4.1 Downtown Vancouver

3.4.1.1 Lower Columbia River Water Trail

The Lower Columbia River Water Trail (LCRWT) is a 146-mile recreational waterway along the Columbia River connecting Bonneville Dam to the Pacific Ocean. The trail crosses the project

area directly underneath the existing I-5 bridges and is used from dawn until dusk by non-motorized boats, such as canoes and kayaks (Exhibit 3-3).

3.4.1.2 Lewis and Clark National Historic Trail

The Lewis and Clark National Historic Trail follows the route of Lewis and Clark's Expedition (1804 through 1806) from Illinois to the Pacific Ocean. The Trail crosses the project area on the Columbia River and includes a campsite, used on their westbound journey, on the north shore of the River in present-day Vancouver. Similar to the LCRWT, users are encouraged to travel the trail in canoes and kayaks (Exhibit 3-3). As this resource is a National Historic Trail, it is not protected under Section 4(f) of the U. S. Department of Transportation act and will not be included in the final 4(f) Evaluation (FHWA 2005).

3.4.1.3 Waterfront Park

Waterfront Park is a 5-acre regional park located at the north end of the I-5 bridges, and is the starting point of the Waterfront Renaissance Trail. The park, which is open to the public from 7:00 a.m. to dusk, is managed by the NPS and is part of the VNHR, and includes passive recreational space and views, as well as the Boat of Discovery Monument and the Illchee Statue and Plaza (Exhibit 3-4). Plans to expand the Vancouver Waterfront Park include sites within the project area that may or may not currently be recreational facilities.

3.4.1.4 Waterfront Renaissance Trail

The Waterfront Renaissance Trail is a 4-mile long, 14-foot-wide multi-use paved trail starting in Waterfront Park and traveling east to Marine Park and Wintler Park. The trail is open to the public from 7:00 a.m. to dusk and connects Vancouver's downtown to the Columbia River waterfront and offers multiple benches for viewing. The trail is owned and maintained by VCPRD, and is a portion of the Discovery Historic Loop Trail (Exhibit 3-4).

3.4.1.5 Old Apple Tree Park

Protected by the FLP program conversion requirements

Old Apple Tree Park is a 1.3-acre community park located north of the Columbia River and BNSF and south of SR 14 in the VNHR. The park can be accessed from Waterfront Park beneath the railroad or from the VNHR using the Confluence Land Bridge over SR 14. It is owned and maintained by VCPRD and is open to the public from 7:00 a.m. to dusk. It is the site of the Heritage Apple Tree, possibly the oldest apple tree in the Pacific Northwest, and provides passive recreational space, viewing, and bike parking for the Confluence Land Bridge (Exhibit 3-5).

3.4.1.6 Vancouver National Historic Reserve

The 366-acre VNHR was established by Congress in 1996 to preserve and interpret historically significant areas in the City of Vancouver. Land within the VNHR is managed by the NPS, the U.S. Army Reserve, the City of Vancouver, FHWA Western Federal Lands (WFL), and the Washington State Department of Transportation (WSDOT). The VNHR is cooperatively managed by the NPS, the City of Vancouver, the U.S. Army Reserve, with support from the Vancouver National Historic Reserve Trust (NPS 2000) (Exhibit 3-6).

Parks and recreation facilities within the VNHR as a whole include the:

- 209-acre Fort Vancouver NHS, which includes Fort Vancouver, the Hudson Bay Company (HBC) (known historically as “Kanaka”) Village, the East and South Vancouver Barracks (detailed description of the Fort Vancouver NHS below);
- 252-acre VNHR Historic District, which overlaps with the Fort Vancouver NHS’ and was designative in 2007 for the National Register of Historic Places (NRHP);
- West Vancouver Barracks, including the Barracks/Post Hospital, and Officer’s Row;
- Pearson Field and Pearson Air Museum;
- Confluence land bridge, which connects trails through the VNHR with the Waterfront Renaissance Trail and Discovery Trail loop;
- Columbia river waterfront and Old Apple Tree Park; and
- Water Resources Education Center.

The construction of a landscaped pedestrian walkway or Confluence Land Bridge to span SR 14 and connect Fort Vancouver to the waterfront has been completed. The bridge landing is located southwest of the reconstructed HBC Fort and will connect to existing Fort Vancouver NHS facilities through extensions to the existing trail system. On the south side of SR 14, the bridge connects to City of Vancouver property near Old Apple Tree Park, and links to the park via a new trail from the bridge landing. The earth-covered and landscaped bridge contains a curving multimodal path and includes artwork and interpretations of the site’s importance in tribal history. The bridge is a result of a partnership of the non-profit Confluence Project, the NPS, the City of Vancouver and the WSDOT, and was funded through federal, state, and private funding.

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

Fort Vancouver National Historic Site

The Fort Vancouver NHS includes approximately 209 acres. The area directly managed by the NPS contains approximately 165 acres. The remaining acreage within the NHS includes land managed by the U.S. Army Reserve, City of Vancouver, and the State of Washington (NPS 2003). The NPS and U.S. Army Reserve are coordinating to transfer the U.S. Army Reserve property to the NPS.

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

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

The park has 16 major structures managed by the NPS. At the administrative area of the Fort Vancouver NHS there are four buildings: the visitor center, administration building, employee residence, and maintenance shop. There are 14 structures at the reconstructed HBC Fort,

including the fort palisade, the Bastion, the Chief Factor's House, the Kitchen, the Bakehouse, the Blacksmith Shop, the Indian Trade Shop, the Fur Store, the Wash House, the Jail, the Carpenter Shop, the Belfry, the Flagpole, and the Wellsweep.

Within the HBC Village area, the NPS is currently constructing a replica village dwelling in the western portion of the NPS property, near the U.S. Army Reserve property.

3.4.1.7 Memory/Mill Plain Park (Potential Soccer Field upgrades)

The Memory/Mill Plain Park is a 14-acre park located north of Officer's Row on Mill Plain Boulevard. This park, which is open from 7:00 a.m. to dusk, contains a running track, multiple Little League field, and soccer fields, and is owned and maintained by the VCPRD (Exhibit 3-6).

3.4.1.8 Discovery Historic Loop Trail

The Discovery Historic Loop Trail is a 2.3-mile trail that travels east on Evergreen Boulevard over I-5, through the VNHR on multi-use paths and local streets, over SR 14 at the Confluence Land Bridge or under SR 14 at the Columbia Way interchange, connecting to the Waterfront Renaissance trail, and then on local streets through downtown Vancouver to Esther Short Park and then back to Evergreen Boulevard. The trail is promoted by VCPRD, and connects Vancouver's most highly valued historic resources with modern-day development. The trail is used for organized walks throughout the year, including the Discovery Walk Festival held in April (Exhibit 3-6).

3.4.1.9 Vancouver Landing at Terminal One

Vancouver Landing at Terminal One is a public dock and amphitheater located along the Columbia River to the west of I-5. The Landing is owned and maintained by the Port of Vancouver and VCPRD and open to the public from 7:00 a.m. to dusk. The location of the facility, which is not expected to be impacted by the LPA, is in Exhibit 2-1. The Landing can be rented and holds many events, including Hoops on the River as described below.

Hoops on the River

Held each August, Hoops on the River is a two-day, 3-on-3 basketball tournament open to all skill and age levels. Hoops on the River is an outdoor event, held at Vancouver Landing along the Columbia River. The 2008 event included close to 200 teams and attracted over 1,500 to downtown Vancouver (Share Vancouver 2008).

3.4.1.10 Esther Short Park

Esther Short Park is a 5-acre community park located at Columbia and 8th Streets in downtown Vancouver (Exhibit 2-1). The park is owned and maintained by VCPRD, and is open to the public between 7:00 a.m. and dusk. The park facilities include a special event pavilion, play equipment, paved walkways, benches, the Slocum Historic House, the Pioneer Mother Statue, a large water play fountain, and the Salmon Run Bell Tower and Glockenspiel diorama. Esther Short Park, which is not expected to be impacted by the LPA, is also the location of some of downtown Vancouver's most popular events described below.

Hot July Nights, Vancouver Music Festival

Hot July Nights is an annual music festival which brings national musical acts to Esther Short Park over a two day period. The event, which has brought nearly 6,000 attendees to watch a single performer, also includes food, beer, and wine sales (Bailey 2008).

Vancouver Wine and Jazz Festival

Each August, the Vancouver Wine and Jazz Festival hosts internationally-known jazz musicians over a three day period at Esther Short Park. The event is widely attended, with a reported 15,000 people attended the 2006 Festival, 48% of who were out-of-town visitors (Kissinger 2007). In addition to music, the event includes food from local restaurants, wine and art.

The Vancouver Farmers Market

Located in downtown Vancouver, between 6th and 8th Streets at Esther Short Park, the Vancouver Farmers Market has over 200 vendors selling products such as fresh fruits and vegetables, flowers dairy products, wine, fish and fresh meats, prepared food and arts and crafts. The annual farmers market is open Saturdays and Sundays from April to October. It is estimated that the Vancouver Farmers Market has attracted up to 15,000 customers on a single day (Mize 2004).

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

Protected by the FLP program conversion requirements

The Marshall Community Center and Park is a 19-acre community park located on the east side of I-5 south of McLoughlin Boulevard. The park, which was renovated in 2006, is owned and maintained by VCPRD and is open from 7:00 a.m. to dusk. The site facilities include play equipment, community gardens, a loop trail, picnic tables, horseshoe pits, ball fields, and the Marshall and Luepke Centers. The Marshall Center, open on weekdays from 5:30 a.m. to 10:00 p.m., with shortened hours on Fridays and weekends, has a swimming pool, a fitness center, two basketball courts, a commercial kitchen, meeting rooms, administrative offices, an aerobics dance studio, and arts and craft studio. The parking lot contains 272 parking spaces, including 26 ADA spaces. The center sees an average daily attendance of 1,200 to 1,500 visitors (VCPRD 2010). The Luepke Senior Center is a full-service senior center with a multi-purpose room and meeting rooms (Exhibit 3-7). Marshall Park will see the addition of a large group picnic shelter in 2010.

Marshall Community Park is the only park protected by FLP provisions that would have property acquired by the project. The FLP land in Marshall Park is the only FLP property in the area affected by the CRC project. It was originally transferred to the City of Vancouver in 1986 through the FLP Program, as administered by the NPS. The FLP parcel is described in the original Application for Federal Surplus Property as a grassy area that is utilized by the public. It is adjacent to a horseshoe pit area and is gently sloping from south to north. The existing parcel also contains a few medium-sized trees and provides a partial vegetative buffer between the park and I-5. Requirements of the FLP Program are similar to those of Section 6(f) of the LWCF Act. If property conveyed under this program is acquired for a non-park or recreation use, this conversion must be approved by NPS, and replacement property of equal market value and reasonable equivalent recreational utility must be identified and acquired. Additionally, the General Services Administration (GSA) must concur on any conveyance and exchange of property rights.

3.4.2 Upper Vancouver

3.4.2.1 Clark College Recreation Fields

The Clark College Recreational Fields are a 13-acre recreation facility located on the east side of I-5 north of McLoughlin Boulevard. The area is owned by Clark College, but the softball field, tennis courts, and open fields are open to the public from 7 a.m. to dusk. The site facilities include sports fields for College students and the public, batting cages, and benches (Exhibit 3-8).

3.4.2.2 Arnada Neighborhood Park

Arnada Neighborhood Park is a 3-acre neighborhood park located on the west side of I-5 and south of Fourth Plain Boulevard. The park is owned and maintained by VCPRD, and is open to the public from 7 a.m. to dusk. The site facilities include a gazebo, picnic shelter, play equipment, a sports court, benches, and a paved walkway (Exhibit 3-9).

One of Upper Vancouver's largest events is the Uptown Village Street Festival, described below, is also located in the Arnada neighborhood.

Uptown Village Street Festival

Located in Vancouver's Uptown Village, the Uptown Village Street Festival is a two-day, outdoor event held each August. The event is located on Main Street, between McLoughlin and Fourth Plain Boulevards. The event includes arts and crafts and food vendors, musical acts, and other activities. It is estimated that the event has brought over 16,000 visitors in a two-day period (CareOregon 2007).

3.4.2.3 Leach Neighborhood Park

Leach Park is a 0.25-acre neighborhood park located on the east side of I-5 on K and 28th Streets. The park is owned and maintained by VCPRD and is open to the public between 7 a.m. and dusk. Site facilities include play equipment and benches. The location of facility is not expected to be impacted by the LPA (Exhibit 2-1).

3.4.2.4 Leverich Community Park

Leverich Park is a 30-acre community park located on the east side of I-5 in the northeast corner of the I-5/SR 500 interchange (Exhibit 3-9). The park is owned and maintained by the VCPRD and is open to the public between 7 a.m. and dusk. Site facilities include a newly opened disc golf course, softball field, picnic tables, paved walkways, a picnic shelter, restrooms, BBQ stands, and horseshoe pits.

3.4.2.5 Burnt Bridge Creek Multi-use Trail (part of Discovery Trail)

Protected by 6(f) of the LWCF Act (See section 3.4)

The Burnt Bridge Creek Multi-use Trail is a 5-mile paved multi-use trail that travels through the Burnt Bridge Creek Greenway located on the east and west sides of I-5 north of the I-5/SR 500 interchange. The trail is owned and maintained by VCPRD and travels over I-5 on a pedestrian and bicycle-only overcrossing south of I-5/Main Street interchange. Exhibit 3-9 shows the portion of this trail that travels through the project area.

3.4.2.6 Kiggins Sports Field/Stadium

The Kiggins Bowl Sports Field/Stadium is a 3-acre sports venue adjacent to Discovery Middle School west of I-5 and north of 39th Street. The facility is owned and maintained by the VPS, but is open to the public during non-school hours for approved activities. Site facilities include natural areas and trails, as well as a sports fields and track that surrounds an artificial turf soccer/football field known as Kiggins Field. The trail that travels through the site and past Discovery Middle School is a spur that connects the Lincoln Neighborhood to the Burnt Bridge Creek portion of the Discovery Trail (Exhibit 3-10).

3.5 Federally, State, and Locally Protected Park and Recreation Resources in the Project Area

3.5.1 Section 4(f)

The Section 4(f) statute and related U.S. Department of Transportation policy requires the U.S. DOT to avoid any *use* of Section 4(f) property (which includes any publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance as determined by the federal, state, or local officials having jurisdiction) unless there is no feasible and prudent alternative to using the land, or unless the impact would be *de minimis*. A *de minimis* impact on a parkland is defined as an impact that will not adversely affect the features, attributes, or activities qualifying the property for protection under Section 4(f).

This technical report documents impacts to all affected park and recreation facilities, but it does not evaluate the project's consistency with Section 4(f) regulations. The final Section 4(f) Evaluation will be in the FEIS.

3.5.2 Section 6(f)

Section 6(f) of the federal LWCF Act prohibits the conversion of property, primarily park and recreation facilities, acquired or developed with grant funds provided through the act, unless replacement land of at least equivalent property and recreational value is identified, approved, and acquired (LWCF 2008). NPS is required to approve all conversions.

Of the resources identified above as in the project area, East Delta Park and the Burnt Bridge Creek Multi-use Trail have received LWCF grant funds (Lippincott 2009, Barker 2009).

3.5.3 Federal Lands to Parks Program

Under Section 203 (k)(2) of Public Law 91-485, as amended (40 U.S.C. 484 (k)(2)), the NPS administers the FLP Program which conveys surplus federal land to local jurisdictions for public park and recreation purposes, usually at no cost. Requirements of the FLP Program are similar to those of Section 6(f) of the LWCF Act. If property conveyed under this program is acquired for a non-park or recreation use, this conversion must be approved, and replacement property of equal market value and reasonable equivalent recreational utility must be identified and acquired. Additionally, the General Services Administration (GSA) must concur in any conveyance and exchange of property rights.

Of the resources identified above as within the project area, portions of Marshall Community Center and Park, Old Apple Tree Park, and East Delta Park are part of the FLP Program.

