

# **INTERSTATE 5 COLUMBIA RIVER CROSSING**

Parks and Recreation Technical Report



**May 2008**



**TO:** Readers of the CRC Technical Reports  
**FROM:** CRC Project Team  
**SUBJECT:** Differences between CRC DEIS and Technical Reports

The I-5 Columbia River Crossing (CRC) Draft Environmental Impact Statement (DEIS) presents information summarized from numerous technical documents. Most of these documents are discipline-specific technical reports (e.g., archeology, noise and vibration, navigation, etc.). These reports include a detailed explanation of the data gathering and analytical methods used by each discipline team. The methodologies were reviewed by federal, state and local agencies before analysis began. The technical reports are longer and more detailed than the DEIS and should be referred to for information beyond that which is presented in the DEIS. For example, findings summarized in the DEIS are supported by analysis in the technical reports and their appendices.

The DEIS organizes the range of alternatives differently than the technical reports. Although the information contained in the DEIS was derived from the analyses documented in the technical reports, this information is organized differently in the DEIS than in the reports. The following explains these differences. The following details the significant differences between how alternatives are described, terminology, and how impacts are organized in the DEIS and in most technical reports so that readers of the DEIS can understand where to look for information in the technical reports. Some technical reports do not exhibit all these differences from the DEIS.

### Difference #1: Description of Alternatives

The first difference readers of the technical reports are likely to discover is that the full alternatives are packaged differently than in the DEIS. The primary difference is that the DEIS includes all four transit terminus options (Kiggins Bowl, Lincoln, Clark College Minimum Operable Segment (MOS), and Mill Plain MOS) with each build alternative. In contrast, the alternatives in the technical reports assume a single transit terminus:

- Alternatives 2 and 3 both include the Kiggins Bowl terminus
- Alternatives 4 and 5 both include the Lincoln terminus

In the technical reports, the Clark College MOS and Mill Plain MOS are evaluated and discussed from the standpoint of how they would differ from the full-length Kiggins Bowl and Lincoln terminus options.

### Difference #2: Terminology

Several elements of the project alternatives are described using different terms in the DEIS than in the technical reports. The following table shows the major differences in terminology.

| <b>DEIS terms</b>            | <b>Technical report terms</b> |
|------------------------------|-------------------------------|
| Kiggins Bowl terminus        | I-5 alignment                 |
| Lincoln terminus             | Vancouver alignment           |
| Efficient transit operations | Standard transit operations   |
| Increased transit operations | Enhanced transit operations   |

### **Difference #3: Analysis of Alternatives**

The most significant difference between most of the technical reports and the DEIS is how each structures its discussion of impacts of the alternatives. Both the reports and the DEIS introduce long-term effects of the full alternatives first. However, the technical reports then discuss “segment-level options,” “other project elements,” and “system-level choices.” The technical reports used segment-level analyses to focus on specific and consistent geographic regions. This enabled a robust analysis of the choices on Hayden Island, in downtown Vancouver, etc. The system-level analysis allowed for a comparative evaluation of major project components (replacement versus supplemental bridge, light rail versus bus rapid transit, etc). The key findings of these analyses are summarized in the DEIS; they are simply organized in only two general areas: impacts by each full alternative, and impacts of the individual “components” that comprise the alternatives (e.g. transit mode).

### **Difference #4: Updates**

The draft technical reports were largely completed in late 2007. Some data in these reports have been updated since then and are reflected in the DEIS. However, not all changes have been incorporated into the technical reports. The DEIS reflects more recent public and agency input than is included in the technical reports. Some of the options and potential mitigation measures developed after the technical reports were drafted are included in the DEIS, but not in the technical reports. For example, Chapter 5 of the DEIS (Section 4(f) evaluation) includes a range of potential “minimization measures” that are being considered to reduce impacts to historic and public park and recreation resources. These are generally not included in the technical reports. Also, impacts related to the stacked transit/highway bridge (STHB) design for the replacement river crossing are not discussed in the individual technical reports, but are consolidated into a single technical memorandum.



## **Title VI**

The Columbia River Crossing project team ensures full compliance with Title VI of the Civil Rights Act of 1964 by prohibiting discrimination against any person on the basis of race, color, national origin or sex in the provision of benefits and services resulting from its federally assisted programs and activities.

## **Americans with Disabilities Act (ADA) Information**

If you would like copies of this document in an alternative format, please call the Columbia River Crossing project office at (360) 737-2726 or (503) 256-2726. Persons who are deaf or hard of hearing may contact CRC using Telecommunications Relay Service by dialing 7-1-1.

¿Habla usted español? La información en esta publicación se puede traducir para usted. Para solicitar los servicios de traducción favor de llamar al (503) 731-3490.

**This page intentionally left blank.**

# Cover Sheet

## Interstate 5 Columbia River Crossing

*Parks and Recreation Technical Report:*

### Submitted By:

John Evans

Megan Taylor

**This page intentionally left blank.**



# TABLE OF CONTENTS

|                                                                                      |            |
|--------------------------------------------------------------------------------------|------------|
| <b>1. SUMMARY.....</b>                                                               | <b>1-1</b> |
| 1.1 Introduction.....                                                                | 1-1        |
| 1.2 Description of the Alternatives.....                                             | 1-1        |
| 1.2.1 System-Level Choices.....                                                      | 1-2        |
| 1.2.2 Segment-Level Choices.....                                                     | 1-3        |
| 1.2.3 Full Alternatives.....                                                         | 1-4        |
| 1.3 Long-Term Effects.....                                                           | 1-6        |
| 1.4 Temporary Effects.....                                                           | 1-6        |
| 1.5 Mitigation.....                                                                  | 1-7        |
| 1.6 Coordination.....                                                                | 1-7        |
| <b>2. METHODS.....</b>                                                               | <b>2-1</b> |
| 2.1 Introduction.....                                                                | 2-1        |
| 2.2 Study Area.....                                                                  | 2-1        |
| 2.2.1 Primary API.....                                                               | 2-1        |
| 2.2.2 Secondary API.....                                                             | 2-3        |
| 2.3 Effects Guidelines.....                                                          | 2-3        |
| 2.4 Data Collection.....                                                             | 2-3        |
| 2.4.1 Phase I.....                                                                   | 2-3        |
| 2.4.2 Phase II.....                                                                  | 2-4        |
| 2.5 Data Analysis.....                                                               | 2-4        |
| <b>3. COORDINATION.....</b>                                                          | <b>3-1</b> |
| <b>4. AFFECTED ENVIRONMENT.....</b>                                                  | <b>4-1</b> |
| 4.1 Regional Conditions.....                                                         | 4-1        |
| 4.1.1 City of Vancouver.....                                                         | 4-1        |
| 4.1.2 Vancouver National Historic Reserve.....                                       | 4-8        |
| 4.1.3 City of Portland.....                                                          | 4-11       |
| <b>5. LONG-TERM EFFECTS.....</b>                                                     | <b>5-1</b> |
| 5.1 How is this section organized?.....                                              | 5-1        |
| 5.2 Full Alternatives.....                                                           | 5-1        |
| 5.2.1 No-Build Alternative.....                                                      | 5-1        |
| 5.2.2 Alternative 2: Replacement Crossing with Bus Rapid Transit.....                | 5-2        |
| 5.2.3 Alternative 3: Replacement Crossing with Light Rail.....                       | 5-2        |
| 5.2.4 Alternative 4: Supplemental Crossing with Bus Rapid Transit.....               | 5-2        |
| 5.2.5 Alternative 5: Supplemental Crossing with Light Rail.....                      | 5-2        |
| 5.3 Impacts from Segment-level Options.....                                          | 5-2        |
| 5.3.1 Segment A: Delta Park to Mill Plain District – Highway Alternatives.....       | 5-3        |
| 5.3.2 Segment B: Mill Plain District to North Vancouver - Highway Alternatives.....  | 5-7        |
| 5.3.3 Segment A1 and A2: Delta Park to Mill Plain District- Transit Alternative..... | 5-7        |
| 5.3.4 Segment B: Mill Plain District to North Vancouver – Transit Alternatives.....  | 5-8        |
| 5.4 Impacts from Other Project Elements.....                                         | 5-9        |
| 5.4.1 Minimum Operable Segment.....                                                  | 5-9        |
| 5.4.2 Transit Maintenance Base Stations.....                                         | 5-10       |
| 5.5 Impacts from System-Level Choices.....                                           | 5-10       |

|                                                                                                                                                                                                   |            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| 5.5.1 River Crossing Type and Capacity: How does the supplemental crossing compare to the replacement crossing .....                                                                              | 5-10       |
| 5.5.2 Transit Mode: How does BRT compare to LRT? .....                                                                                                                                            | 5-11       |
| 5.5.3 Balance of Transit vs. Highway Investment: Enhanced Transit System Operations with Aggressive TDM/TSM Measures, and Standard Transit System Operations with Standard TDM/TSM Measures ..... | 5-11       |
| 5.5.4 Major Transit Alignment: How does the Vancouver alignment compare to the I-5 alignment? .....                                                                                               | 5-11       |
| 5.5.5 Tolling: How do the tolling options compare (no toll, standard or higher toll on I-5, toll on both I-5 and I-205)? .....                                                                    | 5-11       |
| 5.5.6 Transit Project Length: How do the full-length alternatives compare to the shorter length options? .....                                                                                    | 5-12       |
| <b>6. TEMPORARY EFFECTS.....</b>                                                                                                                                                                  | <b>6-1</b> |
| 6.1 Introduction.....                                                                                                                                                                             | 6-1        |
| <b>7. MITIGATION FOR LONG-TERM EFFECTS.....</b>                                                                                                                                                   | <b>7-1</b> |
| <b>8. MITIGATION FOR TEMPORARY EFFECTS .....</b>                                                                                                                                                  | <b>8-1</b> |
| <b>9. REFERENCES.....</b>                                                                                                                                                                         | <b>9-1</b> |

## List of Exhibits

|                                                                                          |     |
|------------------------------------------------------------------------------------------|-----|
| Exhibit 1-1. Full Alternatives.....                                                      | 1-4 |
| Exhibit 1-2. Project Area and Alternatives.....                                          | 1-8 |
| Exhibit 1-3. Summary of Potential Direct Effects to Park and Recreation Resources .....  | 1-9 |
| Exhibit 2-1. Area of Potential Impact.....                                               | 2-2 |
| Exhibit 4-1. Parks and Trails in Project Area.....                                       | 4-3 |
| Exhibit 4-2. Existing and Planned Park and Recreation Resources in the Primary API ..... | 4-4 |
| Exhibit 5-1. Vancouver National Historic Reserve – SR 14 Interchange Left Loop .....     | 5-5 |
| Exhibit 5-2. Vancouver National Historic Reserve – SR 14 Interchange Dual Loop.....      | 5-6 |

## Appendices

APPENDIX A: Maps of Acquisition Impacts to Park and Recreation Resources

# ACRONYMS

| <b>Acronym</b> | <b>Description</b>                                                   |
|----------------|----------------------------------------------------------------------|
| ADA            | Americans with Disabilities Act                                      |
| ADT            | Average Daily Traffic                                                |
| APE            | Area of Potential Effect                                             |
| API            | Area of Potential Impact                                             |
| BMP            | Best Management Practice                                             |
| BNSF           | Burlington Northern Santa Fe Railroad                                |
| BRT            | Bus Rapid Transit                                                    |
| COGP           | County Opportunity Grant Program                                     |
| CRC            | Columbia River Crossing                                              |
| CWG            | Cultural Resources Work Group                                        |
| DAHP           | Washington State Department of Archaeology and Historic Preservation |
| DEIS           | Draft Environmental Impact Statement                                 |
| DEQ            | Oregon Department of Environmental Quality                           |
| DLCD           | Department of Land Conservation and Development                      |
| EIS            | Environmental Impact Statement                                       |
| FHWA           | Federal Highway Administration                                       |
| FVNHS          | Fort Vancouver National Historic Site                                |
| FONSI          | Finding of No Significant Impact                                     |
| Ft             | feet/foot                                                            |
| FTA            | Federal Transit Administration                                       |
| FVNHS          | Fort Vancouver National Historic Site                                |
| HBC            | Hudson Bay Company                                                   |
| HCT            | High-Capacity Transit                                                |
| IAC            | Interagency Committee for Outdoor Funds                              |
| LGGP           | Local Government Grant Program                                       |
| LRT            | Light Rail Transit                                                   |
| LWCFA          | Land and Water Conservation Fund Act                                 |
| MOA            | Memorandum of Agreement                                              |
| MOS            | Minimum Operable Segment                                             |
| NEPA           | National Environmental Policy Act                                    |
| NFA            | No Further Action                                                    |
| NHR            | National historic Reserve                                            |
| NHS            | National Historic Site                                               |
| NPS            | National Park Service                                                |
| NRHP           | National Register of Historic Places                                 |
| OAR            | Oregon Administrative Rule                                           |
| ODOT           | Oregon Department of Transportation                                  |
| ORS            | Oregon Revised Statutes                                              |
| RCW            | Revised Code of Washington                                           |
| ROW            | Right-of-way                                                         |
| SCORP          | State Comprehensive Outdoor Recreation Plan                          |
| SEPA           | State Environmental Policy Act                                       |

| <b>Acronym</b> | <b>Description</b>                             |
|----------------|------------------------------------------------|
| SHPO           | State Historic Preservation Office             |
| SMA            | Shoreline Management Act                       |
| SRA            | Sensitive Resource Areas                       |
| SRFB           | Washington Salmon Recovery Funding Board       |
| SRSAM          | Salmon Resource Sensitive Area Mapping project |
| STIP           | State Transportation Improvement Plan          |
| TDM            | Transportation Demand Management               |
| TSM            | Transportation System Management               |
| UGA            | Urban Growth Area                              |
| UGB            | Urban Growth Boundary                          |
| VNHR           | Vancouver National Historic Reserve            |
| WSDOT          | Washington State Department of Transportation  |

# 1. Summary

---

## 1.1 Introduction

This report evaluates the potential impacts of the proposed Interstate 5 (I-5) Columbia River Crossing (CRC) project alternatives on parks and recreation resources. 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- or short-term) to major recreational events in the project area as a result of project alternatives.

The two overall questions guiding the effects analysis are:

- Will the alternative have any long-term effects on existing or planned future public parks or recreation areas?
- Will construction of the alternative have any short-term effects on public parks or recreation areas?

