

## CHAPTER 5

# Draft Section 4(f) Evaluation

*This chapter provides analysis and information to comply with Section 4(f) of the Department of Transportation Act (49 USC 303).*

## 5.1 Introduction

The Section 4(f) statute and related U.S. Department of Transportation policy require the U.S. DOT to avoid any *use* of Section 4(f) property (which includes any publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance as determined by the federal, state, or local officials having jurisdiction, or any land from an historic site of national, state, or local significance as determined by such officials) unless there is no feasible and prudent alternative to using the land, or unless the impact will be *de minimis* (described on the following page).

A Section 4(f) "use" is defined and addressed in the FHWA/FTA Regulations at 23 CFR 774.17. A "use" of 4(f) property occurs when:

- Land is **permanently incorporated** into a transportation facility,
- There is a **temporary occupancy** of land that is adverse in terms of the Section 4(f) statute's preservationist purposes (23 CFR 774.13(d)), or
- There is a **constructive use** of land as determined by criteria in 23 CFR 774.15.

Land will be considered permanently incorporated into a transportation project when it has been purchased as right-of-way or when sufficient property interests have been otherwise acquired for the purpose of project implementation. For example, a "permanent easement" that is required for the purpose of project construction or that grants a future right of access onto 4(f) property, such as for the purpose of routine maintenance by the transportation agency, would be considered a permanent incorporation of land into a transportation facility.

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The impact of *use* of a Section 4(f) resource may be influenced by multiple factors including, but not limited to:

- The size of the *use* relative to the overall size of the resource; for example, acres of a park or linear feet of a recreational trail.
- The attributes and character of the portion of the resource that is impacted; for example, using an edge of a property rather than dividing it, or impacting non-contributing elements of a historic property versus displacing key features that contribute to its historic significance.
- The effect of removing a structure compared to altering the context surrounding a structure.

A *de minimis* impact on a parkland is defined as an impact that will not adversely affect the features, attributes or activities qualifying the property for protection under Section 4(f). A *de minimis* impact on a historic resource is defined as a determination of either “no adverse effect” or “no historic properties affected” (no effect) in compliance with Section 106 of the National Historic Preservation Act (23 CFR 774.17, *De minimis impact*).

The potential that the CRC alternatives could have a “constructive *use*” of 4(f) resources is also considered in this evaluation. The evaluation of potential constructive *use* analyzes how non-physical effects such as noise, visual impacts, or access restrictions could potentially diminish a resource, as defined in 23 CFR 774.15.

When there are no prudent and feasible alternatives that can avoid all Section 4(f) resources, which is the case for the I-5 CRC project, then the 4(f) analysis must determine which alternative results in the least overall harm to 4(f) resources. Assessing least harm must consider the relative significance of the impacts on the 4(f) resources, mitigation incorporated into the proposed project, and impacts on other important resources that would occur from avoiding or minimizing the impact to a 4(f) resource.

This Section 4(f) Evaluation describes the 4(f) resources, the *uses* of those resources by CRC alternatives, potential avoidance alternatives, potential measures to minimize harm, the net impacts of measures to minimize harm, a preliminary conclusion, and on-going coordination efforts to protect 4(f) resources.

### **5.1.1 CRC Project Background and Purpose and Need**

The CRC project is a bridge, transit and highway improvement project for I-5 between Vancouver, Washington, and Portland, Oregon. It is co-sponsored by ODOT, WSDOT, TriMet, Metro, C-TRAN and RTC and is intended to address the congestion, mobility, and safety problems on I-5 between State Route (SR) 500 in Vancouver and Columbia Boulevard in Portland. The Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) are the lead federal agencies, on behalf of USDOT, responsible for processing the project in accordance with federal laws, regulations, policies and guidelines. FTA and FHWA are jointly issuing this DEIS for the project in accordance with the National Environmental Policy Act (NEPA).

Chapter 1 of this DEIS describes the CRC project's background, purpose, and need. Chapter 2 describes the No-Build and build alternatives being considered for the CRC project. The build alternatives include a range of river crossings, highway improvements, and transit terminus and alignment options, as well as transportation system and demand management measures, tolling, and transit operations options. These are all described in Chapter 2 of this DEIS.

## 5.2 Description of Section 4(f) Resources

This section provides an overview of the 4(f) resources that could be *used* by the CRC project. These resources include parks and recreation facilities and historic properties (including known archaeological sites). Wildlife or waterfowl refuges are 4(f) resources, but there are no such refuges in the project area. The CRC Parks and Recreation and Historic Built Environment Technical Reports discuss additional recreational and historic resources in the CRC project study area that are not Section 4(f) properties. The CRC Archaeology Technical Report provides additional information regarding potential and known archaeological sites in the project area. These reports also provide detailed descriptions of the recreational resources, historic aboveground resources, and archaeological resources that are summarized in this 4(f) section.

### 5.2.1 Park and Recreation Resources

Exhibit 5.2-1 lists summary data for the 4(f) resources potentially affected by this project; all of these potentially affected park and recreation 4(f) resources are located in Washington. Exhibit 5.2-2 identifies the location of existing park and recreation resources within the project area that could potentially have a Section 4(f) *use*. Individual resources that would have an impact constituting a 4(f) *use* by CRC alternatives are described in Section 5.3.

### 5.2.2 Historic Resources

The Washington State Department of Archaeology and Historic Preservation (DAHP) and Oregon State Historic Preservation Office (SHPO) have concurred on the determinations of eligibility for potentially affected resources that are not already on the National Register of Historic Places (NRHP). They have reviewed the eligibility of all potentially affected historic resources (those that were considered eligible as well as those that were considered not eligible) and provided concurrence on eligibility. Concurrence from the DAHP and SHPO on the preliminary findings of effect is expected by late spring of 2008. It is possible that DAHP's and SHPO's concurrence could change the preliminary determination of effect, which would likely change the 4(f) determination. The preliminary determinations of effect are relatively conservative, and any changes resulting from final concurrence would be likely to result in reducing the number of resources that would be adversely affected.

Exhibit 5.2-3 identifies the location of eligible or listed historic properties that may be *used* by the CRC alternatives. Exhibit 5.2-4 lists summary data for these properties. See the Parks and Recreation Resources and the Historic and Archaeological Resources sections of Chapter 3 for maps of all Park and Historic resources in the project area.

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The locations, photographs and preliminary determinations of 4(f) use for each historic resource are shown in Exhibits 5.2-5 through 5.2-8. Section 5.3 provides more detailed discussions of the impacts and 4(f) determinations.

An area of potential effect (APE) for the CRC project has been delineated for regulatory purposes to help focus the investigation and data analysis for historic and archaeological resources. Within the APE for historic resources, approximately 218 historic resources have been identified that are either listed on the NRHP or have been determined to be NRHP-eligible. DAHP and SHPO have concurred with the determinations of eligibility for those resources that would be impacted by the project alternatives. All eligible and listed historic properties are subject to Section 4(f) provisions. DAHP and SHPO are in the process of reviewing the preliminary findings of effect, with concurrence expected by late spring of 2008.

Note that because this analysis is based on conceptual designs of the CRC alternatives, the precise impacts are likely to change as the design process advances. The Final Section 4(f) Evaluation will be updated to reflect any refinements to design and impacts.

Exhibit 5.2-1

**Summary Information About 4(f) Park and Recreation Resources Potentially Used by the Project**

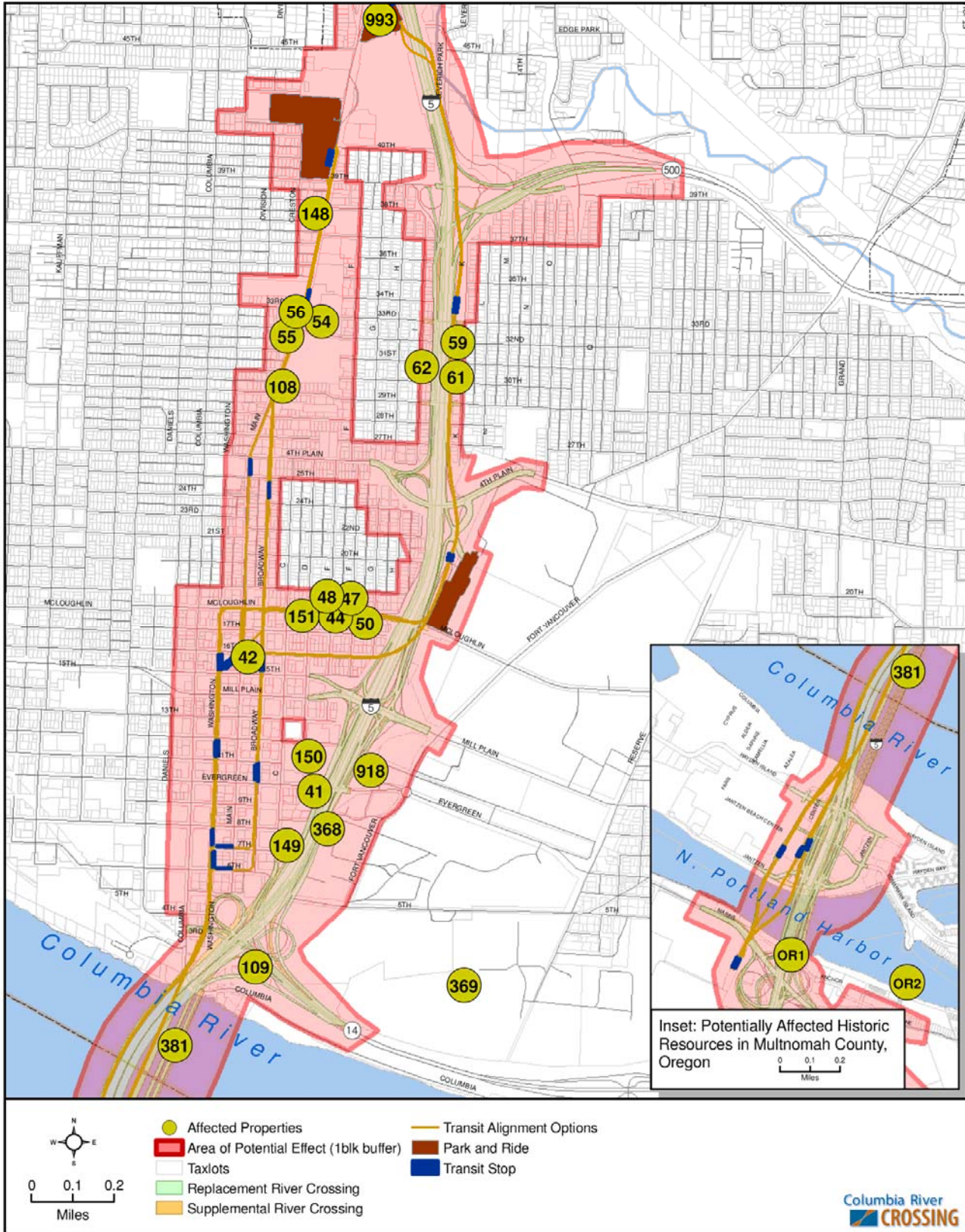
	Name	Facility Type	Location	Ownership and Management	Site Features and Characteristics
<b>1</b>	Waterfront Renaissance Trail	Multi-Use Trail	115 Columbia Way Vancouver, WA	City of Vancouver/ National Park Service	4-mile long, multi-use trail along Vancouver waterfront; connects to Ft. Vancouver and Old Apple Tree Park via the Confluence Land Bridge
<b>2</b>	Waterfront Park	Regional Park	115 Columbia Way Vancouver, WA	National Park Service	5 acres; passive recreation and viewing, including Captain Vancouver Monument and Ilchee Statue, and starting point of the Waterfront Renaissance Trail
<b>3</b>	Vancouver National Historic Reserve (VNHR)	Historic Reserve including recreational facilities	612 E Reserve Vancouver, WA	National Park Service, Vancouver Historic Reserve Trust, US Army, City of Vancouver	366 acres; historic interpretive sites and replica structures, multi-use trails, picnic tables, event and recreation fields, reservable picnic shelter, Pearson Field, and Water Resources Education Center
<b>4</b>	Fort Vancouver National Historic Site (FVNHS)	National Historic Site	612 E Reserve Vancouver, WA	National Park Service	209 acres (included largely within the Vancouver National Historic Reserve); historic interpretive sites and replica structures, multi-use trails, picnic tables, event and recreation fields and reservable picnic shelter
<b>5</b>	Old Apple Tree Park	Community Park	112 Columbia Way Vancouver, WA	City of Vancouver	1.3 acres; passive recreation and viewing, and site of possibly the oldest apple tree in the Northwest (Heritage Apple Tree)
<b>6</b>	Marshall Community Park	Community Center and Public Swimming Pool	1015 E McLoughlin Vancouver, WA	City of Vancouver	22 acres; community center, play equipment, community gardens, loop trail, picnic tables, horseshoes, and ball fields
<b>7</b>	Clark College Recreation Fields	Community Park	1500 E Mill Plain Vancouver, WA	Clark College	14 acres; sports fields/courts, benches, and parking
<b>8</b>	Leverich Park	Regional Park	39th and M Sts. Vancouver, WA	City of Vancouver	30 acres; softball field, picnic tables, paved walkways, reservable picnic shelter, restroom, BBQ stands, and horseshoes pits
<b>9</b>	Kiggins Bowl	Sports Venue	800 E 40th St. Vancouver, WA	Vancouver School District	3 acres; natural area, and sports fields including Kiggins Field (artificial turf soccer/football field)

Exhibit 5.2-2

Map of 4(f) Parks and Recreation Resources Potentially Used by Build Alternatives



Exhibit 5.2-3  
**Map of 4(f) Historic Resources Potentially Used by Build Alternatives**



Analysis by J. Koloszar; Analysis Date: 2/1/08; Plot Date: 3/19/08; File Name: DAHP\_Exhibits\_RK130.mxd

Note: The numbers on this map are historic ID numbers and correspond to those used in Exhibit 5.2.4.

Exhibit 5.2-4

**Summary of 4(f) Historic Resources Potentially Used by the Build Alternatives**

Historic ID#	Tax Lot	Address	Building Name/Use	Construction Date	Eligible Historic Designation <sup>a</sup>
OR1	2N1E34C-02000	OR	Pier 99 Marina	1960	Eligible: NR
381	N/A	OR/WA	I-5 Bridge	1917/1958	NR
OR2	N/A	OR	Oregon Slough Levee	1916-60	Eligible: NR
993	12454005	Vancouver, 98663	Kiggins Bowl Park	dedicated 1933	Eligible: NR,
149	38820000	318 E 7th St	Normandy Apartments	c. 1930	Eligible: NR,
41	39214000	411 E Evergreen St	Kiggins House	1907	NR
150	39220000	400 E Evergreen St	Providence Academy	1873	NR
42	40250000	1511 Main	Carnegie Library (Historical Museum)	1909	NR
151	41240000	401 E McLoughlin	Residence/office	c. 1916	Eligible: NR
44	41290000	501 E McLoughlin	Residence	c. 1927	Eligible: NR
50	41341000	611 E McLoughlin	Residence	c. 1910	Eligible: NR
48	41630000	502 E McLoughlin	Residence	c. 1900	Eligible: NR
47	41640000	510 E McLoughlin	Residence	c. 1910	Eligible: NR
62	13670000	903 E 31st St	Residence	c. 1910	Eligible: NR
61	13725000	3000 K St	Residence	c. 1915	Eligible: NR
59	13460000	3110 K St	Residence	c. 1910	Eligible: NR
108	11265000	2901 Main	Residence	c. 1915	Eligible: NR
54	11295000	401 E 33rd St	First United Methodist	1948	Eligible: NR
55	7590000	3200 Main	Office	c. 1956	Eligible: NR
56	8810000	3212 Main	Office	c. 1960	Eligible: NR
148	10390000	300 E 37th St	Office	c. 1950	Eligible: NR
<b>The following resources are within the Vancouver National Historic Reserve</b>					
109	38279935A	Vancouver, 98661	Heritage Apple Tree	1827	NR, Ft. Vancouver
369	38279914	1115 E 5th St	Pearson Airfield	1904-45	NR, Ft. Vancouver
368	38279906A	Building 614	Barracks Hospital	1903	NR, Ft. Vancouver
918	38279942	Officers Row Historic District	Parking Lot next to 600- 654 E. Evergreen	1849-1907	NR, Ft. Vancouver

<sup>a</sup> DAHP and SHPO have concurred with the determination of eligibility for the Eligible properties.

Note: The historic ID #s for resources in Washington are assigned by the WA DAHP database. The #s for Oregon resources were assigned by the CRC project.

Note: NR = National Register.

Exhibit 5.2-5

Map of Potentially Used 4(f) Historic Resources: Oregon



<sup>a</sup> DAHP and SHPO have concurred with the determination of eligibility for the Eligible properties. Note: The historic ID numbers for resources in Washington are assigned by the WA DAHP database. The numbers for Oregon resources were assigned by the CRC project.



Exhibit 5.2-6

**Map of Potentially Used 4(f) Historic Resources: South Vancouver**



<sup>a</sup> DAHP and SHPO have concurred with the determination of eligibility for the Eligible properties. Note: The historic ID numbers for resources in Washington are assigned by the WA DAHP database. The numbers for Oregon resources were assigned by the CRC project.

Map of Potentially Used 4(f) Historic Resources: McLoughlin Blvd



<sup>a</sup> DAHP and SHPO have concurred with the determination of eligibility for the Eligible properties. Note: The historic ID numbers for resources in Washington are assigned by the WA DAHP database. The numbers for Oregon resources were assigned by the CRC project.

Exhibit 5.2-8

Map of Potentially Used 4(f) Historic Resources: North Vancouver



<sup>a</sup> DAHP and SHPO have concurred with the determination of eligibility for the Eligible properties. Note: The historic ID numbers for resources in Washington are assigned by the WA DAHP database. The numbers for Oregon resources were assigned by the CRC project.

### 5.2.3 The Vancouver National Historic Reserve

The Vancouver National Historic Reserve (VNHR, or Reserve) is a nationally important public resource established to preserve and interpret historically significant and exceptionally complex overlapping areas associated with Native American, Hudson’s Bay Company, U.S. military, and U.S. National Park Service (NPS) uses of the land that have occurred over time. Several of the individual historic resources and public recreation resources listed in Exhibit 5.2-4 are located within the boundaries of the VNHR.