3.5.4 State and Locally Funded Programs

There are many state-funded and implemented programs that have property conversion and replacement requirements similar to the federal LWCF program. These programs include the Oregon Local Government and the County Opportunity Grant Programs through OPRD in Oregon, and the Aquatic Lands Enhancement Account (ALEA) Program, Boating Facilities Program (BFP), and the Washington Wildlife and Recreation Program in Washington (OPRD 2006).

There are also a handful of local funding programs, including the Clark County Conservation Future Program in Washington and the Metro Nature in Neighborhoods Capital Grants Program, though the specific requirements associated with these programs are not outlined here.

Of the resources identified in the project area in the above section, Vancouver Landing at Terminal One was funded through the BFP and Leverich Park received a combination of state bonds from different sources for its development (Barker 2009).

3.6 Future Plans for Park and Recreation Resources in the Project Area

3.6.1 City of Portland

PP&R, in coordination with the Portland Development Commission (PDC), plans to construct a 0.5-mile trail section linking the Bridgeton Neighborhood on North Portland Harbor to I-5. The Bridgeton Trail would travel along the levee and underneath I-5 connecting to the Marine Drive Multi-use Trail on the west side of I-5. In winter 2009, PDC and PP&R began working to acquire trail easements from property owners. After these acquisitions are complete, the agencies will work to refine the trail design for construction. The location of the proposed trail is shown in Exhibit 3-2.

3.6.2 City of Vancouver

The VCPRD is planning soccer field updates to better serve regional tournaments at the site of the Memory/Mill Plain Park and Clark College, as shown on Exhibit 3-6.

The Master Plan for the Marshall/Luepke Center Complex calls for an expanded footprint that includes the addition of a Leisure Pool, a climbing wall, birthday party rooms, additional fitness space, childwatch facilities, additional multi-purpose classrooms and additional parking (VCPRD 2010).

Additionally, the VCPRD is planning for the extension of the Waterfront Trail and Park west of I-5 to the Vancouver Waterfront Redevelopment at the site of the Boise-Cascade Plant. The trail connection is shown in Exhibit 3-3.

In addition to, or as a possible part of the Evergreen Community Connector, the City of Vancouver has called for a separate pedestrian connection over I-5 at 7th Street.

3.6.3 National Park Service

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

Planned Fort Vancouver NHS park and recreation facilities within the project area include a replica historic village (HBC Village) and associated extensions to the existing trail system. The planned facilities would be tied to the historic village and the land bridge in the southwestern portion of the Fort Vancouver NHS near the I-5/SR 14 interchange, as well as a proposed new pedestrian crossing over I-5 connecting E 7th Street and Hathaway Road. This development would occur on land owned by the U.S. Army Reserve, but currently in the process of being transferred to the NPS.

For more information regarding the VNHR and Fort Vancouver NHS please see the Historic Built Environment Technical Report and the Archaeology Technical Report.

3.6.4 Clark College

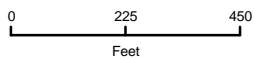
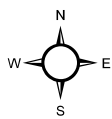
Clark College planned to develop a parcel located immediately east of I-5 north of McLoughlin Boulevard. This parcel, previously owned by WSDOT as the location of an information center, was purchased by the College in 1999. This space is labeled an “athletic annex” and currently provides space for athletic offices, storage, and some parking. In the Clark College Facilities Master Plan (2007), the College identifies this parcel as a potential site for a large multi-program, mixed-use building and batting cage. However, the Master Plan also noted that the CRC Project was also interested in acquiring this parcel for a “large structured parking facility and/or a light-rail terminal.”

3.6.5 Vancouver School District

There are no known plans for future redevelopment or expansion at the Kiggins Bowl Recreation Field.

3.6.6 Lower Columbia River Estuary Partnership

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

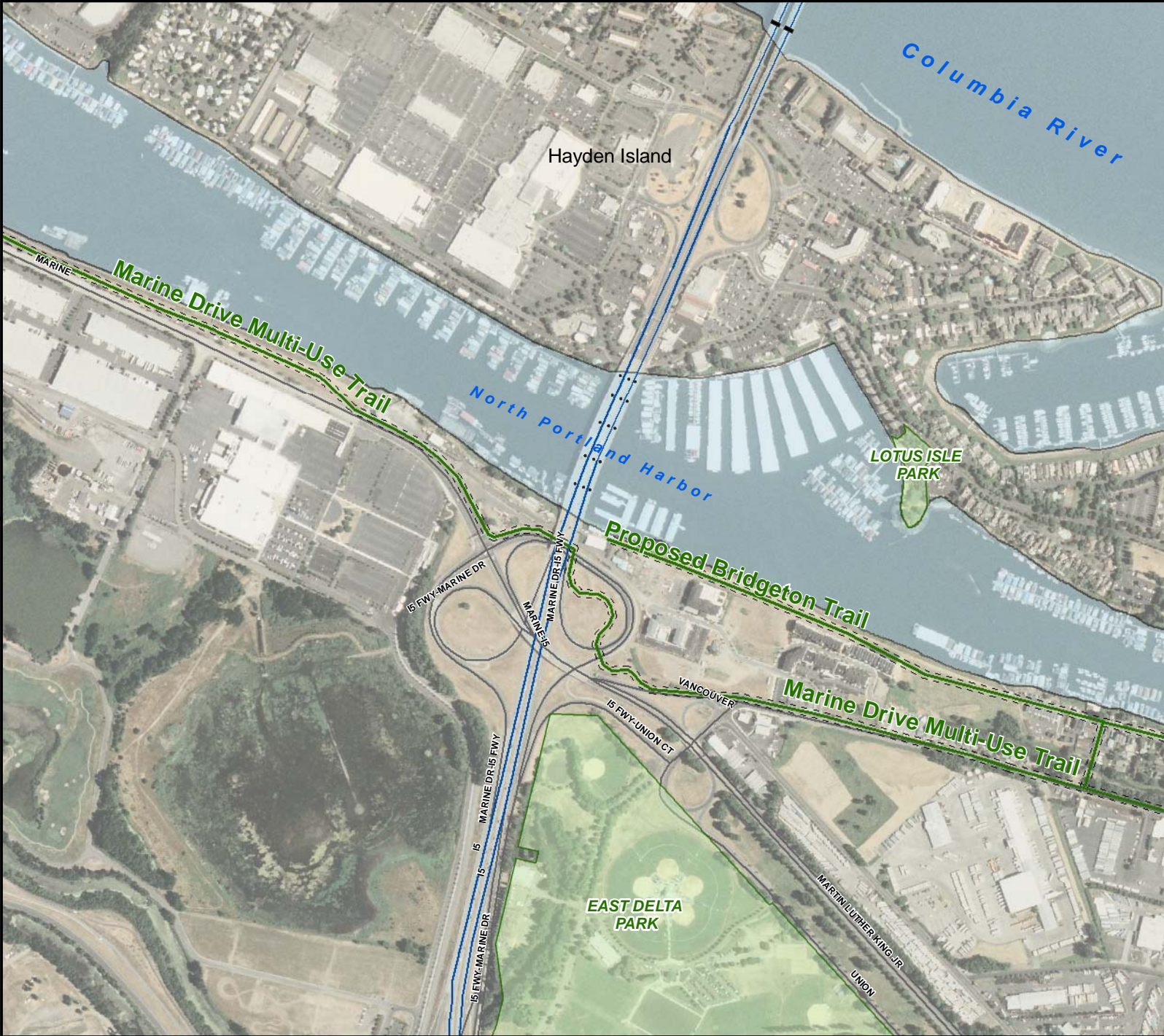


- Park
- Trail
- Tax Lots

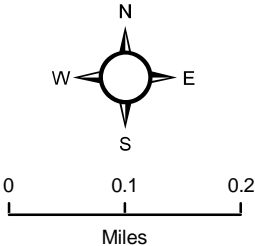
Exhibit 3-1. East Delta Park - Portland Parks and Recreation



Exhibit 3-2. Marine Drive Multi-Use Trail and Proposed Bridgeton Trail - Portland Parks and Recreation

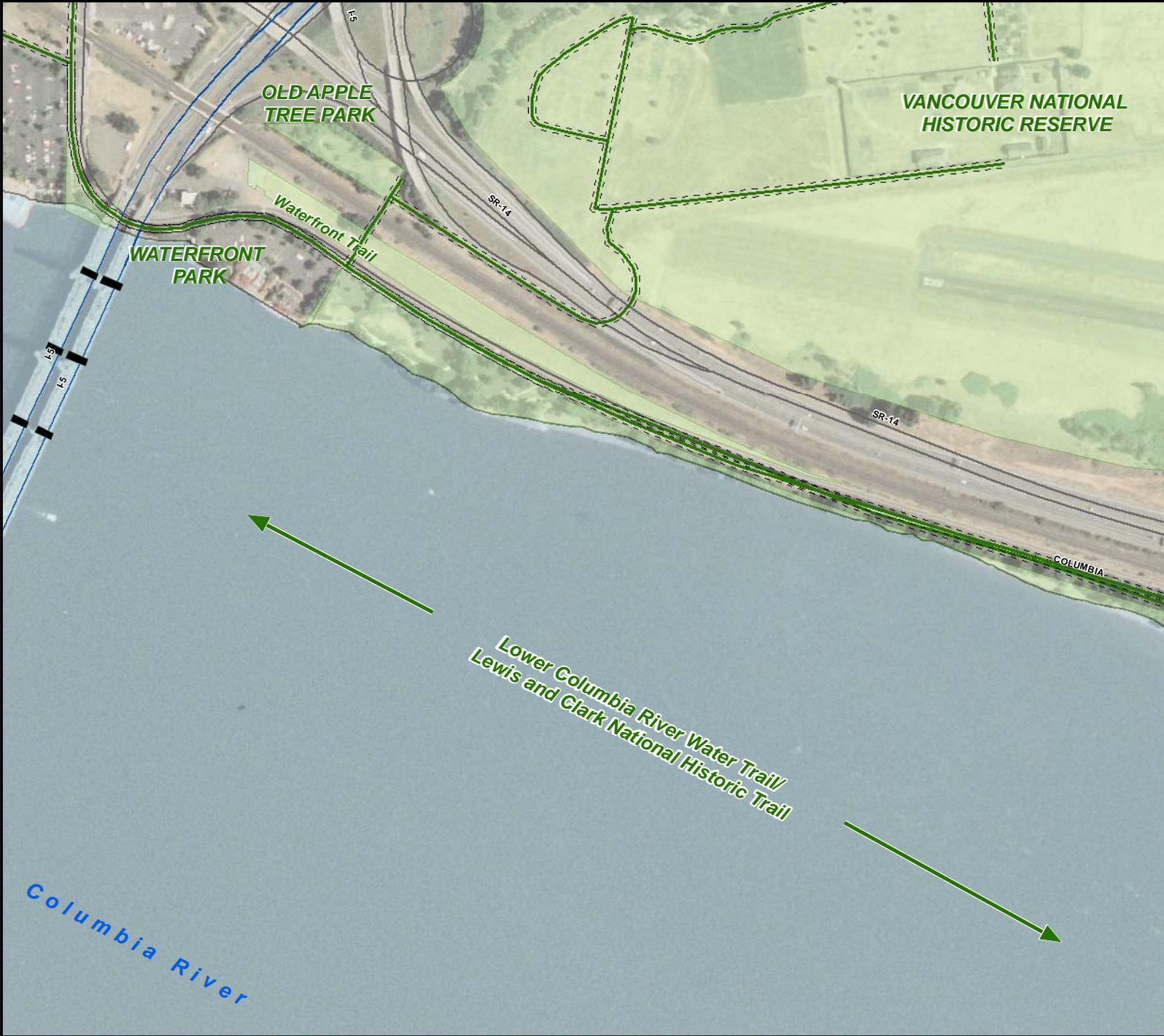


- Parks
- Trails
- Existing Pier Locations



Analysis by J. Koloszar; Analysis Date: Dec. 2009; File Name: PNR_MT142_Trails.mxd

Exhibit 3-3. Lower Columbia River Water Trail and Lewis and Clark Historic Trail - Lower Columbia River Estuary Partnership and National Park Service



-  Parks
-  Trails
-  Existing Pier Locations

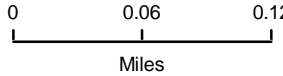
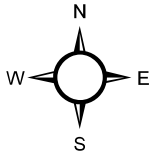
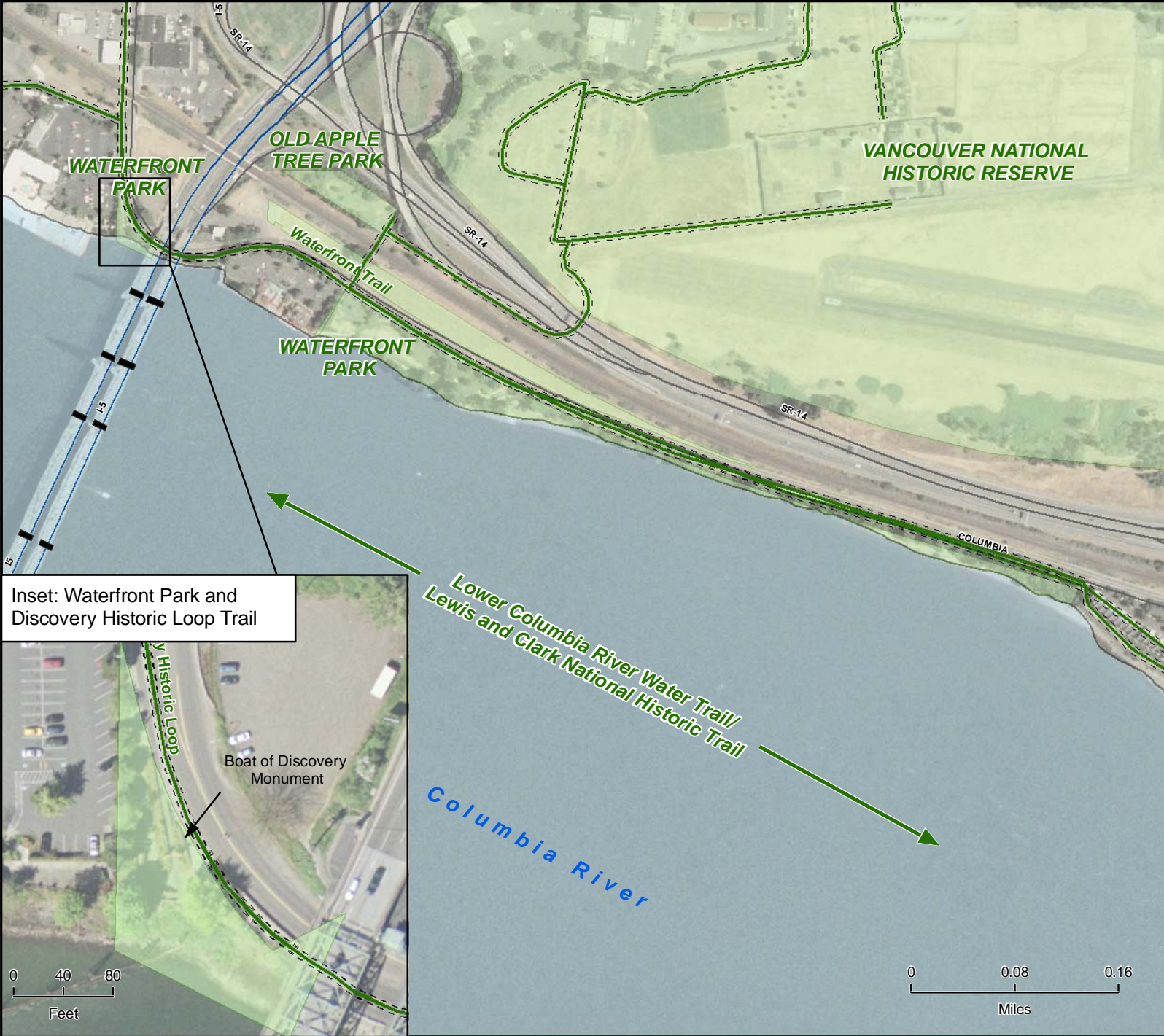
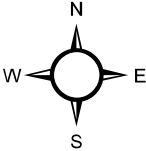