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

At this stage of the project, the analysis is based on conceptual designs of a range of alternatives. This report identifies the likely impacts from those alternatives and potential measures to reduce the impacts, including possible options for avoiding, minimizing, or mitigating impacts. Following the analysis and findings described in this report, and following additional agency and public coordination and input, the project sponsors will select a preferred alternative. The project team will further design and evaluate that alternative, refining the impact analysis and further developing mitigation measures.

## 1.2 Description of the Alternatives

The alternatives being considered for the CRC project consist of a diverse range of highway, transit and other transportation choices. Some of these choices – such as the number of traffic lanes across the river – could affect transportation performance and impacts throughout the bridge influence area or beyond. These are referred to as “system-level choices.” Other choices – such as whether to run high-capacity transit (HCT) on Washington Street or Washington and Broadway Streets – have little impact beyond the area immediately surrounding that proposed change and no measurable effect on regional impacts or performance. These are called “segment-level choices.” This report discusses the impacts from both system- and segment-level choices, as well as “full alternatives.” The full alternatives combine system-level and segment-level choices for highway, transit, pedestrian, and bicycle transportation. They are representative examples of how project elements may be combined. Other combinations of specific elements are possible.

Analyzing the full alternatives allows us to understand the combined performance and impacts that would result from multimodal improvements spanning the bridge influence area.

Following are brief descriptions of the alternatives being evaluated in this report, which include:

- System-level choices,
- Segment-level choices, and
- Full alternatives.

### **1.2.1 System-Level Choices**

System-level choices have potentially broad influence on the magnitude and type of benefits and impacts produced by this project. These options may influence physical or operational characteristics throughout the project area and can affect transportation and other elements outside the project corridor as well. The system-level choices include:

- River crossing type (replacement or supplemental)
- High-capacity transit mode (bus rapid transit or light rail transit)
- Tolling (no toll, I-5 only, I-5 and I-205, standard toll, higher toll)

This report compares replacement and supplemental river crossing options. A replacement river crossing would remove the existing highway bridge structures across the Columbia River and replace them with three new parallel structures – one for I-5 northbound traffic, another for I-5 southbound traffic, and a third for HCT, bicycles, and pedestrians. A supplemental river crossing would build a new bridge span downstream of the existing I-5 bridge. The new supplemental bridge would carry southbound I-5 traffic and HCT, while the existing I-5 bridge would carry northbound I-5 traffic, bicycles, and pedestrians. The replacement crossing would include three through-lanes and two auxiliary lanes for I-5 traffic in each direction. The supplemental crossing would include three through-lanes and one auxiliary lane in each direction.

Two types of HCT are being considered – bus rapid transit and light rail transit. Both would operate in an exclusive right-of-way through the project area, and are being evaluated for the same alignments and station locations. The HCT mode—LRT or BRT—is evaluated as a system-level choice. Alignment options and station locations are discussed as segment-level choices. BRT would use 60-foot or 80-foot long articulated buses in lanes separated from other traffic. LRT would use one- and two-car trains in an extension of the MAX line that currently ends at the Expo Center in Portland.

Under the efficient operating scenario, LRT trains would run at approximately 7.5 minute headways during the peak periods. BRT would run at headways between 2.5 and 10 minutes depending on the location in the corridor. BRT would need to run at more frequent headways to match the passenger-carrying capacity of the LRT trains. This report also evaluates performance and impacts for an increased operations scenario that would double the number of BRT vehicles or the number of LRT trains during the peak periods.

## 1.2.2 Segment-Level Choices

### 1.2.2.1 Transit Alignments

The transit alignment choices are organized into three corridor segments. Within each segment the alignment choices can be selected relatively independently of the choices in the other segments. These alignment variations generally do not affect overall system performance but could have important differences in the impacts and benefits that occur in each segment. The three segments are:

- Segment A1 – Delta Park to South Vancouver
- Segment A2 – South Vancouver to Mill Plain District
- Segment B – Mill Plain District to North Vancouver

In Segment A1 there are two general transit alignment options - offset from, or adjacent to, I-5. An offset HCT guideway would place HCT approximately 450 to 650 feet west of I-5 on Hayden Island. An adjacent HCT guideway across Hayden Island would locate HCT immediately west of I-5. The alignment of I-5, and thus the alignment of an adjacent HCT guideway, on Hayden Island would vary slightly depending upon the river crossing and highway alignment, whereas an offset HCT guideway would retain the same station location regardless of the I-5 bridge alignment.

HCT would touch down in downtown Vancouver at Sixth Street and Washington Street with a replacement river crossing. A supplemental crossing would push the touch down location north to Seventh Street. Once in downtown Vancouver, there are two alignment options for HCT – a two-way guideway on Washington Street or a couplet design that would place southbound HCT on Washington Street and northbound HCT on Broadway. Both options would have stations at Seventh Street, 12th Street, and at the Mill Plain Transit Center between 15th and 16th Streets.

From downtown Vancouver, HCT could either continue north on local streets or turn east and then north adjacent to I-5. Continuing north on local streets, HCT could either use a two-way guideway on Broadway or a couplet on Main Street and Broadway. At 29th Street, both of these options would merge to a two-way guideway on Main Street and end at the Lincoln Park and Ride located at the current WSDOT maintenance facility. Once out of downtown Vancouver, transit has two options if connecting to an I-5 alignment: head east on 16th Street and then through a new tunnel under I-5, or head east on McLoughlin Street and then through the existing underpass beneath I-5. With either option HCT would connect with the Clark College Park and Ride on the east side of I-5, then head north along I-5 to about SR 500 where it would cross back over I-5 to end at the Kiggins Bowl Park and Ride.

There is also an option, referred to as the minimum operable segments (MOS), which would end the HCT line at either the Mill Plain station or Clark College. The MOS options provide a lower cost, lower performance alternative in the event that the full-length HCT lines could not be funded in a single phase of construction and financing.

### 1.2.2.2 Highway and Bridge Alignments

This analysis divides the highway and bridge options into two corridor segments, including:

- Segment A – Delta Park to Mill Plain District
- Segment B – Mill Plain District to North Vancouver

Segment A has several independent highway and bridge alignment options. Differences in highway alignment in Segment B are caused by transit alignment, and are not treated as independent options.

There are two options for the replacement crossing—it could be located either upstream or downstream of the existing I-5 bridge. At the SR 14 interchange there are two basic configurations being considered. A traditional configuration would use ramps looping around both sides of the mainline to provide direct connection between I-5 and SR 14. A less traditional design could reduce right-of-way requirements by using a “left loop” that would stack both ramps on the west side of the I-5 mainline.

### 1.2.3 Full Alternatives

Full alternatives represent combinations of system-level and segment-level options. These alternatives have been assembled to represent the range of possibilities and total impacts at the project and regional level. Packaging different configurations of highway, transit, river crossing, tolling and other improvements into full alternatives allows project staff to evaluate comprehensive traffic and transit performance, environmental impacts and costs.

Exhibit 1-1 summarizes how the options discussed above have been packaged into representative full alternatives.

#### Exhibit 1-1. Full Alternatives

| Full Alternative | Packaged Options    |          |                            |                 |                             |
|------------------|---------------------|----------|----------------------------|-----------------|-----------------------------|
|                  | River Crossing Type | HCT Mode | Northern Transit Alignment | TDM/TSM Type    | Tolling Method <sup>a</sup> |
| 1                | Existing            | None     | N/A                        | Existing        | None                        |
| 2                | Replacement         | BRT      | I-5                        | Aggressive      | Standard Rate               |
| 3                | Replacement         | LRT      | I-5                        | Aggressive      | Two options <sup>b</sup>    |
| 4                | Supplemental        | BRT      | Vancouver                  | Very Aggressive | Higher rate                 |
| 5                | Supplemental        | LRT      | Vancouver                  | Very Aggressive | Higher rate                 |

<sup>a</sup> In addition to different tolling rates, this report evaluates options that would toll only the I-5 river crossing and options that would toll both the I-5 and the I-205 crossings.

<sup>b</sup> Alternative 3 is evaluated with two different tolling scenarios, tolling and non-tolling.

Modeling software used to assess alternatives’ performance does not distinguish between smaller details, such as most segment-level transit alignments. However, the geographic difference between the Vancouver and I-5 transit alignments is significant enough to warrant including this variable in the model. All alternatives include Transportation



Demand Management (TDM) and Transportation System Management (TSM) measures designed to improve efficient use of the transportation network and encourage alternative transportation options to commuters such as carpools, flexible work hours, and telecommuting. Alternatives 4 and 5 assume higher funding levels for some of these measures.

**Alternative 1:** The National Environmental Policy Act (NEPA) requires the evaluation of a No-Build or “No Action” alternative for comparison with the build alternatives. The No-Build analysis includes the same 2030 population and employment projections and the same reasonably foreseeable projects assumed in the build alternatives. It does not include any of the I-5 CRC related improvements. It provides a baseline for comparing the build alternatives, and for understanding what will happen without construction of the I-5 CRC project.

**Alternative 2:** This alternative would replace the existing I-5 bridge with three new bridge structures downstream of the existing bridge. These new bridge structures would carry Interstate traffic, BRT, bicycles, and pedestrians. There would be three through-lanes and two auxiliary lanes for I-5 traffic in each direction. Transit would include a BRT system that would operate in an exclusive guideway from Kiggins Bowl in Vancouver to the Expo Center station in Portland. Express bus service and local and feeder bus service would increase to serve the added transit capacity. BRT buses would turn around at the existing Expo Station in Portland, where riders could transfer to the MAX Yellow Line.

**Alternative 3:** This is similar to Alternative 2 except that LRT would be used instead of BRT. This alternative is analyzed both with a toll collected from vehicles crossing the Columbia River on the new I-5 bridge, and with no toll. LRT would use the same transit alignment and station locations. Transit operations, such as headways, would differ, and LRT would connect with the existing MAX Yellow Line without requiring riders to transfer.

**Alternative 4:** This alternative would retain the existing I-5 bridge structures for northbound Interstate traffic, bicycles, and pedestrians. A new crossing would carry southbound Interstate traffic and BRT. The existing I-5 bridges would be re-striped to provide two lanes on each structure and allow for an outside safety shoulder for disabled vehicles. A new, wider bicycle and pedestrian facility would be cantilevered from the eastern side of the existing northbound (eastern) bridge. A new downstream supplemental bridge would carry four southbound I-5 lanes (three through-lanes and one auxiliary lane) and BRT. BRT buses would turn around at the existing Expo Station in Portland, where riders could transfer to the MAX Yellow Line. Compared to Alternative 2, increased transit service would provide more frequent service. Express bus service and local and feeder bus service would increase to serve the added transit capacity.

**Alternative 5:** This is similar to Alternative 4 except that LRT would be used instead of BRT. LRT would have the same alignment options, and similar station locations and requirements. LRT service would be more frequent (approximately 3.5 minute headways during the peak period) compared to 7.5 minutes with Alternative 3. LRT would connect with the existing MAX Yellow Line without requiring riders to transfer.

### 1.3 Long-Term Effects

Exhibit 1-2 shows the project area and segment boundaries. Exhibit 1-3 summarizes the permanent acquisition of land from park and recreation resources that would result in for each highway and transit alignment analyzed in each project segment. The segment-level effects on the resources addressed in this analysis are generally grouped into six key areas:

- Trails in the Delta Park area
- Trail, park, and recreation functions and facilities near the Vancouver waterfront
- Trails, park, and recreation functions and facilities within the Vancouver National Historic Reserve
- Park and recreation functions and facilities in the Marshall Parks and Clark College Recreation area
- Park lands of Leverich Park
- Trails and sports fields in the Kiggins Bowl area

This analysis evaluated highway and transit alternatives to determine whether project options would impact any park or recreation resources or convert any state or local park and recreation grant-funded properties to another use. All transit and highway alignments analyzed in this document would result in an impact to one or more park and recreation resources (as identified above), although some of these impacts may be minimal. Section 5 describes the specific potential impacts from the build alternatives.

Exhibit 1-3, Summary of Parks and Recreation Direct Effects, summarizes the potential direct effects associated with each of the system-level choices, specifically how the replacement and supplemental river crossings compare, and how the I-5 and Vancouver transit alignments compare. In summary, the replacement crossing would impact five park and recreation resources, while the supplemental would impact four. Additionally, the Vancouver transit alignment impacts two park and recreation resources, while the I-5 alignment impacts three.

### 1.4 Temporary Effects

Temporary effects to park and recreation resources from construction may include issues relating to temporary easements, access, noise, vibration, dust, or delays in traveling to events. While the location and duration of these effects would differ depending on the highway and transit alignments chosen, it is likely that these impacts would most substantially impact resources directly adjacent to the I-5 corridor. These could include East Delta Park, the Marine Drive multi-use trail, the planned Bridgeton trail, Waterfront Park and trail, the Vancouver National Historic Reserve (VNHR), Clark College recreation area, Marshall Park and Community Centers, Kiggins Bowl recreation area, and Leverich Park.