The VNHR is a Section 4(f) resource encompassing 366 acres. It includes the Fort Vancouver National Historic Site (approximately 209 acres), Vancouver Barracks and Officers Row, Pearson Field, the Water Resources Education Center, a section of the Discovery Trail, and portions of the Columbia River waterfront. Approximately 252 acres in the westernmost portion of the VNHR lie within the VNHR Historic District. The VNHR is cooperatively managed by the NPS, the City of Vancouver, the U.S. Army, and the Vancouver National Historic Reserve Trust. Exhibit 5.2-9 shows the land ownership within the Reserve. Exhibits 5.2-10 and 5.2-11 show the area within and around the Reserve, including some of the buildings in the Reserve as well as the National Historic Site that is contained within the Reserve.

Exhibit 5.2-9  
**Vancouver National Historic Reserve (VNHR)**  
**Land Ownership/Management**



- |                                |                       |
|--------------------------------|-----------------------|
| Federal Highway Administration | National Park Service |
| U.S. Army                      | State of Washington   |
| City of Vancouver              | BNSF Railroad         |

Exhibit 5.2-10

**Fort Vancouver National Historic Reserve and National Historic Site**



DIMENSIONS ARE APPROXIMATE.

Exhibit 5.2-11

**Vancouver National Historic Reserve (VNHR) Historic District**



DIMENSIONS ARE APPROXIMATE.

Source: National Park Service, National Register Nomination.

The following recreational and historic built environment resources or facilities are associated with the VNHR in part or in whole, and are near to the proposed CRC project improvements:

- Fort Vancouver National Historic Site, including the Fort Vancouver Village (“Kanaka Village”)
- Discovery Loop Trail
- Pearson Airfield
- Barracks Post Hospital
- NCO Duplexes south of Barracks Post Hospital
- West end of Officers Row
- Old Apple Tree Park (although not an historic resource, Old Apple Tree Park is a 4(f) public park, and contains the Heritage Apple Tree, which itself is a historic resource).

## Archaeological Resources

Several archaeological sites, or archaeological contributing elements to the VNHR Historic District, are located in the archaeological Area of Potential Effect (APE). Several sites were likely impacted by previous construction of I-5 and SR 14. The archaeological APE also includes locations where a historic “military cemetery” may have been located. While graves were exhumed and re-interred at another cemetery during the late 1800s, previous archaeological research has indicated that not all of the graves were relocated. Unmarked graves were apparently excavated during construction of I-5, and other potential grave shafts have been identified in the general vicinity of the historic cemetery. The exact location of the cemetery is withheld from this report because of the sensitive nature of the resource. The portion of the CRC project that overlaps the historic site of the cemetery, based on historic mapping, has been extensively altered by past excavations and construction.

Only archaeological sites that are on or eligible for inclusion on the National Register and that warrant preservation in place are subject to Section 4(f) requirements. Extensive archaeological investigations have been conducted in the project area, particularly within the VNHR. Currently, no archaeological resources have been identified that can conclusively be determined to be significant for reasons other than the information they contain (which would require that they be preserved in place). The archaeological resources in the CRC project area are being further investigated within the context of the National Historic Preservation Act (NHPA), Section 4(f), and other related laws, regulations, and guidelines. The Final EIS and Final Section 4(f) Evaluation will update the relevant status of these resources.

## Historic Resources

The VNHR Historic District listing promotes the District within the concept of a complex historic landscape that reflects continuous layers of construction and removal by various inhabitants of the area over time, and that provides a rich tapestry of buildings, structures, vegetation, and land uses that have overlapped and become interwoven. The National Park Service (NPS) has developed a Cultural Landscape Report that describes the contributing resources within the historic cultural landscape and provides planning guidelines for the area. The guidelines include strategies that recognize, protect, and celebrate the diverse influences that have created the cultural and recreational landscape.

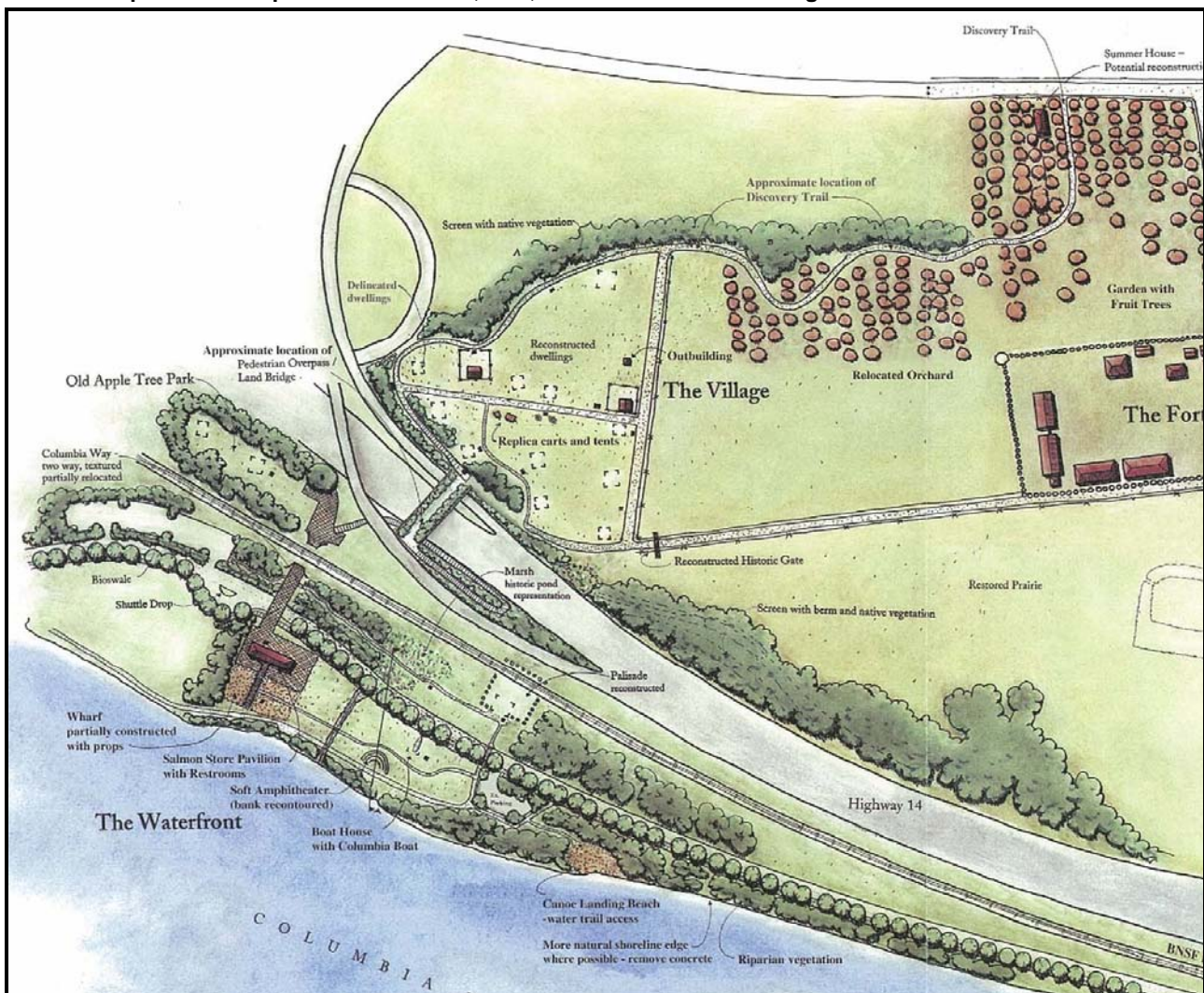
The National Park Service’s overall management objectives are to enhance visitors’ experience and understanding of the District. Key treatment strategies that recognize and celebrate historic context in accordance with these objectives include rehabilitating existing buildings or landscape features and/or reconstructing buildings and features in association with preserving the landscape between features. The *Landscape Report*, the *VNHR Long-Range Plan* (NPS 2006), and the *Long-Range Interpretive Plan, VNHR with Special Emphasis on FVNHS and Vancouver Barracks* (NPS 2004) recommend reconstructing some buildings, historic roadway alignments, and interpretive features, and recommend leaving the Fort Vancouver Village (“Kanaka” Village) area in the southwest portion of the Reserve as open space, except for the proposed reconstruction of a limited number of Village buildings. The

CRC project team has reviewed these documents and coordinated with NPS staff to identify how the CRC alternatives could conflict with, or be compatible with, the VNHR's plans and priorities, as summarized below and in the following section on VNHR Plans.

Within the Fort Vancouver Village area, the NPS is currently reconstructing a Village dwelling in the western portion of the NPS property, near the U.S. Army Reserve property, and plans to construct additional Village buildings or building silhouettes to better enable the public to interpret the historic landscape (see Exhibit 5.2-12). Expansion plans include extensions to the existing trail system that would be tied to the historic Village and the new "land bridge" pedestrian overpass in the southwestern portion of the Reserve, near the I-5/SR 14 interchange.

Exhibit 5.2-12

**NPS Development Concept Plan: Waterfront, Fort, and Fort Vancouver Village Site**



Source: NPS 2003.



The Confluence Land Bridge was opened in December 2007, spanning SR 14 and connecting existing Fort facilities through extensions to the existing trail system. On the south side of SR 14, the Land Bridge connects to City of Vancouver property near Old Apple Tree Park, and to the park via a new trail from the bridge landing.

### **VNHR Plans**

Some elements of the 10-Year Capital Project Priorities list in the VNHR's *Vancouver National Historic Reserve Long Range Plan* provide information relevant to the impacts of CRC on the VNHR. For example, Alternatives 2 and 3 would require acquisition of land near the Barracks Hospital, removal of a section of Anderson Road between the Hospital and I-5, and potentially, installation of a sound barrier between I-5 and Hospital. Implementing these changes would satisfy these priorities on the VNHR priority list, but would also reduce the width of open space buffer between the Reserve and I-5. One element in the VNHR's long range plan involves "Completion of landscaping including eliminating Anderson Street..." (2006:21). With Alternatives 2 or 3, this street would be removed by the CRC project.

Generally consistent with the long-range plan, the "Treatment" chapter of the VNHR's *Cultural Landscape Report* references measures that would "[s]electively remove non-historic roads in the West Barracks" and "[s]creen the interstate highway's visual and noise impacts on the West Barracks with a sound barrier wall and vegetative buffer...Native conifers such as Douglas-fir or incense cedar trees could provide a living screen between the structures and the barrier wall" (Jones & Jones 2005). Some of these measures could be carried out with the CRC build alternatives. Some may not be possible given the right-of-way acquisition that would occur in this location, narrowing the existing buffer between I-5 and the buildings located near the VNHR's western border.

The NPS has plans to build a new Visitor Center that would provide information on the entire Reserve, reconstruct buildings within the Fort and Fort Vancouver Village area directly to the west, reconstruct historic uses along the Columbia River Waterfront, and develop interpretive facilities. The NPS hopes to provide additional interpretive signage throughout the Reserve, landscaping improvements, and new parking facilities and circulation. In this same time frame, the City of Vancouver hopes to initiate West Barracks redevelopment, focusing on the rehabilitation and use of the Barracks Hospital and other buildings.

In a slightly longer time frame, the City of Vancouver, in partnership with the NPS, has plans to relocate the Vancouver Police Administration (currently located north of the Barracks Hospital) and restore that area for use by the Reserve. The City would also like to construct a Seventh Street pedestrian connection between downtown Vancouver and the Reserve that crosses over I-5. The NPS hopes to attain (through trade or other means) the Mule Barn located on Federal Highways land, and begin the rehabilitation and use of the East and South Barracks following the vacating of that land by the U.S. Army. The CRC project is not expected to preclude the NPS or the City from advancing any of these plans or priorities, and coordination will work to ensure that this remains the case. On-going coordination with NPS and City of Vancouver staff

has included identifying potential opportunities for the CRC project to help the City and NPS realize some elements of these plans.

#### **5.2.4 Traditional Cultural Properties**

Traditional Cultural Properties (TCPs) can also be 4(f) resources. No TCPs have been previously identified in the project APE, and none have been identified through nearly two years of CRC-related consultations with tribes. However, on-going tribal consultation, including gathering oral histories, will further address the potential for TCPs in the project APE.

### **5.3 Potential Use of Section 4(f) Resources**

#### **5.3.1 How is this section organized?**

This section describes the potential impacts from the CRC project, and how those impacts could constitute a *use* of Section 4(f) resources. The discussion addresses the 4(f) resources, based on analyses reported in the Parks and Recreation and the Historic Built Environment Technical Reports. It provides a brief evaluation of the No-Build Alternative, and then addresses potential *uses* of Section 4(f) resources from each of the build alternatives. Exhibits 5.3-1 and 5.3-2 provide comparative, synthesized summaries of the impacts associated with each CRC build alternative on 4(f) park and recreation resources, and 4(f) historic resources, respectively. Potential *de minimis* impacts and potential constructive *uses* are discussed at the end of this chapter.

Exhibit 5.3-1

**Potential Use of Park and Recreation Section 4(f) Resources**

Use Location	Resources Affected	Alternatives 2 and 3 (A,B,C and D) (Effects from Highway)		Alternatives 2, 3, 4 and 5 (Effects from Transit)			
		Replacement Crossing	Supplemental Crossing	Alignment A (Kiggins Bowl Terminus)	Alignment B (Lincoln Terminus)	Alignment C (Clark College MOS)	Alignment D (Mill Plain MOS)
Waterfront Renaissance Trail <sup>a</sup>	Paved multimodal public path.	Crosses over 180 linear feet of multimodal path and likely requires relocation of path. Possible <i>de minimis</i> impact.	Crosses over 93 linear feet of multimodal path; path relocation unlikely to be required. Possible <i>de minimis</i> impact.	N/A	N/A	N/A	N/A
Waterfront Park <sup>a</sup>	Recreational park shoreline and public plaza/view areas.	Bridge spans about 0.23 acre of park shoreline and waterfront plaza/views. Potential bridge piers in park. Possible <i>de minimis</i> impact.	Bridge spans about 0.17 acre of park shoreline and waterfront plaza/views; potential bridge piers in park. Possible <i>de minimis</i> impact.	N/A	N/A	N/A	N/A
Vancouver National Historic Reserve	Cultural and recreational park landscape near I-5/SR 14, strip adjacent to I-5 between E 5th St. and McClellan St, including portion of park, hospital and barracks buildings.	Acquires 1.76 to 2.70 acres of park land; possible impacts to Federal Lands Building and a storage garage owned by Army. No historic structures would be displaced. Potential for use to 0.54 acre of temporary construction easements.	0.31 acre of park land and buffer between VNHR and I-5. No building displacements. No historic structures would be displaced. Potential for up to 0.13 acre of temporary construction easements.	N/A	N/A	N/A	N/A
Fort Vancouver National Historic Site	Cultural and recreational park landscape near I-5/SR 14, strip adjacent to I-5 between E 5th St. and McClellan St., including portion of park, hospital and barracks buildings.	1.50 acres of park land near I-5/SR 14 with the dual-loop design, and 0.80 acre with the left-loop design. Land is vacant but contains archaeological resources. Potential for up to 0.23 acre of temporary construction easements.	0.004 acre of park land near the I-5/SR 14 interchange. Land is vacant but contains archaeological resources.	N/A	N/A	N/A	N/A

Use Location	Resources Affected	Alternatives 2 and 3 (A,B,C and D) (Effects from Highway)		Alternatives 2, 3, 4 and 5 (Effects from Transit)			
		Replacement Crossing	Supplemental Crossing	Alignment A (Kiggins Bowl Terminus)	Alignment B (Lincoln Terminus)	Alignment C (Clark College MOS)	Alignment D (Mill Plain MOS)
Old Apple Tree Park	Portion of cultural and recreational viewing courtyard and passive recreation space.	0.27 acre of viewing courtyard and passive recreation space w/ dual-loop SR 14 interchange design; 0.027 acre w/ left-loop.	N/A	N/A	N/A	N/A	N/A
Marshall Community Park	Strip of landscaped passive recreation area adjacent to park ball field.	1.2-acre strip of landscaped passive recreation area adjacent to parking and fields. Could displace up to 3 horseshoe courts.	1.2-acre strip of landscaped passive recreation area adjacent to parking and fields. Could displace up to 3 horseshoe courts.	N/A	N/A	N/A	N/A
Clark College Recreation Fields	Strips of ball field, batting cage, park path, grass field.	0.07-acre strip of landscaped area adjacent to Clark College recreation fields.	N/A	1.24-acre strip with portions of ball field, batting cage, park path, grass field.	1.24-acre strip with portions of ball field, batting cage, park path, grass field.	1.24-acre strip with portions of ball field, batting cage, park path, grass field.	1.24-acre strip with portions of ball field, batting cage, park path, grass field.
Leverich Park	Passive recreational park border berms and landscaping. Park entrance road and parking area.	0.33 acre of park border, berms and landscaping. Airspace over park entrance road. Possible <i>de minimis</i> impact.	0.24 acre of park border, berms and landscaping. Airspace over park entrance road. Possible <i>de minimis</i> impact.	0.01 acre of park border and landscaping. Possible <i>de minimis</i> impact.	N/A	N/A	N/A
Kiggins Bowl	Recreational trail; landscaped area adjacent to sports venue.	N/A	N/A	Relocate 50 linear ft of trail; up to 0.35 acre landscaped area. Possible <i>de minimis</i> impact.	Relocate 50 linear ft of trails; impact to landscaping. Possible <i>de minimis</i> impact	Relocate 50 linear ft of trails; impact to landscaping. Possible <i>de minimis</i> impact.	Relocate 50 linear ft of trails; impact to landscaping. Possible <i>de minimis</i> impact.

<sup>a</sup> Waterfront Park and Waterfront Renaissance Trail would be impacted by the river crossing, which includes highway, transit, and bike/ped facilities.