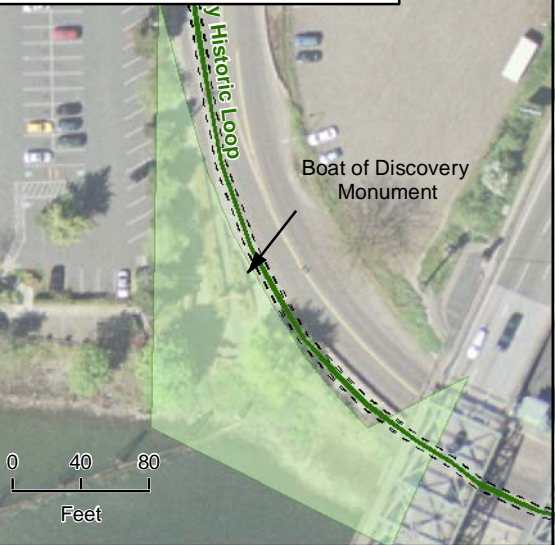
Exhibit 3-4. Waterfront Park and Waterfront Renaissance - Vancouver-Clark Parks and Recreation Department



- Parks
- Trails
- Existing Pier Locations

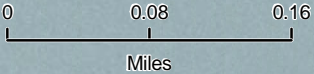


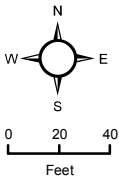
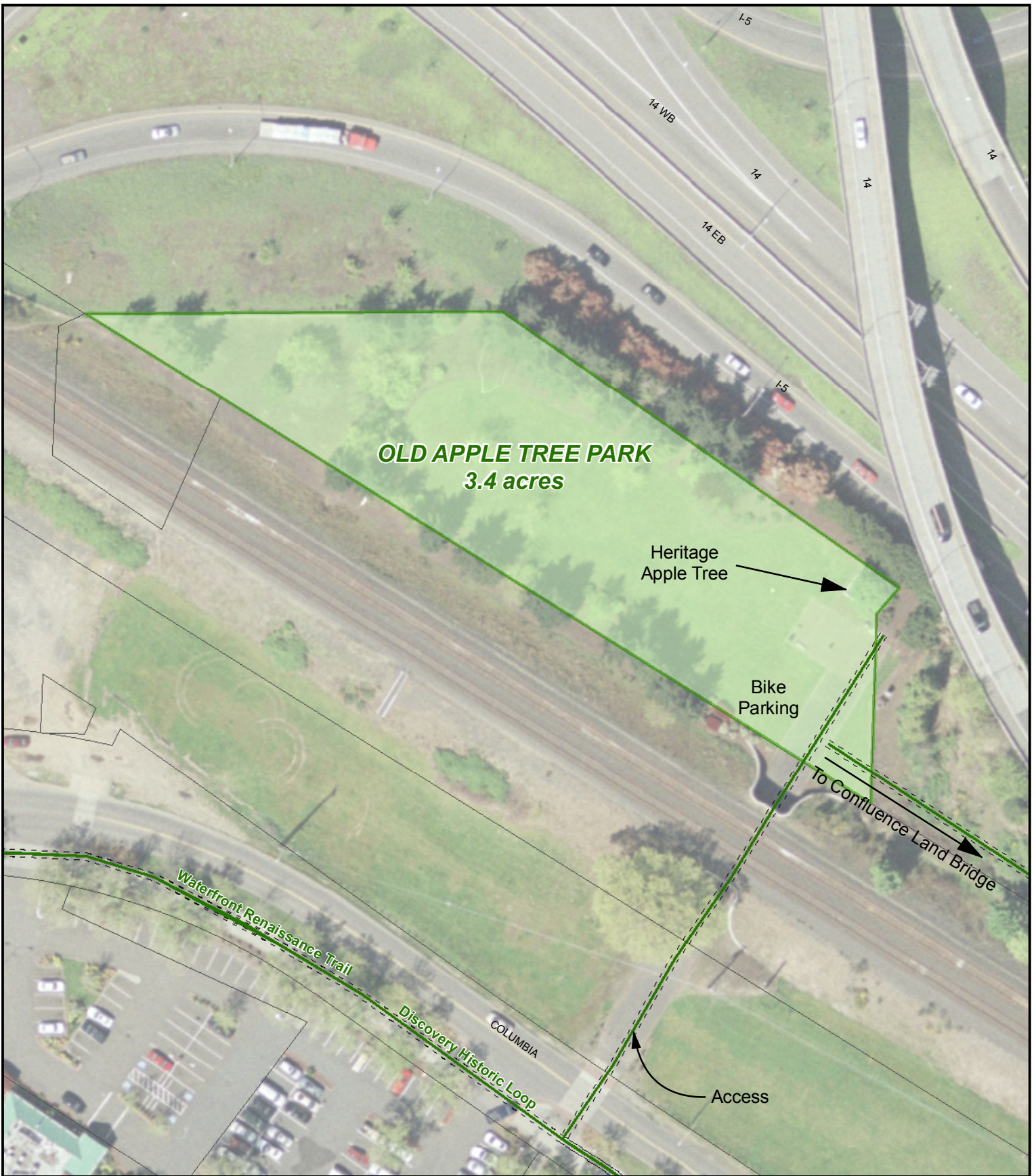
Inset: Waterfront Park and Discovery Historic Loop Trail



*Lower Columbia River Water Trail/
Lewis and Clark National Historic Trail*

Columbia River

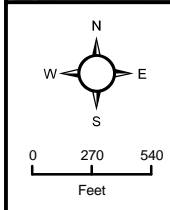




- Park
- Trails
- Tax Lots

Exhibit 3-5. Old Apple Tree Park (located in Vancouver National Historic Reserve) - Vancouver-Clark Parks and Recreation Department





Park
 Trails

Exhibit 3-6. Vancouver National Historic Reserve and Discovery Historic Loop Trail - National Park Service and City of Vancouver

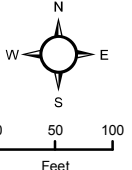


Note: Impacts to Old Apple Tree Park are shown on separate exhibit.



CLARK COLLEGE RECREATION FIELDS

**MARSHALL COMMUNITY CENTER, LUEPKE SENIOR CENTER,
AND MARSHALL PARK
22 acres**



- Park
- Trails
- Tax Lots

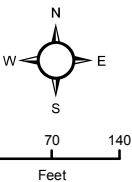
Exhibit 3-7. Marshall Community Center, Luepke Senior Center, and Marshall Park - Vancouver-Clark Parks and Recreation Department



Analysis by J. Koloszar; Analysis Date: Apr. 23, 2010; File Name: 4fmaps_CM196_Parks_RP_Marshall.mxd



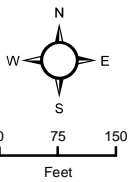
**MARSHALL COMMUNITY CENTER,
LUEPKE SENIOR CENTER,
AND MARSHALL PARK**



- Park
- Trail
- Tax Lots

**Exhibit 3-8. Clark College
Recreation Fields - Clark College**





- Park
- Trail
- Tax Lots

Exhibit 3-9. Leverich Community Park and Burnt Bridge Creek Trail - Vancouver-Clark Parks and Recreation Department





Exhibit 3-10. Kiggins Sports Fields/Stadium - Vancouver Public School District



Analysis by J. Koloszar; Analysis Date: Mar. 11, 2011; File Name: 4fmaps_CM196_Parks_RP_Kiggins.mxd

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4. Long-term Direct Effects

4.1 Introduction

This section describes the long-term direct effects caused by the LPA to the park and recreation resources identified in Section 3, Affected Environment. Temporary effects caused during construction of the LPA are included in Section 5, Temporary Effects. Effects to existing, planned, and protected resources are discussed together. This discussion of effects is organized by geography, discussing resources as they fall on the Oregon Mainland, Hayden Island, Downtown Vancouver (south of McLoughlin Boulevard), and Upper Vancouver (north of McLoughlin Boulevard). As described in Section 3, the recreation resources that exist in the Columbia River are included in Section 4.3.1 Downtown Vancouver.

This section includes effects caused by both the construction and operation of the project that are permanent in nature, tree removal, realignment and rebuilding of trails, permanent right-of-way acquisitions, changes in access and accessibility, changes in visual quality to or from the resource, as well as changes in noise levels or air quality. Mitigation for these long-term effects is discussed in Section 6 of this report.

4.2 Oregon Long-term Direct Effects

4.2.1 Oregon Mainland

4.2.1.1 East Delta Park

Protected by 6(f) of the LWCF Act (See section 3.4)

A fill wall supporting the I-5 northbound to Marine Drive interchange ramp would be constructed along and around the northern tip of the park. All permanent changes would be located entirely outside the park boundaries, with the nearest improvements located five feet outside the park boundary (and within the existing I-5 right-of-way). This new wall may protect users of the Control-Line flying field from the effects of wind through this area, but would also limit their westerly views. Noise levels will also increase somewhat in Delta Park with the project compared to No-Build Alternative.

The 2.1-acre off-leash area associated with East Delta Park, and located in ODOT-owned right-of-way, would be permanently impacted by a roadway connection between Vancouver Way and Union Court and construction of a stormwater facility. Approximately 1.0 acre of this area would be removed from use by PP&R as an off-leash area. No permanent direct impacts would occur to the PP&R-owned parkland as a result of construction, as shown in Exhibit 4-1a at the end of this section.

4.2.1.2 Marine Drive Multi-use Trail

The realignment and reconstruction of Marine Drive Boulevard would require that an approximate 130-foot length of the 5-mile Marine Drive Trail be temporarily closed, demolished, and rebuilt in a similar location. This section of the trail is on a parcel owned by Metro, but is operated and maintained through an easement held by the City of Portland. The rebuilt portion of

the trail would be slightly widened to connect in with a 16-foot wide multi-use path along the north side of Marine Drive Boulevard, which would replace the existing sidewalk. This 16-foot wide multi-use path would extend to the Marine Drive interchange, connecting to the Expo Center light rail station and the light rail bridge over North Portland Harbor. These new trails would provide safer and more direct bicycle and pedestrian connections than the circuitous paths that exist in and through the Marine Drive interchange today. The impacted portion of the trail and parcel is represented in Exhibit 4-1b.

In addition to the direct trail impacts, a small stormwater treatment facility would be built on the Metro parcel to treat runoff from Marine Drive Boulevard. This facility would require approximately 0.5 acres of the 3.6-acre parcel in an area unrelated to the trail, and would not affect the long-term location or use of the trail.

4.2.1.3 Proposed Bridgeton Trail

The LPA improvements could provide the connection of the Bridgeton Trail to the Marine Drive Multi-use trail within and west of the Marine Drive interchange. The new improvements to bicycle and pedestrian facilities provided by the LPA within the Marine Drive interchange area could be connected to the proposed Bridgeton Trail. This connection would not occur along the levee, as proposed in some early concept plans for the trail, as there is only five to seven feet of clearance between I-5 and the levee. As the existing North Portland Harbor bridges would be retained in the LPA, this clearance would not increase. Instead, the proposed Bridgeton Trail would have to connect to the CRC bicycle and pedestrian improvements by cutting diagonally across the parcel immediately east of I-5, traveling southwest to the new multi-use path provided on the north side of the new local street beneath the Marine Drive interchange. These potential connections are in Exhibit 4-2.

4.2.1.4 Gresham, Oregon

The expansion of the TriMet Ruby Junction Maintenance Facility expansion in Gresham to accommodate the new light rail vehicles is not expected to affect any park or recreation resources. The planned Gresham/Fairview Trail through this area would run along the east side of the existing TriMet facility, and therefore would not be impacted by the expansion that would occur to the west of the existing maintenance facility.

4.2.2 Hayden Island

4.2.2.1 Lotus Isle Park

As mentioned in Section 3, Lotus Isle Park, located on Hayden Island east of I-5 on North Portland Harbor, is close to but outside of the project area. Views from this park towards the west would be changed due to the construction of new ramps over North Portland Harbor and the reconstruction of the Marine Drive interchange, but no long-term adverse direct effects to this facility are expected.

4.3 Washington Long-term Direct Effects

4.3.1 Downtown Vancouver

4.3.1.1 Lower Columbia River Water Trail

Users traveling through the project area using the LCRWT would likely benefit from the replacement of the Columbia River bridges, as this would reduce the number of pier sets in the water from nine to six. These piers can pose a navigational hazard to those using the LCRWT for recreation and commercial purposes alike. Exhibit 4-3 contains an illustration of the reduction in navigation hazard.

4.3.1.2 Lewis and Clark National Historic Trail

Same as for the LCRWT, users of the Lewis and Clark National Historic Trail along the Columbia River would benefit from the reduced navigational hazard (Exhibit 4-3).

4.3.1.3 Waterfront Park

The new I-5 bridges over the Columbia River would travel over the portion of Waterfront Park that is located on the west side of the existing I-5 bridge. This portion of the park, which is in City of Vancouver right-of-way adjacent to Columbia Way, acts as the entrance to the larger Waterfront Park and Waterfront Renaissance Trail and includes a plaza and public art. The project would permanently acquire this entire area, approximately 0.4 acre, and displace the Discovery Monument and Waves plaza as shown in Exhibit 4-4. This permanent property acquisition constitutes nine percent of the 5-acre Waterfront Park.

Traffic noise levels at the Waterfront Park are expected to decrease compared to No-Build conditions due to the highway facility being located further away (higher in elevation) from the park than existing.

4.3.1.4 Waterfront Renaissance Trail

Approximately 450 feet of Waterfront Renaissance Trail would be permanently realigned by the construction of the new I-5 bridges and demolition of the existing bridges (Exhibit 4-4). The length of the trail beneath the existing and new bridges would be realigned along the realigned Columbia Way. Users would benefit from the construction of the new bridges, as they would no longer have to travel beneath the existing low level bridges, which can be dark and create a tunnel-like experience. This length of impacted trail constitutes approximately five percent of the existing 5-mile Waterfront Trail.

Access to this trail from I-5 is currently provided by steep or circuitous paths extending from the north ends of the I-5 bridges to Columbia Way. Users have to cross Columbia Way before accessing the Trail. The LPA would involve the construction of a new multi-use path within the northbound I-5 bridge via a looped path that would travel underneath the bridges to connect directly to the trail along the realigned Columbia Way. Though the number of connections from the I-5 bridges to the Waterfront would be reduced from two to one, the future connection would be wider and safer than what exists today, and would directly benefit Waterfront Trail and the parks that it provides connection to, including Waterfront Park, Old Apple Tree Park, the Confluence Land Bridge, and the VNHR.

Similar to the Waterfront Park, noise levels at this Trail are expected to decrease.

4.3.1.5 Old Apple Tree Park

Protected by the FLP program conversion requirements

The Old (or Heritage) Apple Tree Park would be impacted by a permanent airspace easement of less than 0.1 acre over the northwest corner of the park for maintenance of the I-5 northbound to SR 14 elevated ramp (Exhibit 4-5). This easement would give WSDOT the right to enter the park with equipment to perform routine inspections of the ramp structure. It is not expected that any landscaping on the park property would be impacted by this easement.

The new I-5 northbound to SR 14 interchange ramp would be located closer to the park than the existing ramp, coming within 5 to 10 feet of its northern boundary. It is not expected that the ramp would cause any shading of the Old Apple Tree, nor adversely impact user experience given the forested buffer along the northern edge of the park.

Traffic noise levels would decrease slightly (by approximately 1 dBA) with the project compared to the No-Build alternative as the new highway ramp would be higher than existing.

Users of the Confluence Land Bridge, which goes over SR 14 connecting the Vancouver Waterfront with the VNHR, have to travel through Old Apple Tree Park. The minor permanent impacts to this facility are not expected to detract from the experience of users traveling through or visiting this park.