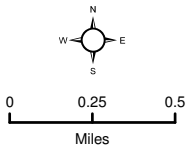
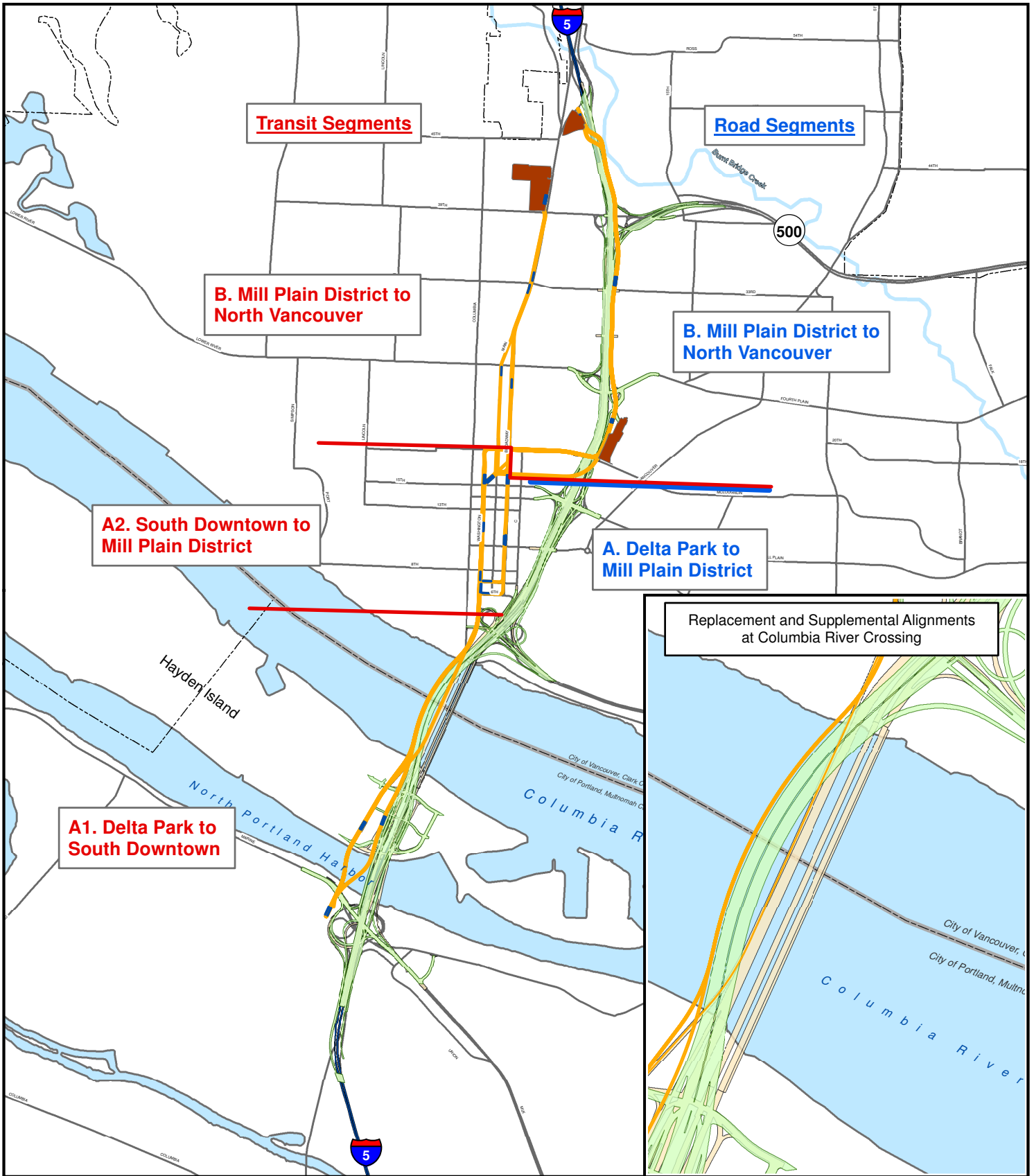
## 1.5 Mitigation

Further design refinements could avoid, or decrease the severity of some of the park and recreation acquisitions listed in Exhibit 1-2. Unavoidable direct acquisitions could be mitigated through its replacement with land of equivalent quality and location, though this may be difficult to find in such an urbanized area. Long-term proximity impacts resulting from increased noise or the diminution of visual quality to and from park and recreation resources could be mitigated through the placement and rebuilding of berms and sound walls to block the effects.

Construction related impacts could be mitigated through temporary noise walls and well-planned and signed detours and access routes. Also, temporarily disturbed areas around park and rides and transit alignments could be re-landscaped after construction.

## 1.6 Coordination

The project team has coordinated with federal, state, and local park and recreation jurisdictions, as well as Clark College and the National Park Service (NPS), to identify all existing and planned resources. These jurisdictions included the Oregon Parks and Recreation Department (OPRD), Vancouver-Clark Parks and Recreation Department, the Washington Recreation and Conservation Office, and the Portland Parks and Recreation Bureau.



- Transit Segment Boundaries
- Roadway Segment Boundary
- Park and Ride
- Transit Stop
- Transit Alignment Options
- Replacement River Crossing
- Supplemental River Crossing

### Exhibit 1-2: Project Area and Alternatives



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

| Use Location                                  | Facilities Affected                                                                                                                                                                                 | Segment A:<br>Replacement River<br>Crossing                                                                                                                                                                                                                     | Segment A:<br>Supplemental River<br>Crossing                                                                                                                   | Segment B:<br>Replacement River<br>Crossing                                   | Segment B:<br>Supplemental River<br>Crossing                          | Segment B:<br>Transit: Vancouver Alignment                                         | Segment B:<br>Transit: I-5 Alignment                                                                                |
|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|-----------------------------------------------------------------------|------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Kiggins Bowl Sports Venue                     | Park facility parking and landscaped area, recreational trail                                                                                                                                       |                                                                                                                                                                                                                                                                 |                                                                                                                                                                |                                                                               |                                                                       | 50 linear feet of trails. 0.14 acres of parking/landscaped area                    | 50 linear ft of trails<br>0.14 to 0.45 acres of parking and forested and landscaped area, depending on transit mode |
| Leverich Park                                 | Passive recreational park border berms, and landscaping. Park entrance road and parking area.                                                                                                       |                                                                                                                                                                                                                                                                 |                                                                                                                                                                | 0.33 acres of park border, berms and landscaping. Park entrance road.         | 0.24 acres of park border, berms and landscaping. Park entrance road. |                                                                                    | 0.01 acres of park boarder berms, and landscaping                                                                   |
| Clark College Recreation Fields               | Strip portions of ball field, batting cage, park path, grass field                                                                                                                                  |                                                                                                                                                                                                                                                                 |                                                                                                                                                                |                                                                               |                                                                       | 1.24 acres strip with portions of ball field, batting cage, park path, grass field | 1.24 acres strip with portions of ball field, batting cage, park path, grass field                                  |
| Marshall Community Park and Community Centers | Strip of landscaped passive recreation area adjacent parking and fields and approx. 3 horseshoe courts                                                                                              | 1.2 acre strip of landscaped passive recreation area adjacent to parking, displacement of approx. 3 horseshoe courts                                                                                                                                            | 1.2 acre strip of landscaped passive recreation area adjacent to parking, displacement of approx. 3 horseshoe courts                                           |                                                                               |                                                                       |                                                                                    |                                                                                                                     |
| Old Apple Tree Park                           | Portion of cultural and recreational viewing courtyard and passive recreation space                                                                                                                 | 0.27 acres of a portion of viewing courtyard and passive recreation space with the dual-loop I-5/SR 14 Interchange                                                                                                                                              |                                                                                                                                                                |                                                                               |                                                                       |                                                                                    |                                                                                                                     |
| Vancouver National Historic Reserve           | Cultural and recreational park landscape near I-5/SR 14 Interchange, strip adjacent to I-5 between E 5 <sup>th</sup> St. and McClellan St including portion of park hospital and barracks buildings | 2.7 acres of park land near I-5/SR 14 Interchange with the dual-loop design" and 1.73 acres with the left-loop design; park land and buildings adjacent to I-5 between E 5 <sup>th</sup> St. and McClellan St (total acreage impact to FVNHS: 0.8 to 1.5 acres) | 0.31 acres of park land and possibly some park buildings adjacent to I-5 between E 5 <sup>th</sup> St. and McClellan St (total acreage impact to FVNHS: 0.004) |                                                                               |                                                                       |                                                                                    |                                                                                                                     |
| Waterfront Park                               | Recreational park shoreline and public plaza/view areas, Capitan George Vancouver Monument, Boat of Discovery art piece, and Illichee Statue and Plaza                                              | Travels over 0.23 acres of park shoreline and waterfront plaza/views area                                                                                                                                                                                       | Travels over 0.17 acres of park shoreline and waterfront plaza/views area                                                                                      |                                                                               |                                                                       |                                                                                    |                                                                                                                     |
| Waterfront Renaissance Trail                  | Paved multimodal public path                                                                                                                                                                        | Travels over 180 linear feet of path, may need to be realigned due to pier placement                                                                                                                                                                            | Travels over 93 linear feet of path, may need to be realigned due to pier placement                                                                            |                                                                               |                                                                       |                                                                                    |                                                                                                                     |
| Lower Columbia River Water Trail              | Recreational waterway                                                                                                                                                                               |                                                                                                                                                                                                                                                                 |                                                                                                                                                                | Could increase navigational hazard with increase number of piers in the river |                                                                       |                                                                                    |                                                                                                                     |
| Bridgeton Trail (planned)                     | Planned connection of multimodal trail section linking N Bridgeton Road to I-5.                                                                                                                     | Could interfere with the proposed route of the Bridgeton Trail                                                                                                                                                                                                  | Could interfere with the proposed route of the Bridgeton Trail                                                                                                 |                                                                               |                                                                       |                                                                                    |                                                                                                                     |

The potential direct effects identified in this table are based on preliminary designs and all areas are approximate and will require additional investigation. All impacts to Park and Recreation resources resulting from Transit occur in Segment B. There are no known impacts from transit in Segment A1 or A2.

**This page intentionally left blank.**

## 2. Methods

---

### 2.1 Introduction

This section identifies the approach for data collection and impacts analysis that the CRC project used to analyze effects to park and recreation resources. Impacts from project alternatives were determined for those resources within the project corridor, in coordination with federal, local, and state agencies. Impacts include direct impacts resulting from right-of-way acquisitions and indirect impacts resulting from increases in noise or vibration, diminution of views or air quality, or changes in traffic. Potential cumulative effects from this project are evaluated in the Cumulative Effects Technical Report. Please refer to this report for an evaluation of possible cumulative effects.

### 2.2 Study Area

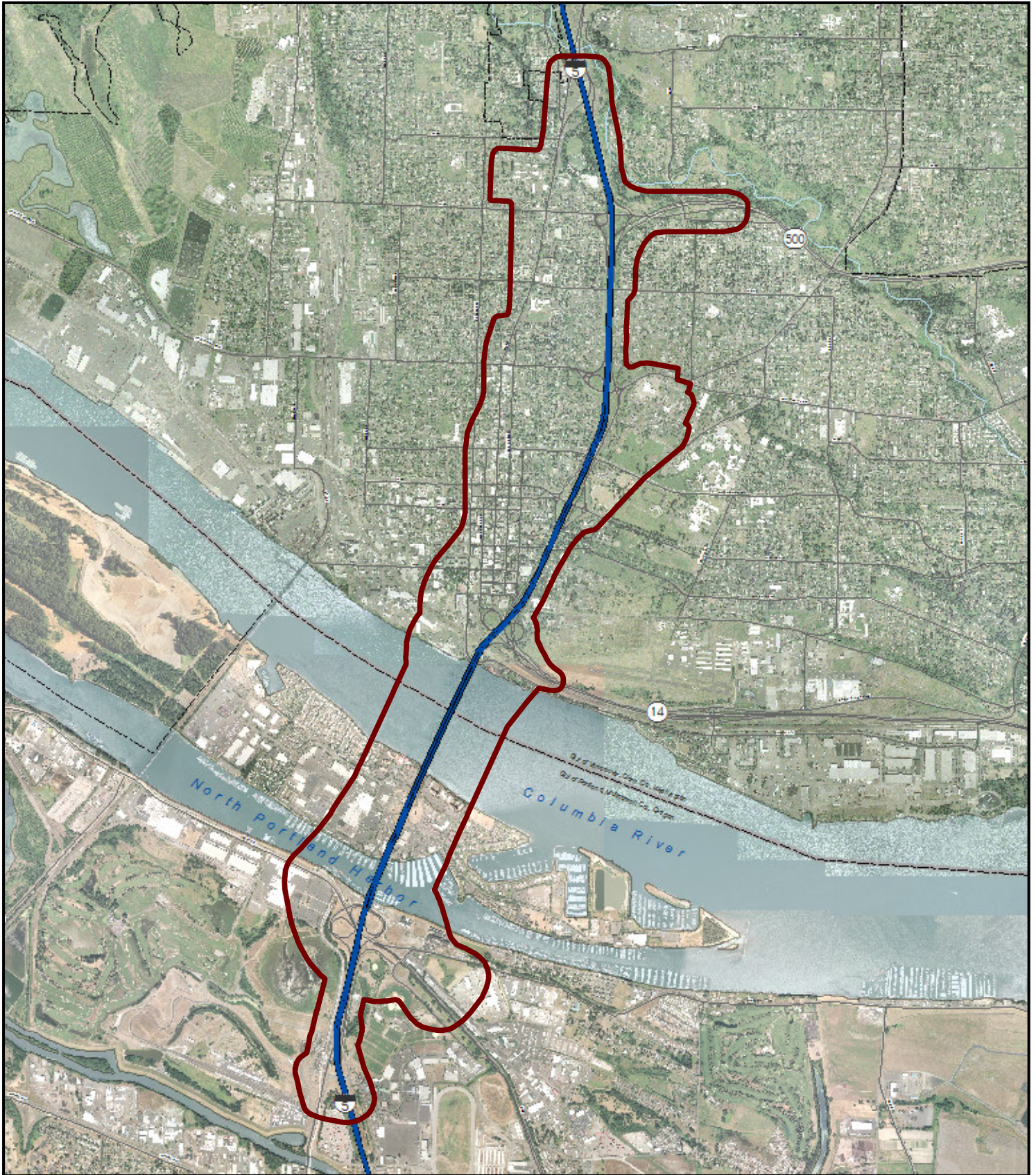
This evaluation uses two study areas for assessing effects: the primary and secondary areas of potential impact (APIs). The primary API addresses direct impacts and is similar across technical disciplines. Secondary APIs, the analysis units for indirect and cumulative impacts, may vary by discipline. APIs are shown in Exhibit 2-1 and are described below.

#### 2.2.1 Primary API

The primary API is the area most likely to experience direct impacts from right-of-way acquisition or construction and operation of project alternatives. Most physical project changes would occur in this area, though mitigation could occur outside of it.

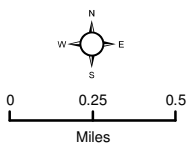
As shown in Exhibit 2-1, the primary API extends about five miles from north to south. It starts north of the I-5/Main Street interchange in Washington, and runs to the I-5/Columbia Boulevard interchange in Oregon. North of the river, the API expands west into downtown Vancouver, and east near Clark College to include potential high capacity transit alignments and park-and-ride locations. Around the actual river crossing, the eastern and western sides each extend 0.25 mile from the I-5 right-of-way. South of the river crossing, this width narrows to 300 feet on each side.