Exhibit 5.3-2

**Potential Use of Historic Section 4(f) Resources<sup>a, b</sup>**

Resource Name/ <i>Location</i>	Alternatives 2 and 3 (A, B, C and D) (Effects from Highway)	Alternatives 4 and 5 (A, B, C and D) (Effects from Highway)	Alternatives 2, 3, 4 and 5 (Effects from Transit)			
	Replacement Crossing	Supplemental Crossing	Alignment A (Kiggins Bowl Terminus)	Alignment B (Lincoln Terminus)	Alignment C (Clark College MOS)	Alignment D (Mill Plain MOS)
Pier 99, <i>OR</i>	Adverse ( <i>Use</i> ) (full displacement)	Adverse ( <i>Use</i> ) (full displacement)	N/A	N/A	N/A	N/A
1917 I-5 Bridge, <i>OR/WA<sup>c</sup></i>	Adverse ( <i>Use</i> ) (full displacement)	Adverse ( <i>Use</i> )	N/A	N/A	N/A	N/A
Oregon Slough Levee, <i>OR</i>	No Adverse Effect ( <i>de minimis</i> impact)	No Adverse Effect ( <i>de minimis</i> impact)	N/A	N/A	N/A	N/A
Heritage Apple Tree, <i>Vancouver, 98661</i>	Adverse ( <i>Use</i> )	No Adverse Effect (No 4(f) <i>Use</i> )	N/A	N/A	N/A	N/A
Kiggins Bowl Park, <i>Vancouver, 98663</i>	N/A	N/A	No Adverse Effect ( <i>de minimis</i> impact)	No Adverse Effect ( <i>de minimis</i> impact)	N/A	N/A
Potential Downtown Vancouver NRHP Historic District	Potential Proximity Effect (No 4(f) <i>Use</i> )	N/A	N/A	N/A	N/A	N/A
Normandy Apartments, <i>318 E 7th St</i>	No Adverse Effect (possible <i>de minimis</i> ) + Potential Proximity Effect (No 4(f) <i>Use</i> )	N/A	N/A	N/A	N/A	N/A
Fort Apartments, <i>500 E 13th St</i>	Potential Proximity Effect (No 4(f) <i>Use</i> )	N/A	N/A	N/A	N/A	N/A
Kiggins House, <i>411 E Evergreen St</i>	Adverse ( <i>Use</i> ) <sup>d</sup>	N/A	N/A	N/A	N/A	N/A
Providence Academy, <i>400 E Evergreen St</i>	Adverse ( <i>Use</i> ) (0.27 acre)	N/A	N/A	N/A	N/A	N/A
Carnegie Library, <i>1511 Main St</i>	N/A	N/A	No Adverse Effect Potential Proximity Effect (No 4(f) <i>Use</i> )	N/A	No Adverse Effect Potential Proximity Effect (No 4(f) <i>Use</i> )	N/A

COLUMBIA RIVER CROSSING

Resource Name/ <i>Location</i>	Alternatives 2 and 3 (A, B, C and D) (Effects from Highway)	Alternatives 4 and 5 (A, B, C and D) (Effects from Highway)	Alternatives 2, 3, 4 and 5 (Effects from Transit)			
	Replacement Crossing	Supplemental Crossing	Alignment A (Kiggins Bowl Terminus)	Alignment B (Lincoln Terminus)	Alignment C (Clark College MOS)	Alignment D (Mill Plain MOS)
Residence/office, 401 E McLoughlin	N/A	N/A	Adverse ( <i>Use</i> ) (acquires 0.009 acre)	N/A	Adverse ( <i>Use</i> ) (acquires 0.009 acre)	N/A
Residence, 501 E McLoughlin	N/A	N/A	No Adverse Effect ( <i>de minimis</i> impact)	N/A	No Adverse Effect ( <i>de minimis</i> impact)	N/A
Residence, 611 E McLoughlin	N/A	N/A	Adverse ( <i>Use</i> ) (acquires 0.003 acre)	N/A	Adverse ( <i>Use</i> ) (acquires 0.003 acre)	N/A
Residence, 502 E McLoughlin	N/A	N/A	No Adverse Effect ( <i>de minimis</i> impact)	N/A	No Adverse Effect ( <i>de minimis</i> impact)	N/A
Residence, 510 E McLoughlin	N/A	N/A	No Adverse Effect ( <i>de minimis</i> impact)	N/A	No Adverse Effect ( <i>de minimis</i> impact)	N/A
Residence, 903 E 31st St	N/A	N/A	Adverse ( <i>Use</i> ) (acquires 0.125 acre)	N/A	Adverse ( <i>Use</i> ) (acquires 0.125 acre)	N/A
Residence, 3000 K St	No Adverse Effect ( <i>de minimis</i> impact) (acquires 0.012 acre)	Adverse ( <i>Use</i> ) (acquires 0.034 acre)	N/A	N/A	N/A	N/A
Residence, 3110 K St	N/A	Adverse ( <i>Use</i> ) (acquires 0.019 acre)	N/A	N/A	N/A	N/A
Residence/Office, 2901 Main St	N/A	N/A	N/A	Adverse ( <i>Use</i> ) (acquires 0.010 acre)	N/A	N/A
First United Methodist, 401 E 33rd St	N/A	N/A	N/A	No Adverse Effect ( <i>de minimis</i> impact)	N/A	N/A
Office, 3200 Main St	N/A	N/A	N/A	No Adverse Effect ( <i>de minimis</i> impact)	N/A	N/A

Resource Name/ <i>Location</i>	Alternatives 2 and 3 (A, B, C and D) (Effects from Highway)	Alternatives 4 and 5 (A, B, C and D) (Effects from Highway)	Alternatives 2, 3, 4 and 5 (Effects from Transit)			
	Replacement Crossing	Supplemental Crossing	Alignment A (Kiggins Bowl Terminus)	Alignment B (Lincoln Terminus)	Alignment C (Clark College MOS)	Alignment D (Mill Plain MOS)
Office, <i>3212 Main St</i>	N/A	N/A	N/A	Adverse ( <i>Use</i> ) (acquires 0.043 acre)	N/A	Adverse ( <i>Use</i> ) (acquires 0.043 acre)
Office, <i>300 E 37th St</i>	N/A	N/A	N/A	Adverse ( <i>Use</i> ) (acquires 0.095 acre)	N/A	N/A
VNHR NRHP District/Cultural Landscape <i>Vancouver</i>	Adverse (4(f) <i>Use</i> ) <sup>e</sup>	Adverse (4(f) <i>Use</i> ) <sup>e</sup>	N/A	N/A	N/A	N/A
Pearson Airfield, <i>1115 E 5th St</i>	Adverse (4(f) <i>Use</i> ) <sup>e</sup>	Adverse (4(f) <i>Use</i> ) <sup>e</sup>	N/A	N/A	N/A	N/A
Barracks Hospital, <i>Building 614</i>	Adverse ( <i>Use</i> ) (acquires 0.098 acre) <sup>e</sup>	Adverse ( <i>Use</i> ) (acquires 0.031 acre) <sup>e</sup>	N/A	N/A	N/A	N/A
Officers Row, <i>Parking Lot next to 600-654 E. Evergreen</i>	Adverse (4(f) <i>Use</i> ) <sup>e</sup>	Adverse (4(f) <i>Use</i> ) <sup>e</sup>	N/A	N/A	N/A	N/A

<sup>a</sup> The preliminary Section 106 findings of effect (Adverse (for Adverse Effect), No Adverse Effect, or Potential Proximity Effect) are shown in this table. The 4(f) use determination (Use, Constructive Use, No 4(f) Use, or de minimis impact) is shown in parentheses.

<sup>b</sup> The area of land that would be acquired, if any, from each resource, is indicated in the relevant cells. If the acquisition would fully displace the building, then "full displacement" is in that cell.

<sup>c</sup> Impacts to the 1917 bridge would be due to the work associated with the river crossing. The river crossing includes highway, transit and bike/ped facilities. However, all impacts to the bridge are shown in the Effects from Highway columns.

<sup>d</sup> The adverse effect determination and the Use, per 4(f) are based on the current location of the Kiggins House. However, as noted later in the text, the Kiggins House is scheduled to be moved from its current location by the Riverwest Development, a project that is completely independent of CRC.

<sup>e</sup> The impact to the individual contributing resources within the VNHR District (such as Pearson Airfield, Barracks Hospital and Officers Row) may be small or indirect, but because these resources are included within the VNHR District, they are part of that 4(f) resource. The overall effect on the VNHR is considered a 4(f) use, and therefore the 4(f) use determination also applies to any contributing resources that would be affected within the VNHR, regardless of the magnitude of the impact on that resource.

### 5.3.2 Potential 4(f) Uses by the No-Build Alternative

With the No-Build Alternative, there would be no CRC-related *uses* of park, recreational or historic resources subject to Section 4(f) provisions. Under the No-Build Alternative, the historic I-5 bridge would be retained but there would be no seismic retrofits to the structure. As such, the No-Build Alternative would likely have no direct effect on the historic bridge. However, the indirect effect of the No-Build alternative on the historic bridge would be that the bridge would remain vulnerable to severe damage or collapse in the event of a major seismic event.<sup>1</sup>

### 5.3.3 Potential 4(f) Uses by the Build Alternatives

This section is organized geographically from south to north in the project area, and discusses potential *uses* of Section 4(f) resources located in these four subareas:

- Resources in Portland
- The 1917 Interstate bridge
- Resources in Vancouver, south of the I-5/Mill Plain interchange
- Resources in Vancouver, north of the I-5/Mill Plain interchange

The following describes each resource, provides an aerial photo, and describes the potential 4(f) *use*. Note that the aerial photos are at different scales, as noted on each exhibit.

#### Impacts to Resources in Portland

There is one potential *use* of 4(f) resources located in Portland, south of the Columbia River.

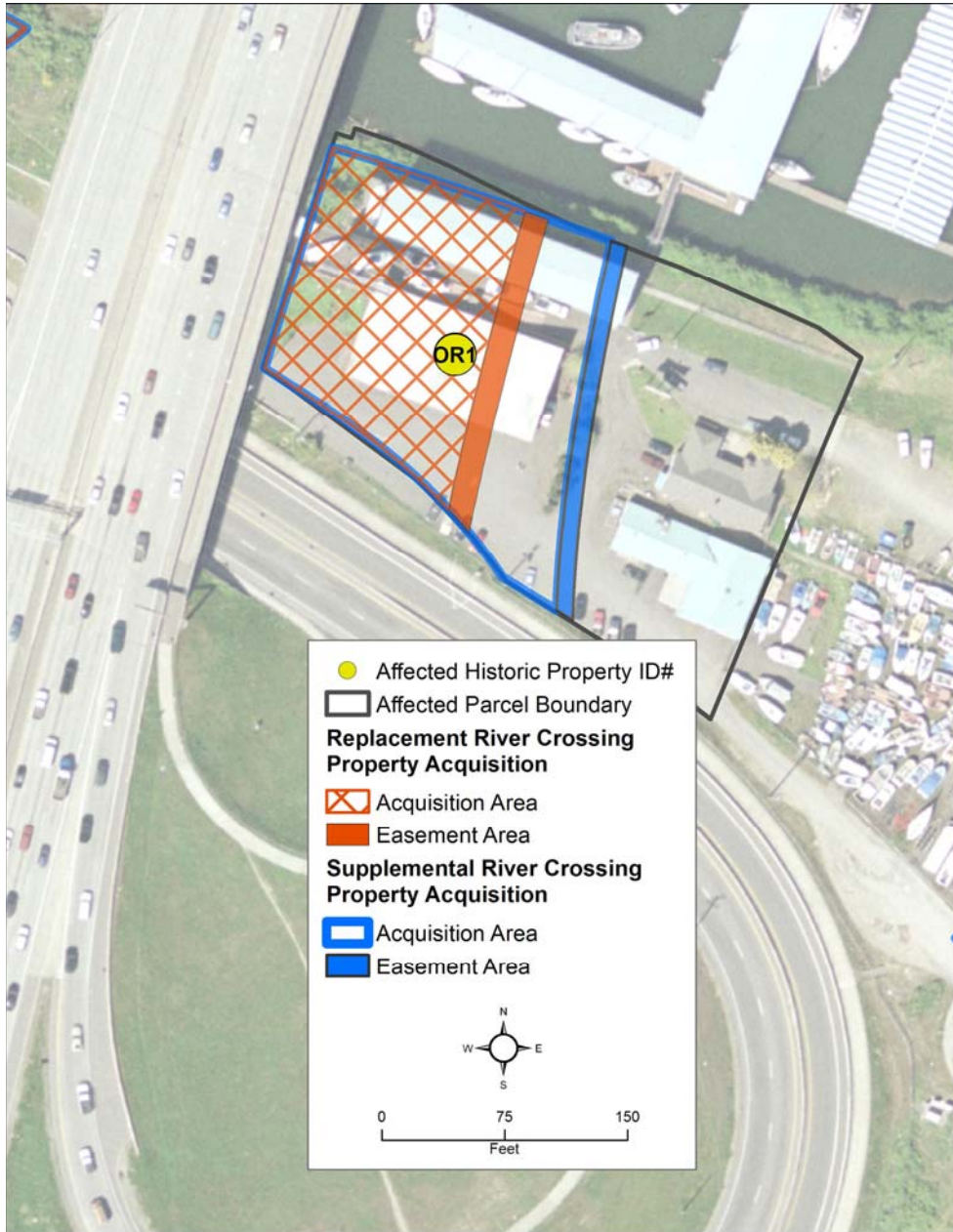
*Pier 99* – As illustrated in Exhibit 5.3-3, highway construction associated with all build alternatives would require the acquisition of the western half of the parcel that houses Pier 99, a boat store and marina. This acquisition would displace this mid-century, NRHP-eligible resource, which would constitute a Section 4(f) *use*. CRC construction would also require the acquisition of a non-contributing garage.

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<sup>1</sup> Seismic Panel, 2006.



Exhibit 5.3-3  
**Pier 99**



DIMENSIONS ARE APPROXIMATE.

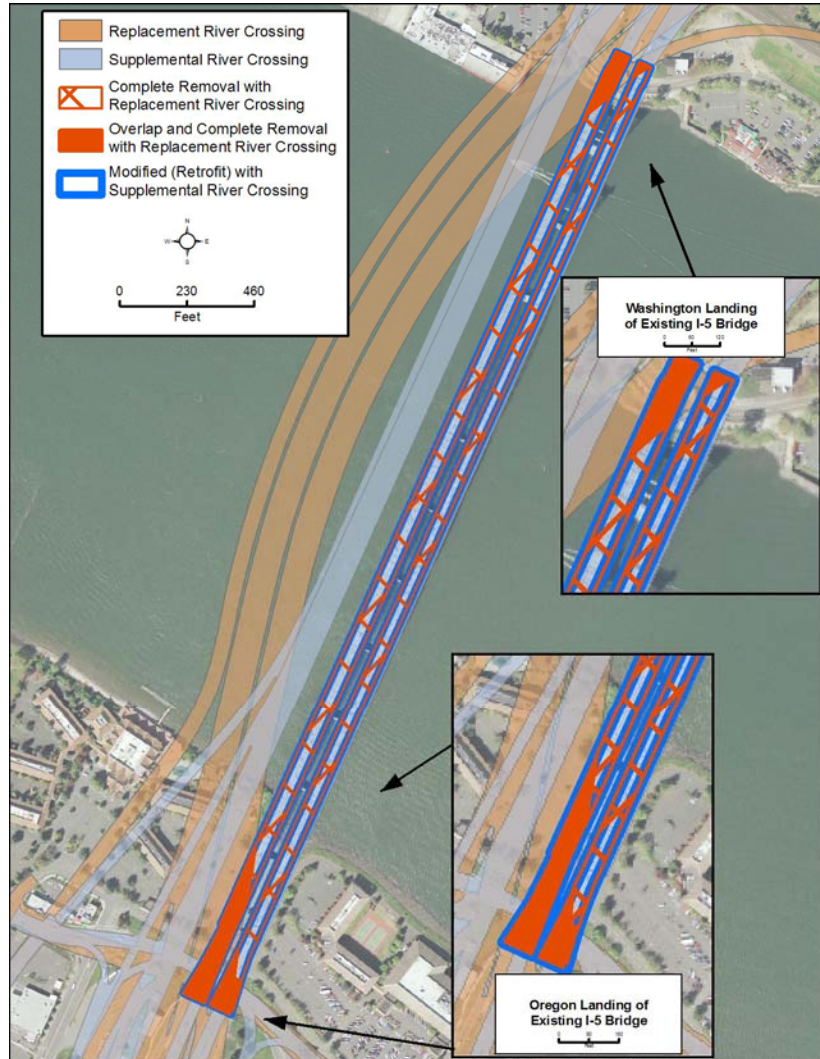
**Impacts to the 1917 Northbound I-5 Bridge**

Impacts to the 1917 Interstate bridge are shown in Exhibit 5.3-4. With Alternatives 2 and 3 (the replacement crossing), the bridge would be removed, which would constitute a Section 4(f) use.

With Alternatives 4 and 5 (the supplemental crossing), the 1917 and parallel 1958 bridges would be retrofitted, and a modern bridge would be built just west of and parallel to these bridges. These retrofits to the 1917 bridge include modifications to both the substructure and superstructure and would be a 4(f) use.

Exhibit 5.3-4

**4(f) Impacts – Northbound I-5 Bridge**



DIMENSIONS ARE APPROXIMATE.

**SUBSTRUCTURE MODIFICATIONS WITH ALTERNATIVES 4 AND 5**

With Alternatives 4 and 5, the pier system would be retrofitted by constructing, for each intermediate bent pier, a supplemental pile group of six large (8-12 foot) diameter shafts, topped by a new pile cap at or slightly above water level. The existing piers would be connected to the new shafts and pile cap, providing additional seismic stability. Welded hoops would be placed at 6-inch intervals along the entire face of the existing pier; this would require drilling through the in-fill walls between the columns and running the hoops through the holes. The existing pier would be encased in a jacket of 6- to 12-inch thick concrete, or a steel plate sheathing.

The bridge decking would be modified. A bicycle/pedestrian pathway would be cantilevered from the existing 1917 bridge, extending from its east side.

#### SUPERSTRUCTURE MODIFICATIONS WITH ALTERNATIVES 4 AND 5

To an unspecified extent, the chords and bracing members would be replaced or retrofitted (which might include adding additional members) in each of the steel truss spans. While methods are available that could complement the webbing and lacing visible on the historic bridge, no riveting would be *used* in replacement or retrofitted members.

The existing vertical steel lift towers would be either replaced or substantially retrofitted in a manner similar to the changes described above for the truss spans. The height would remain approximately the same.