4.3.1.6 Vancouver National Historic Reserve

Current designs indicate that approximately 1.7 acres would need to be permanently acquired from the VNHR (Exhibit 4-6). Approximately 0.2 acres of the site would be required for a permanent easement. These permanent property impacts comprise less than one percent of the VNHR and are predominately the result of the redesign of the I-5/SR 14 interchange and the realignment of I-5. These impacts include narrow strips of property along southern and western edges of the VNHR, as well as NPS-owned property south of the BNSF railway. Specifically, property would be acquired along SR 14 west of the Confluence Land Bridge, along the I-5 northbound to City Center loop ramp in the U.S. Army Reserve-owned portion of the VNHR, adjacent to the FHWA WFL building, and further north adjacent to the City-owned West Barracks. Additionally, the project would require the acquisition of a small permanent airspace easement from Old Apple Tree Park (described above) and in the Army Reserve-owned portion of the VNHR for the maintenance of elevated ramp structures in these areas. At this time, no recreation facilities are expected to be displaced, though some parking stalls along 5th Street and on the Army property and FHWA WFL building would be permanently displaced.

Traffic noise levels in the recreational portion of the VNHR near the I-5/SR 14 interchange would increase slightly (2 dBA) with the project compared to the No-Build alternative. Despite the small noise increase, the high usage of this recreation facility may support the need for mitigation at this location as described in Section 6 of this report.

Although the LPA would require acquisition of land near the planned reconstruction of the Fort Vancouver Village (“Kanaka Village”) it is not expected to substantially interfere with NPS plans. Impacts would be limited to existing and planned landscaping along SR 14 and the I-5/ SR 14 interchange, as well as changes in views from the Village area. The Confluence Land Bridge would not be physically impacted by the reconstruction of the I-5/SR 14 interchange, though views from the Land Bridge to the east would change due to the increased heights of the interchange ramps and the river crossing.

4.3.1.7 Discovery Historic Loop Trail

The Historic Discovery Loop Trail includes the Waterfront Renaissance Trail, and would therefore experience the same long-term direct effects as those described above. In addition, users of the trail through downtown Vancouver streets would have to navigate the light rail alignment on Washington and Broadway Streets, though new and improved intersections, sidewalks, and bike lanes associated with the alignment would result in an overall improvement in safety and enjoyment for users. Additionally, trail users would benefit from the Community Connector that would be constructed south of Evergreen Boulevard to provide connection between downtown Vancouver and the VNHR. This connector would provide wide paths, landscaping, possible water features and interpretative signage, and some reduction in highway noise, all of which would enhance user experience when traveling this section of the Discovery Historic Loop Trail.

4.3.1.8 Vancouver Landing at Terminal One

There would be no long-term direct effects to Vancouver Landing at Terminal One, beyond the changes in easterly and southern views from the resource due to the construction of the new river crossing. These changes in views are not expected to adversely impact the function or enjoyment of this facility.

4.3.1.9 Esther Short Park

There would be no long-term adverse effects to Esther Short Park as a result of constructing the LPA. A light rail station would be located one block east of the Park, which would improve accessibility for users traveling to many of the large events held at the park including Hot July Nights, the Wine and Jazz Festival, and the weekend Vancouver Farmers Market.

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

Protected by the FLP program conversion requirements

Construction associated with the light rail guideway and terminal station on McLoughlin Boulevard, as well as construction of a fill wall for the I-5 northbound to Fourth Plain Boulevard elevated exit ramp, would require the permanent use of 0.6 acre of property from the parcel that houses the Marshall Community Center, Luepke Senior Center, and Marshall Park. Exhibit 4-7 shows a majority of this permanent property acquisition, 0.5 acre would occur along the western edge of the parcel for the fill wall, while the remaining 0.1 acre would be required along the northern boundary of the parcel to accommodate the wider street cross-section needed for light rail. The permanent acquisition due to the highway construction would permanently displace up to one parking space, four horseshoe pits, and trees (both in state right-of-way and within the park boundary), including several large sequoia trees, that currently serve as a buffer between the Community Center campus and I-5. The fill wall would be located along the border of the parking lot and would be up to 20 feet high at its maximum. Specific tree replanting requirements on the property would be determined by the City of Vancouver Urban Forester during the tree removal permitting process. The property acquisition associated with light rail would displace grass and landscaping, and possibly impact utility risers at this location. The permanent use of 0.6 acre comprises 3 percent of the 19-acre facility. The total area of FLP protected land at Marshall Park is approximately 0.5 acre. Approximately 0.10 acre of FLP land would be required for the project. As of 2011, the existing parcel also contains a few medium-sized trees and provides a partial vegetative buffer between the park and I-5. The CRC Project would require approximately 5,461 square feet of the 0.5 acres of FLP land previously granted to Marshall Park. This 5,461

square feet of land represents a small portion of the parks overall recreational utility and does not include any recreational attributes that are particularly unique to Marshall Park.

Additionally, the west access point to this facility on McLoughlin Boulevard would be realigned further to the west to accommodate the location of the terminal light rail station. The eastern access would remain in a similar location as the current location. The accesses would be aligned on either side of the station, both of which would become signalized intersections to facilitate safe traffic, bike, and pedestrian movements to and from the Community Center Campus and between the Community Center and transit station and Clark College Park and Ride.

The VCPRD has expressed concern that the introduction of a Park and Ride adjacent to the Clark College Recreational Fields and across McLoughlin Boulevard from Marshall Community Center, Luepke Senior Center, and Marshall Park would increase vehicular and pedestrian traffic through the area which could result in increased noise, incidents of loitering, vandalism, or littering, or other unwanted activities or effects. As discussed in Section 6 of this report, these impacts could be avoided or minimized through the appropriate design of this park and ride facility and surrounding streetscape.

Traffic noise levels would increase somewhat (3 dBA) with the project compared to No-Build conditions. No impacts from transit noise are expected.

Existing on-street parking on McLoughlin Boulevard (an estimated 76 spaces), which is often used by members of the public accessing the Community Center and Park, would be eliminated to accommodate the light rail guideway and station, two lanes of traffic, turn lanes into the Community Center and the Clark College Park and Ride, bicycle lanes, and sidewalks.

With sufficient mitigation for the loss of both on- and off-street parking spaces, as well as the re-establishment of a buffer between I-5 and the Community Center, the relatively small permanent use of the facility (3 percent) would not diminish the long-term character, use or enjoyment of the current facility.

4.3.2 Upper Vancouver

4.3.2.1 Clark College Recreation Fields

Construction associated with light rail guideway, terminal station, and the Clark College Park and Ride would require a permanent use of 1.0 acre of the southern edge of Clark College Recreation Fields along McLoughlin Boulevard, as shown in Exhibit 4-8. This permanently acquired area would house small one story buildings including: a power substation and a signal communication building for light rail and an operator building that would include a restroom and break area for the transit agency staff. Further east along the parcel, property would be needed for a widened street cross-section to accommodate a left-turn lane into Marshall Community Center and Park. The permanently affected area would constitute approximately 7 percent of the 14-acre recreational property, and is occupied by a grassy slope serving predominately as a transition area between parking on McLoughlin Boulevard and the softball and multi-use field to the north, as well as a line of trees that are a part of the “Vancouver Street Tree Arboretum” that extend throughout Vancouver Central Park. These property impacts would be south of the existing homerun fence for the softball field and south of the multi-use field, and are not expected to interfere with any of the public recreational activities that take place at the park.

Traffic noise levels would increase somewhat (3 dBA) with the project compared to No-Build conditions. No impacts from transit noise are expected.

Existing on-street parking on McLoughlin Boulevard (an estimated 76 spaces), which is often employed by members of the public accessing these recreational fields, would be eliminated to accommodate the light rail guideway and station, two lanes of traffic, turn lanes into Marshall Community Center and Park and the Clark College Park and Ride, bicycle lanes, and sidewalks.

The introduction of the parking facility adjacent to the recreation fields would change the westerly views of park users, which is currently of a largely wooded parcel with I-5 just beyond. Three floors of the Clark College Park and Ride would be visible at its northern end increasing to five floors at the south end of the facility. A bike path, local circulation road, and stormwater facilities would be located between the fields and the parking structure itself. Among other visual considerations, it is expected that a buffer of trees would be planted (or possibly preserved) to provide screening between the fields and the new park and ride. As the design of the park and ride progresses, the visual experience of the facility would be evaluated and additional aesthetic treatments would be proposed. Clark College would have the opportunity to provide input on this design.

4.3.2.2 Arnada Neighborhood Park

There would be no long-term direct effects to Arnada Neighborhood Park as a result of constructing the LPA. This park is located adjacent to Fourth Plain Boulevard and would not experience any changes in view or noise levels from any improvements to Fourth Plain Boulevard associated with the CRC project. Trees and vegetation that serve as a buffer between the park and Fourth Plain Boulevard will remain.

4.3.2.3 Leach Neighborhood Park

There would be no long-term direct effects to Leach Park as a result of constructing the LPA. This park is located approximately one block west of I-5 and would not experience any changes in views or noise levels as a result of the highway improvements.

4.3.2.4 Leverich Community Park

Approximately 0.3 acre of vegetated and steeply sloped passive parkland would need to be permanently acquired from the 30-acre Leverich Park for the construction of the SR 500 eastbound to I-5 northbound interchange ramp (Exhibit 4-9). The elevated ramp would be constructed on a fill wall and piers along the southern and western portions of the park, with most of the property acquisition occurring at the access point to the park on 39th Street. The new ramp would be constructed over the access point and would not result in any permanent changes to this access. The permanent use of 0.3 acres comprise approximately 1 percent of Leverich Park, which would be limited to impacts on landscaping, and would not diminish the long-term character, use or enjoyment of the Park.

Noise levels are expected to stay the same or possibly decrease with the project compared to the No-Build alternative. The visibility of SR 500 westbound to I-5 northbound ramp would be greater than that of the existing roadway facilities that border the park. The new ramp would be elevated a minimum of 16.5 feet over the park entrance and transition onto a fill wall approximately 20 feet high and decreasing in height as it wraps around the park and heads north. While the elevated structure over Leverich Community Park access would be similar in height and volume to the existing SR 500 to I-5 southbound and I-5 northbound to SR 500 ramps located to the south, the ramp as it wraps around the park would be newly visible to park users at the start of the disc golf course and could introduce more light from the lighting on the highway facility. Leverich Community Park is largely a recreation-oriented facility where the need for quiet or

unobstructed views is not necessary for its enjoyment. Therefore, these minor changes in noise levels and visual context would not adversely affect the public use of the park.

If the north legs of the I-5/SR 500 interchange were deferred, as proposed under the potential phased construction option, then these impacts to Leverich Community Park would be deferred.

4.3.2.5 Burnt Bridge Creek Trail

Protected by 6(f) of the LWCF Act (See section 3.4)

There would be no long-term direct effects to Burnt Bridge Creek Trail as a result of constructing the LPA. The trail travels through Leverich Community Park and across I-5 via a bicycle and pedestrian-only overcrossing south of the I-5/Main Street interchange. The northbound SR 500 ramps would tie into mainline I-5 at this location, resulting in some repaving and restriping beneath the overpass, but no adverse impacts are expected.

If construction of the north legs of the I-5/SR 500 interchange were deferred, as proposed under the potential phased construction option, then work beneath the overpass would also be deferred.

4.3.2.6 Kiggins Sports Fields and Stadium

One of the two access points to the Kiggins Sports Fields and Stadium, located on the same parcel as Discovery Middle School, would be impacted by the construction of a retaining wall along I-5, though the fields and stadium themselves would not be physically impacted. Additionally, connection to a local trail that runs through the property occurs along the impacted access. This local trail connection is open to the public and connects to the larger Discovery Trail system.

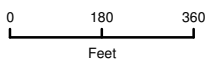
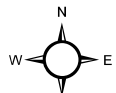
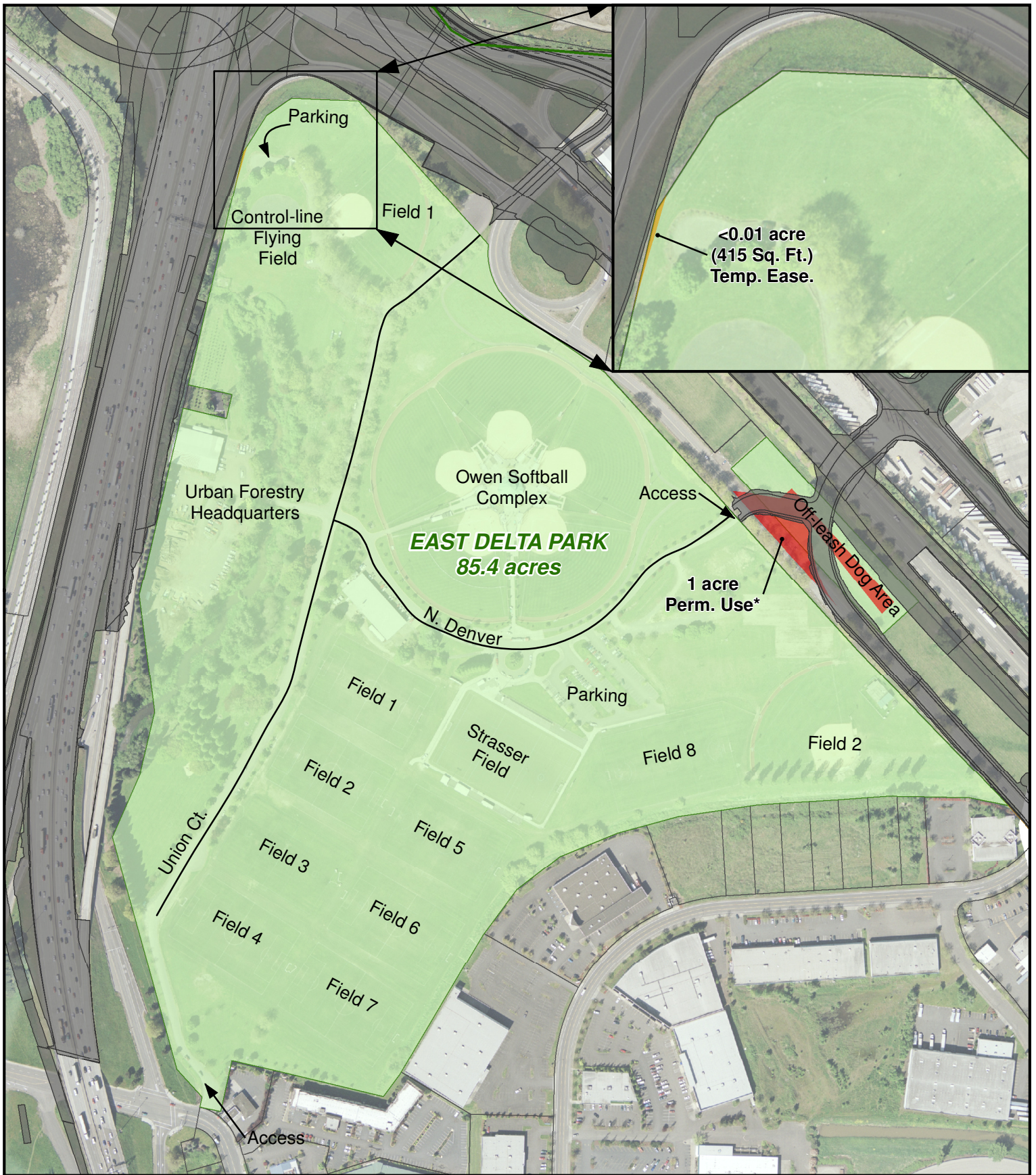
Near the southern access located along the east side of Discovery Middle School, less than 0.1 acre would be acquired for the placement of the retaining wall. This permanent acquisition would displace some landscaping, trees, and parking used by the school. A permanent subsurface easement, totaling approximately 0.3 acre, would extend from the wall and under the access road for the installation of long ties that would anchor the wall into the soil. This subsurface easement would not permanently affect the above ground use of this area in any way, and would only prevent excavation below a certain depth to be determined following the final design of the wall. Use of this road to access the stadium and sports fields, as well as the Discovery Trail, is not expected to be permanently affected by installing a retaining wall at this location. The permanent acquisition would comprise less than 1 percent, and the subsurface easement, 1 percent, of the 22-acre Kiggins Bowl Sports Fields and Stadium and Discovery Middle School Complex. These impacts, shown in Exhibit 4-10, would not diminish the long-term character, or the use or enjoyment of the fields, stadium, or trail by the public.

Noise levels at this location are expected to increase slightly (2 dBA) with the project when compared to the No-Build alternative. Despite the small noise increase, the proximity of this area to Discovery Middle School may support the need for mitigation at this location as described in Section 6 of this report.