The primary API includes the project construction footprint. Temporary construction easements (as yet largely unspecified) would be required. Temporary construction easements may be subject to the differing temporary use and occupancy allowances provided in section 4(f), 6(f), and similar state regulations or guidance, depending on duration and impact magnitude of occupancy.



 Primary API

**Exhibit 2-1: Area of Potential Impact**





### **2.2.2 Secondary API**

The initial evaluation for park and recreation resources focused on the primary API. If changes in travel, traffic patterns, or volumes substantially alter critical access, visual, noise, vibration, or air quality conditions necessary to maintain the character or use of recreational and park resources beyond the primary API, then the Federal Highway Administration (FHWA) and the Federal Transit Authority (FTA) may expand the analysis area to address these indirect impacts.

## **2.3 Effects Guidelines**

A significant park or recreational property is one that plays a comparatively important role in meeting the park and recreational objectives of the community or jurisdiction. Such publicly owned parks and recreational lands that are 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 proposed alternatives 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 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, increased noise levels, diminution of views or air quality, access restriction, or increased vibration could result in direct impacts to park and recreation resources. This analysis relied on the Noise and Vibration, Traffic, Visual and Aesthetics, 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. The ultimate determination of magnitude of effect is made by DOT (FHWA and FTA).

## **2.4 Data Collection**

Data collection and analysis for this report was conducted in two phases due to the project size and complexity.

### **2.4.1 Phase 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. Limited 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. This information informed the alternative development and screening processes for opportunities to either avoid recreational resources or minimize potential impacts.

Project staff contacted the OPRD, Vancouver-Clark Parks and Recreation Department, the Washington Recreation and Conservation Office, and the Portland Parks and Recreation Bureau to identify park and recreational sites that have received funds through LWCF, LGGP, COGP, or SRFB and are subject to the protection procedures for 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 Phase II**

Phase II involved more focused analysis of potential impacts from the project alternatives to park and recreation resources.

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*.

For the Phase II analysis, project staff:

- conducted detailed consultation with NPS and other local park jurisdictions,
- mapped sites with specific use areas in each park or recreation area or historic site (e.g., access points, playgrounds, etc.),
- assessed impacts of the project alternatives,
- began drafting potential measures to mitigate these impacts.

Potential impacts to park and recreation resources not subject to the legal and regulatory oversights identified in Section 4(f) may nonetheless be considered adverse by the community (such as impacts to privately owned recreation resources, or facilities determined by federal authorities to be non-recreational). These impacts are addressed in the Public Services Technical Report.

## **2.5 Data Analysis**

This analysis evaluated potential long-term effects of right-of-way or property acquisitions, construction, and operation of the project alternatives. Potential direct and indirect effects that were evaluated for each alternative include:

- Roadway and transit alignments that would require acquisition of identified resources;

- Changes in traffic volume, routes and patterns that would affect access to or enjoyment of resources; and
- Aesthetic effects from increased noise or pollution levels.

The evaluation also considered beneficial impacts, such as new or increased public access, reduced congestion, or increased service by public transit adjacent to existing park and recreation areas not currently well served by public transit or currently compromised in recreational value by traffic volumes and related effects.

**This page intentionally left blank.**

### 3. Coordination

---

Early coordination with federal, state and local park and recreation providers occurred to obtain information on the potential affected resources. Project staff contacted the OPRD, Vancouver-Clark Parks and Recreation Department, the Washington Recreation and Conservation Office, Portland Parks and Recreation Bureau, as well as Clark College, to identify all existing and planned park and recreation facilities.

The project also initiated bi-weekly meeting with the NPS, which manages the Fort Vancouver National Historic Site (FVNHS), to discuss potential impacts to the potential FVNHS, and the larger Vancouver National Historic Reserve (VNHR), as well as the feasibility and appropriateness of various avoidance, minimization, and mitigation measures. These meetings have assisted in the effective transmittal of ideas and technical information between the project and NPS, and have provided the Reserve with the opportunity to voice their concerns in an immediately responsive environment.

**This page intentionally left blank.**

## 4. Affected Environment

---

### 4.1 Regional Conditions

This section provides an overview of the parks and recreational facilities in the Primary API. Park and recreation resources are scattered throughout the primary API in both Oregon and Washington, many of which exist immediately adjacent to the current I-5 corridor. The specific locations of the facilities that are shown on Exhibit 4-1. The jurisdictions that manage these resources are also identified, as are their future plans for improving and increasing the number and size of their parks. Resource information, such as hours of operation, size, characteristics, etc. can be found in Exhibit 4-2.

#### 4.1.1 City of Vancouver

As classified by the Vancouver-Clark Parks and Recreation District, facilities within the primary API include a national park and historic site, a community center (which includes a senior center and a public swimming pool), a sports field, a public dock, three neighborhood parks, two regional multi-use trails, five community parks, and two regional parks. According to District officials, all of these facilities are major components in meeting the overall park and recreational objectives of the Vancouver-Clark Parks and Recreation Department.

##### 4.1.1.1 Major Recreational Events

Many Vancouver-Clark Park and Recreation facilities are the sites of major recreational events in the City of Vancouver that draw thousands of people from Portland and the Greater Clark County Area. Some of these events include:

*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 & 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).

*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 Boulevard, and Fourth Plain Boulevard.

The event includes arts and craft and food vendors, musical acts, and other forms of street entertainment. It is estimated that the event has brought over 16,000 visitors in a two-day period (Care Oregon 2007).

*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 is expected to include 200 teams and attract over 1,500 to downtown Vancouver (Share Vancouver 2008).

#### **4.1.1.2 Section 6(f) Resources**

Section 6(f) of the federal Land and Water Conservation Fund 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. State-funded and implemented programs that are very similar to the federal LWCF program include the Oregon Local Government Grant Program, Oregon County Opportunity Grant Program, and Washington Salmon Recovery Funding Board.

Currently, of all the park or recreation facilities potentially affected, the only facilities known to have received funding from the Land and Water Conservation Fund (LWCF) are a portion of the trail within the Burnt Bridge Creek Greenway near SR 500 (grant in 2007)(Washington State Recreation and Conservation Office 2008), Waterworks Park (grant received in 1984) (Washington State Recreation and Conservation Office 2008), and Vancouver Landing (City of Vancouver 2008).<sup>1</sup> See Exhibit 4-1 for locations of these resources.

#### **4.1.1.3 Parks and Recreation Plans**

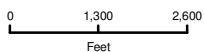
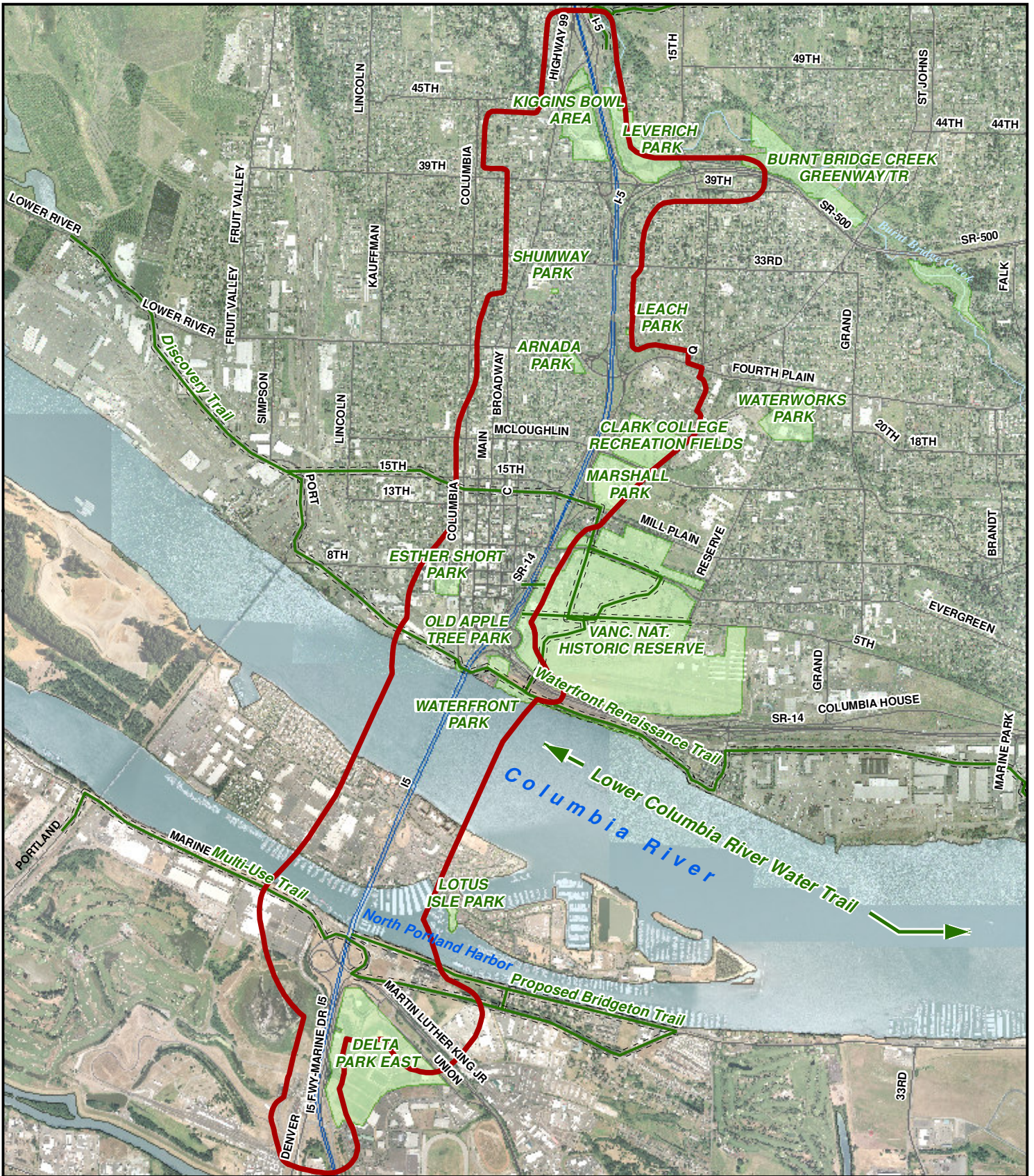
Vancouver and surrounding areas offer a wide range of outdoor recreation opportunities to residents and visitors. There are urban walking and biking trails located throughout the Vancouver area. Federal, state, county, and city areas provide a wide variety of recreational choices for the region.

In 1995/96, 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.

---

<sup>1</sup> City of Vancouver, Personal Communication, 2008.





- Primary API
- Park
- Trails

**Exhibit 4-1: Parks and Trails in Project Area**



### Exhibit 4-2. Existing and Planned Park and Recreation Resources in the Primary API

| Name                                             | Facility Type                        | Location                               | Approx. Distance from Proposed Highway/ Transit Improvements | Hours of Operation | Ownership and Management                 | Received <sup>a</sup> Funding from LGGP/COGP/ LWCF/IAC-SRFB | Site Features and Characteristics                                                                                                                                                                                                             |
|--------------------------------------------------|--------------------------------------|----------------------------------------|--------------------------------------------------------------|--------------------|------------------------------------------|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Existing Portland Facilities (Segment A)</b>  |                                      |                                        |                                                              |                    |                                          |                                                             |                                                                                                                                                                                                                                               |
| Lotus Isle Park                                  | Neighbor-hood Park                   | N Tomahawk Island Drive Portland, OR   | 200 ft from I-5 on Hayden Island                             | 5 am to midnight   | City of Portland                         | No                                                          | Paved paths, picnic tables, playground                                                                                                                                                                                                        |
| East Delta Park                                  | Neighbor-hood/ Regional Park         | N Denver & MLK, Jr. Blvd. Portland, OR | Adjacent to I-5                                              | 5 am to midnight   | City of Portland                         | No                                                          | Sports complex with 5 lighted softball fields, a synthetic soccer field, 7 grass soccer fields, 6 sand volleyball courts, playground, picnic tables, restrooms, parking lot, support buildings, nature trails, and off-leash dog area.        |
| Marine Drive Trail                               | Multi-use trail                      | I-5 to Kelley Point Park               | Adjacent to I-5                                              | All                | City of Portland                         | No                                                          | Bike and walking trail that connects path on the North Portland Harbor Bridge to the Marine Drive Interchange and South side of the harbor                                                                                                    |
| <b>Existing Vancouver Facilities (Segment A)</b> |                                      |                                        |                                                              |                    |                                          |                                                             |                                                                                                                                                                                                                                               |
| Lower Columbia River Water Trail                 | Recreational and commercial waterway | Columbia River                         | Passes under I-5 river crossing                              | Sunrise to dusk    | Lower Columbia River Estuary Partnership | No                                                          | 146-mile water trail from Bonneville Dam to Pacific Ocean                                                                                                                                                                                     |
| Waterfront Park                                  | Regional Park                        | 115 Columbia Way Vancouver, WA         | Adjacent to I-5                                              | 7 am to dusk daily | National Park Service                    | No                                                          | Passive recreation and viewing; Capitan George Vancouver Monument, Boat of Discovery art piece, and Illichee Statue and Plaza; Starting point of the Waterfront Renaissance Trail. Site of annual Old Apple Tree Festival (1st Sat. in Oct.). |
| Waterfront Renaissance Trail (4 miles)           | Multi-use trail                      | 115 Columbia Way Vancouver, WA         | Adjacent to I-5                                              | 7 am to dusk daily | City of Vancouver/ National Park Service | No                                                          | 4-mile long, 14-foot-wide, shared-use concrete trail. Part of the Discovery Loop trail.                                                                                                                                                       |