These retrofits would substantially alter the integrity of the bridge's design, material, and workmanship within the context of its significance primarily under National Register Criterion C. Criterion C relates to a resource that embodies the distinctive characteristics of a type, period or method of construction, or represents the work of a master.

Alternatives 4 and 5 would also result in a higher, wider, modern bridge next to the existing I-5 bridges, and the existing visual context would be substantially changed. The bridge type for the new bridge has not yet been determined. However, height restrictions associated with Pearson Airfield would not allow the new bridge to be a through truss design like the existing I-5 bridges.

These changes would constitute a Section 4(f) *use*.

#### **Impacts to Resources in Vancouver, South of the I-5/Mill Plain Interchange**

This section describes potential *uses* of 4(f) resources located in Vancouver, south of the I-5/Mill Plain Boulevard interchange. This subarea includes the Vancouver National Historic Reserve.

*Old Apple Tree Park* and *Heritage Apple Tree* – the Heritage Apple Tree (a historic resource) is located within Old Apple Tree Park (a public park). Constructing Alternative 2 or 3 (the replacement crossing) with the dual-loop I-5/SR 14 interchange configuration would impact the park. The elevated ramps would cross over approximately 0.27 acre of the Old Apple Tree Park. The left-loop interchange configuration would not impact the park. These impacts are illustrated in Exhibit 5.3-5. The extent of actual displacement of Section 4(f) land would depend on whether or not ramp piers would be placed within the park. The dual-loop configuration, which would cross over portions of the park’s viewing courtyard and passive recreation space on the south side of the resource, has the potential to require pier placement in the park. The ramps associated with the dual loop interchange would also cause increased shading on the Heritage Apple Tree. The dual-loop interchange configuration would constitute a Section 4(f) *use* of Old Apple Tree Park.

Exhibit 5.3-5  
**Old Apple Tree Park**



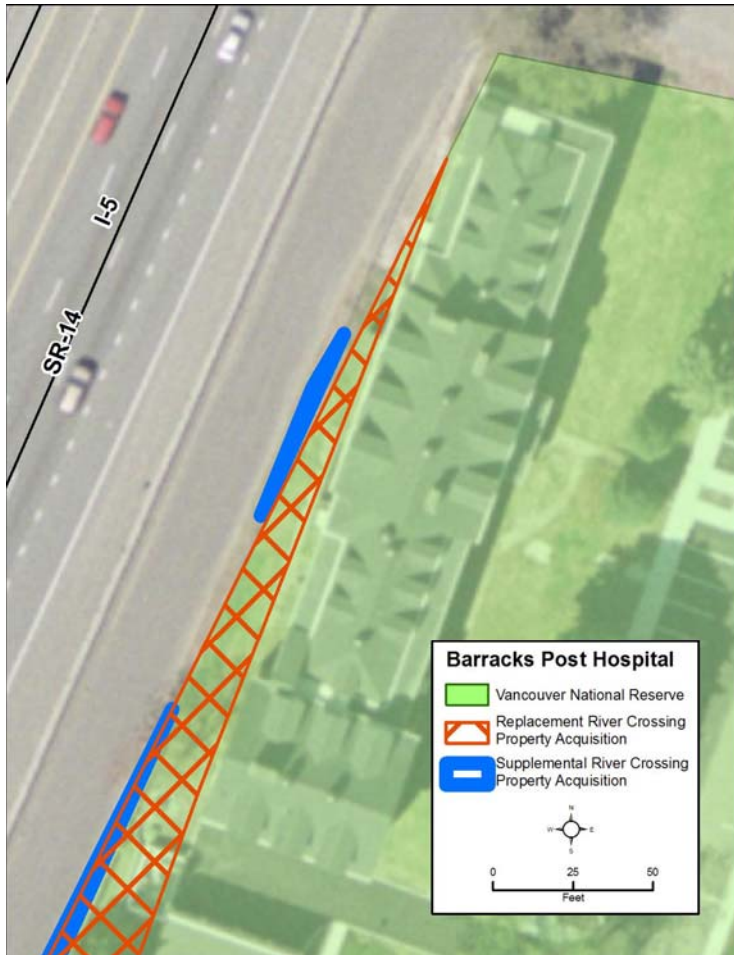
DIMENSIONS ARE APPROXIMATE.

*Barracks Post Hospital* – As illustrated in Exhibit 5.3-6, none of the alternatives would directly impact the Barracks Post Hospital building. However, the replacement crossing (Alternatives 2 and 3) would require acquisition of about 0.098 acre of VNHR land between I-5 and the hospital, largely displacing Anderson Road, and encroaching to within 14 to 16 feet of the hospital building.

The supplemental crossing (Alternatives 4 and 5) would require acquisition of less than 0.031 acre of VNHR land between I-5 and the hospital, largely displacing Anderson Road, and encroaching to within 14 to 30 feet of the hospital building.

As mentioned in Section 5.2.3, NPS has plans to remove Anderson Road and replace it with landscaping that would better reflect the historic context of the hospital, and/or to place sound barriers to reduce noise levels from I-5 traffic. This acquisition would be consistent with these plans, but would reduce the amount of area that could be *used* for landscaping. Although this property acquisition would not directly affect the Barracks Hospital or any other historic buildings, it would constitute a 4(f) *use* because the land that would be acquired is part of the VNHR and the VNHR NRHP District.

Exhibit 5.3-6  
**Barracks Post Hospital**



DIMENSIONS ARE APPROXIMATE.

*Fort Vancouver National Historic Site* – With Alternatives 2 and 3, the dual-loop and left-loop SR 14 interchange options would require acquisition of approximately 1.50 acres and 0.80 acre, respectively, of land within the Fort Vancouver Village (“Kanaka Village”) and South Barracks areas, including the Army property located north of the SR 14 interchange, adjoining I-5. While the dual-loop design would acquire more property, the left-loop design would be higher in the air and more visually intrusive on views from the VNHR. The area that would be acquired by either interchange option is currently vacant. The U.S. Army Reserve and NPS have made progress in the planned transfer of the military property to the NPS. Given the historical significance of these impacted areas, the NPS has developed plans that include incorporating the southern portion of the impacted areas into the Fort Vancouver Village interpretive trails, reconstruction, and park perimeter buffering. See Section 5.2.3 for more information regarding these plans. Up to 0.23 acre of temporary construction easements could also be required from the Site for these alternatives.

Alternatives 4 and 5 would require acquisition of approximately 0.004 acres in this area.

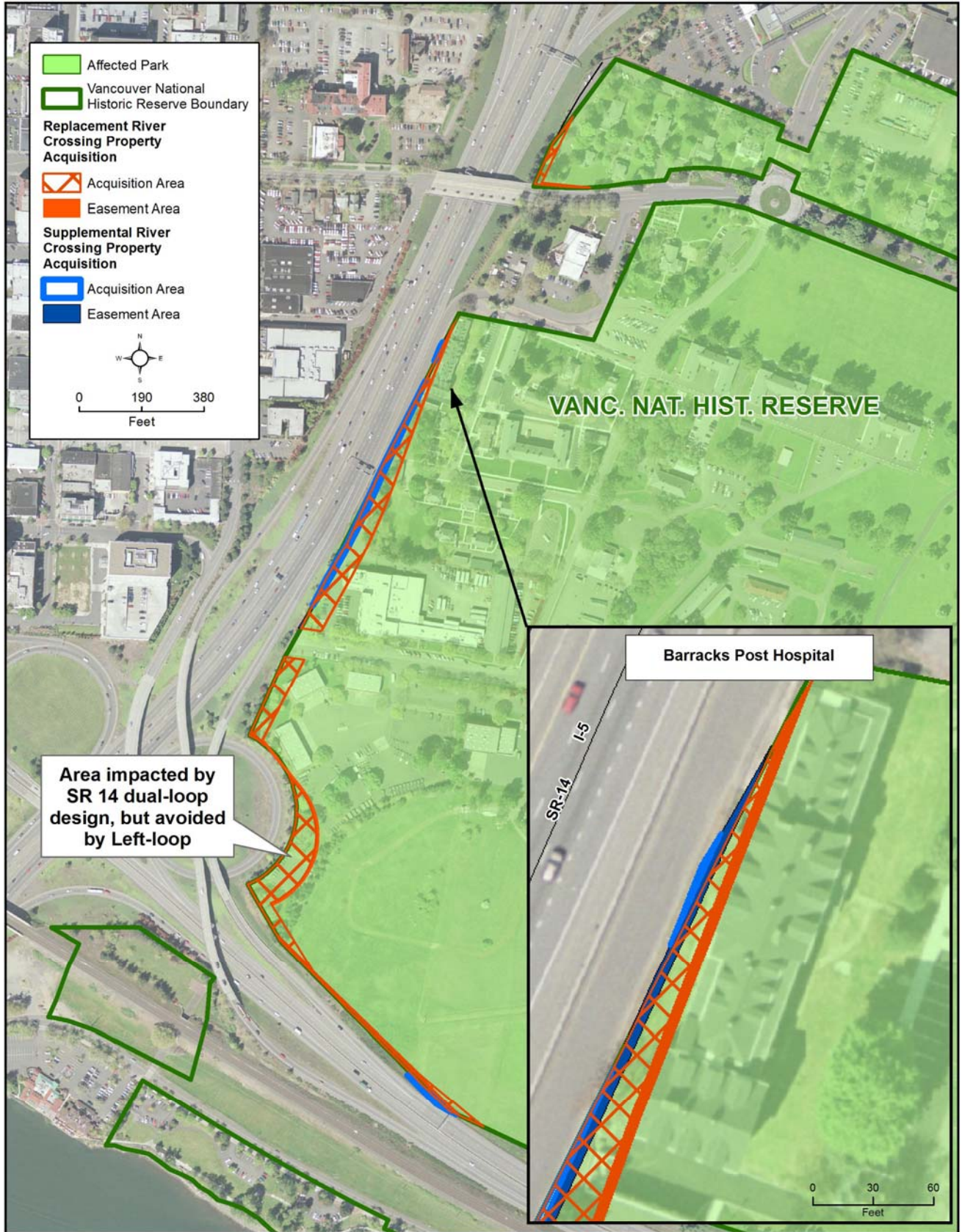
*Vancouver National Historic Reserve* – As illustrated in Exhibit 5.3-7, Alternatives 2 and 3 (the replacement crossing) would require acquisition of a total of 2.7 acres of land within the Reserve with the dual-loop SR 14 interchange design, and approximately 1.76 acres with the left-loop design. This includes impacts to the Fort Vancouver National Historic Site, discussed above, the parking lot at the west end of Officers Row (see Exhibit 5.3-8), and land owned by the City of Vancouver, U.S. Army, WSDOT, and the FHWA. These alternatives could require up to 0.54 acre of the Reserve as temporary easements for the construction of the SR 14 interchange and a retaining wall along I-5.

All alternatives would also have a minor incursion into Pearson Field’s protected air space.

Alternatives 4 and 5 (the supplemental crossing) would require acquisition of approximately 0.31 acre of the Reserve, with up to 0.13 acre of temporary easement.

Although these alternatives would require acquisition of land near the planned reconstruction of the Fort Vancouver Village (“Kanaka Village”) and redevelopment of the West Barracks, they are not expected to substantially interfere with NPS and City of Vancouver plans for Fort Vancouver Village reconstruction or West Barracks redevelopment (see discussion of the relevant plans in Section 5.2.3). It is likely that impacts will be limited to existing and planned landscaping along SR 14, the I-5/SR 14 interchange, and between the West Barracks and I-5.

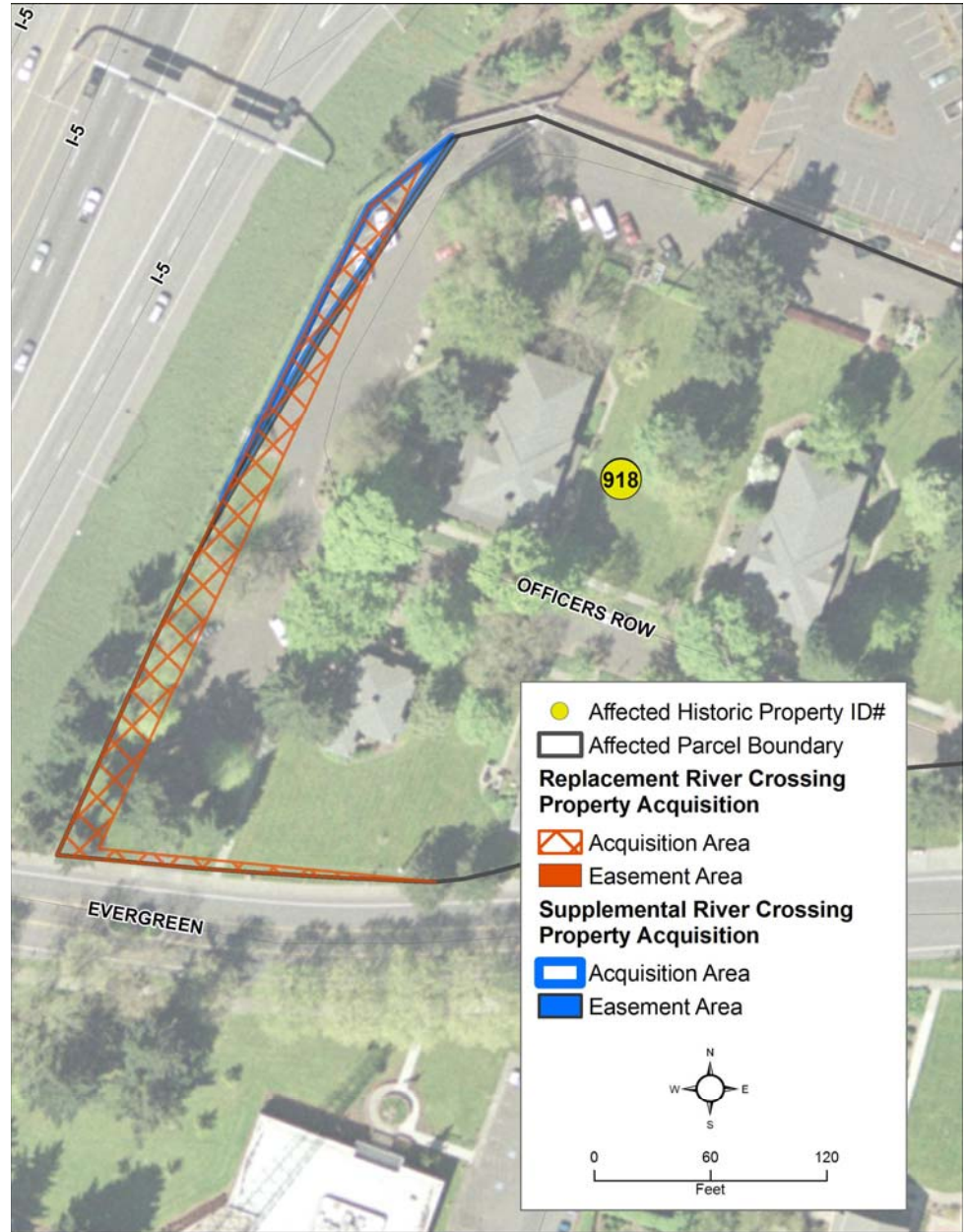
Exhibit 5.3-7  
Vancouver National Historic Reserve



DIMENSIONS ARE APPROXIMATE.

Exhibit 5.3-8

**Officers Row (part of the Vancouver National Historic Reserve)**

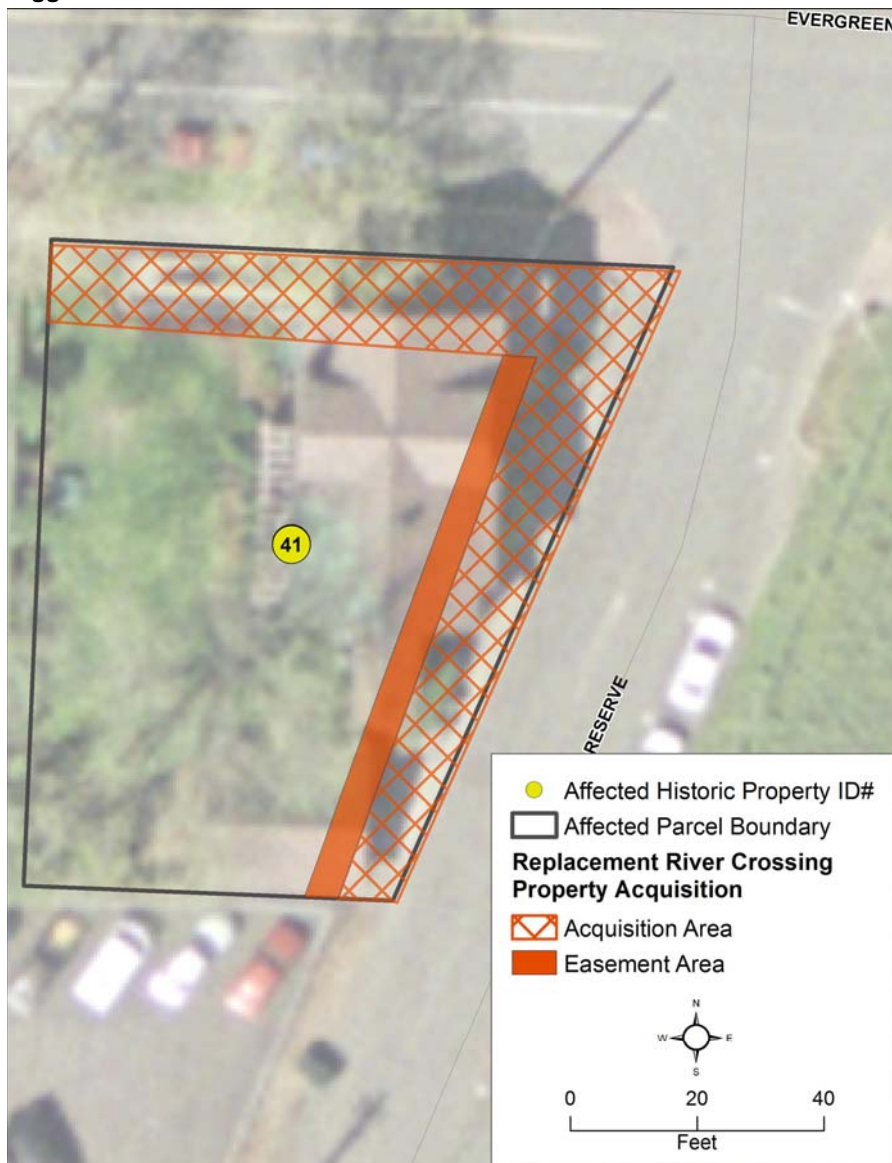


DIMENSIONS ARE APPROXIMATE.