According to a representative of the VPS, bicyclists and pedestrians traveling to Discovery Middle School Complex and Kiggins Bowl Sports Fields and Stadium often use the 39th Street overpass. Currently, there is only one sidewalk on the north side of the overpass. The project would provide sidewalks, as well as bicycle lanes, on both sides of the overpass. Staff also enlisted the help of the CRC Pedestrian and Bicycle Advisory Committee to determine treatments at intersections, including signals, crosswalk locations, and connectivity to the school and stadium. In addition to providing sidewalks on both sides of the overpass, the project also plans to extend the southern sidewalk to 15th Avenue/P Street on the east side of I-5, increasing

accessibility to the school and stadium. Also, the construction of the north legs of the I-5/SR 500 interchange is expected to result in a decrease in traffic volumes along 39th Street, though there may be impacts to local traffic movements along this street through the interchange construction.

If the north legs of the I-5/SR 500 interchange were deferred, as proposed under the potential phased construction option, then impacts to Kiggins Sports Field and Stadium would be deferred.

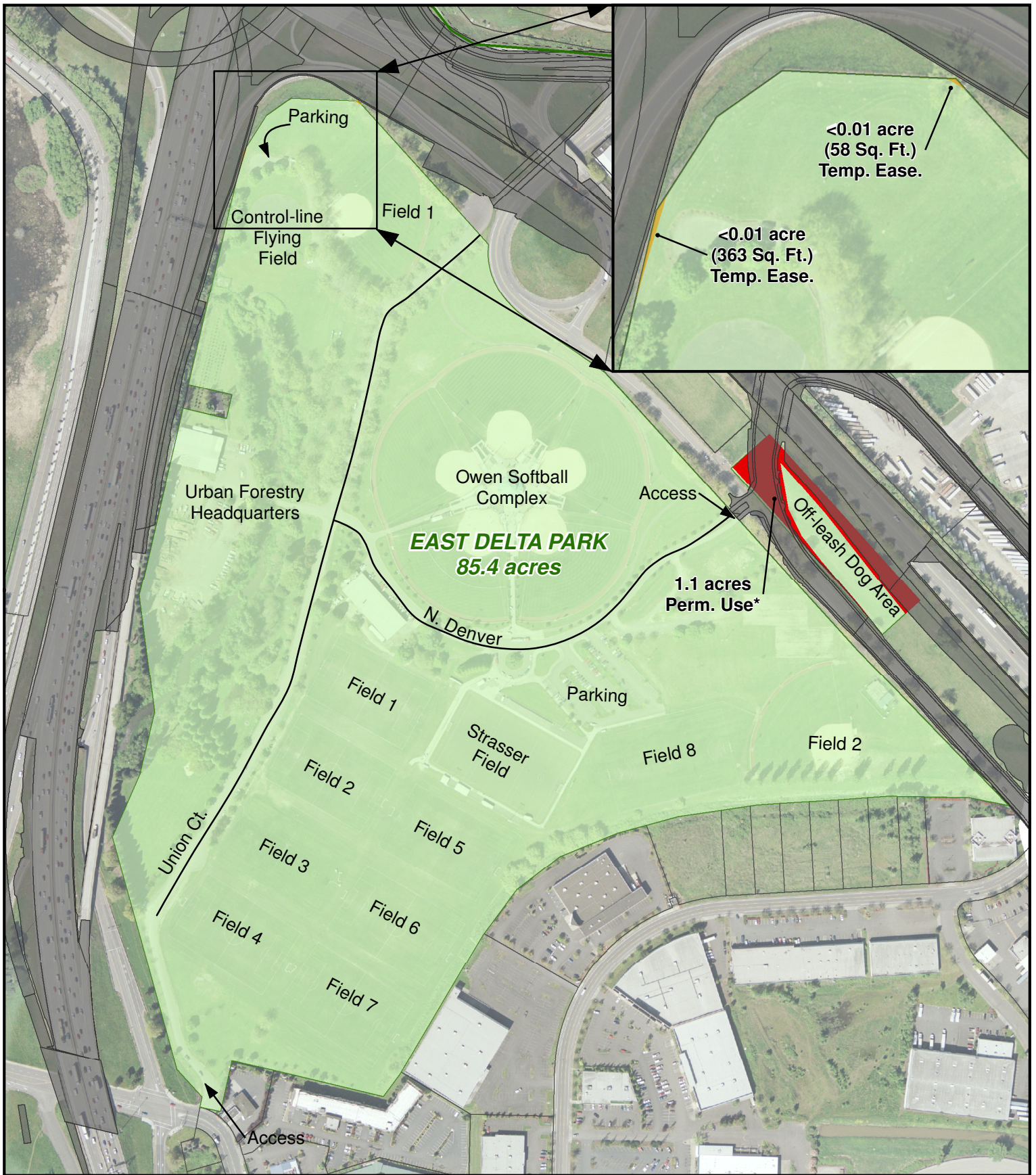


- | | | |
|-------------------|-------------------------------|----------------------------|
| Project Footprint | Acquisition Boundaries | Transit Right-of-Way |
| Park | Roadway Right-of-Way | Transit Permanent Easement |
| Tax Lot | Roadway Permanent Easement | Transit Temporary Easement |
| | Roadway Temporary Easement | |

Exhibit 4-1a. East Delta Park - LPA Option A



* This area is owned by ODOT, therefore would not actually be "acquired".



0 180 360
Feet

Project Footprint

Park

Tax Lot

Roadway Right-of-Way

Roadway Permanent Easement

Roadway Temporary Easement

Transit Right-of-Way

Transit Permanent Easement

Transit Temporary Easement

Exhibit 4-1b. East Delta Park - LPA Option B

* This area is owned by ODOT, therefore would not actually be "acquired".

Exhibit 4-2. Marine Drive Multi-Use Trail

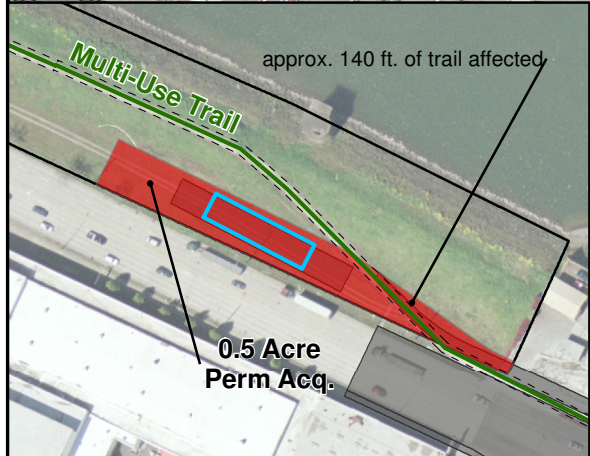
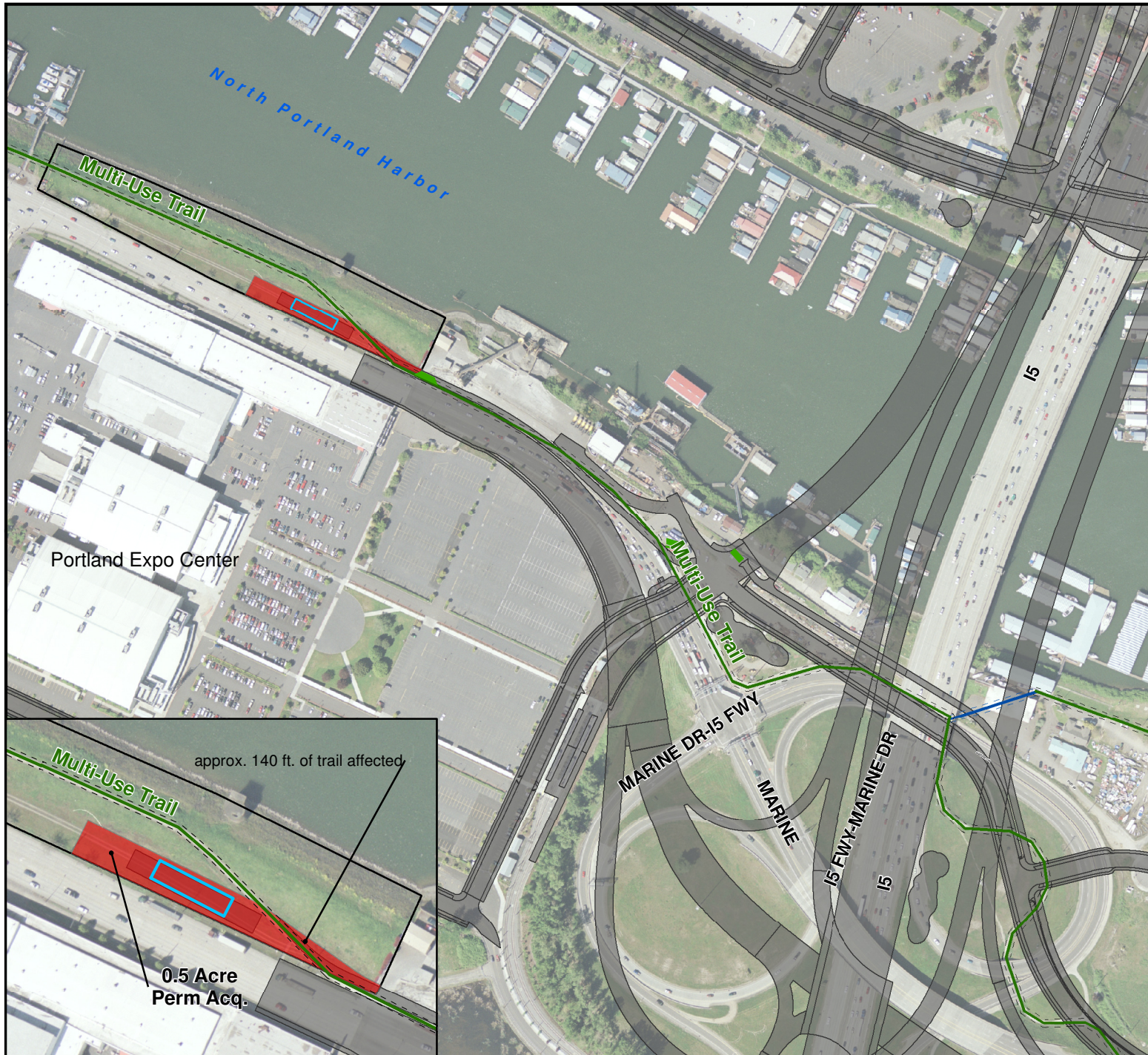
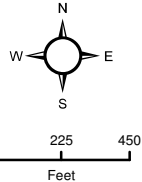
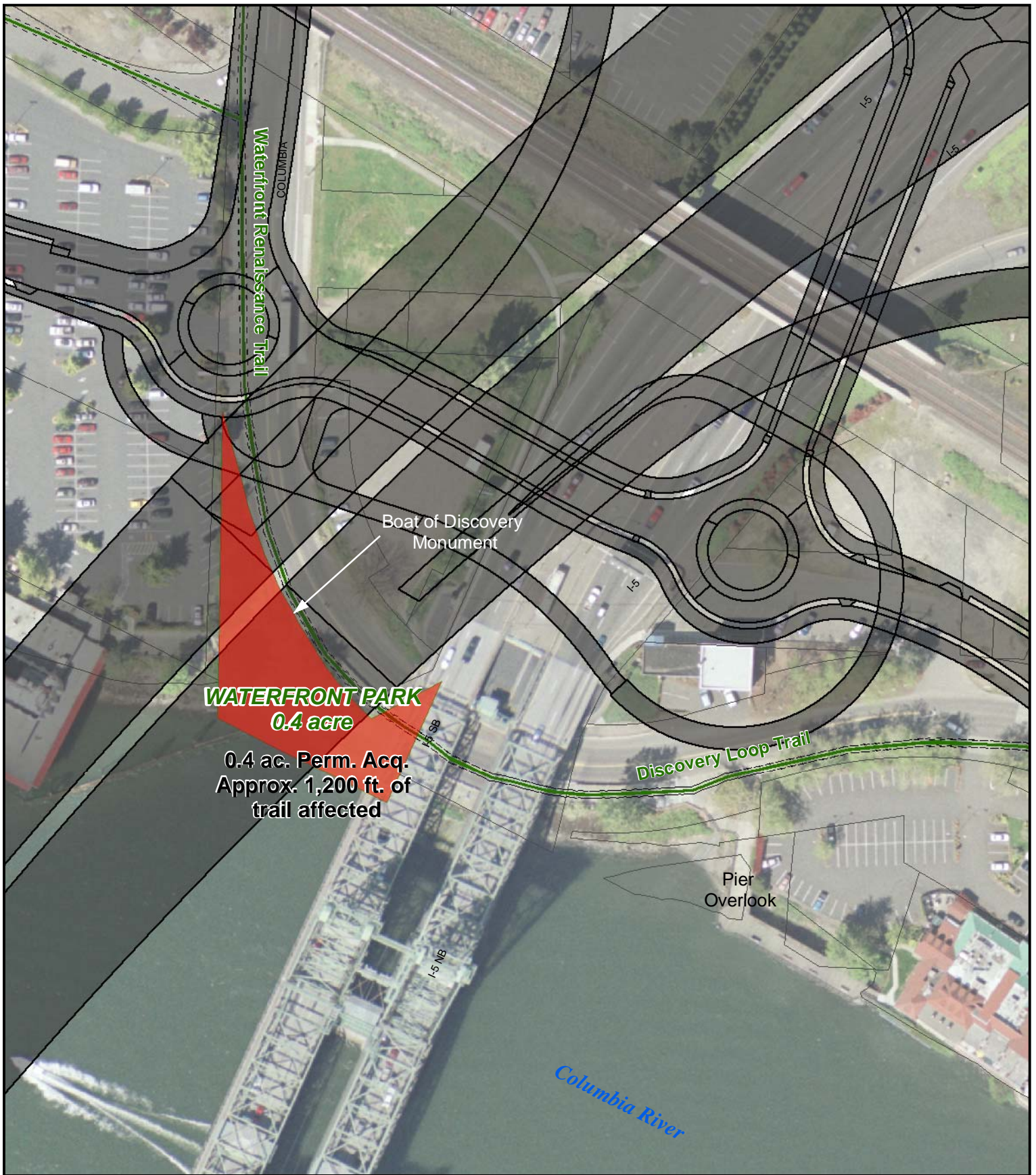


Exhibit 4-3. Lower Columbia River Water Trail and Lewis and Clark Historic Trail



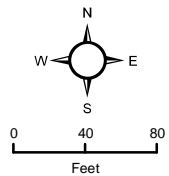
- Parks
- Trails
- Existing Pier Locations
- Project Design
- Potential Pier Locations