| Name                                             | Facility Type                                                                    | Location                                            | Approx. Distance from Proposed Highway/ Transit Improvements | Hours of Operation                                                               | Ownership and Management                                                                                                           | Received <sup>a</sup> Funding from LGGP/COGP/ LWCF/IAC-SRFB | Site Features and Characteristics                                                                                                                               |
|--------------------------------------------------|----------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------------------------------------|----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Vancouver Landing                                | Public dock and amphitheater                                                     | River mile 106 on north shore of the Columbia River | Approx 1000 ft west of I-5                                   | 7 am to dusk daily                                                               | City of Vancouver                                                                                                                  | Yes, IAC funds                                              | Public transient moorage facility/dock, amphitheater                                                                                                            |
| Old Apple Tree Park                              | Community Park                                                                   | 112 Columbia Way<br>Vancouver, WA                   | Adjacent to SR 14 and I-5 interchange                        | 7 am to dusk daily                                                               | City of Vancouver                                                                                                                  | No                                                          | Passive recreation and viewing. Site of possibly the oldest apple tree in the Northwest.                                                                        |
| Vancouver National Historic Reserve              | National Historic Reserve; includes National Historic Site and Historic District | 612 E. Reserve<br>Vancouver, WA                     | Adjacent to I-5                                              | Nov. 1 to Feb. 28: 9 am to 4 pm daily.<br>Mar. 1 to Oct. 31: 9 am to 5 pm daily. | National Park Service, City of Vancouver, State of Washington, and US Army; supported by Vancouver National Historic Reserve Trust | No                                                          | Historic interpretive sites and replica structures, multi-use trails and land bridge, picnic tables, event and recreation fields and reservable picnic shelter. |
| Esther Short Park                                | Community Park                                                                   | W Columbia St. and 8th St.<br>Vancouver, WA         | Approximately 1 block from transit station on Washington     | 7 am to dusk daily                                                               | City of Vancouver                                                                                                                  | No                                                          | Special event pavilion, play equipment, paved walkways and benches.                                                                                             |
| Waterworks Park (Outside of API)                 | Community Park                                                                   | Fourth Plain Blvd & Fort Vancouver Way              | Approximately 1 mile from I-5                                | 7 am to dusk daily                                                               | City of Vancouver                                                                                                                  | Yes, LWCF                                                   |                                                                                                                                                                 |
| <b>Existing Vancouver Facilities (Segment B)</b> |                                                                                  |                                                     |                                                              |                                                                                  |                                                                                                                                    |                                                             |                                                                                                                                                                 |
| Clark College Recreation Fields                  | Community park                                                                   | 1500 East Mill Plain<br>Vancouver, WA               | Adjacent to proposed park and ride location                  | 7 am to dusk daily                                                               | Clark College                                                                                                                      | No                                                          | Sports fields for College and Public, batting cages, and benches                                                                                                |
| Leach Park                                       | Neighborhood park                                                                | 28th & K St.<br>Vancouver, WA                       | 50 ft from I-5                                               | 7 am to dusk daily                                                               | City of Vancouver                                                                                                                  | No                                                          | Play equipment<br>Benches                                                                                                                                       |
| Marshall Community Park                          | Community Center and Public Swimming Pool                                        | 1015 E McLoughlin<br>Vancouver, WA                  | Adjacent                                                     | 7 am to dusk, or as determined by activity                                       | City of Vancouver                                                                                                                  | No                                                          | Play equipment, community gardens, loop trail, picnic tables, horseshoes, ball fields.                                                                          |

| Name                        | Facility Type                                    | Location                                                | Approx. Distance from Proposed Highway/ Transit Improvements | Hours of Operation                                      | Ownership and Management  | Received <sup>a</sup> Funding from LGGP/COGP/ LWCF/IAC-SRFB | Site Features and Characteristics                                                                                          |
|-----------------------------|--------------------------------------------------|---------------------------------------------------------|--------------------------------------------------------------|---------------------------------------------------------|---------------------------|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| Marshall Community Center   | Indoor Community Center and Public Swimming Pool | 1009 E McLoughlin Vancouver, WA                         | 300 ft                                                       | 7 am to dusk, or as determined by activity              | City of Vancouver         | No                                                          | Swimming pool, fitness center, basketball courts (2), gym, commercial kitchen, meeting rooms, admin. offices.              |
| Luepke Senior Center        | Senior Center                                    | 1009 E McLoughlin Vancouver, WA                         | 300 ft                                                       | 7 am to dusk, or as determined by activity              | City of Vancouver         | No                                                          | Multipurpose room, meeting rooms.                                                                                          |
| Leverich Park               | Regional park                                    | 39th and M St. Vancouver, WA                            | Adjacent                                                     | 7 am to dusk daily                                      | City of Vancouver         | No                                                          | Softball field<br>Picnic tables<br>Paved walkways Reservable picnic shelter<br>Restroom<br>BBQ stands<br>Horseshoes pits   |
| Ellen Davis Trail           | Multi-use trail                                  | Trailhead at N End at Leverich Park                     | 650 ft                                                       | 7 am to dusk daily                                      | City of Vancouver         | No                                                          | 1.2-mile multi-use trail open to hikers and cyclists in the Burnt Bridge Creek Greenway                                    |
| Burnt Bridge Creek Greenway | Natural Area                                     | E 39th Street & M Street Vancouver, WA                  | Adjacent                                                     | 7 am to dusk daily                                      | City of Vancouver         | Yes, LWCF for portion of trail                              | Includes Kiggins Bowl and Leverich park, 8-mile multi-use trail from Kiggins to Stewart Glen                               |
| Kiggins Bowl Area           | Sports Venue                                     | Discovery Middle School, 800 E. 40th St., Vancouver, WA | Adjacent to proposed park and ride and to I-5 to the west    | School hrs, or other as determined by approved activity | Vancouver School District | No                                                          | Sports fields and track, including Kiggins Field (artificial turf soccer/football field) used by school and open to public |
| Arnada park                 | Neighborhood park                                | W 25th & G St. Vancouver, WA                            | 600 ft                                                       | 7 am to dusk daily                                      | City of Vancouver         | No                                                          | Gazebo, Picnic shelter, Play equipment Sports court, Benches Paved walkway                                                 |
| Shumway Park                | Neighborhood Park                                | 3014 F St. Vancouver, WA                                | 1000 ft                                                      | 7 am to dusk daily                                      | City of Vancouver         | No                                                          | Play equipment<br>Benches<br>Picnic tables                                                                                 |

| Name                                          | Facility Type            | Location                                         | Approx. Distance from Proposed Highway/ Transit Improvements | Hours of Operation | Ownership and Management                          | Received <sup>a</sup> Funding from LGGP/COGP/ LWCF/IAC-SRFB | Site Features and Characteristics                                                         |
|-----------------------------------------------|--------------------------|--------------------------------------------------|--------------------------------------------------------------|--------------------|---------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| <b>Planned Portland Facilities Segment A</b>  |                          |                                                  |                                                              |                    |                                                   |                                                             |                                                                                           |
| Bridgeton Trail                               | Multi-Use Path           | Between I-5 and N Bridgeton Rd along river levee | Adjacent                                                     | Undetermined       | City of Portland, Portland Development Commission | Undetermined                                                | 0.5-mile-long trail section in Bridgeton neighborhood, linking N Bridgeton Rd to I-5.     |
| <b>Planned Vancouver Facilities Segment A</b> |                          |                                                  |                                                              |                    |                                                   |                                                             |                                                                                           |
| Pedestrian crossing                           | Path                     | Connects E 7th St. and Hathaway Rd               | Adjacent                                                     | Undetermined       | Undetermined                                      | Undetermined                                                | Bridge for multimodal path over I-5.                                                      |
| Hudson Bay Company Village                    | Replica Historic Village | Southwestern FVNHS                               | Adjacent                                                     | Undetermined       | Undetermined                                      | Undetermined                                                | Replica historic dwellings, and other village features.                                   |
| <b>Planned Vancouver Facilities Segment B</b> |                          |                                                  |                                                              |                    |                                                   |                                                             |                                                                                           |
| Burnt Bridge Creek Greenway Improvements      | Natural Area             | E 39th Street & M Street Vancouver, WA           | Adjacent                                                     | 7 am to dusk daily | City of Vancouver                                 | Undetermined                                                | Planned improvements to existing multi-use trail including portions through Kiggins Bowl. |

<sup>a</sup> Based on preliminary information only from research of LWCF, LGGP, and COGP databases and/or documents, and grants administered by the Washington Office of the IAC-SRFB. Additional verification from Washington and Oregon state agencies will be required to verify the source of funding for any potentially affected properties.

In 1997, the City of Vancouver and Clark County combined their parks services to create the Vancouver-Clark Parks and Recreation Department. The Vancouver Urban Parks, Recreation, and Open Space Plan 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 parks and recreation department.

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 Vancouver-Clark Parks and Recreation facilities included within the primary API. These facilities include neighborhood parks (3-5 acres in size), community parks (15-100 acres in size), and open spaces (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 department'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 acres/1,000 people
- Development standard: 4.25 acres/1,000 people

#### **4.1.2 Vancouver National Historic Reserve**

Parks and recreation facilities within the Vancouver National Historic Reserve (VNHR) include the:

- 209-acre Fort Vancouver National Historic Site (FVNHS), which includes Fort Vancouver, the Hudson Bay Company (HBC) (known historically as “Kanaka”) Village, the East and South Vancouver Barracks,
- West Vancouver Barracks, including the Barracks Post Hospital, and Officer’s Row,
- Pearson Field and Pearson Air Museum,
- Confluence land bridge, which connect trails through the Vancouver National Historic Reserve with the Waterfront Renaissance Trail and Discovery Trail loop,
- Columbia river waterfront and Old Apple Tree Park,
- Water Resources Education Center

##### **4.1.2.1 Major Recreational Events**

The Vancouver National Historic Reserve is the sight of many large recreational events throughout the year. The largest of which is the Fort Vancouver Independence Day Fireworks. The annual Fort Vancouver Independence Day Fireworks celebration is the largest 4th of July fireworks display in the Portland-Vancouver area, with attendance reported at over 65,000 participants. In addition to the fireworks display, the all-day event

includes music, arts and crafts, food, carnival rides, and an outdoor film (VANCWA 2007). To manage the traffic generated by the event, the Vancouver Police Department (VPD) alters traffic patterns, closes several streets, and encourages attendees to take public transportation.

#### **4.1.2.2 Park and Recreation Plans**

The 366 acre Vancouver National Historic Reserve (VNHR), or Reserve, was established by Congress in 1996 to preserve and interpret historically significant areas in the city of Vancouver, Washington. Only a small portion of the Reserve lies within the primary API. Land within the Reserve is owned by the National Park Service, the US Army, the City of Vancouver, FHWA Western Federal Lands, and the Washington State Department of Transportation. The Reserve is cooperatively managed by the NPS, the City of Vancouver, the U.S. Army, with support from the Vancouver National Historic Reserve Trust. The VNHR, Washington, Cooperative Management Plan (NPS 2000) notes that a purpose of the Reserve is to encourage and promote heritage tourism. Heritage tourism is defined as travel that is directed toward experiencing the arts, heritage, and special character of a place and traveling to historic and cultural attractions to learn about the past in an enjoyable way.

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

Approximately 252 acres in the westernmost portion of the Reserve is within a nationally registered Historic District, which includes the Barracks Hospital - the aboveground resource nearest the project. The U.S. Army Reserve buildings adjacent to the I-5/SR 14 interchange and the FHWA Western Federal Lands Building just north of the Army buildings, are not identified as contributing resources within the Historic District.

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

#### **4.1.2.3 FVNHS Facilities**

The FVNHS is bordered by other parts of the Reserve 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 FVNHS. An unpaved administrative road leads from E Fifth Street to a maintenance storage area in the HBC Village in the southwest corner of the FVNHS. Approximately 0.7 miles of concrete sidewalk along Columbia Way and 0.34 miles of concrete/asphalt sidewalk within the FVNHS waterfront parcel border the Vancouver Waterfront area.

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

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

The construction of a landscaped pedestrian walkway or “land bridge” to span SR 14 and connect Fort Vancouver to the waterfront has been completed. The bridge landing is located approximately 750 ft southwest of the reconstructed HBC Fort and will connect to existing FVNHS 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.

#### **4.1.2.4 Planned Facilities**

Planned FVNHS park and recreation facilities within the primary API include a replica historic village (Hudson Bay Company 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 FVNHS near the I-5/SR 14 interchange, and a proposed new pedestrian crossing over I-5 connecting E Seventh Street and Hathaway Road.



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

#### **4.1.3 City of Portland**

As classified by the City of Portland Parks and Recreation Bureau, facilities within the primary API include one multi use trail, one neighborhood park and one neighborhood/regional park. According to Bureau officials, the parks and trail are considered major components in meeting the overall park and recreation objectives of the City of Portland.

##### **4.1.3.1 Parks and Recreation Plans**

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 such as community centers and swimming pools, and identifies programs, partnerships and funding.

Parks 2020 Vision does not specifically address the I-5 Columbia River Crossing. 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 residents;
- A lack of sufficient full-service community centers with aquatic facilities;
- Too few community gardens to meet 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.

**This page intentionally left blank.**

## 5. Long-Term Effects

---

### 5.1 How is this section organized?

This chapter describes possible long-term direct and indirect impacts that are expected from the I-5 CRC alternatives and options. It first describes impacts from the five full alternatives, including the No-Build Alternative. These are the representative alternatives that include specific highway, transit, bicycle, pedestrian and other elements. This discussion focuses on how these alternatives would affect parks and recreation areas at a corridor level. It then focuses on impacts that would occur with various design options at the segment level, for example, comparing the impacts of each alignment option in each segment. Finally, it provides a more comparative and synthesized summary of the impacts associated with the system-level choices. This three-part approach provides a comprehensive description and comparison of (1) the combination of system-level and segment level choices expressed as five specific alternatives: (2) discrete system-level choices, and (3) discrete segment-level choices.

### 5.2 Full Alternatives

This section describes the impacts from five full alternatives, including the No-Build Alternative. These are combinations of highway, river crossing, transit and pedestrian/bicycle alternatives and options covering all of the CRC segments. They represent the range of system-level choices that most affect overall performance, impacts and costs. The full alternatives are most useful for understanding the regional impacts, performance and total costs associated with the CRC project. Exhibit 1-3 summarizes potential effects to park and recreation resources, which are discussed in detail here.

#### 5.2.1 No-Build Alternative

Under the No-Build Alternative there would be no known displacement of park 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 affect overall community livability, and 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 congestion problems could result in loss of park properties. Large events such as the Fort Vancouver fireworks display, 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 less than optimum.

### **5.2.2 Alternative 2: Replacement Crossing with Bus Rapid Transit**

Alternative 2 would require more area from the Vancouver National Historic Reserve, the Old Apple Tree Park, and Leverich Park to the north for the construction of the highway than for Alternatives 4 and 5. Transit related impacts to parks are similar for all build alternatives, and can only be slightly differentiated at the component level. One noted difference is the increased impact to the Kiggins Bowl Sports Venue as a result of the I-5 alignment with BRT. This additional impact would be avoided by LRT.