*Kiggins House, 411 E Evergreen Street* – With Alternatives 2 and 3 (the replacement crossing), widening the highway could require acquisition of a portion of the property currently occupied by this NRHP-listed house (see Exhibit 5.3-9). However, the City of Vancouver plans to move the Kiggins house for the Riverwest development, which is not associated with the CRC project. This is expected to occur in May 2008, before CRC would be constructed. The City has designated an area of about 3.75 acres, including the land where the Kiggins House is located, as the Riverwest Revenue Development Area. Construction of that mixed use project is scheduled to begin in late 2008 and continue through 2011. The Riverwest development is being designed to allow CRC to use a portion of that property, if needed. Given that the Riverwest development is occurring irrespective of the CRC project, its moving of the Kiggins House would not be a 4(f) use.

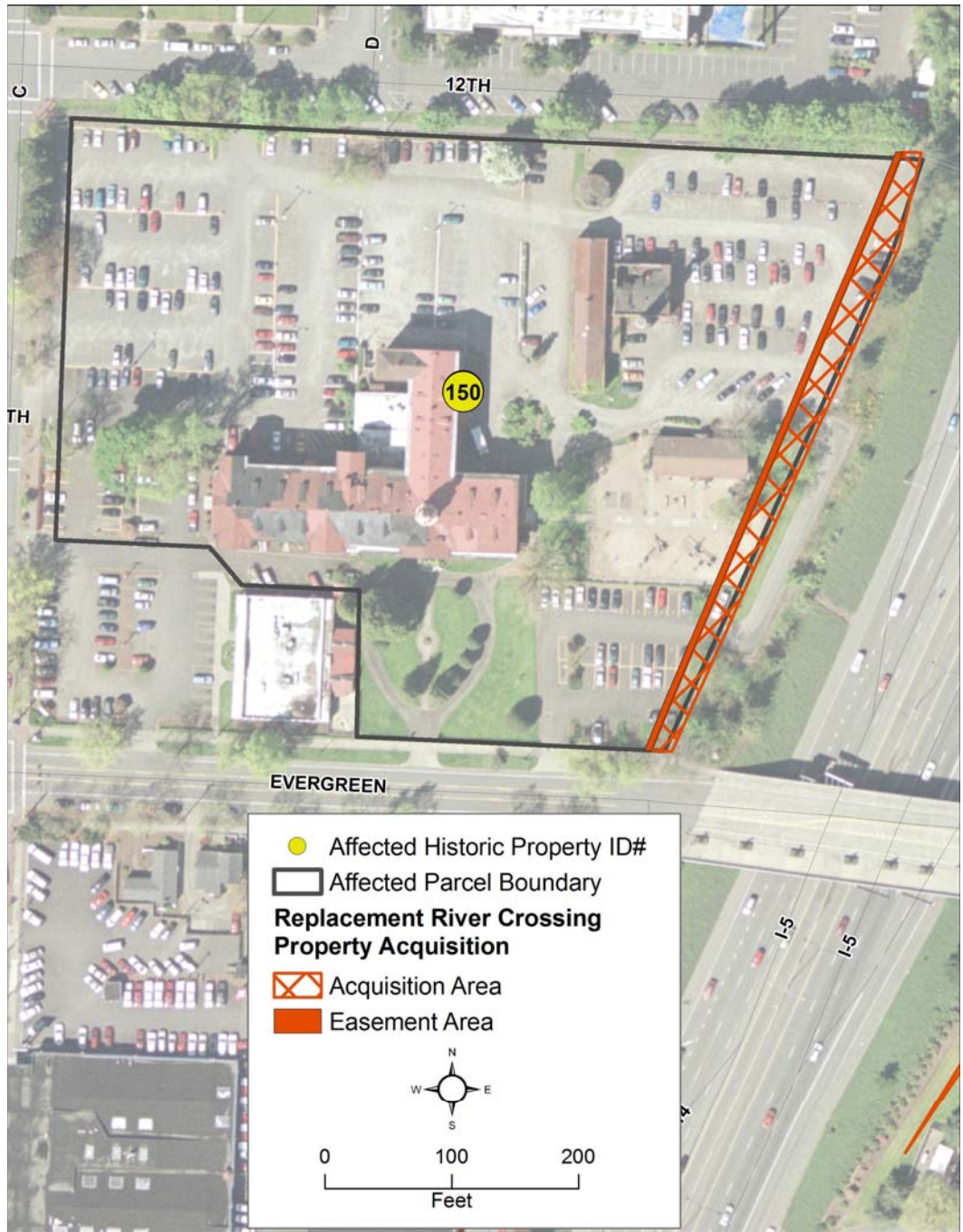
Exhibit 5.3-9  
**Kiggins House**



DIMENSIONS ARE APPROXIMATE.

*Providence Academy, 400 E Evergreen Street* – Alternatives 2 and 3 (the replacement crossing) would require acquisition of 0.27 acre of the eastern edge of the parcel containing this eligible historic resource, as illustrated in Exhibit 5.3-10. The land that would be acquired is adjacent to I-5 and contains parking spaces and landscaping. Highway construction would not remove any historic or non-historic buildings from the site.

Exhibit 5.3-10  
**Providence Academy**



DIMENSIONS ARE APPROXIMATE.

**Impacts to Resources in Vancouver, North of the I-5/Mill Plain Boulevard Interchange**

This section describes potential *uses* of Section 4(f) resources located in Vancouver, north of the I-5/Mill Plain Boulevard interchange. This sub-area includes resources that would be impacted by highway or transit improvements along I-5, as well as by potential transit improvements at the Lincoln terminus.

*Marshall Community Park* – All of the build alternatives, regardless of transit terminus or alignments option, would require acquisition of an approximately 1.2-acre strip of land along the western boundary of this park (Exhibit 5.3-11). The northern portion of this land is used for buffering landscaping, and the southern portion for passive recreation space. The acquisition could also displace up to three horseshoe courts. The conversion of this land to transportation functions would constitute a Section 4(f) *use*.

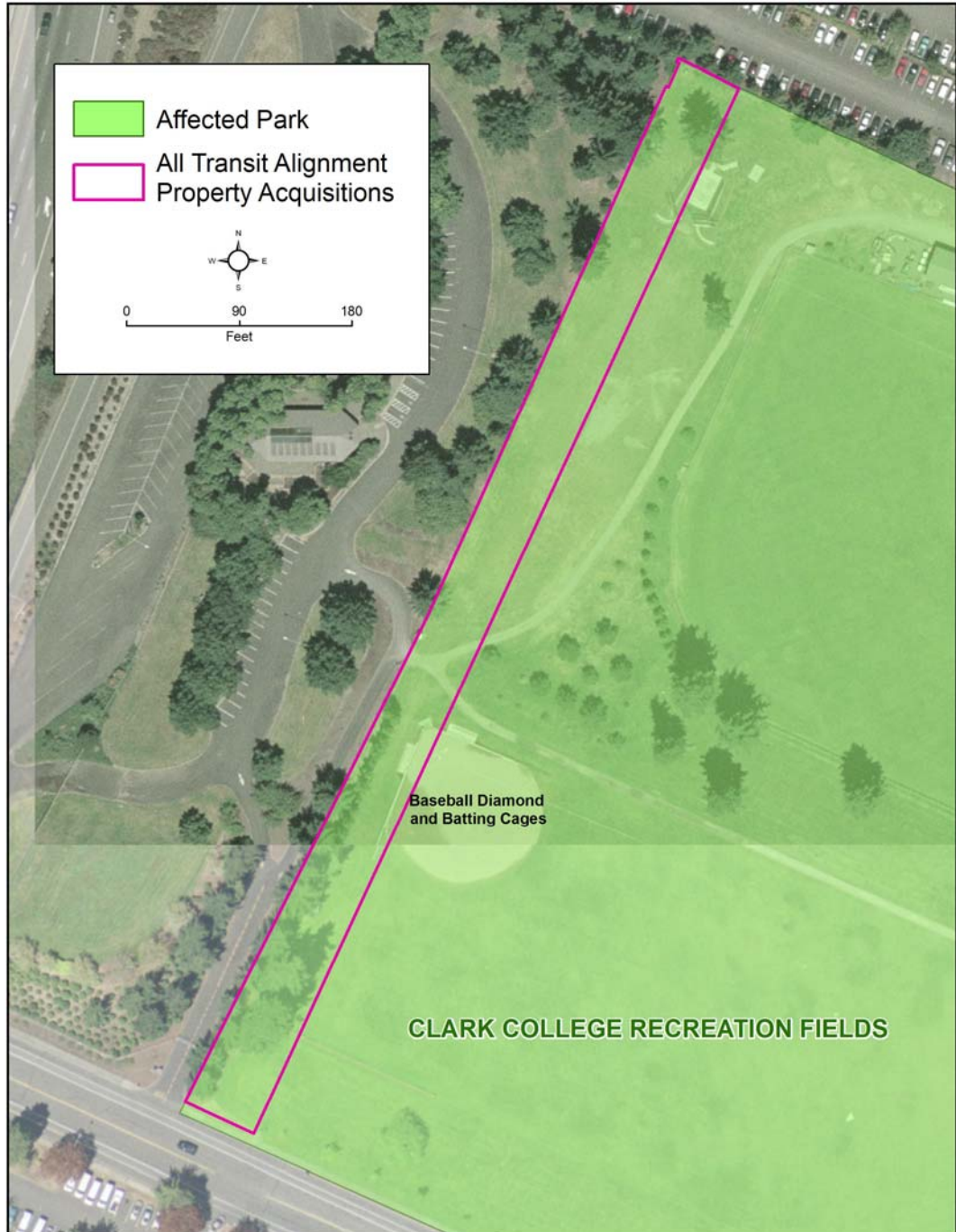
Exhibit 5.3-11  
**Marshall Community Park**



DIMENSIONS ARE APPROXIMATE.

*Clark College Recreation Fields* – The proposed Clark College Park and Ride associated with all of the alternatives, with any transit terminus option, would require acquisition of a 1.24-acre narrow strip of the Clark College recreational fields, which are open to the public. This acquisition could displace a batting cage and a portion of a ball field, as illustrated in Exhibit 5.3-12. Converting this recreational resource to transportation use would constitute a Section 4(f) *use*.

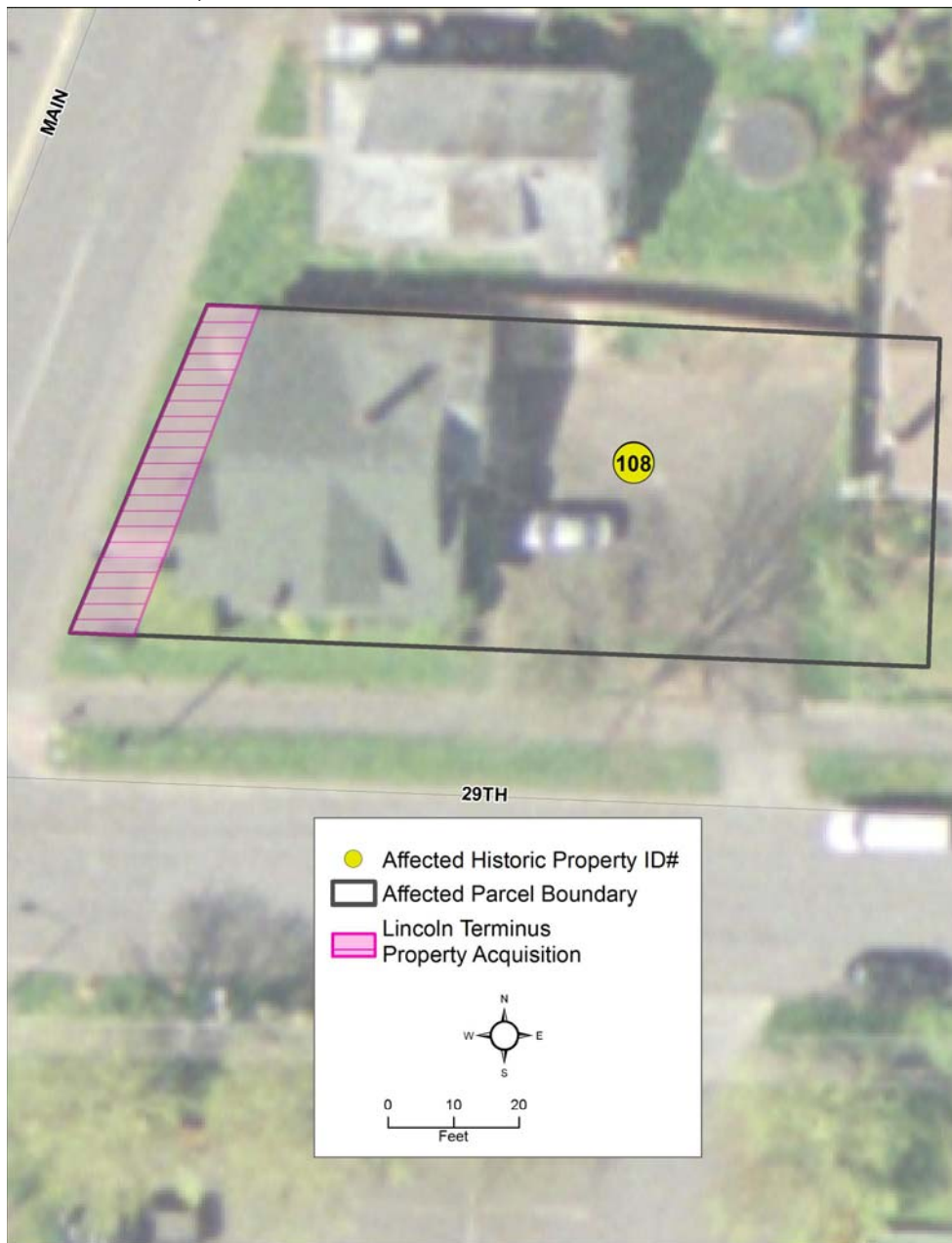
Exhibit 5.3-12  
**Clark College Recreation Fields**



DIMENSIONS ARE APPROXIMATE.

*Residence/Office, 2901 Main Street* – The Broadway-Main couplet and Two-way Broadway alignment options (part of the Lincoln terminus) would require displacement of this NRHP-eligible building currently being used for offices, which would constitute a 4(f) use (Exhibit 5.3-13).

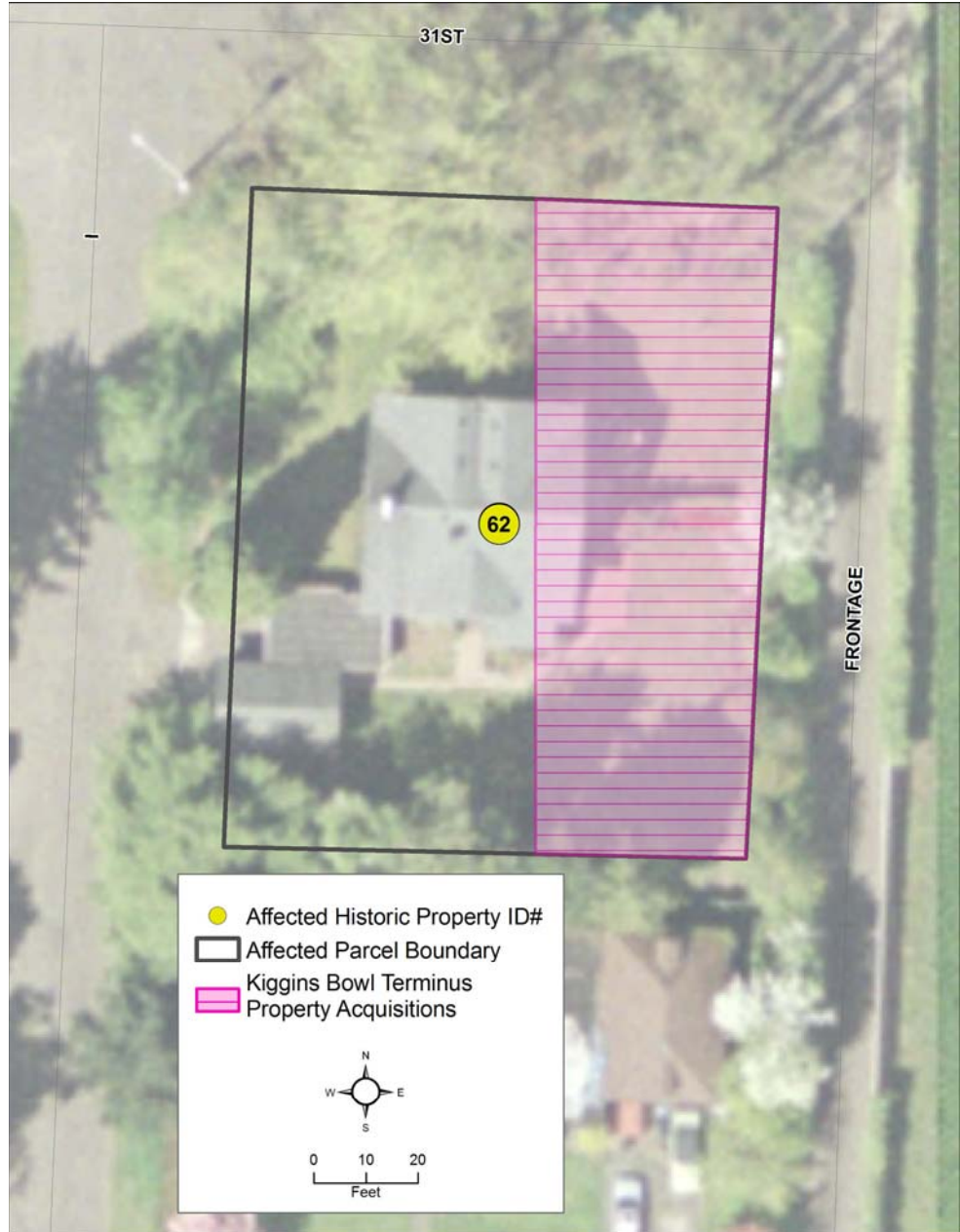
Exhibit 5.3-13  
**Residence/Office, 2901 Main Street**



DIMENSIONS ARE APPROXIMATE.