WATERFRONT PARK
0.4 acre

0.4 ac. Perm. Acq.
Approx. 1,200 ft. of trail affected



- Tax Lot Boundaries
- Park
- Trails

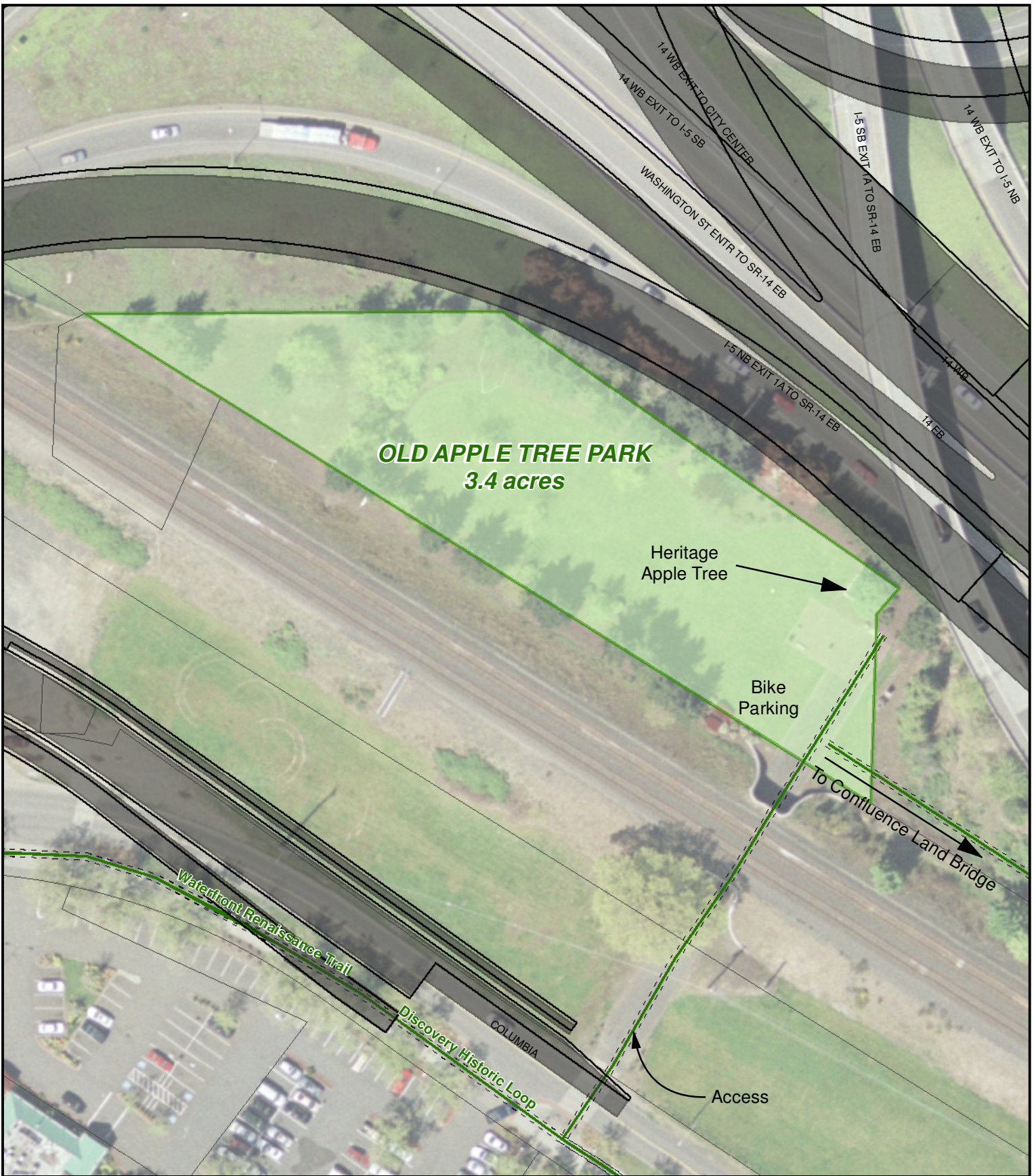
Acquisition Boundaries

- Roadway Right-of-Way
- Roadway Permanent Easement
- Roadway Temporary Easement

- Transit Right-of-Way
- Transit Permanent Easement
- Transit Temporary Easement

Exhibit 4-4. Waterfront Renaissance Trail and Waterfront Park





OLD APPLE TREE PARK
3.4 acres

Heritage
Apple Tree

Bike
Parking

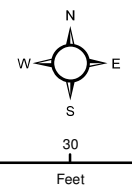
Waterfront Renaissance Trail

Discovery Historic Loop

To Confluence Land Bridge

Access

COLUMBIA



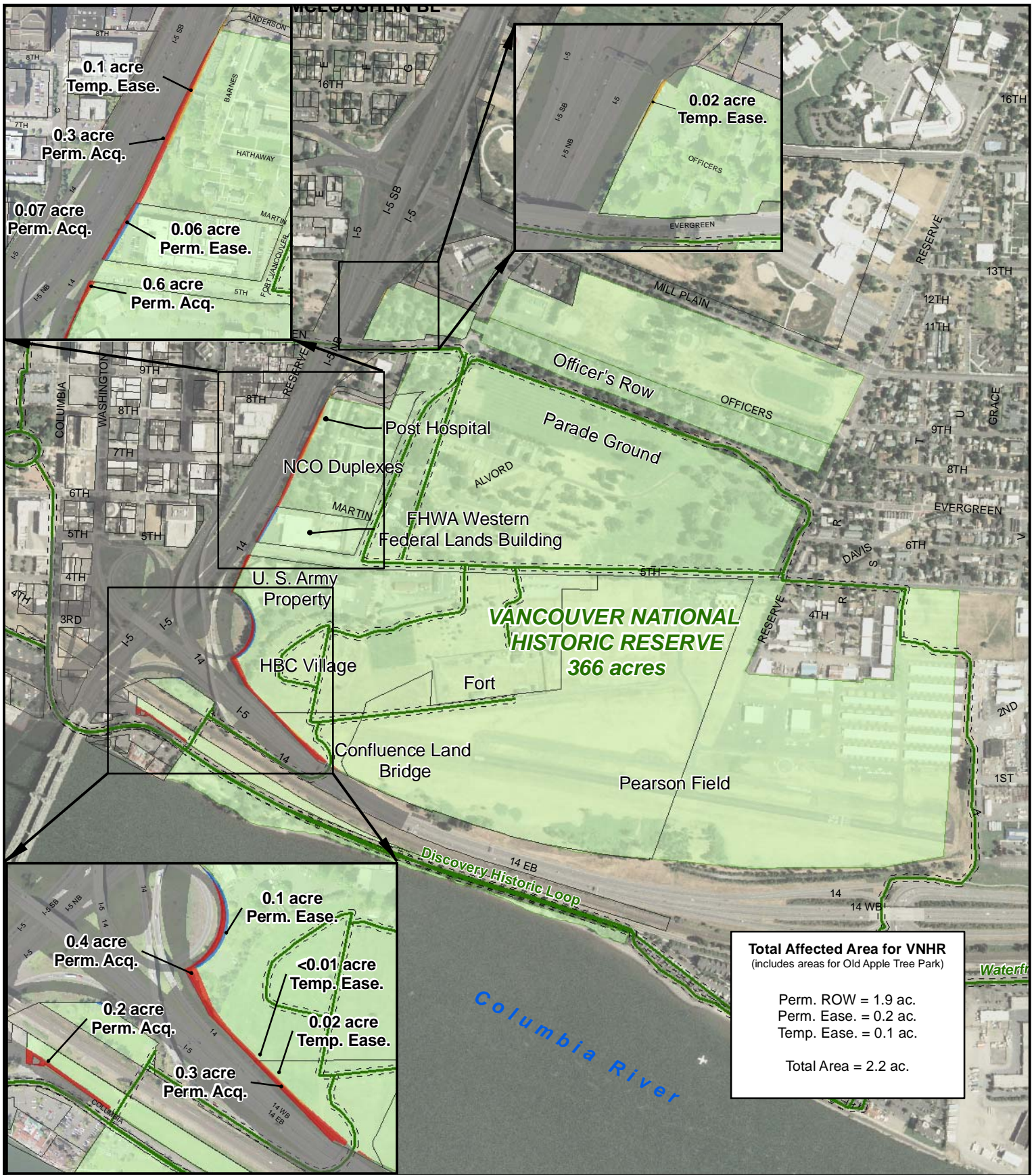
- Project Design Footprint
- Park
- Trails
- Tax Lots

- Acquisition Boundaries**
- Roadway Right-of-Way
 - Roadway Permanent Easement
 - Roadway Temporary Easement

- Transit Right-of-Way
- Transit Permanent Easement
- Transit Temporary Easement

Exhibit 4-5. Old Apple Tree Park (located in Vancouver National Historic Reserve)

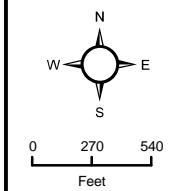




Total Affected Area for VNHR
 (includes areas for Old Apple Tree Park)

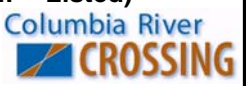
Perm. ROW = 1.9 ac.
 Perm. Ease. = 0.2 ac.
 Temp. Ease. = 0.1 ac.

Total Area = 2.2 ac.



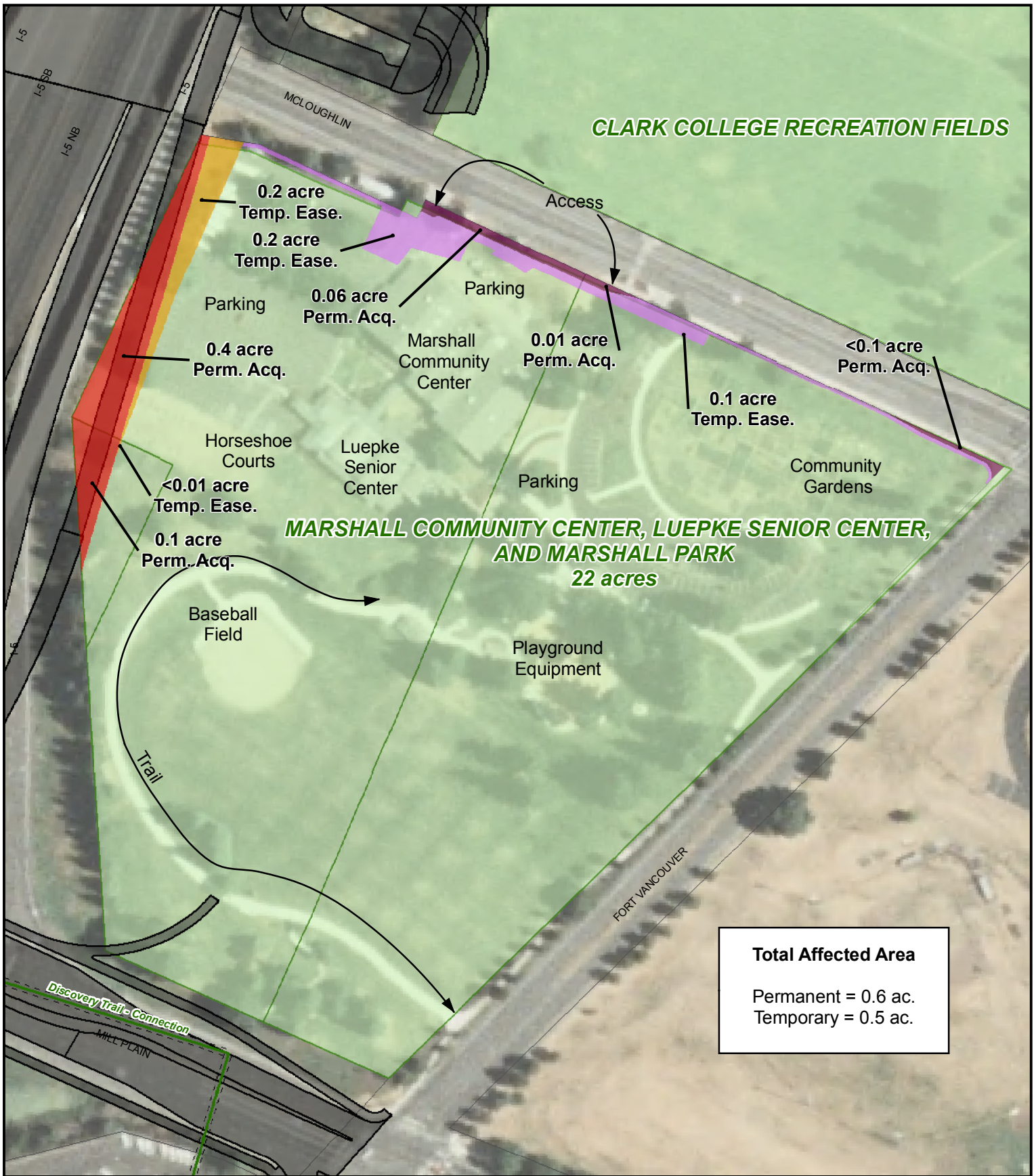
- | | | |
|-------------------|-------------------------------|----------------------------|
| Project Footprint | Acquisition Boundaries | Transit Right-of-Way |
| Park | Roadway Right-of-Way | Transit Permanent Easement |
| Trails | Roadway Permanent Easement | Transit Temporary Easement |
| Parcel Boundary | Roadway Temporary Easement | |

Exhibit 4.6. Vancouver National Historic Reserve (DAHP #s 109, 368, 369, and 381 NRHP - Listed)



Note: Impacts to Old Apple Tree Park are shown on separate exhibit.

Analysis by J. Koloszar; Analysis Date: May 9, 2010; File Name: 4fmaps_CM196_Parks_RP_VNHR.mxd



Total Affected Area

Permanent = 0.6 ac.
 Temporary = 0.5 ac.

	Project Design Footprint	Acquisition Boundaries Roadway Right-of-Way Roadway Permanent Easement Roadway Temporary Easement	Transit Right-of-Way Transit Permanent Easement Transit Temporary Easement
	Park Trails Tax Lots		

Exhibit 4-7. Marshall Community Center, Luepke Senior Center, and Marshall Park



Analysis by J. Koloszar; Analysis Date: Apr. 23, 2010; File Name: 4fmaps_CM196_Parks_RP_Marshall.mxd

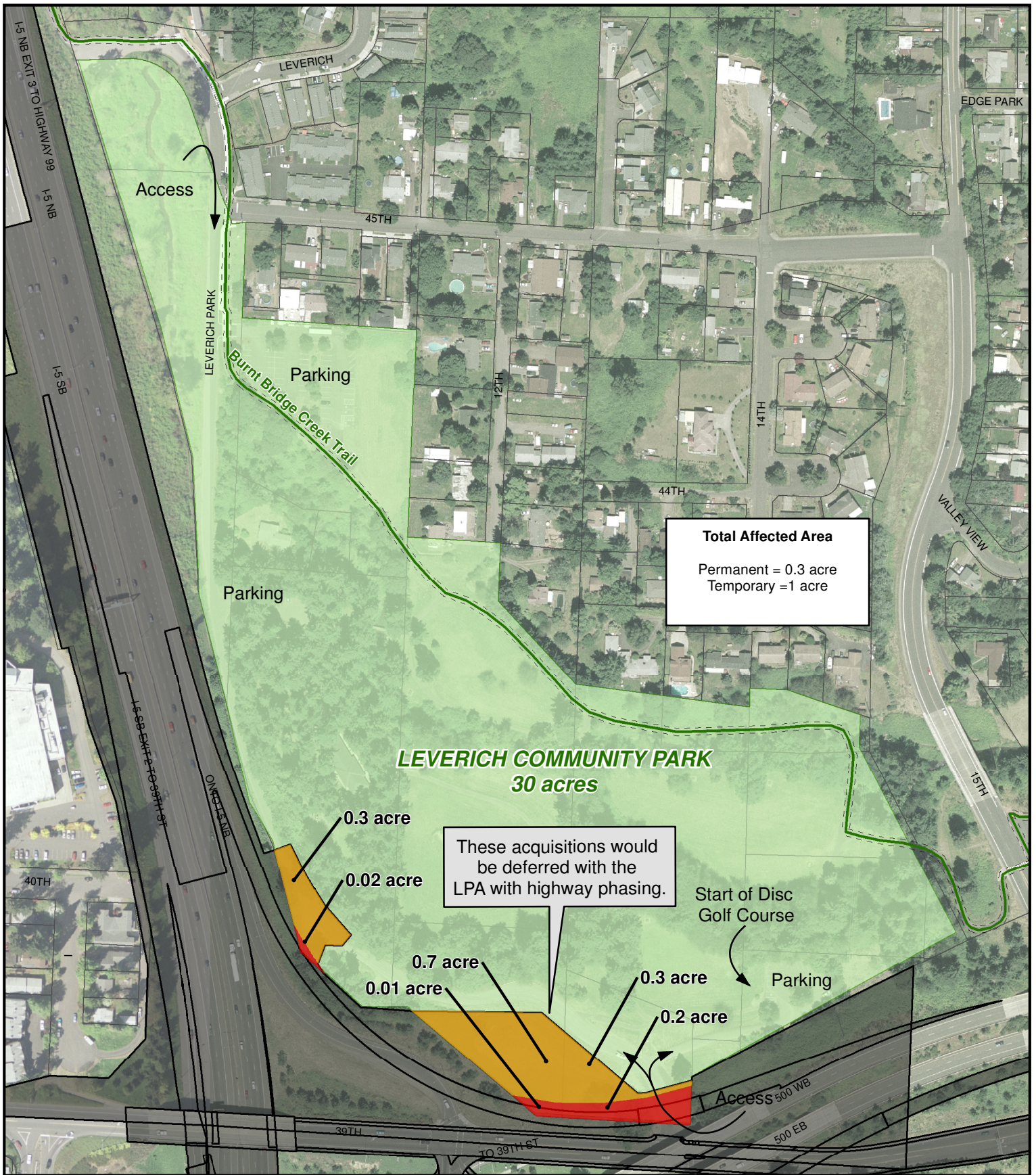


	Project Design Footprint	Acquisition Boundaries Roadway Right-of-Way Roadway Permanent Easement Roadway Temporary Easement	Transit Right-of-Way Transit Permanent Easement Transit Temporary Easement
	Park Trail Tax Lots		

Exhibit 4-8. Clark College Recreation Fields

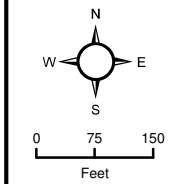


Analysis by J. Koloszar; Analysis Date: Apr. 23, 2010; File Name: 4fmaps_CM196_Parks_RP_ClarkFields.mxd



Total Affected Area
 Permanent = 0.3 acre
 Temporary = 1 acre

These acquisitions would be deferred with the LPA with highway phasing.