Alternative 2 would have the greatest highway capacity, and therefore least traffic congestion, it would improve access to and from significant recreation events at the Vancouver National Historic Reserve, Esther Short Park, and the Vancouver waterfront areas. All build alternatives would result in improved transit access to local and large regional parks and recreation facilities. Additionally, Alternative 2 would result in improved bicycle and pedestrian connection over the Columbia River and North Portland Harbor, as users would no longer have to navigate local streets on Hayden Island to move between the two crossings.

### **5.2.3 Alternative 3: Replacement Crossing with Light Rail**

Alternative 3 would result in the same effects as Alternative 2 for park and recreation resources, except that it would avoid an additional impact to the parcel on which Kiggins Bowl sports field is located as a result of transit mode choice.

### **5.2.4 Alternative 4: Supplemental Crossing with Bus Rapid Transit**

Alternative 4 would avoid impact to the Old Apple Tree Park, and minimize land required from the Vancouver National Historic Reserve and Leverich Park. Alternative 4 would not result in as much congestion relief as with Alternatives 2 and 3, and would therefore not result in a substantial improvement to access to and from important recreational events in Vancouver. Additionally, this option would increase the number of bridge piers in the waters, making marine navigation more difficult, and possibly impeding recreational use of the Columbia River Water Trail and North Portland Harbor. Last, this alternative would not provide a grade separated bicycle and pedestrian pathway across Hayden Island

### **5.2.5 Alternative 5: Supplemental Crossing with Light Rail**

Alternative 5 would result in the same effects as Alternative 4 for park and recreation resources, except that it would avoid a minor impact to the parcel on which Kiggins Bowl sports field is located as a result of transit mode choice.

## **5.3 Impacts from Segment-level Options**

This section describes and compares the impacts associated with specific highway alignment and interchange options and specific transit alignments and options. They are organized by Segment, including:

- Segment A: Delta Park to Mill Plain District

- Segment B: Mill Plain District to North Vancouver

For transit options, Segment A is divided into two sub-segments, each with a discrete set of transit choices:

- Sub-segment A1: Delta Park to South Vancouver
- Sub-segment A2: South Vancouver to Mill Plain District

Exhibit 2-1 shows the segment boundaries of the project APIs. Impacts from highway options are described separately from impacts from transit options. The purpose of this organization is to align the information with possible alternative options. Where the traffic and transit choices would have a substantial effect on each other, this is considered.

### **5.3.1 Segment A: Delta Park to Mill Plain District – Highway Alternatives**

#### **5.3.1.1 Replacement Crossing**

In Segment A, the downstream replacement crossing would impact the following park and recreation resources (Please refer to Appendix A for graphical representations of the following acquisition impacts):

*The planned Bridgeton Trail:* The replacement crossing may interfere with the proposed route of the Bridgeton Trail connection. This trail connection is planned to provide a recreational link from the Bridgeton neighborhood to the I-5 bridge and connect to east and west portions of the Marine Drive multi-use trail. The project team is working to accommodate this planned trail into the designs.

*The Old Apple Tree Park:* The Heritage Apple Tree could potentially be shaded by this alternative, thereby affecting the integrity of this important park feature. Approximately 0.27 acres of the property may be acquired with the dual-loop I-5/SR 14 interchange design, including a portion of the park's viewing courtyard, though the tree would not be displaced. The left-loop I-5/SR 14 interchange design would avoid this impact. See *Vancouver National Historic Reserve* section below for more information on the I-5/SR 14 interchange designs.

*Waterfront Renaissance Trail:* Possible realignment of up to 180 feet of the trails due to bridge relocation. Under the Replacement crossing, this realignment would be easy to accommodate due to the increased waterfront open space beneath the new bridge landing.

*Waterfront Park:* Approximately 0.23 acres of park shoreline and quay plaza viewing areas would be shaded. The connection from this Park and the Marine Drive multi-use trails would be dramatically improved by the bridge replacement. Current designs indicate that the art pieces located at this site, the Capitán George Vancouver Monument and the Boat of Discovery would not be displaced by the replacement river crossing.

*Vancouver National Historic Reserve:* Approximately 1.73 to 2.7 acres of the VNHR near the I-5/SR 14 interchange and adjacent to I-5 to the east, would be acquired, depending on interchange design. The left-loop SR 14 interchange design would result in 1.73 acres of impact to the area, while the dual-loop interchange design would result in impact to 2.7 acres in this area. See Exhibits 5-1 and 5-2 for a graphical representation of this interchange design comparison. As the left-loop design would stack ramps on the west side of I-5, to avoid direct impacts on the VNHR. The total height of the interchange would increase and may result in visual impact to the VNHR, and possibly to the potential Downtown Vancouver Historic District. Noise levels in this area would likely decrease over No-Build conditions due to the construction of new and improved noise walls along the I-5/SR 14 interchange ramps.

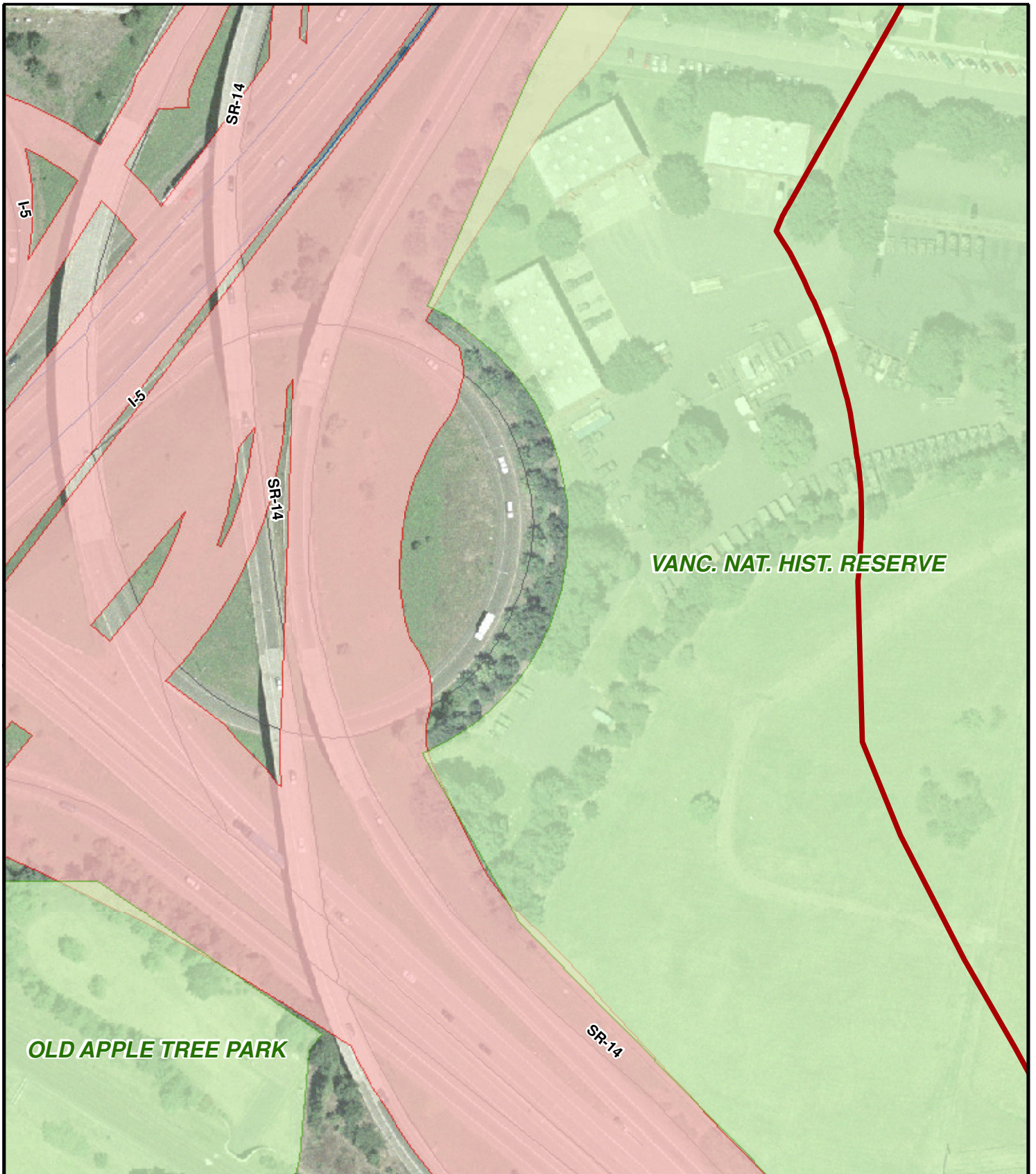
Approximately 0.8 to 1.5 acres of the Fort Vancouver National Historic Site may be acquired by this alternative, depending on interchange design. This impact is included in those calculated above for the Reserve.

The Western Federal Lands building and other portions of the Reserve currently owned by the U.S. Army Reserve and the City of Vancouver may also be impacted, but these areas are not available to the public for recreational use and are not recreational. However, NPS plans to convert the Army Reserve property to recreational/interpretive uses. Because they abut the existing I-5 corridor, these portions of land maintain limited recreational function other than buffer between the open space uses, historic buildings, and the Interstate.

Users of the new Confluence land bridge may experience a reduction in their overall recreational experience with the new wider highway ramps constructed under the facility. Views of the HBC Village area are not expected to be affected by the highway reconfigurations due to screening provided by existing trees, but Noise levels are not likely to increase above no-build levels. Users of the bridge may also experience temporary construction-related impacts, which are addressed in Chapter 6.

*Planned 7<sup>th</sup> Street Pedestrian Crossing:* The planned 7<sup>th</sup> Street pedestrian bridge over I-5 would be would not be precluded with the replacement river crossing, and in fact, would be easier to accomplish with the replacement river crossing than with the supplemental crossing, as the replacement river crossing would be at grade through this area. The replacement river crossing would also allow for another use (through an airspace lease) of the property for Fifth Street to cross under I-5. This would provide a new connection between downtown Vancouver and Vancouver National Historic Reserve.





*Marshall Park and Community Center:* The replacement alignment would also require a 1.2 acres partial acquisition of a landscaped, largely passive recreation area adjacent to the parking area in near the Marshall Community Center and Luepke Senior Center. The roadway may also displace up to three of the approximately 20 horseshoe courts behind the Luepke Center.



VANG. NAT. HIST. RESERVE

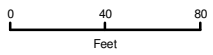
OLD APPLE TREE PARK

SR-14

-  Primary API
-  Affected Park
-  Affected Trails
-  Cut-Fill Lines Showing Single Loop

**Exhibit 5-1: Vancouver National Historic Reserve - SR 14 Interchange Left Loop**





- Primary API
- Transit ROW Requirements
- Affected Park
- Downstream Replacement ROW Requirements
- Affected Trails

**Exhibit 5-2: Vancouver National Historic Reserve - SR 14 Interchange Dual Loop**





### **5.3.1.2 Supplemental Crossing**

Compared to the replacement crossing, the supplemental river crossing would have fewer negative effects on parks and recreation resources. This crossing requires only very minor acquisitions of park property at the Vancouver National Historic Reserve (0.31 acres), including 0.004 acres of the Fort Vancouver National Historic Site, and Leverich Park (0.24 acres), and is not expected to result in shading of the apple tree at Old Apple Tree Park, or require modifications to the highway ramps under the Confluence Project land bridge. This crossing option would also shade approximately 0.17 acres of the Waterfront Park, in addition to the area already shaded by the existing crossing, and could require the realignment of up to 93 linear feet of the Waterfront Renaissance Trail due to pier placement.

The planned Seventh Street pedestrian connection across I-5 would be more difficult with the supplemental river crossing than with the replacement crossing, as the supplemental bridge would be higher than existing grade in this area.

The supplemental river crossing will not result in the potential beneficial impact of increasing open space along the waterfront, as the replacement crossing may be able to do, because the existing bridge landing would remain in place. The supplement crossing would similarly interfere with the Planned Bridgeton Trail and Marshall Community Park (1.24 acres) as the replacement crossing.

## **5.3.2 Segment B: Mill Plain District to North Vancouver - Highway Alternatives**

### **5.3.2.1 Replacement Crossing**

In Segment B, the replacement crossing and highway improvements would have the following effects on park and recreation resources (Please refer to Appendix A for graphical representations of the following acquisition impacts):

*Leverich Park:* The replacement crossing would acquire 0.33 acres of the passive recreation park border, berms, and landscaping from Leverich Park. The reconstructed SR 500 to I-5 northbound ramp would travel over the 39th Street entrance to this park, but would not impede access for the long-term.

### **5.3.2.2 Supplemental Crossing**

In Segment B, the supplemental crossing and highway improvements would have similar effects to park and recreation resources as the replacement crossing (Please refer to Appendix A for graphical representations of the following acquisition impacts):

*Leverich Park:* The supplemental crossing would acquire 0.24 acres of this resource; slightly less than the replacement crossing.

## **5.3.3 Segment A1 and A2: Delta Park to Mill Plain District- Transit Alternative**

No park or recreation resources would be affected by direct acquisitions from the transit alignments in these segments.

The Marine Drive multi-use trail and Vancouver Waterfront Park may experience proximity effects (increased noise, decrease of visual quality) resulting from the placement of an elevated transit guideway over these resources. As the portions of these resources that would be affected by the elevated guideway are also located adjacent to the loud and visually imposing I-5 corridor and bridge, these impacts will likely be minor. Additionally, these resources would likely benefit from improved access to the multi-modal pathway over the river crossing.

### **5.3.4 Segment B: Mill Plain District to North Vancouver – Transit Alternatives**

#### **5.3.4.1 North I-5 and Vancouver Transit Alignments**

The first two park and recreation resources listed in this section would be affected by park and rides associated with both the Vancouver and I-5 transit alignments. The last resource would be impacted by only the I-5 alignment. Please refer to Appendix A for graphical representations of the following acquisition impacts.

*Clark College Recreational Fields:* Both transit alignments would require the acquisition of an approximately 1.24 acre strip of land at the Clark College recreational fields, including portions of a ball field, batting cage, park path, grass field for the construction of the Clark College Park and Ride. This park and ride will also require the acquisition of a 5-acre parcel directly west of the recreation fields also owned by Clark College. 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-floor, mixed-use building.