*Residence, 903 E 31 Street* – The McLoughlin and 16th Street alignment options (Kiggins Bowl and Clark College MOS terminus options) would require acquisition of the eastern half of the parcel that houses this NRHP-eligible residential building. This acquisition would result in a displacement of the building, which would constitute a Section 4(f) *use* (see Exhibit 5.3-14).

Exhibit 5.3-14  
**Residence, 903 E 31st Street**

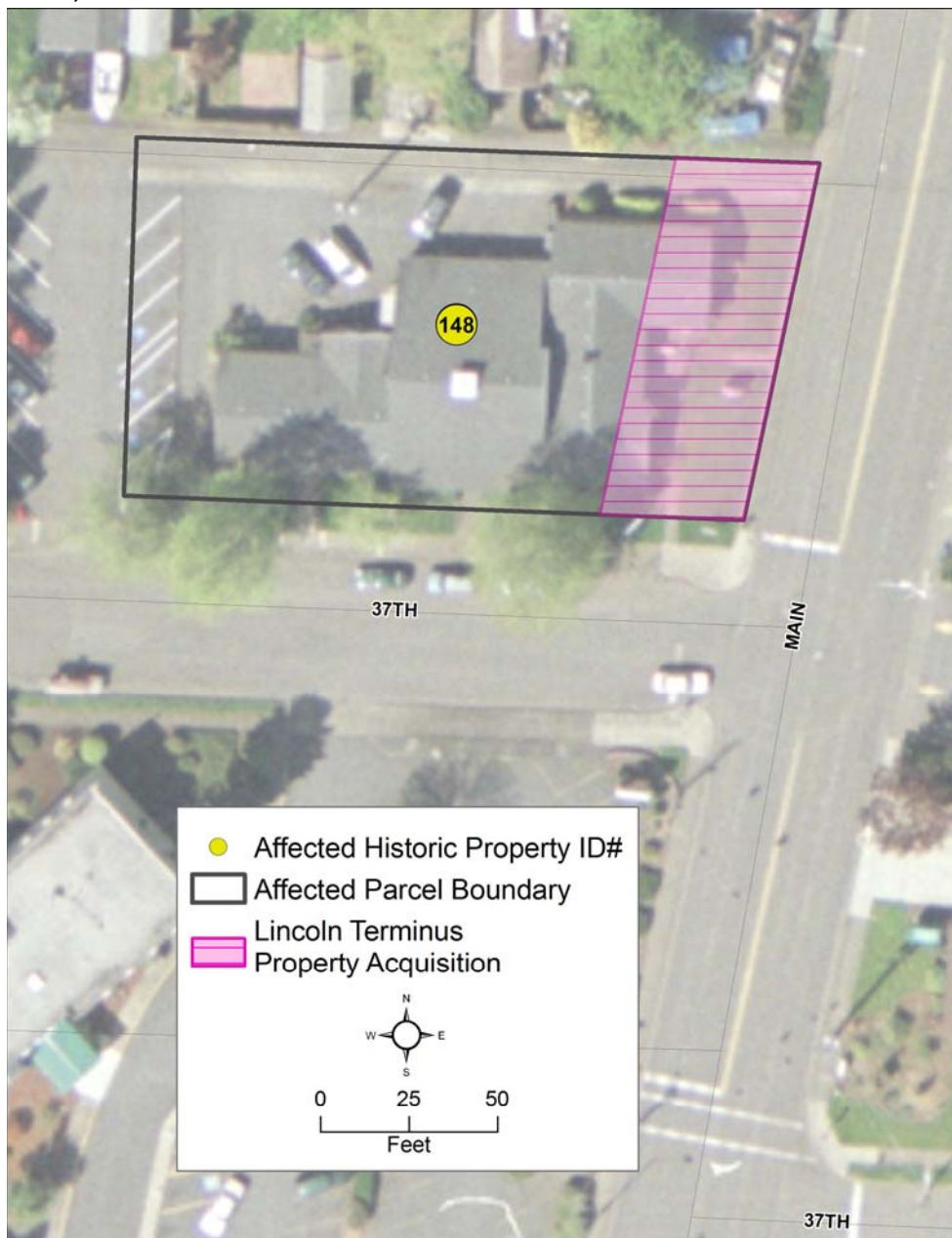


DIMENSIONS ARE APPROXIMATE.

*Residence, 3000 K Street* – Alternatives 4 and 5 would require acquisition of 0.034 acre of the western edge of this parcel, eliminate back access, and require the demolition of the garage. This would be considered a 4(f) use. Alternatives 2 and 3 would have substantially less impact on this property, as discussed under De Minimis Impact Findings later in this section. The impacts of all alternatives on this resource are illustrated in Exhibit 5.3-25, also in the De Minimis section.

*Office, 300 E 37th Street* – The Broadway-Main couplet and Two-way Broadway alignment options (part of the Lincoln terminus) would require displacement of this NRHP-eligible building currently being used for offices, which would constitute a 4(f) use (Exhibit 5.3-15).

Exhibit 5.3-15  
**Office, 300 E 37th Street**



DIMENSIONS ARE APPROXIMATE.

*Residence/Office, 401 E McLoughlin* – The McLoughlin alignment option (Kiggins Bowl or Clark College MOS terminus option) would require acquisition of 0.009 acre of this parcel, as illustrated in Exhibit 5.3-16, but would not require displacement of the use. This would change the building’s setting by removing trees associated with the house and relocating the road nearer to the house. Pending DAHP’s concurrence on the preliminary findings of effect, this is currently assumed to be an adverse effect, and is therefore assumed to be a 4(f) use.

Exhibit 5.3-16  
**Residence/Office, 401 E. McLoughlin**

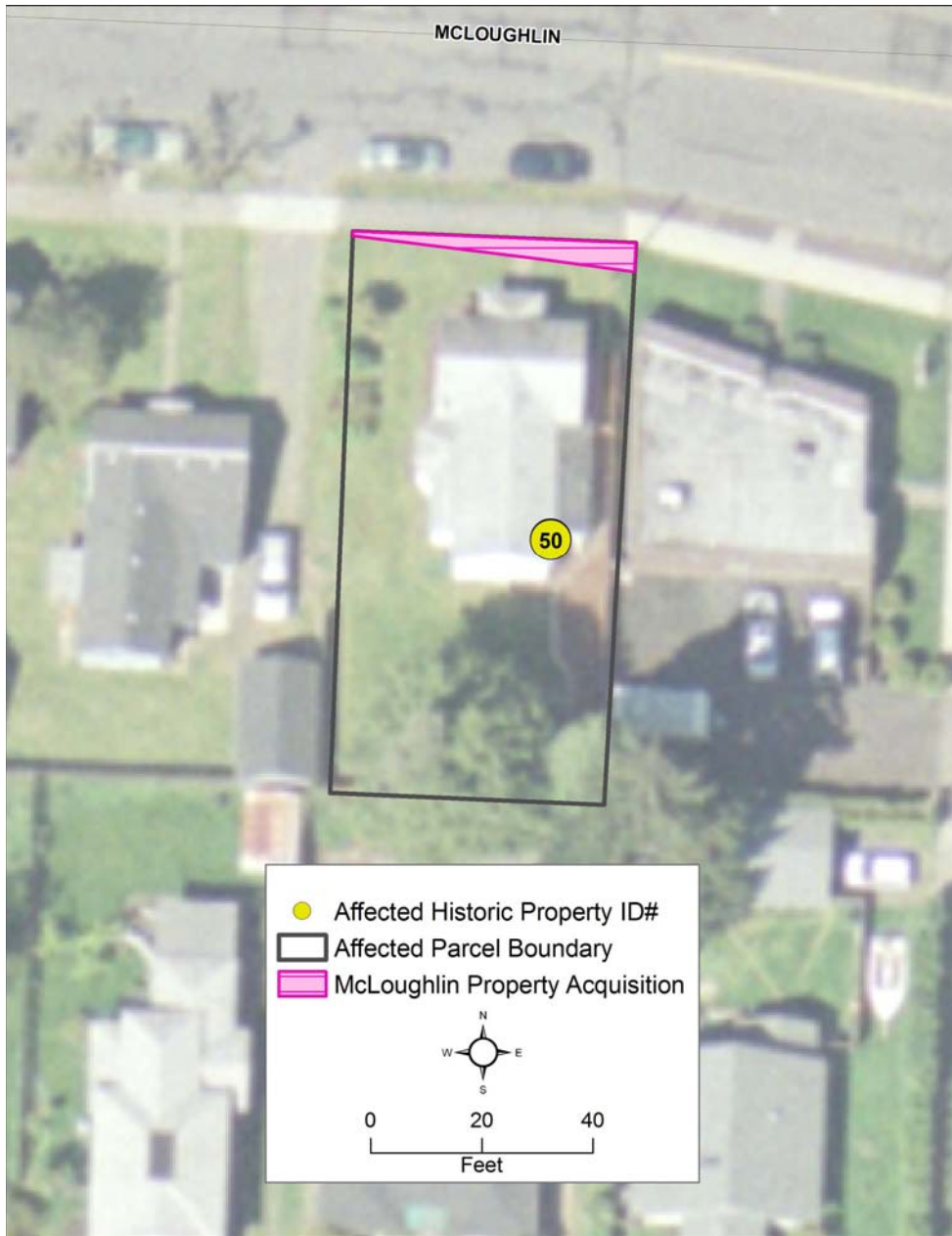


DIMENSIONS ARE APPROXIMATE.



*Residence, 611 E McLoughlin* – The McLoughlin alignment option (Kiggins Bowl or Clark College MOS terminus options) would require acquisition of 0.003 acre of this parcel, as illustrated in Exhibit 5.3-17, but would not require displacement of the use. This would change the building’s setting by relocating the road nearer to the house and removing a portion of the front lawn. Pending DAHP’s concurrence on the preliminary findings of effect, this is currently assumed to be an adverse effect, and is therefore assumed to be a 4(f) use.

Exhibit 5.3-17  
**Residence, 611 E McLoughlin**



DIMENSIONS ARE APPROXIMATE.

*Residence 3110 K Street* – Alternatives 4 and 5 would require acquisition of 0.02 acre of this parcel, as illustrated in Exhibit 5.3-18. The acquisition is from the back of the property (western edge of the parcel) and no buildings would be displaced, but access to the back of the parcel would be eliminated. This would be considered a 4(f) use.

Exhibit 5.3-18  
**Residence, 3110 K Street**



DIMENSIONS ARE APPROXIMATE.

### De Minimis Impact Findings Being Pursued

A *de minimis* impact on a parkland is defined as an impact that does not adversely affect the activities, features or attributes of the 4(f) resource.

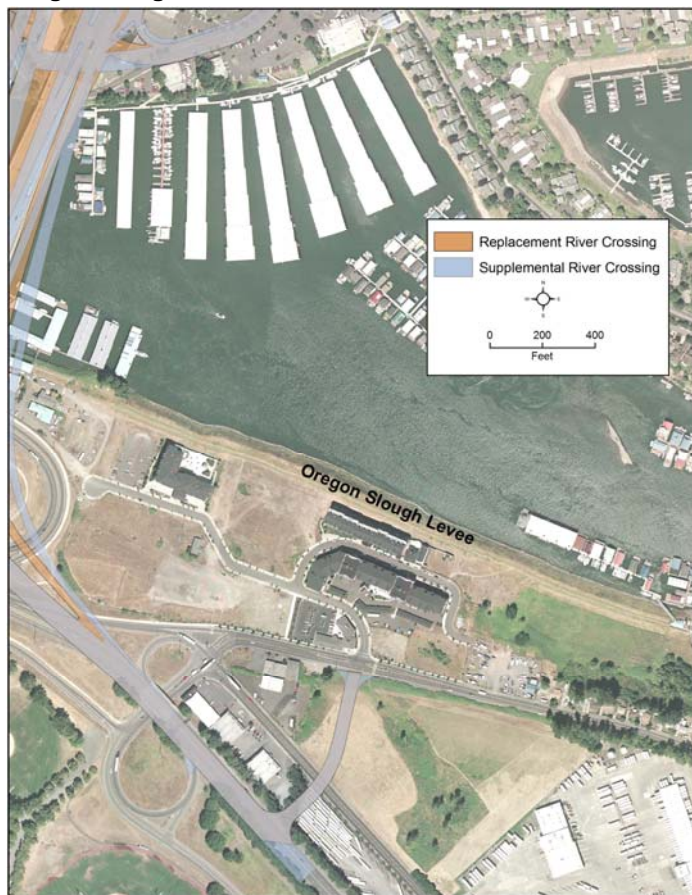
A *de minimis* impact on a historic resource is defined as a finding of either “no adverse effect” or “no historic properties affected” (no effect) in compliance with Section 106 of the National Historic Preservation Act. *De minimis* impact findings must be made in compliance with Section 6009(a) of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) and subsequent amendments to Section 138 of Title 23 and Section 303 of Title 49, United States Code. There will be an opportunity for the public to review and comment on any *de minimis* impact findings for parks.

FHWA and/or FTA intend to pursue making *de minimis* impact findings on the following parks and historic properties for which the project would have a “no adverse effect”. These “no adverse effect” findings are pending concurrence from the Washington Department of Archaeology and Historic Preservation (DAHP) or Oregon SHPO.

*Oregon Slough Levee, Oregon* – With all alternatives, highway ramps would be elevated over the levee located on the southern shore of the North Portland Harbor, as illustrated in Exhibit 5.3-19. No piers would be placed in the levee.

Exhibit 5.3-19

#### Oregon Slough Levee



DIMENSIONS ARE APPROXIMATE.

*Residence, 501 E McLoughlin* – The McLoughlin alignment option (Kiggins Bowl or Clark College MOS terminus options) would require acquisition of 0.001 acre from the front of the parcel, which may shorten the front access pathway. This impact is illustrated in Exhibit 5.3-20.

*Residence, 502 E McLoughlin* – The McLoughlin alignment option (Kiggins Bowl or Clark College MOS terminus options) would require acquisition of 0.01 acre from the front of the parcel, which may shorten the front access pathway. This impact is illustrated in Exhibit 5.3-21.

*Residence, 510 E McLoughlin* – The McLoughlin alignment option (Kiggins Bowl or Clark College MOS terminus option) would require acquisition of 0.008 acre from the front of the parcel, which may shorten the front access pathway. This impact is illustrated in Exhibit 5.3-22.

*Office, 3200 Main Street* – The Lincoln terminus would require acquisition of 0.015 acre from the front of the parcel, which may require the front strip of the drive way and possibly one to two parking spaces. This impact is illustrated in Exhibit 5.3-23.

*First United Methodist Church, 401 E 33rd Street* – The Lincoln terminus would require acquisition of 0.08 acre of lawn in front of the church. This impact is illustrated in Exhibit 5.3-24.

*Residence, 3000 K Street* – Alternatives 2 and 3 would require acquisition of 0.012 acre of land from the parcel, but would not require displacement of the garage or eliminate access to it. This impact is illustrated in Exhibit 5.3-25. The FTA and FHWA anticipate pursuing *de minimis* findings for this use.

*Normandy Apartments, 318 E Seventh Street* – Alternatives 2 and 3 (replacement crossing) would require highway ramp widening next to the parcel containing this eligible historic resource. As illustrated in Exhibit 5.3-26, construction would temporarily *use* about 0.013 acre of the eastern edge of this parcel, which is currently used for landscaping. A temporary occupancy does not necessarily constitute a *use* of a 4(f) resource (23 CFR 771.135(p)(7)). Any permanent acquisition would be less than 0.013 acre. The building would not be displaced, nor would any contributing features. This could be a *de minimis* impact, unless the Washington DAHP determines that, in accordance with Section 106 of the National Historic Preservation Act (16 USC 470f), this would constitute an adverse effect.

Exhibit 5.3-20  
**Residence, 501 E McLoughlin**



DIMENSIONS ARE APPROXIMATE.

Exhibit 5.3-21  
**Residence, 502 E McLoughlin**



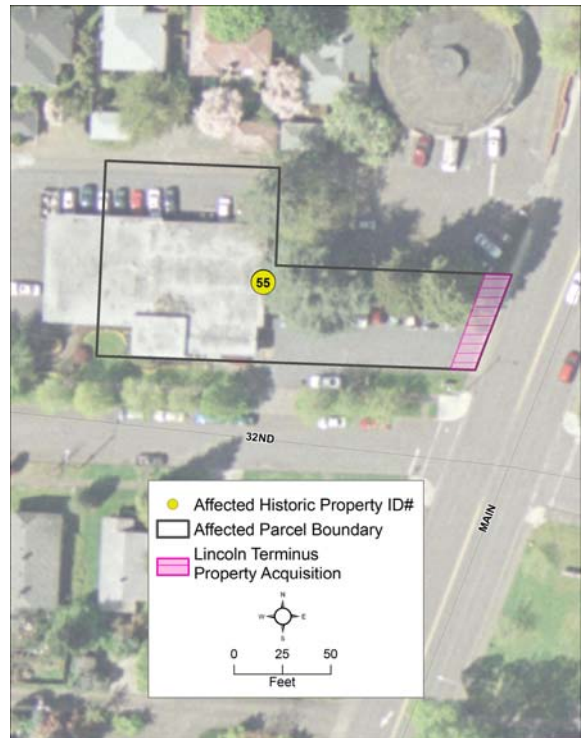
DIMENSIONS ARE APPROXIMATE.

Exhibit 5.3-22  
**Residence, 510 E McLoughlin**



DIMENSIONS ARE APPROXIMATE.

Exhibit 5.3-23  
**Office, 3200 Main Street**



DIMENSIONS ARE APPROXIMATE.

Exhibit 5.3-24  
First United Methodist Church, 401 E 33rd Street



DIMENSIONS ARE APPROXIMATE.

Exhibit 5.3-25  
Residence, 3000 K Street



DIMENSIONS ARE APPROXIMATE.

Exhibit 5.3-26  
Normandy Apartments, 318 E 7th Street



DIMENSIONS ARE APPROXIMATE.