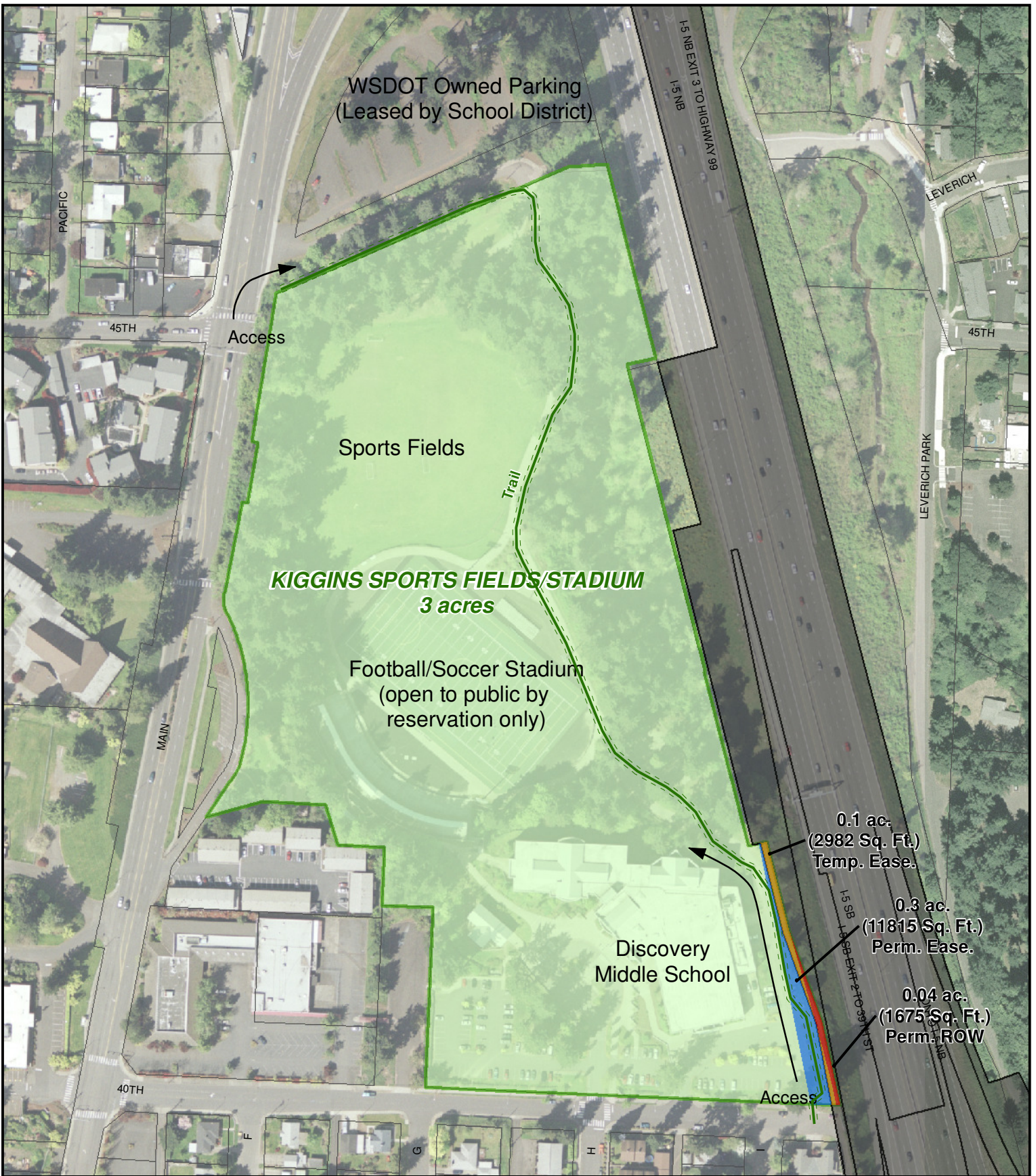
- Park
- Trail
- Tax Lots

- Acquisition Boundaries**
- Roadway Right-of-Way
 - Roadway Permanent Easement
 - Roadway Temporary Easement

- Transit Right-of-Way
- Transit Permanent Easement
- Transit Temporary Easement

Exhibit 4-9. Leverich Community Park and Burnt Bridge Creek Trail





	Project Design Footprint Park Trail Tax Lots	Acquisition Boundaries Roadway Right-of-Way Roadway Permanent Easement Roadway Temporary Easement	Transit Right-of-Way Transit Permanent Easement Transit Temporary Easement	Exhibit 4-10. Kiggins Sports Fields/Stadium

5. Temporary Effects

5.1 Introduction

This section describes the temporary effects that would be caused during construction of the LPA to the park and recreation resources identified in Section 3, Affected Environment. Temporary effects to existing, planned, and protected resources are discussed together and organized the same as in Section 4, Long-term Direct Effects.

Temporary effects are short-term in nature and include temporary easements of parkland, temporary changes in access and accessibility, detours and delays that may impede access to the park during construction, as well as changes in noise levels or air quality caused by construction activities. Mitigation for these temporary effects is discussed in Section 6 of this report.

5.2 Oregon Temporary Effects

5.2.1 Oregon Mainland

5.2.1.1 Delta Park East

Protected by 6(f) of the LWCF Act (See section 3.4)

Highway construction would require the temporary use of less than 0.1 acre from the northern corner of East Delta Park (Exhibit 4-1). This temporary easement would be required to gain construction access to the I-5 right of way in order to build a fill wall supporting the I-5 northbound bridge to the Marine Drive interchange ramp. The temporarily affected area of the park is occupied by grass that is periodically mowed. A small parking area and a concrete pad for flying control-line model airplanes are adjacent to this impacted area. Construction activities would generate noise and would damage the grass where construction equipment would operate. All landscaping would be restored after construction.

5.2.1.2 Marine Drive Multi-Use Trail

During construction, bicycles, pedestrians, and other trail users would be detoured to the other side of Marine Drive Boulevard, and at times along the south side of the Portland Expo Center, for approximately 2,000 to 4,000 feet, depending on stage of construction. Trail users would connect back to the existing trail at the signalized intersection with Force Avenue west of the construction. The temporary detour during construction would cause a short-term inconvenience to trail users, but would not diminish the long-term character, use, or enjoyment of the Trail.

5.2.1.3 Proposed Bridgeton Trail

If the proposed Bridgeton Trail project were to obtain funding and be constructed prior to the construction of the LPA, trail users would experience temporary detours and delays in connecting to the Marine Drive Trail and multi-use path over North Portland Harbor during the reconstruction of the Marine Drive interchange. Establishing safe connections for non-motorized users in the construction zone would be a priority, and it is expected that these temporary impacts would be minor.

5.2.2 Hayden Island

5.2.2.1 Lotus Isle Park

As Lotus Isle Park is most used by residents of Hayden Island, it is not expected to be impacted by traffic detours and delays associated with the reconstruction of the Hayden Island interchange. The park is located far enough to the east so as not to be adversely impacted by construction-related noise, dust, debris, or glare.

5.3 Washington Temporary Effects

5.3.1 Downtown Vancouver

5.3.1.1 Lower Columbia River Water Trail

Both recreational and commercial marine travel along the Columbia River would be limited during the construction of the replacement I-5 bridges and the demolition of the existing bridges. Users of the LCRWT would be provided with a safe passage route or detours, if necessary, through the construction zone. It is possible that recreational travel through the project area would be limited at times to areas that certain users would not be able to access. For example, during construction or demolition of the shallow-water piers near shore areas may be closed to recreational use due to safety considerations. Users in kayaks or canoes may not be able to venture into the mid-river detour routes that involve faster flowing water and possible interactions with motorized boats.

5.3.1.2 Lewis and Clark National Historic Trail

Temporary impacts to the Lewis and Clark National Historic Trail would be the same as those mentioned above for the LCRWT.

5.3.1.3 Waterfront Park

As the portion of Waterfront Park west of the I-5 bridges would be fully acquired prior to construction, it is the remaining portion of the park east of I-5 that may experience temporary impacts. These include increased noise, changes in views of the Columbia River at I-5, and glare from construction lighting. Park users would be far enough to the east that they would not likely be affected by vehicle emissions and dust associated with construction.

5.3.1.4 Waterfront Renaissance Trail

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

Additionally, during construction at the I-5/SR 14 interchange, connections between downtown Vancouver and SR 14 would be closed for long periods of time. Drivers and bicyclists attempting to make this movement would be detoured to enter and exit SR 14 at Exit 1, and would be required to travel along Columbia Way to reach downtown Vancouver. This would temporarily increase traffic levels on this street, which is adjacent to the Waterfront Renaissance Trail. This

increase in traffic levels would pose a risk to trail users crossing into Old Apple Tree Park or crossing Columbia Way for some other reason.

5.3.1.5 Old Apple Tree Park

Protected by the FLP program conversion requirements

Construction of the new I-5 northbound to SR 14 westbound ramp would occur 5 to 10 feet outside of the Old Apple Tree Park boundary. Demolition of the existing ramp or construction of the new ramp would result in increased levels of noise, glare from construction lighting, additional dust and possibly debris from construction entering the Park.

Temporary increases in traffic levels along Columbia Way, as described above, may make it more challenging for trail users to leave or enter Old Apple Tree Park.

5.3.1.6 Vancouver National Historic Reserve

As shown in Exhibit 4-6, approximately 0.2 acre would be temporarily needed adjacent to the West Barracks and at the west end of Officer's Row for the construction of a retaining wall along I-5. One portion of this temporary construction easement would occur along Anderson Road and adjacent to the Post Hospital for the construction of a retaining wall in this location. Anderson Road is used largely for access to the FHWA WFL Building, so it is not expected that this construction would impact the recreational use of the property. Additionally, the temporary construction easement at the west end of Officer's Row, a largely commercial area of the VNHR, is not expected to affect recreation.

Construction at the I-5/SR 14 interchange and along I-5 would introduce temporary increases in noise, vibration, and dust that would distract from recreational activities, especially those in need of quietness. Additionally, the Evergreen Boulevard overpass would be completely closed for 9 to 12 months during the reconstruction of I-5 and the construction of the new overpass. This closure would eliminate the only direct east-west connection between downtown Vancouver and the VNHR, which is widely used by bicyclists and pedestrians recreating in the VNHR. Park visitors entering the VNHR from downtown would have to be detoured north to Mill Plain Boulevard for the accesses at Fort Vancouver Way and E Reserve Street, or south along Columbia Way. Bicyclists and pedestrians traveling to the VNHR would be detoured to Waterfront Trail and Old Apple Tree Park to cross SR 14 at the Confluence Land Bridge.

5.3.1.7 Discovery Historic Loop Trail

The section of the Discovery Historic Loop Trail that travels on Evergreen Boulevard would be closed for 9 to 12 months during its reconstruction as described above. Trail users would need to be detoured in the same ways as described above. Additionally, trail users traveling the portion of the trail that overlaps with Waterfront Trail would experience the same temporary effects as described in that section, including the increased traffic levels along Columbia Way.

5.3.1.8 Vancouver Landing at Terminal One

Users at the Vancouver Landing may experience increased noise during construction of the new I-5 bridges and demolition of the existing bridges. Access to Vancouver Landing via Columbia Way is expected to remain open throughout the duration of construction.

5.3.1.9 Esther Short Park

During the light rail construction, park users traveling through downtown Vancouver to Esther Short Park could encounter traffic delays, sidewalk closures, or street closures. Those traveling to the Park on I-5 or SR 14 for special events could encounter traffic delays and detours associated with bridges, interchange, and highway construction and demolition. Additionally, park visitors could be exposed to higher levels of noise during construction, as the light rail alignment is located within one block.

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

Protected by the FLP program conversion requirements

The realignment of Marshall Community Center and Park's accesses along McLoughlin Boulevard would require the temporary use of 0.5 acre along the western and northern boundaries of the parcel (Exhibit 4-7). Thirty to forty parking stalls may be temporarily unusable during construction of the Fourth Plain Boulevard exit ramp along the parks western edge and during transit construction along the northern boundary. Access to and from the Community Center would be maintained during the duration of construction. It is possible that one of the two accesses may need to be closed for short periods of time to complete construction. During any closures, the one-way access between the two main parking lots would likely be signed for two-way traffic to allow for full use of the parking facility though this would likely require flaggers or some other mitigation as this access is currently only one lane. Any closures would be coordinated with the Vancouver-Clark Parks and Recreation Department.

Users of this facility would likely experience increased levels of noise and glare from construction lighting due to construction of the Fourth Plain exit ramp, the light rail station and guideway on McLoughlin Boulevard, and the Clark College Park and Ride. Additionally, users attempting to access this facility from McLoughlin Boulevard may run into delays as they navigate through the construction on this street.

5.3.2 Upper Vancouver

5.3.2.1 Clark College Recreation Fields

Approximately 0.2 acre of the Clark College Recreational Fields would be temporarily used to access the construction of these facilities, and would impact landscaping in this area including grass and small trees. As with the permanent property acquisitions at this facility, these temporary acquisitions would occur south of the fields and are not expected to affect the recreational experience of park users. Similar to Marshall Community Center and Park, users of this facility would likely experience increased levels of noise and glare from construction lighting due to construction of the light rail station and guideway on McLoughlin Boulevard and the Clark College Park and Ride. Additionally, users attempting to access this facility from McLoughlin Boulevard may run into delays as they navigate through the construction on this street. If the park and ride at Clark College is not constructed prior to closing the on-street parking on McLoughlin Boulevard, users wanting to park at the recreation fields would have to do so at the parking lot provided on Fort Vancouver Way and use the trails that run throughout the facility to access the southern fields (Exhibit 4-8).

5.3.2.2 Leach Neighborhood Park

It is not expected that Leach Neighborhood Park would be impacted by LPA construction.

5.3.2.3 Leverich Community Park

Construction of the ramp over the access to Leverich Park would require brief temporary closures for the safety of the public. These closures would be minimized to the extent possible, and would be coordinated with the Vancouver-Clark Parks and Recreation Department. A temporary detour route is available to access the park, taking users along 15th Avenue, 45th Avenue, and NE Leverich Parkway, and would be signed during any closures. Additionally, there may be impacts to local traffic movements on 39th Street throughout the interchange construction.

In addition to the temporary closures, an additional 1.3 acre of the park would need to be temporarily used for the construction of the SR 500 eastbound to I-5 northbound interchange ramp, including the bridge over the access to Leverich Park (Exhibit 4-9), and possible utility relocation. This construction easement would include 1.0 acre of a grassy bowl-shaped area that is surrounded by chain link fencing along the western and southern sides (adjacent to the state right-of-way) and a low wooden post and cable fence within the Park along the access road. This area is largely unused and the public is discouraged from crossing through it. This area would be required for approximately 1.5 years to complete construction, and would need to be regraded which would require the removal of several trees, as well as a few shrubs. The remaining 0.3 acre that would be required temporarily is a gravel pullout located along NE Leverich Park Way, the local circulation road within the park. This temporary construction easement would be required for the relocation of city water and sewer mains crossing beneath I-5 that connect to the city utility mains in NE Leverich Park Way. Work would require excavation for pipe installation in and adjacent to the gravel pullout. This utility relocation may require the temporary closure of NE Leverich Park Way at this location or the narrowing of the road to a single lane.