However, the Master Plan also notes that the Columbia River Crossing Project, is also interested in acquiring this parcel for a “large structured parking facility and/or a light-rail terminal.” Therefore, this possibility is likely being taken into account in their planning. Though this parcel is not considered a park and recreation resource at this time, further evaluation of the potential recreational use will be conducted at such time that this park and ride is considered part of a preferred alternative.

A 3-story park and ride facility at this location, as would be required with the I-5 alignment, may also result in diminution of the views from the Clark College Recreational fields. Currently views of the I-5 corridor from the fields are blocked by the largely forested “Athletic Annex” parcel. Some of these trees, especially those along the edge of the fields, may be able to be kept in place to provide a visual buffer. Under the Vancouver alignment, this park and ride would be a surface lot, easily buffered by existing or new vegetation.

A park and ride facility at this location could also improve public access to the Clark College Recreation fields and other nearby parks, and thereby result in a benefit. Additionally, the I-5 alignment would provide direct transit access to this park and ride, thereby improving access to the Clark College Recreational fields and other nearby facilities.

*Kiggins Bowl sports venue:* Both alignments would require the realignment of up to 50 linear feet of a local trail connection between Main Street to the Burnt Bridge Creek Greenway and trail. Both would also acquire 0.14 acres of a parking/landscaped area within the Kiggins Bowl area. An additional 0.35 acres would be acquired from this parcel for the I-5 alignment when paired with BRT. None of these impacts are expected to affect the functionality of the sports venue. This acquisition would require realignment of the existing trail to maintain connectivity between Main Street and the Burnt Bridge Creek Greenway trail, specifically the bicycle and pedestrian overpass to Leverich Park.

These impacts would occur as a result of a park and ride structure or lot at a WSDOT-owned parking lot north of the Kiggins Bowl sports venue. With the I-5 alignment the structure would be 6-stories and would not likely result visual impacts to the Kiggins Bowl recreation field, as the area is heavily wooded and below grade. Additionally, the space acquired for the parking structure or lot is already used as surface parking for access to the fields, and would therefore not change use.

Public access to Kiggins Bowl may increase as a result of the new park and ride facility and transit terminus station (with the I-5 alignment), which may constitute a beneficial impact to this resource.

*Leverich Park:* The I-5 transit alignment would also impact a small portion (0.01 acres) of the 30-acre Leverich Park as it is elevated over the I-5/SR 500 interchange and to Kiggins Park and Ride. This alignment impacts a portion of a berm along the park's western edge, and would occur in addition to impacts due to highway improvements.

Public access to Leverich Park may increase as a result of the new park and ride facility and transit terminus station (with the I-5 alignment) directly across I-5 and near the bicycle and pedestrian overpass that connects Kiggins Bowl with Leverich park.

## **5.4 Impacts from Other Project Elements**

### **5.4.1 Minimum Operable Segment**

The Clark College and Mill Plain minimum operable segments (MOS) would travel through Segments A1 and A2 in much the same fashion as analyzed above, and would therefore have the same associated impacts (i.e., none). The Mill Plain MOS would terminate between Mill Plain and McLoughlin Boulevards, while the Clark College MOS would travel east to the Clark College Park and Ride, where the line would terminate. As the Clark College Park and Ride is associated with both MOSs, the Clark College Recreation Fields would be impacted in the same way as the full length alignments. Additionally, as the Kiggins Park and Ride is also included with both MOSs, the impacts to Kiggins Bowl will also occur as described above, though the park and ride will be a surface lot, not a structure. The only transit related park and recreation impacts avoided by either MOS would be the 0.01 acre acquisition at Leverich Park and possible 0.33 acre impact to Kiggins Bowl, as required by the full-length I-5 alignment. (Highway widening would still result in impacts to Leverich Park.) Both MOSs therefore result in the same impacts to park and recreation resources as does the full-length Vancouver transit alignment.

## 5.4.2 Transit Maintenance Base Stations

The expansion of either the C-TRAN maintenance facility in East Vancouver for BRT or the TriMet Ruby Junction facility expansion in Gresham for light rail 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 Ruby Junction facility, and therefore would not be impacted by the expansion, as it occurs to the west.

## 5.5 Impacts from System-Level Choices

### 5.5.1 River Crossing Type and Capacity: How does the supplemental crossing compare to the replacement crossing

The supplemental crossing would impact fewer park and recreational resources, than the replacement crossing. While the replacement option would impact four separate parks, translating into the acquisition or shading of up to 3.46 to 4.40 acres of parkland depending on the I-5/SR 14 interchange design. The supplemental crossing would impact three parks totaling 1.68 acres. In addition, the replacement crossing could also result in the possible realignment of up to 180 linear feet of the Waterfront Renaissance trail, while the supplemental would only impact 93 linear feet of the Waterfront Renaissance trails. The greater impact associated with the replacement alignment is largely the result of widening the mainline and reconfiguring the major interchanges that occurs to a greater degree than with supplemental.

The supplemental crossing may negatively impact the use of the Columbia River Water Trail due to the increased number of piers in the water and increased navigation hazard.

Both crossing options would result in a substantial change in visual context at the Vancouver Landing at Terminal One. This public dock/moorage and amphitheater was built with Washington State's Interagency Committee for Outdoor Recreation (IAC) funds and is used for the annual fundraising event, Hoops on the River. This would not likely be considered a negative effect.

The replacement river crossing would improve congestion on I-5 and local streets over No-Build more effectively than the supplemental crossing. This could improve access to and from major recreation events at the Vancouver National Historic Reserve, Esther Short Park, and the Vancouver waterfront areas.

The planned Seventh Street pedestrian connection, as indicated in City of Vancouver and NPS plans, across I-5 would be more difficult with the supplemental river crossing than with the replacement crossing, as the supplemental bridge would be higher than existing grade in this area. The replacement crossing would match the existing grade in this area. The replacement river crossing would also allow for another use (through an airspace lease) of the property for Fifth Street to cross under I-5. This would provide a new connection between downtown Vancouver and Vancouver National Historic Reserve.

### **5.5.2 Transit Mode: How does BRT compare to LRT?**

The only impact to park and recreation resources that differentiates between the two transit modes, is a BRT-related impact to the parcel on which the Kiggins Bowl sports field is located. In order for the transit guideway for BRT to access the proposed Kiggins Park and Ride from the I-5 transit alignment, it must transition over I-5 further south than light rail, and would therefore pass over approximately 0.35 acres of forested area before terminating at the park and ride. This impact is not expected to interfere with the functional use of the Kiggins Bowl playing field.

The expansion of either the C-TRAN maintenance facility in East Vancouver for BRT or the TriMet Ruby Junction facility expansion in Gresham for light rail 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 Ruby Junction facility, and therefore would not be impacted by the expansion, as it occurs to the west.

### **5.5.3 Balance of Transit vs. Highway Investment: Enhanced Transit System Operations with Aggressive TDM/TSM Measures, and Standard Transit System Operations with Standard TDM/TSM Measures**

No appreciable differences.

### **5.5.4 Major Transit Alignment: How does the Vancouver alignment compare to the I-5 alignment?**

Both the Vancouver and I-5 transit alignments are associated with the Kiggins and Clark College Park and Rides, and therefore both have the same direct acquisition impacts to the Kiggins Bowl recreation area and the Clark College recreation fields. Visual impacts between these two alignments may differ as the Kiggins Park and Ride is a six-story structure, and the Clark College Park and Ride, a three-story structure, under the I-5 alignment, while they are only surface lots under the Vancouver alignment. The I-5 alignment also impacts the Leverich Park, due to the I-5/SR 500 HCT flyover, while the Vancouver alignment avoids this impact.

Additionally, the I-5 alignment would provide direct transit access to large regional parks such as the Clark College Recreation Fields, Marshall Park and Community Center, and the Burnt Bridge Creek Greenway, which includes Kiggins Bowl and Leverich Park. The Vancouver alignment would provide improved transit access to small neighborhood and community parks located on the west side of I-5, but would not provide direct transit access (i.e., a station stop within a short walking distance of the park) to any of the large regional parks in Vancouver.

### **5.5.5 Tolling: How do the tolling options compare (no toll, standard or higher toll on I-5, toll on both I-5 and I-205)?**

No appreciable differences.

### **5.5.6 Transit Project Length: How do the full-length alternatives compare to the shorter length options?**

Both the Clark College and Mill Plain MOS would have the same impacts to park and recreation resources as the full-length Vancouver alignment, while avoiding the 0.01 acre impact to Leverich Park and potential 0.33 acres impact to Kiggins Bowl Recreation Area, impacted under the I-5 alignment with BRT.

The shorter length alignments would not as substantially improve transit access to park and recreation resources as the full length alignments as they do not extend as far north in the project area.

## 6. Temporary Effects

---

### 6.1 Introduction

Temporary effects from construction may include issues relating to temporary easements, access, noise, vibration, dust, or delays in traveling to events. The location and duration of these effects would differ depending on the highway and transit alignments chosen. Though the exact plan for the construction of all project alternatives has yet to be detailed, the following impacts may occur.

Between 0.13 acre for the supplemental river crossing and 0.54 acre for the replacement river crossing, of the Vancouver National Historic Reserve could be temporarily acquired as construction easements. These would likely be required to construct a retaining wall and/or sound walls along SR 14 or I-5.

The potential sites for a bridge assembly/casting yard are unknown at this time. The bridge assembly/casting yard could potentially impact unknown public parks or recreation facilities. However, avoiding public parks and recreation facilities will be a priority for siting this temporary facility.

Interchange construction near Marine Drive could make access to East Delta Park, the West Marine Drive Multi-use Trail, and the planned Bridgeton Trail more difficult. Construction at the Vancouver bridge landing and SR 14 interchange could affect access to Waterfront Park, the Waterfront Renaissance Trail, Old Apple Tree Park, the Confluence land bridge, and associated recreation facilities. Transit construction in downtown Vancouver could reduce access to Esther Short Park and the Vancouver Landing. Construction at the SR 500 to I-5 northbound ramp may temporarily affect access to Leverich Park from 39th Street. This ramp would be elevated over the access and would therefore not result in any long-term impacts.

Additionally, the construction of the Clark College and Kiggins Park and Rides could temporarily impact access to portions of nearby parks and recreation areas. Increased congestion resulting from project detours due to the construction of park and rides and other transit and highway project elements could make it difficult to access park and recreation resources immediately adjacent to the I-5 corridor.

Delays associated with construction could affect the attendance at large events such as the Fort Vancouver Independence day Fireworks display, Wine and Jazz Festival, Hot July Nights, Hoops on the River, and the docking of the Portland Spirit. Construction could be planned to avoid closures or delays during such events.

Construction activities such as demolition, movement of heavy equipment, regrading, etc., have the potential to affect the health of the Heritage Apple Tree, which would be very close to these activities. Extreme care would be needed to avoid damaging this tree during construction in this location. The supplemental alternatives would not require

demolition of the existing ramps here, and could pose less of a construction hazard to the heritage tree. Vancouver urban forestry experts would be consulted to ensure that all appropriate measures are taken to preserve the health of the Heritage Apple tree and others in Old Apple Tree Park.

Similar construction related impacts could occur during the construction of the river crossing over Vancouver Waterfront Park and to associated art installations—the Captain George Vancouver Monument and Boat of Discovery.

At times, construction of the bridge may require channel closure of the Columbia River or North Portland Harbor. Although efforts will be made to ensure at least one shipping channel is passable, in-water construction could detract from enjoyment and increase the hazard to recreational boating near the bridge.

Under certain scenarios, construction could close or limit bicycle or pedestrian access to all or part of the crossing, which would affect the connection between multi-use trails in Vancouver and Portland.

For some people, construction of a project on the scale of the Columbia River Crossing will be interesting, and facilities with views of the bridge, such as Vancouver Waterfront Park, the Confluence Land Bridge, or the Columbia River would be appealing vantage points to watch construction. Others will find the noise and sight of construction activities detract from their recreation experience.



## 7. Mitigation for Long-Term Effects

---

Long-term effects to park and recreation resources are largely the result of direct acquisition impacts, but can also include proximity effects, such as increased noise, decrease visual quality, etc. The following mitigation measures attempt to address these two types of impacts. Additionally, these measures will be developed further through close coordination with the official(s) having jurisdiction over the property, and with DOT (FHWA and FTA), DOI, OPRD and SRFB, as applicable.

- Further design refinements could avoid, or decrease the severity of some of the park and recreation acquisitions listed above.
- Unavoidable direct acquisitions could be mitigated by replacing the land acquired for the project, equivalent with federal, state, and local regulation, with land of equivalent size, value, location, and usefulness in the vicinity. Considering the urbanized nature of the area, it may be difficult to find replacement property that meets these criteria.
- Long-term proximity impacts resulting from increased noise as a result of HCT on the I-5/SR 500 flyover could be mitigated through the placement and rebuilding of berms and sound walls to block the effects.
- The diminution of visual quality to and from park and recreation resources due to the prominence of park and ride structures (e.g., Kiggins Bowl, Clark College) or elevated or out-of-place HCT guideway could be mitigated through appropriate design principles and buffering vegetation or berms.

Other potential measures for reducing impacts to the parks and recreation facilities are discussed in the Draft Section 4(f) Evaluation.

**This page intentionally left blank.**

## 8. Mitigation for Temporary Effects

---

Temporary construction related effects to park and recreation resources could potentially be mitigated through temporary structures and access routes, as well as simple forethought in construction planning that would maintain the functionality and enjoyment of the resources. Such measures could include:

- Timing construction closures or major detours to minimize effects to large events such as the Fort Vancouver fireworks on the Fourth of July, Wine and Jazz Festival, Hot July Nights, Uptown Village Street Festival, and Hoops on the River.
- Design construction staging that occurs in parks or recreation areas directly adjacent to roadway and transit alignments (i.e., potentially East Delta Park, Waterfront Park, Clark College, Leverich Park, and Kiggins Bowl) to take advantage of unused spaces, and to maintain pedestrian and bike connectivity during construction.
- Include specific protection measures in the construction plan for the Vancouver landing/SR 14 interchange to reduce the potential of harm to the Heritage Apple Tree. These could include debris or dust shielding, barriers to prevent construction equipment from accidentally damaging the tree, or scheduling work during the fall and winter when the tree is dormant. The project team would consult with an urban forestry specialist to determine the best methods of protecting the tree.
- Provide re-routed access to the Burnt Bridge Creek Greenway and Trail at Leverich Park and Kiggins Bowl, and create or retain a forested landscape buffer between the Kiggins Park and Ride and the greenway.
- Best management practices, including those already developed in WSDOT and ODOT construction manuals could also be developed to protect the art installations in Waterfront Park - Captain George Vancouver Monument and the Boat of Discovery- from construction related impacts such as dust, vibration, or accidental damage from construction equipment.