A finding of *de minimis* impact for historic resources requires that the project have no adverse effect on that site, or no historic properties affected (no effect), in accordance with Section 106 of the National Historic Preservation Act (16 USC 470f). The Section 106 finding needs to be developed in consultation with Section 106 consulting parties, and requires written concurrence from the Washington or Oregon State Historic Preservation Office (SHPO) (and from the Advisory Council on Historic Preservation, when the Council is participating in the consultation process). Written concurrence on the Section 106 findings of effect is expected prior to publication of the Final EIS and 4(f) Evaluation. The relevant SHPO would be notified that the Section 106 finding of effect determination will be used for a Section 4(f) *de minimis* finding. However, the *de minimis* impact finding does not require SHPO concurrence.

FTA and FHWA will pursue making *de minimis* impact findings on the following park lands.

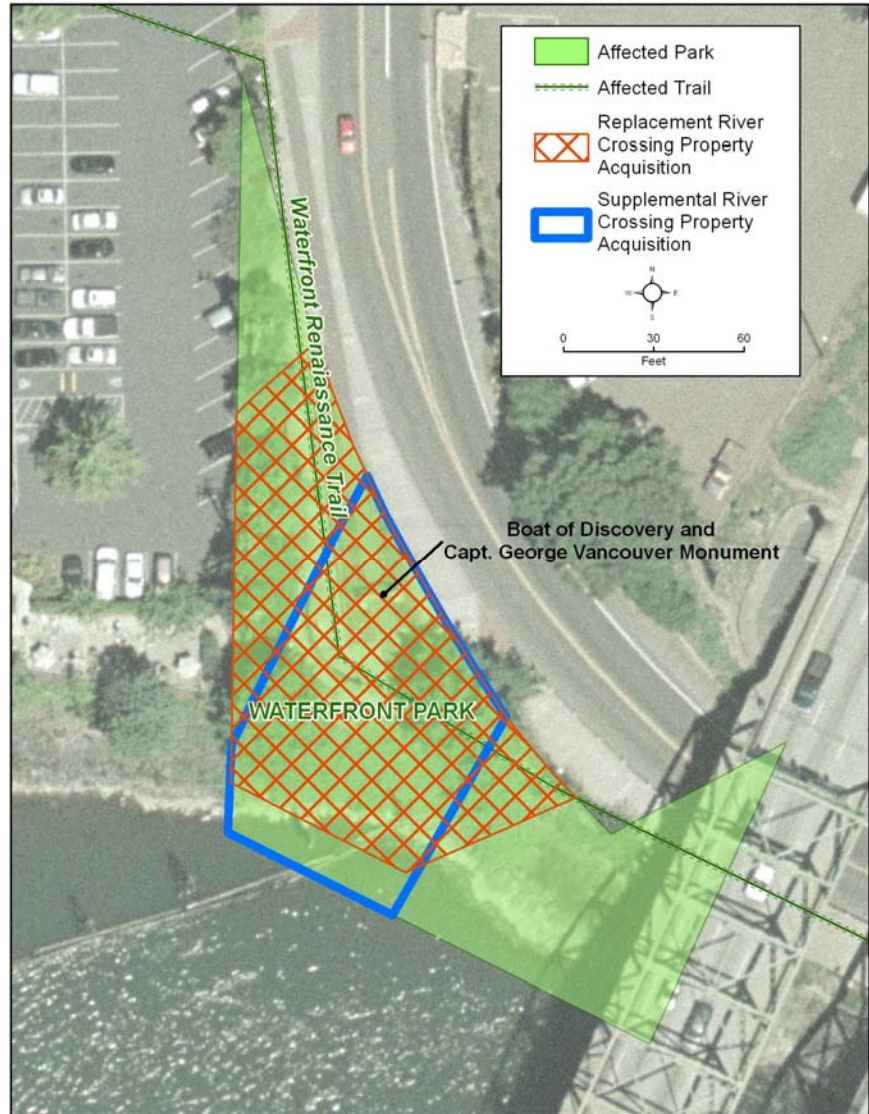
The finding of *de minimis* impact for the parks and recreation areas will be reviewed and commented on by the public during the Draft EIS comment period. The public will have the opportunity to comment at a public hearing and open houses, and to submit written comments. It must be demonstrated that the project will not adversely affect the activities, features, or attributes of the park or recreation area. This finding will need concurrence from the officials with jurisdiction over the park or recreation area. This concurrence, and the *de minimis* findings, will be documented in the Final 4(f) Evaluation.

*Waterfront Renaissance Trail (part of the Discovery Loop Trail)* – The Waterfront Renaissance trail is located in Waterfront Park, along Columbia Way on the Vancouver riverfront. With Alternatives 2 and 3 (the replacement crossing), the piers of the new bridges, and other improvements underlying the northern elevated approach to the new bridge, could require relocating up to 180 feet of this trail, which could constitute a Section 4(f) *use* of the resource. This portion of the trail is located west of the existing bridges, and acts as the starting point of the trail for many downtown residents (Exhibit 5.3-27).

Alternatives 4 and 5 could require the relocation of up to 93 feet of trail. Additional coordination is required before making final conclusions, however, based on communication with the City of Vancouver, relocating this trail would likely be acceptable to the City. The FTA and FHWA anticipate pursuing *de minimis* findings for this *use* and will continue coordination with the official having jurisdiction to substantiate the finding.

Exhibit 5.3-27

**Waterfront Trail and Waterfront Park**



DIMENSIONS ARE APPROXIMATE.

*Waterfront Park* – With Alternatives 2 and 3 (the replacement crossing), the new bridges would be built in the air space over about 0.23 acre of *Waterfront Park*, located on the Vancouver shoreline. These alternatives would also require removal of the existing I-5 bridges located adjacent to the parkland.

Alternatives 4 and 5 would span about 0.17 acre of *Waterfront Park*. These areas of the park are occupied by landscaping, riprap shoreline and some public art installations. None of the alternatives would require displacement of the art installations at this site (i.e., the *Boat of Discovery* or the *Capitan George Vancouver Monument*). See Exhibit 5.3-27.

Occupying the air space over a park is typically not considered a 4(f) *use*. However, placing any bridge piers in the park (locations yet to be determined) would be a 4(f) *use*. The FTA and FHWA anticipate pursuing *de minimis* findings for this *use* and will continue coordination with the official having jurisdiction to substantiate the finding.



*Leverich Park* – This resource is impacted by all alternatives, but in slightly different ways.

Alternatives 2B, 2C, 2D, 3B, 3C, and 3D (replacement crossing with the Lincoln Terminus, Clark College MOS or Mill Plain MOS) would require displacement of approximately 0.33 acre of narrow park perimeter landscaping and berms, and would include elevated highway ramps over the park entrance road (see Exhibit 5.3-28). These impacts would be due to highway improvements and would occur adjacent to I-5 and SR 500.

Alternatives 4B, 4C, 4D, 5B, 5C, and 5D (supplemental crossing with the Lincoln Terminus, Clark College MOS or Mill Plain MOS) would require acquisition of approximately 0.24 acre of narrow park perimeter landscaping and berms and would include elevated highway ramps over the park entrance road (see Exhibit 5.3-28). These impacts would be due to highway improvements and would occur adjacent to I-5 and SR 500.

The Kiggins Bowl terminus would require acquisition of an additional 0.01 acre along the western edge of Leverich Park, adjacent to I-5. This would increase the Leverich Park acquisition to approximately 0.34 acre for Alternatives 2A and 3A, and to 0.25 acre for Alternatives 4A and 5A.

These acquisitions would comprise approximately one percent of Leverich Park. The FTA and FHWA anticipate pursuing *de minimis* findings for this potential *use* of Leverich Park, and will continue coordination with the official having jurisdiction to substantiate the finding.

Exhibit 5.3-28  
**Leverich Park**



DIMENSIONS ARE APPROXIMATE.

*Kiggins Bowl* – With all of the build alternatives, approximately 0.14 acre of Kiggins Bowl would be acquired and 50 linear feet of the trail connecting Main Street to the Burnt Bridge Creek Greenway Trail would be relocated. The Kiggins Park and Ride would be located on WSDOT property that is adjacent to but not part of the Kiggins Bowl property.

With Alternatives 2A and 4A (bus rapid transit and Kiggins Bowl terminus) there would be an additional *use* of about 0.35 acre of land within the Kiggins Bowl parcel. As illustrated in Exhibit 5.3-29, the affected land is currently forested, and the impact would not affect the use of the sports fields or venues of Kiggins Bowl.

This resource not only serves as a park and recreation facility, but is also an eligible historic resource. Considering the relatively minor impact to the 4(f) resource, combined with the enhanced transit access to the nearby parks and existing and planned Burnt Bridge Creek trail system, and potential mitigation (trail relocation), overall impacts to the recreational resource would be minimal. The FTA and FHWA anticipate pursuing *de minimis* findings for this *use* and will continue coordination with the official having jurisdiction to substantiate the finding.

Exhibit 5.3-29  
**Kiggins Bowl**



DIMENSIONS ARE APPROXIMATE.

The finding of *de minimis* impact for the parks and recreation areas will be reviewed and commented on by the public during the Draft EIS comment period. The public will have the opportunity to comment at a public hearing and open houses, and to submit written comments. It must be demonstrated that the project will not adversely affect the activities, features, or attributes of the park or recreation area. This finding will need concurrence from the officials with jurisdiction over the park or recreation area. This concurrence, and the *de minimis* findings, will be documented in the Final 4(f) Evaluation.

#### **5.3.4 Potential Constructive Uses**

The project team evaluated the potential for “constructive uses” to 4(f) resources, consistent with 23 CFR 774.15. This included historic resources for which NHPA Section 106 preliminary “adverse effect” findings were identified based on proximity impacts, as well as park and recreation resources where land would not be incorporated into the CRC project but where proximity impacts (noise, visual, access, vibration) would or could occur. The analysis revealed that such impacts would not substantially impair the protected activities, features or attributes of any 4(f) properties, and therefore there would be no constructive use of 4(f) resources.

### **5.4 Avoidance Alternatives**

As outlined in 23 CFR 774.3, the USDOT may not approve the use of Section 4(f) property unless they first determine that there is no prudent and feasible alternative to the use of land from the property, or that any use of 4(f) property would be a *de minimis* impact. An alternative is not prudent, according to 23 CFR 774.17(3)), if it compromises the project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need. In other words, alternatives that do not adequately meet the project’s Purpose and Need can be dropped from further consideration.

There are no alternatives that can simultaneously meet the project’s Purpose and Need while also avoiding all Section 4(f) resources.

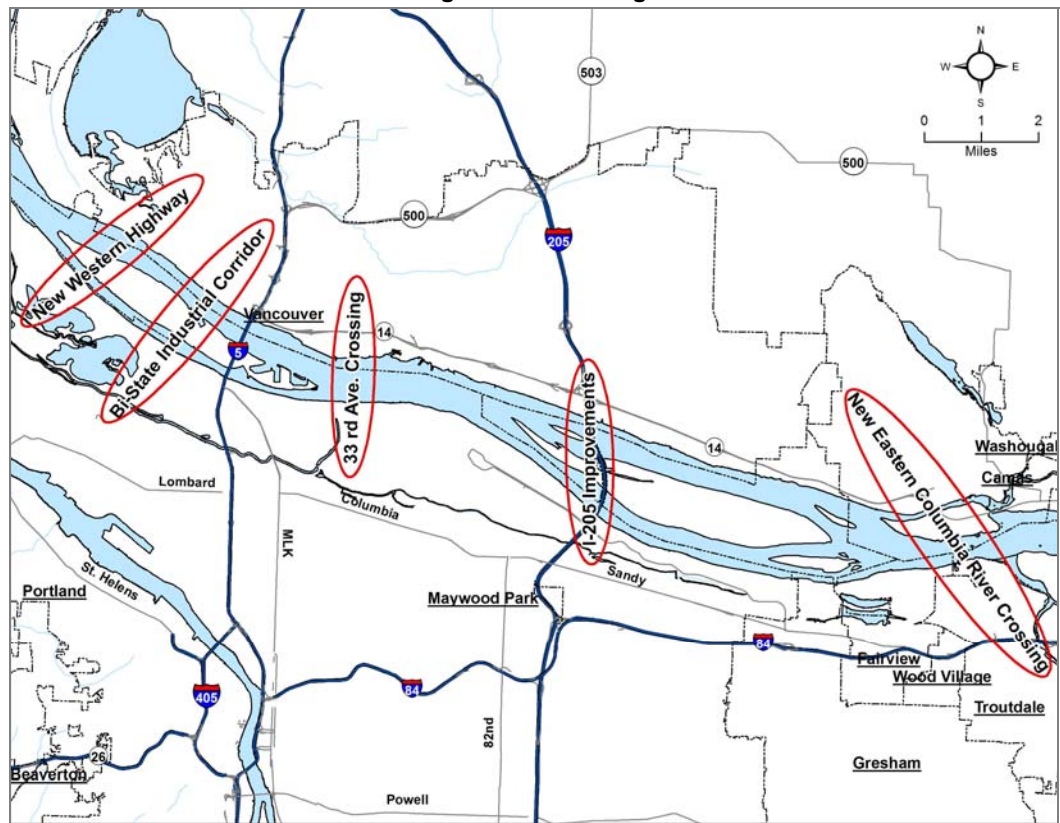
In earlier phases of alternative development, the project team evaluated a wide range of potential alternatives, as summarized in Section 2.5 of the DEIS. Potential avoidance alternatives evaluated during screening included a package of transportation demand management (TDM) and transportation system management (TSM) measures, and five alternate river crossing corridors outside the area immediately surrounding the I-5 crossing.

The TSM/TDM alternative included very limited capital construction and therefore did not directly result in impacts to Section 4(f) resources. However, the TSM/TDM alternative included very few physical improvements and did not meet the project’s Purpose and Need.

Exhibit 5.4-1 illustrates the five alternate corridors evaluated during this screening process, located both west and east of the existing I-5 corridor:

- A Western Highway crossing two to three miles west of I-5 that would connect suburban Clark and Multnomah counties
- A Bi-State Industrial Corridor crossing near the BNSF railroad bridge, one mile west of I-5
- A new crossing at 33rd Avenue in Portland, two to three miles east of I-5
- Improvements to I-205 only
- An Eastern Columbia River crossing 10 to 12 miles east of I-5, that would connect Camas/East Clark County to Troutdale

Exhibit 5.4-1  
**Alternative Corridors Evaluated During Initial Screening Process**



DIMENSIONS ARE APPROXIMATE.

The initial screening process was used to evaluate how well these corridors would meet the purpose and need of the project. While most of these alternatives could provide transportation benefits, they would do little to address the mobility, transit or safety problems in the I-5 corridor or to serve the proposed action’s targeted travel markets. Therefore, these five corridor alternatives failed to meet most or all of the elements of the project’s Purpose and Need.

The Bi-State Industrial Corridor had the potential for improving I-5-related freight mobility, as it connects the industrial areas in Vancouver to those in Portland. The initial traffic analysis indicated that this Industrial Corridor, as well as the Western Crossing, have potential for providing some congestion relief compared to 2030 No-Build conditions.

However, the potential highway transportation benefits of these two corridors would be limited and are outweighed by the fact that these, and the three other corridors, would fail to improve the stated needs related to transit performance, bicycle and pedestrian mobility, and highway safety. All alternative corridors evaluated would require substantial out-of-direction travel for transit passengers, bicyclists and pedestrians, and would do nothing to address the identified I-5 safety deficiencies, high crash rates, and seismic vulnerability.

These alternatives would have avoided affecting the Section 4(f) resources impacted by the alternatives evaluated in the DEIS, because they would be located in other corridors. However, given the density and distribution of historic and recreational resources within the north Portland and Vancouver areas, these corridors would very likely result in impacts to different Section 4(f) resources. Impacts to 4(f) resources from alternative corridors were not evaluated in detail because all of these alternatives, and the TSM/TDM alternative, failed to meet most or all of the proposed action's Purpose and Need.

Alternatives and options that could avoid one or more of the Section 4(f) properties, but could not *avoid Section 4(f) properties altogether* (23 CFR 774.17) are not considered avoidance alternatives. Alternatives and options that would have less impact on Section 4(f) resources or would impact fewer Section 4(f) properties, are considered Measures to Minimize Harm, and are described and evaluated in Section 5.5.

## 5.5 Measures to Minimize Net Harm

As discussed above, there are no prudent and feasible alternatives that would avoid all Section 4(f) resources. The next step then is to identify all reasonable measures to minimize harm or mitigate for adverse impacts and effects. 23 CFR 774.3(c) provides the following direction:

*(c) If the analysis ... concludes that there is no feasible and prudent avoidance alternative, then the Administration may approve only the alternative that:*

- (1) Causes the least overall harm in light of the statute's preservation purpose. The least overall harm is determined by balancing the following factors:*
  - i. The ability to mitigate adverse impacts to each Section 4(f) property (including any measures that result in benefits to the property);*
  - ii. The relative severity of the remaining harm, after mitigation, to the protected activities, attributes, or features that qualify each Section 4(f) property for protection;*
  - iii. The relative significance of each Section 4(f) property;*

- iv. *The views of the official(s) with jurisdiction over each Section 4(f) property;*
- v. *The degree to which each alternative meets the purpose and need for the project;*
- vi. *After reasonable mitigation, the magnitude of any adverse impacts to resources not protected by Section 4(f); and*
- vii. *Substantial differences in costs among the alternatives.*

This section describes how the CRC alternatives and options, and other potential minimization measures, could avoid one or more of the Section 4(f) resources, reduce the impacts to one or more Section 4(f) resources, or potentially mitigate impacts to Section 4(f) resources.

This section also evaluates whether these measures would be reasonable. As outlined in 23 CFR 774.17, *All possible planning*, in evaluating the reasonableness of measures to minimize harm, FHWA and FTA consider the preservation principles of the 4(f) statute, along with:

- (i) *The views of the officials with jurisdiction over the Section 4(f) property,*
- (ii) *Whether the cost of the measures is a reasonable public expenditure in light of the adverse impacts of the project on the Section 4(f) property and the benefits of the measure to the property, and*
- (iii) *Any impacts or benefits of the measures to communities or environmental resources outside the Section 4(f).*

Based on this analysis, some of the CRC options and other measures that could minimize harm to 4(f) resources are not reasonable. However, because the CRC project is currently in the conceptual design phase, it is not possible to draw conclusions about the reasonableness of all potential measures to minimize harm. Therefore, this draft 4(f) Evaluation carries all reasonable and potentially reasonable measures forward for consideration. These measures will be further considered as the CRC project sponsors identify a locally preferred alternative and move into preliminary engineering and final design. In all cases, measures to minimize harm to 4(f) resources will be considered in coordination with the relevant consulting parties for historic resources, and with the City of Vancouver for city park resources.