A large cedar located within the park on the east side of the entrance has been identified as significant by the City Urban Forester. There are additional trees located outside the park boundary and in State right-of-way that currently serve as a buffer to I-5 which may be able to be preserved during construction. Construction activities would generate noise and would damage the grass and small plantings where construction equipment would operate.

If the north legs of the I-5/SR 500 interchange were not built or construction was delayed as proposed under the potential phased construction option, then any temporary impacts to users of Leverich Park would be avoided or delayed.

5.3.2.4 Burnt Bridge Creek Trail

Protected by 6(f) of the LWCF Act (See section 3.4)

There are no expected temporary impacts to Burnt Bridge Creek Trail, except for those users that access the trail via Leverich Park. These users would be affected by temporary closures as described above.

If the north legs of the I-5/SR 500 interchange were not built or construction was delayed as proposed under the potential phased construction option, then any temporary impacts to users of the Burnt Bridge Creek Trail would be avoided or delayed.

5.3.2.5 Kiggins Sports Fields and Stadium

The construction of the retaining wall along the access to Kiggins Sports Fields and Stadium would require 0.1 acre to be temporarily used. It is not expected that this construction would limit the use of this access by passenger vehicles, bicyclists, or pedestrians. The movement of heavier trucks, buses, etc., along this road could be restricted during the installation of the tie backs for

the wall. Every effort would be made to minimize closures of this access to large vehicles during times that have been identified by VPS as high use times (e.g., September 1 through November 15). If closures are unavoidable when access to the stadium or fields is needed, an appropriate detour route would be established. This detour would be signed and would direct users to the northern access point from Main Street. The contractor would be directed to coordinate with the VPS on any planned closures of the access.

If the north legs of the I-5/SR 500 interchange were not built or construction delayed, the potential phased construction option, then any temporary impacts to Kiggins Bowl Sports Fields/Stadium and the local connection trail would be avoided or delayed.

6. Proposed Mitigation for Adverse Effects

6.1 Introduction

The potential mitigation measures discussed below are presented in two sections – mitigation for permanent adverse effects and mitigation for temporary effects. Within both sections these mitigation measures are organized by impact type instead of by park, as many of the measures would apply to multiple parks. Mitigation for certain impacts would be dictated by local, state, and federal regulations, with specific requirements associated with converting parkland for transportation use, removing trees, protecting trees during construction, relocating public art, etc. Additional mitigation measures are proposed that are not prescribed by government regulation but address the concerns of the local park jurisdictions whose properties are being affected.

6.2 Proposed Mitigation for Long-term Adverse Effects

6.2.1 Permanent Parkland Acquisition

Rights to land, airspace, and the subsurface would have to be permanently acquired from multiple parks for the construction of the LPA as summarized in Exhibit 6-1.

Exhibit 6-1. Summary of Permanent Property Acquisitions and Easements from Parks

Resource	Permanent right-of-way acquisition
Waterfront Park	0.4-acre permanently acquired
VNHR	1.3-acres permanently acquired
Old Apple Tree Park	Less than 0.1-acre of airspace permanently acquired by easement
Marshall Community Center and Park	0.6-acre permanently acquired
Clark College Recreational Fields	1.0-acre permanently acquired
Leverich Community Park	0.3-acre permanently acquired
Kiggins Bowl Sports Fields/Stadium	0.3-acre of permanently acquired (less than 0.1 acre permanently and approximately 0.3 acre by easement for rights to the subsurface)

As discussed in Section 3.5, some federal and state funding programs would require that parkland permanently acquired to construct the LPA be replaced by land of equivalent market value and recreational utility. The Marshall Park and Community Center and the Old Apple Tree Park participated in the FLP program administered by the NPS. Approximately 0.1 acre at Marshall Community Center and Park would be permanently acquired from property previously transferred to the VCPRD via the FLP program. It is expected that this 0.1 acre would have to be formally converted for highway use by NPS with approval from GSA, and replacement property would need to be identified, approved, and acquired.

In previous designs, airspace rights to less than 0.1 acre at Old Apple Tree Park would be acquired through easement by the state. Recent designs have eliminated the need for this airspace and therefore there are no anticipated impacts to Old Apple Tree Park.

Though Leverich Park received state funding and portions of the parkland will be permanently acquired, the Washington RCO has indicated that no replacement property will be required (Barker 2009) as this park received only development funding, not land acquisition money, and no developed recreational facilities will be impacted.

As not all of the parks impacted received federal or state funding that requires replacement property to be acquired, other measures for addressing the acquisition of parkland are also proposed. For example, it is possible that the area vacated by the existing I-5 bridges could be redeveloped into a park or plaza to replace the parkland lost at Waterfront Park by the construction of the new bridges. The project will work with the City of Vancouver to utilize vacated state right-of-way beneath the existing I-5 bridge landings in Vancouver, to include this area as an expansion of Waterfront Park. The project will also work with the City to provide access across new state right-of-way beneath the new bridge alignment, in order to provide a connection between Waterfront Park and future waterfront uses west of the new bridge as envisioned in City plans.

In addition to the possible redevelopment of the Waterfront site, the loss of parkland in Vancouver could also be mitigated for by the construction of the Evergreen Community Connector. This park like cover over I-5 would be located south of Evergreen Boulevard, and would provide a connection between downtown Vancouver with the VNHR. Due to its proximity to the VNHR, the Community Connector could serve to mitigate for the permanent loss of property, acting almost as an extension of the impacted Vancouver Barracks. The connector could become a VCPRD or VNHR facility (depending on who has capacity of manage and maintain it), which could mitigate for the permanent loss of property at the other facilities under their jurisdiction.

The City of Vancouver initiated a Community Connector Design Competition in order to develop a design for a LID across the Interstate facility immediately south of the Evergreen Boulevard crossing. The result was a compelling design for a pedestrian crossing at Evergreen. The change would be generally positive. The design for the Community Connector will be further refined in preparation for the publication of the CRC Final Environment Impact Statement. The design has already been modified based on adopted engineering standards, and with the intent of avoiding the impacts related to the ventilation of tunnels.

6.2.2 Tree Removal

It is expected that trees would have to be removed to accommodate the highway and transit improvements, as well as the areas needed to construct these improvements. Removing trees to accommodate construction, though for a temporary activity, is considered a long-term impact as the trees themselves would be permanently removed and new trees planted to replace them. Trees would need to be removed from Waterfront Park; the VNHR; Marshall Community Center, Luepke Senior Center, and Marshall Park; Clark College Recreational Fields; and Leverich Community Park. Specific tree replanting requirements on each property will be determined by the City of Vancouver Urban Forester during the tree removal permitting process. It is expected that the location and type of this replanting will also be coordinated with the local park jurisdiction as well.

In most cases, it is assumed that trees will be replanted in the same or similar location as the trees removed. This will allow for the new trees to serve the same or similar function as the existing trees, such as buffering or screening the park or recreation facility from transportation facilities. It is expected that this will be feasible for all locations except the trees removed from Marshall Community Center and Park. The highway improvements would require that a large fill wall be placed adjacent to the parking lot west of the community center. These improvements will displace most of the trees that serve as a buffer between the community center and I-5. In order to plant new trees of the same size as the existing trees, additional parking spaces would need to be displaced. Given the high demand for parking at this facility, another method will need to be employed to provide this buffering or eliminate its need. This could include plantings that require less space or different wall façade treatments that minimize visual impacts.

6.2.3 Displacement of Public Art at Waterfront Park

The Boat of Discovery Monument and Waves Plaza will be displaced from their current location at Waterfront Park. The relocation of public art would be governed by the City of Vancouver's Public Art Policy which indicates that a committee composed of City Staff, including maintenance staff, the City Cultural Division, and/or the artist who created the art work will be established to recommend a site for relocation. This recommendation will go to Vancouver City Council for final approval. While it is likely the Boat of Discovery Monument could be easily moved to temporary storage or relocated to a different location, the Waves Plaza, which is composed of planters with rising and falling wave-like brick edges, would be much more challenging to move. If it is determined that the components of this plaza should be relocated, they may need to be completely dismantled and reconstructed in a different location.

Please see the Visual and Aesthetic Technical Report for more detail about the impacts to public art throughout the project area, as well as the proposed mitigation for these impacts.

6.2.4 Displacement of Parking

The project will displace off-street parking, eight spaces at Marshall Community Center and all parking at the Athletic Annex adjacent to the Clark College Recreational Fields. Additionally, the loss of on-street public parking on McLoughlin Boulevard (an estimated 76 spaces) would decrease the number of parking spaces available for use by visitors of these facilities. CRC, C-TRAN, the City of Vancouver, VCPRD, and Clark College are exploring the possibility of a shared-use agreement for the park and ride that would allow users of the community center to park in the park and ride during non-peak commute hours (e.g., nights, weekends, holidays, etc.). This would not only mitigate for the permanent loss of the spaces on their property, but would also alleviate the impact of lost on-street parking.

6.2.5 Design and Aesthetics

New or higher interchange ramps, widened highways and local streets, new transit facilities, including park and rides, and tall walls could visually intrude into the park and recreation resources along the project corridor. Changes in views are not likely to adversely affect the recreational use of these facilities, but these effects could be minimized by screening the transportation improvements from view with trees, vegetation, or built screens. Also, as mentioned above, different wall façade treatments could be explored to improve the visual quality of the structures.

Specifically, the VCPRD requested that the Clark College Park and Ride be designed to benefit adjacent park and recreation resources, such as providing new bicycle and pedestrian connections, and minimize unwanted impacts such as increased noise, loitering, vandalism, or litter.

6.2.6 Increased Noise

Those resources that exceed the WSDOT or Oregon Department of Transportation (ODOT) noise criteria threshold and meet the cost-effectiveness criteria for mitigation could receive sound walls along their boundaries to protect park visitors and trail users against increased noise levels. Parks that fall into the category include: Kiggins Sports Fields/Stadium and the VNHR. It is uncommon for parks to meet the cost-effectiveness criteria to receive noise mitigation, as the walls often have to be very large (i.e., costly), are placed along the boundaries of parks away from the highest use areas, and even if in place, are not always able to achieve the necessary noise reduction due to other nearby noise generators (e.g., other roads, etc.). The noise analysis found that mitigation at VNHR would meet the cost-effectiveness criteria due to the high visitor rate (estimated at over one-million visitors a year by the NPS), and sound walls between the VNHR and I-5 are proposed. A sound wall is also proposed along the entrance to Kiggins Sports Fields/Stadium due in large part to the proximity of this area to Discovery Middle School, not to the recreation facilities.

Despite the increase in noise levels at Marshall Community Center complex and the Clark College recreational fields, noise walls to mitigate increased highway noise are not proposed as they do not meet the cost-effectiveness criteria. They do not meet the cost-effectiveness criteria due to the high cost of the wall given its size, the relatively low number of park visitors in the area that would benefit from the mitigation, and the inability of a wall along I-5 to achieve the necessary noise reductions due to noise generated by McLoughlin Boulevard and Fort Vancouver Way. See the CRC Noise and Vibration Technical Report for more detail on the noise analysis, expected impacts, and proposed mitigation.

6.3 Proposed Mitigation for Adverse Effects during Construction

6.3.1 Damaged Landscaping and Tree Protection

Landscaping impacted by construction activities at facilities such as East Delta Park, the VNHR, Marshall Community Center and Park, Clark College Recreational Fields, and Leverich Park would be restored to its original condition once construction is complete.

During construction, trees on park property that would be close to construction activities but not displaced, would be protected from adverse impacts as directed by the Urban Forestry divisions of the VCPRD and Portland Parks Bureau, and in compliance with the City of Vancouver's Tree Conversation requirements (VMC 20.770.090).

The Vancouver-Clark Parks and Recreation Department expressed concern specifically in regards to the Heritage Apple Tree at Old Apple Tree Park. Though no work will be conducted directly above the tree, measures would be taken by the contractor to protect the tree from falling debris during demolition of existing ramps and construction of new ramps near the Old Apple Tree Park. The Contractor would be required to submit a detailed work plan for approval by the WSDOT outlining methods to be used to protect the tree. These methods could include a debris curtain, temporary fencing, a concrete curtain barrier with a plywood shield, and/or a canopy curtain over

the top of the tree. Coordination with the City of Vancouver Urban Forester and NPS regarding these protective measures would also occur.

6.3.2 Limits or Closures to Access

Possible temporary closures in access to facilities such as Marine Drive Multi-use Trail, Waterfront Trail, Discovery Historic Loop Trail, Marshall Community Center complex, the VNHR, Kiggins Bowl Sports Fields and Stadium, and Leverich Park would be minimized to the furthest extent possible. If temporary closures are unavoidable, detour routes would be established in coordination with the appropriate jurisdictional authority. All detour routes would be appropriately signed, and if necessary, information regarding these closures would be distributed to the public beforehand.

It is possible that construction-related closures could be timed to minimize effects to large events that take place at Vancouver Landing, Esther Short Park, the VNHR, Marshall and Luepke Center's, and the Discovery Historic Loop Trail/Waterfront Renaissance Trail.

LCRWT and Lewis and Clark National Historic Trail: It is likely that users in non-motorized boats would not be able to use the established detours when near shore areas are closed. During these closures, a public information campaign in coordination with the LCREP and NPS may be the best way of alerting users to these temporary limits on recreation in the Columbia River. Informational materials could be distributed to local boat rental stores and posted at popular local boat launch ramp sites and put-ins.

6.3.3 Temporary loss of Parking

Approximately 30-40 parking spaces at Marshall Community Center, Luepke Senior Center, and Marshall Park would be temporarily unusable during construction. The mitigation proposed for the permanent parking loss – restriping the parking lot or allowing visitors to use the Clark College Park and Ride – could minimize the impact of these temporary losses.

6.3.4 Constructed-related Environmental Effects

Visitors at parks closest to the construction could experience increased levels of noise, vibration, glare from construction lights, emissions from construction vehicles, or dust from demolition of existing structures. Best management practices, including those already outlined in WSDOT and ODOT construction manuals, would be employed to minimize these effects and subsequent public exposure. Additionally, many local ordinances that are already in place would provide additional protection for park users. For more possible mitigation measures for noise and vibration, please see the CRC Noise and Vibration Technical Report. Additionally, information regarding vehicle emissions and dust or glare can be found in the CRC Air Quality and Visual and Aesthetic technical reports respectively.

6.3.5 Bicycle and Pedestrian Safety during Construction

During the construction of specific structures, bike and pedestrian facilities would either be rerouted, temporarily closed, or would be covered with temporary pedestrian enclosures in order to minimize safety impacts associated with construction activities. This would help to avoid risks to cyclists and pedestrians who are crossing below construction work such as at the Waterfront Trail or access into Leverich Park.

Depending on the expected increase in traffic levels traveling along Columbia Way during the closures at SR 14, additional signage and lighting could be provided to protect users of Waterfront Park and Old Apple Tree Park that are crossing Columbia Way.

7. Permits and Approvals

7.1 Federal

The NPS would have to approve any conversion of parkland conveyed to local park jurisdictions through the FLP Program. Replacement property would have to be identified, approved, and acquired. The NPS would have to get approval from GSA for this conversion.

The Final Section 4(f) Evaluation provides information on the federal approvals required for the *use* of protected parkland.

7.2 State

VCPRD would have to receive written confirmation from the Washington State RCO that the impacts to Leverich Community Park are not considered a conversion. This approval would not require replacement property to be acquired for the impacts to this park.

7.3 Local

A City of Portland Non-Park Use permit would have to be obtained for the temporary impacts to East Delta Park and the Marine Drive Multi-use Trail.

A City of Vancouver Tree Removal permit would have to be filed in order to remove trees on park property in order to construct the LPA.

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