Other potential measures for reducing impacts to the parks and recreation facilities are discussed in the Draft Section 4(f) Evaluation.

**This page intentionally left blank**

## 9. References

---

- Bailey, Mike. March 10, 2008. Bits and Pieces: Busy musician has a talent for juggling. The Columbian. Accessed April 2008 [Online] Available URL: <http://www.columbian.com>.
- Bunes, Kammie. October 10, 2005. Washington Interagency Commission for Outdoor Recreation. Personal Communication.
- CareOregon. 2007. 2007 Upcoming Multicultural Events. CareOregon. Accessed April 2008 [Online] Available URL: [http://www.careoregon.org/provider/documents/2007\\_diversity-events.pdf](http://www.careoregon.org/provider/documents/2007_diversity-events.pdf).
- Clark College Facilities Master Plan. 2007. Clark Community College, Vancouver, Washington. Accessed December 2007 [Online] Available URL: <http://www.clark.edu>.
- COP (City of Portland). 2005a. Gardens and Natural Areas. City's Parks and Recreation Bureau's official web site. Parks, [Online]-Available URL: <http://www.parks.ci.portland.or.us/Parks/Parks.htm>.
- COP. 2005b. Parks 2020 Vision. City's Parks and Recreation Bureau's official web site. [Online]-Available URL: <http://www.parks.ci.portland.or.us/PlansReports/2020/2020.htm>.
- COV (City of Vancouver). 1999. Vancouver-Clark Facilities Study. Facilities and Services Strategic Plan.
- COV. 2005. All About Vancouver. City's official web site. [Online]-Available URL: <http://www.ci.vancouver.wa.us/parks-recreation/>.
- Kissinger, Michael. 2007. The 10th Anniversary: Vancouver Wine and Jazz Festival. Vancouver Wine and Jazz Festival. Accessed April 2008 [Online] Available URL: [http://www.vancouverwinejazz.com/press/1.Festival\\_History.pdf](http://www.vancouverwinejazz.com/press/1.Festival_History.pdf).
- Lippincott, Marilyn. October 6, 2005, and February 8, 2006. Oregon Parks and Recreation Department. Personal Communication.
- LWCF (Land and Water Conservation Fund). Accessed November 2005 and February 2006. [Online]-Available URL: <http://waso-lwcf.ncrc.nps.gov/public/>
- Mize, Jeffrey. 2004. Vancouver Farmers Market wants to be funky, just not far-put funky. The Columbian. Accessed April 2008 [Online] Available URL: <http://www.columbian.com/>

NPS (National Park Service). 2000. Vancouver National Historic Reserve Cooperative Management Plan.

NPS. 2003. Fort Vancouver National Historic Site Final General Management Plan Environmental Impact Statement.

Oregon Parks and Recreation Department: Grants Programs Accessed November 2005, and February 2006 [Online]-Available URL:  
<http://egov.oregon.gov/OPRD/GRANTS/lwcf.shtml>

Share Vancouver. 2008. Hoops on the River. Accessed April 2008 [Online] Available URL: <http://www.sharevancouver.org/events/hoops-on-the-river>

VANCWA. 2007. Fort Vancouver 4th of July Fireworks Show in Vancouver, Washington. Accessed April 2008 [Online] Available URL:  
[http://www.vancwa.com/4th\\_of\\_july.htm](http://www.vancwa.com/4th_of_july.htm).

Vancouver-Clark Parks and Recreation Department. 2007. Vancouver Urban Parks, Recreation, and Open Space Plan. [Online]-Available URL:  
[http://www.cityofvancouver.us/parks-recreation/parks\\_trails/planning/parkplan.htm](http://www.cityofvancouver.us/parks-recreation/parks_trails/planning/parkplan.htm)

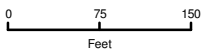
Washington Department of Transportation. September 2007. Environmental Procedures Manual. Chapters 455, 456, and 457.

## **APPENDIX A**

### **Maps of Acquisition Impacts to Park and Recreation Resources**



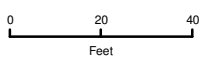




- Primary API
- Transit ROW Requirements
- Park
- Trails
- Supplemental ROW Requirement
- Replacement ROW Requirements

### Proposed Bridgeton Trail





- Primary API
- Replacement ROW Requirement
- Affected Parks
- Supplemental ROW Requirement
- Affected Trails

**Waterfront Park**

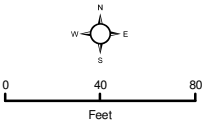




**OLD APPLE TREE PARK**

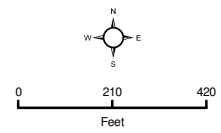
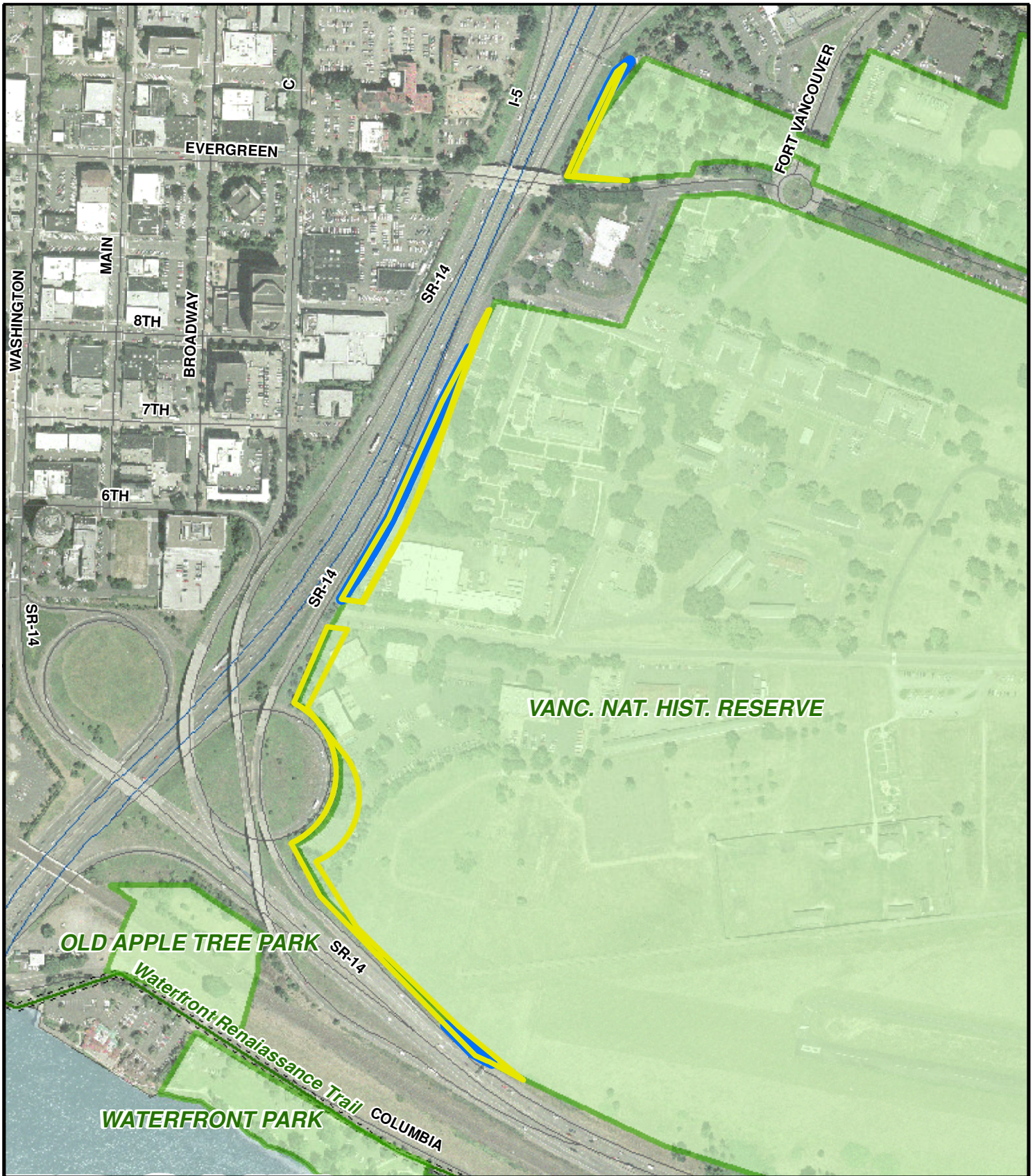
**COLUMBIA**  
*Waterfront Renaissance Trail*

**Old Apple Tree Park**



- Primary API
- Transit ROW Requirements
- Affected Park
- Downstream Replacement ROW Requirements
- Affected Trails

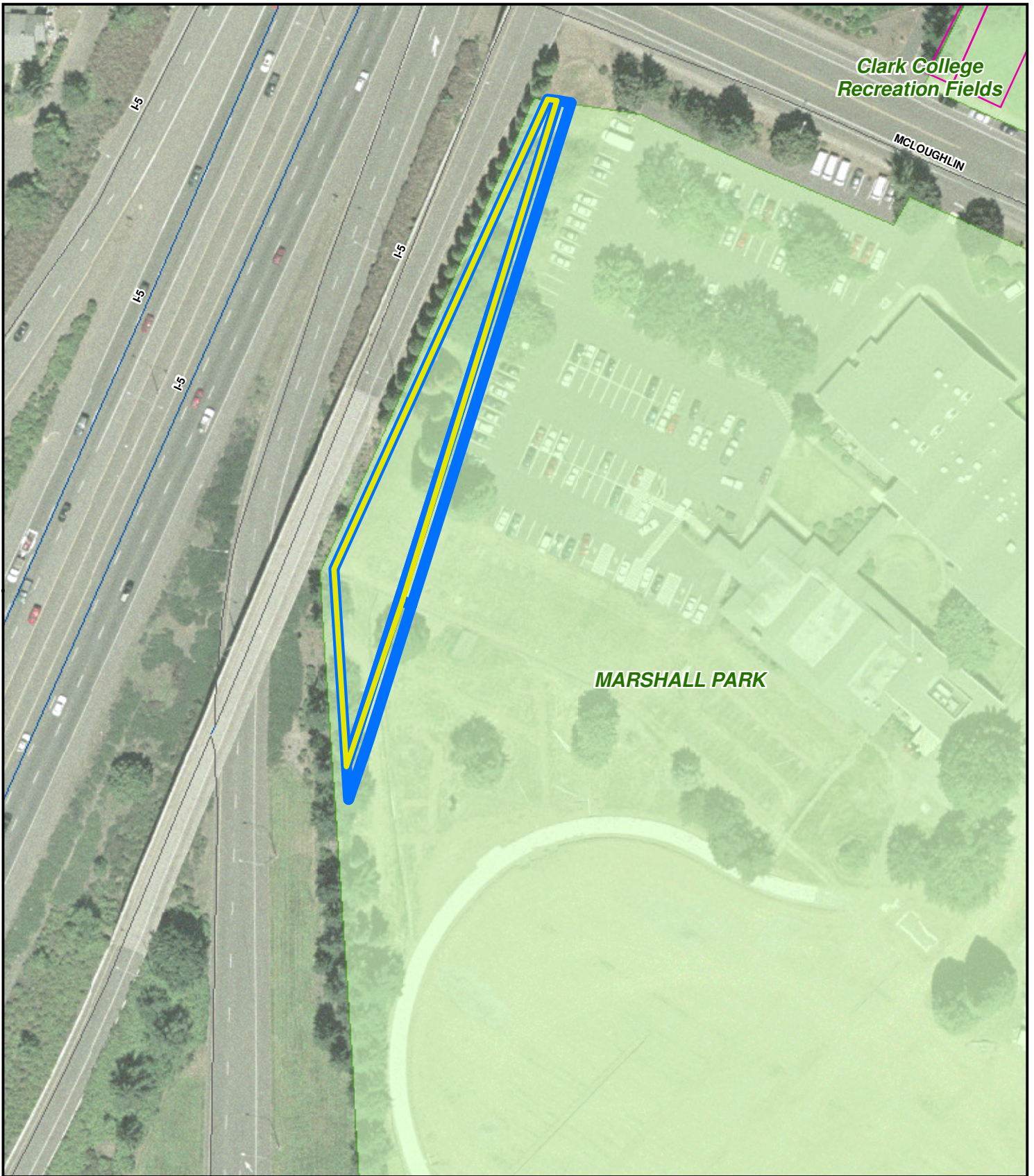




- Reserve Boundary
- Transit ROW Requirements
- Affected Trails
- Downstream Replacement ROW Requirements
- Supplemental Replacement ROW Requirement

**Ft. Vancouver National Historic Reserve**





Clark College  
Recreation Fields

MCLOUGHLIN

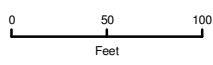
I-5

I-5

I-5

I-5

MARSHALL PARK



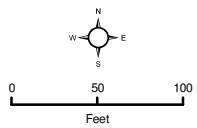
- Primary API
- Transit ROW Requirements
- Affected Parks
- Replacement ROW Requirement
- Supplemental ROW Requirement

**Marshall Park**





**Clark College Recreation Fields**



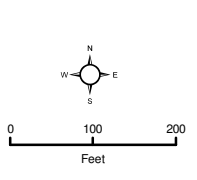
- Primary API
- Transit ROW Requirements
- Affected Parks





**KIGGINS BOWL AREA**

**Kiggins Bowl Area**

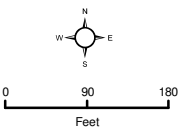


- Affected Park
- Park and Ride
- Downstream Replacement ROW Requirements
- Supplemental Replacement ROW Requirement
- Kiggins Bowl Terminus Property Acquisition
- Kiggins Bowl Terminus Property Acquisition (BRT)





**LEVERICH PARK**



- Affected Park
- Transit ROW Requirements
- Park and Ride
- Downstream Replacement ROW Requirements
- Supplemental Replacement ROW Requirement

**Leverich Park**