This section is organized geographically from the south to the north end of the corridor, and discusses the options and measures in the context of the Section 4(f) resources located in each geographic area of the project. These areas include:

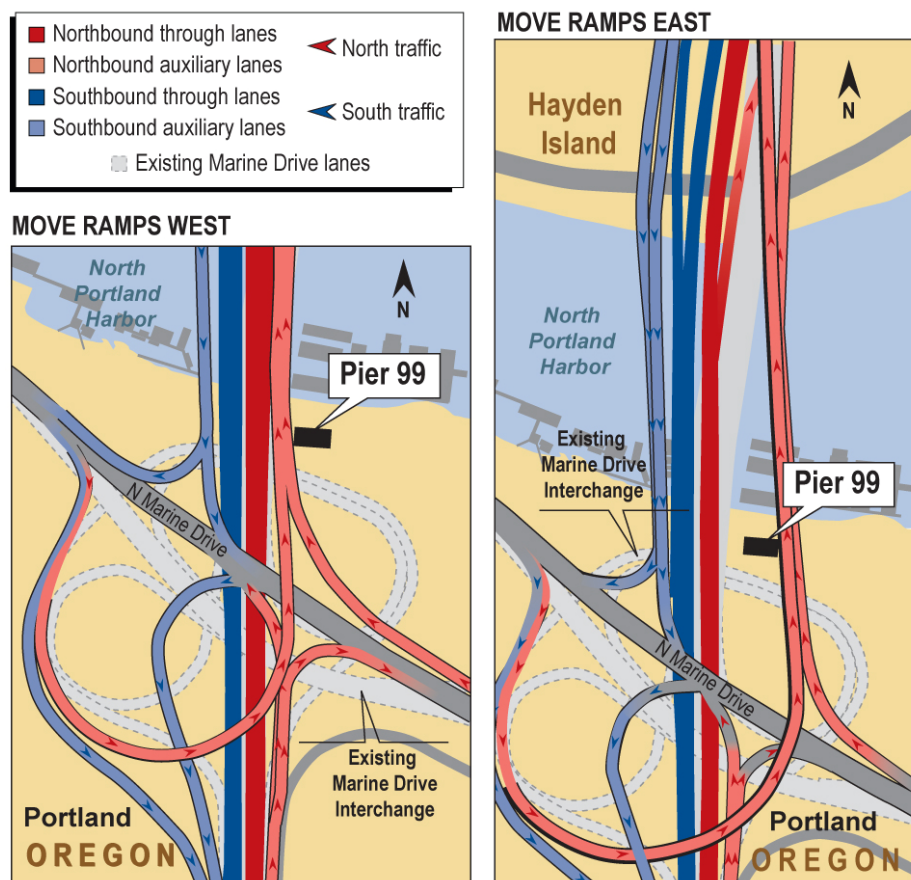
- Resources in Portland
- The Columbia River - 1917 Bridge
- Resources in Vancouver, south of the I-5/Mill Plain interchange
- Resources in Vancouver, north of the I-5/Mill Plain interchange.

Exhibit 5.6-1 lists the measures being considered to avoid or minimize harm, indicates which 4(f) resources could be benefited by each measure, and indicates which measures are considered reasonable, potentially reasonable, or unreasonable.

### 5.5.1 Minimizing Harm to the Resources in Portland

One potential Section 4(f) resource, the Pier 99 Marina (an eligible historic resource), would be impacted by the proposed Marine Drive interchange improvements. The proposed improvements would require displacement of the building and permanent acquisition of up to half of the parcel. Potential measures to minimize harm are described below. Exhibit 5.5-1 shows the Marine Drive interchange area, along with proposed refinements to this interchange to reduce impacts to Pier 99 (discussed below).

Exhibit 5.5-1  
**Potential Marine Drive Refinements to Reduce Impacts to Pier 99**



NOT TO SCALE

#### Moving the Marine Drive/I-5 Interchange Ramps Farther East

**Measure:** Relocate, to the east end of the Pier 99 parcel, the proposed eastbound Marine Drive to northbound I-5 and westbound Martin Luther King Jr. Boulevard to northbound I-5 ramps. Relocating these ramps to the east would avoid the Pier 99 building but would result in a different set of impacts. It would displace several businesses, displace additional boat docks and floating homes on North Portland Harbor, and still acquire a portion of the Pier 99 parcel. It would also leave the Pier 99

building isolated between the I-5 mainline and the on-ramps, which would be highly undesirable. Given the additional impacts associated with this design refinement, and the remaining harm to the resource, this does not appear to be a reasonable measure.

### **Moving the Marine Drive/I-5 Interchange Ramps Farther West**

**Measure:** Relocate, farther west, the proposed eastbound Marine Drive to northbound I-5 and westbound Martin Luther King Jr. Boulevard to northbound I-5 ramps. Relocating these ramps farther to the west, directly adjacent to the I-5 mainline, could potentially avoid displacing the Pier 99 building. This would require reducing the radius of the curves for the ramps from Marine Drive and Martin Luther King Jr. Boulevard to northbound I-5, and shifting both ramps farther west as they parallel the I-5 mainline. Additional design work will be required to determine if this design refinement is constructible and can completely avoid the Pier 99 building. This may be a reasonable measure for reducing harm to the Pier 99 building and will be further evaluated through on-going design efforts.

### **5.5.2 Minimizing Harm to the 1917 Interstate Bridge**

Moving north, the next Section 4(f) resource that would be impacted is the northbound I-5 bridge, constructed in 1917 and listed on the NRHP. The adjacent 1958 bridge was exempted from review as a potential historic property under Sections 4(f) and 106, per the 2005 federal transportation reauthorization act, known as the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU).

Between 2005 and early 2007 the project team evaluated a wide range of potential river crossings, including new crossings in other corridors that would avoid the 1917 bridge. However, these crossings in other corridors could not meet the project's Purpose and Need and were dropped from further consideration. In addition, the team evaluated a range of I-5 crossing options that would reuse rather than remove the 1917 bridge. These crossing options were eliminated from further consideration because they either did not meet the Purpose and Need or performed poorly when measured against the screening criteria developed for the project (see Section 2.5 for a discussion of alternatives screening).

Of the river crossing options being considered in this DEIS, the supplemental crossing would have less harm on the 1917 bridge. However, the supplemental crossing has an accumulation of performance deficiencies, adverse impacts, and other factors described below that make this an unreasonable measure to reduce harm to the 1917 bridge.

### **Supplemental River Crossing (Alternatives 4 and 5)**

The supplemental river crossing evaluated as part of Alternatives 4 and 5 was the only bridge reuse option that passed the screening process. This option would allow at least some of the I-5 traffic safety and mobility issues to be addressed while still keeping part of the interstate traffic on the existing bridges. However, continued analysis of this option has demonstrated that it cannot meet the project's Purpose and Need as well as the replacement crossing can, it would have higher adverse impacts on the community and environment, and it would have fewer benefits.



Given the collection of problems associated with the supplemental river crossing, it is not a reasonable measure for minimizing harm to the Interstate Bridge.

The problems with the supplemental river crossing (lower transportation benefits, higher adverse impacts, and lower community benefits) are listed below, followed by more detailed descriptions of each item in this list:

- Higher seismic vulnerability
- Greater impacts and degradation of river navigation safety, potentially to levels that are unacceptable to the United States Coast Guard
- Minimal benefits to traffic safety, mobility, congestion and travel time
- Higher adverse impacts on downtown Vancouver land use, circulation, and development
- Higher adverse impacts to neighborhoods and populations on Hayden Island
- Higher adverse impacts and fewer benefits to threatened and endangered species and the natural environment
- Higher maintenance and operation costs.

These problems are described in more detail below.

#### SEISMIC VULNERABILITY AND SEISMIC RETROFITS

Improving the seismic safety of the crossing is considered critical, and extensive seismic retrofits would be required. The existing bridges do not meet basic “no collapse” criteria for safety in the occurrence of a major seismic event. An expert panel, convened to assess this vulnerability, determined that it is technically feasible to upgrade the bridges’ seismic stability to withstand a 500-year event, at a cost of between \$125 million and \$265 million.<sup>2</sup> These retrofits would change the visual character of the existing bridges due to added and strengthened piers, structural members and rebuilt towers. Seismic retrofits would include encasing the existing piers in a suitable material, adding 40 to 60 feet to the width of each of the foundations. This would extend the current foundation limits and reduce the horizontal clearance between piers, worsening the already restricted navigation route that many vessels must traverse between the existing bridges and a downstream railroad bridge. The supplemental crossing, with major seismic retrofits, would greatly improve the seismic stability of river crossing but would still be more vulnerable to seismic damage than a new bridge.

#### NAVIGATION SAFETY AND EFFICIENCY

The river navigation problems associated with the existing bridges would be greatly improved if they were replaced by a new crossing (Alternatives 2 and 3). Navigation problems would be exacerbated by reusing the existing bridges (Alternatives 4 and 5) and adding a

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<sup>2</sup> Seismic Panel, 2006.

supplemental structure. The supplemental crossing would result in nearly three times as many pier sets across the Columbia River as the replacement crossing, and would result in narrowing the already tight navigation clearance between the existing piers. While this would further degrade navigational safety for the supplemental crossing, the U.S. Coast Guard has not yet provided an official opinion or determination on their ability to permit or not permit this option. Formal determinations by the Coast Guard are typically not issued prior to submitting permit applications, which occurs much later in the bridge design process. Stakeholders from the commercial river users community testified in a preliminary Coast Guard hearing that they would not support an alternative that worsened existing navigation hazards.

#### TRAFFIC SAFETY, CONGESTION, MOBILITY AND TRAVEL TIME

Because the supplemental crossing would keep northbound interstate traffic on the existing I-5 bridges, it would fail to eliminate all of the sub-standard safety features associated with these bridges. It would not fix the vertical curves that restrict sight distance, or eliminate the need for bridge lifts that are associated with higher accident rates. It would also not include standard width shoulders. Failing to eliminate bridge lifts also means that the congestion and delay associated with bridge lifts will continue. The supplemental crossing, with fewer auxiliary highway lanes, would also do less to address congestion and mobility than a replacement crossing. The supplemental crossing would result in over 11 hours of daily congestion, compared to 4.5 hours with the replacement crossing. This added congestion further contributes to higher accident rates.

The supplemental crossing would also provide poor access for Hayden Island residents to Vancouver destinations, especially during peak periods. This is because the northbound on-ramps at Hayden Island can only access the eastern most bridge, which will also be carrying all I-5 traffic that needs to exit at SR 14, City Center, Mill Plain or Fourth Plain. This is necessary because of the physical separation of the two existing bridges that would be reused with the supplemental crossing. Because of the high number of trips exiting and entering I-5 at these interchanges, modeling indicates substantial northbound congestion in these two traffic lanes during the peak period.

#### DOWNTOWN VANCOUVER LAND USE, CIRCULATION AND DEVELOPMENT

The supplemental crossing would cause a decrease in connectivity in downtown Vancouver and complicate the City's ability to meet parts of the City Center Vision, which includes providing new connections between downtown and the waterfront. Removing the existing bridges (part of alternatives 2 and 3) would allow Main Street to be extended to the waterfront, whereas keeping the existing bridge (part of alternatives 4 and 5) and adding a supplemental one would not. The City could still potentially extend other local streets to the waterfront, but these would require tunneling under the BNSF right-of-way and additional property acquisitions.

The supplemental crossing would also close Sixth Street, an important east-west connection to the City of Vancouver's Convention Center and City Center (including Esther Short Park).

#### HAYDEN ISLAND NEIGHBORHOOD AND ENVIRONMENTAL JUSTICE IMPACTS

The supplemental crossing would require displacement of the Safeway supermarket on Hayden Island. Community members have expressed concern over the potential loss of this use, since it is the only grocery store on the island. Its loss would require community residents, which include a relatively high number of mobility-impaired people, to travel much further for groceries. The replacement crossing design could be refined so that it does not impact Safeway. The supplemental crossing would also require displacement of more floating homes than the replacement crossing.

The supplemental crossing would provide much poorer highway egress off the island during peak periods (as described above under Traffic Safety, Congestion, Mobility and Travel Time). Substantially impaired egress off the island would adversely affect the residents' mobility, and would adversely affect emergency vehicle access and response time.

The replacement crossing would allow for a local east-west street connection under I-5 on Hayden Island; the supplemental crossing, similar to existing conditions, would not allow for this. Hayden Island residents and the City of Portland's Hayden Island Concept Plan have identified this east-west link as important to local circulation and to connecting the community on either side of I-5.

#### NATURAL ENVIRONMENT IMPACTS

The supplemental crossing would cause greater short-term and permanent impacts to the natural environment than the replacement crossing. It would require more in-water structures (16 sets of bridge piers, compared to 6 sets for the replacement crossing) across the river. The amount of fill would be similar, but the supplemental crossing would result in nearly three times as many large pier sets across the river and more piers in shallow water. Piers can create habitat for invasive fish species that prey on juvenile salmon. The supplemental crossing would also continue to discharge untreated stormwater runoff from a portion of the crossing directly into the Columbia River, which is critical habitat for threatened and endangered salmon species. The National Marine Fisheries Service has provided a written statement of their preference for the replacement crossing over the supplemental crossing.

#### COSTS

The cost to maintain and operate the existing bridges would be an order of magnitude higher than the costs for maintaining and operating a new, fixed span bridge. The costs for routine maintenance for the existing bridges would be approximately \$750,000/year, compared to about \$35,000/year for a new facility. However, the existing bridges also have projected major maintenance costs (e.g., for painting and deck replacement) that result in an annualized equivalent cost of about \$3.9 million per year over 30 years. Preliminary estimates indicate capital costs for supplemental alternatives would be roughly 10 to 15 percent less than the replacement alternatives.

### **Other Measures to Minimize Harm to the 1917 I-5 Bridge**

Other measures to minimize harm to this 4(f) resource would include mitigation that will be developed through a Memorandum of Agreement (MOA) with consulting parties, in compliance with Section 106 of the National Historic Preservation Act. Such measures could include documenting the bridge prior to deconstruction, relocating and adaptively reusing elements of the existing bridge, developing interpretive information, and other measures to be determined in coordination with the Section 106 consulting parties.

### **5.5.3 Minimizing Harm to 4(f) Resources in Vancouver, South of the I-5/Mill Plain Interchange**

Section 4(f) resources are located adjacent to both sides of the I-5 right-of-way between the north shore of the Columbia River and the Mill Plain interchange. Any action that widens the right-of-way of I-5 or the I-5/SR 14 interchange could potentially impact the adjacent 4(f) properties, including:

- The Vancouver National Historic Reserve (VNHR)
- Old Apple Tree Park (parkland)
- Fort Vancouver Village (“Kanaka” Village; historic resource in the VNHR)
- Barracks Hospital (historic resource in the VNHR)
- The Providence Academy (historic resource)
- The Kiggins House (historic resource)
- The Waterfront Renaissance Trail (park and recreation resource)
- Waterfront Park (park and recreation resource)

These resources would be affected by the highway widening and I-5/SR 14 interchange improvements. The highway improvements associated with the replacement crossing generally would require more right-of-way than with the supplemental crossing. Potential ways to minimize harm include:

- Select the supplemental crossing option with its narrower footprint to reduce harm to the west edge of the VNHR, the Barracks Hospital, the Fort Vancouver Village area of the VNHR, Old Apple Tree Park, the Providence Academy, Waterfront Trail and Waterfront Park.
- Shift the replacement crossing alignment to the west to avoid the VNHR.
- Shift the replacement crossing slightly west (Intermediate Alignment) to reduce harm to the VNHR.
- Stack I-5 on-ramps from SR 14 vertically instead of aligning them side by side to reduce harm to the west edge of the VNHR.
- Reduce I-5 lane widths and/or shoulder widths below standards to reduce harm to the west edge of the VNHR and Barracks Hospital.

- Eliminate one or more proposed auxiliary lanes from I-5 between SR 14 and Mill Plain to reduce harm to the west edge of the VNHR, Barracks Hospital and the Academy.
- Select an SR 14 interchange design that reduces acquisition of VNHR property to reduce harm to the Fort Vancouver Village area of the VNHR, and Old Apple Tree Park.
- Select the SR 14 Left-Loop interchange design to reduce the direct impact to the Fort Vancouver Village area of the VNHR and Old Apple Tree Park.
- Refine the SR 14 Dual-Loop interchange design to reduce the direct impact to the Fort Vancouver Village area of the VNHR and Old Apple Tree Park.
- Reorient the I-5/SR 14 interchange to reduce direct impacts to the Fort Vancouver Village area of the VNHR and Old Apple Tree Park.

### **Select the Supplemental Crossing Option**

The supplemental crossing (part of Alternatives 4 and 5) has a narrower cross-section than the replacement crossing (part of Alternatives 2 and 3), with one less lane in each direction north of SR 14. It would also make no improvements to the eastern portion of the SR 14 interchange that abuts parts of the VNHR. This option would result in less impact on the VNHR resources, Waterfront Trail and Waterfront Park and would avoid the Providence Academy and Barracks Hospital. However, the supplemental crossing has an accumulation of performance deficiencies, adverse impacts and other factors, described in Section 5.5.2, that demonstrate why this option is not a reasonable measure to reduce harm to 4(f) resources.

### **Shift the Replacement Crossing Alignment to the West to Avoid the VNHR**

The CRC team has evaluated a potential refinement of the highway design for Alternatives 2 and 3 that would shift the I-5 alignment and proposed improvements to the west in order to fully avoid the VNHR (Exhibit 5.5-2). Shifting the alignment west would avoid the following impacts:

- Acquisition of 1.76 to 2.7 acres (0.4 to 0.6 percent) of the land within the VNHR, occupied largely by open space or road.
- Removal of a portion (about 2,000 square feet) of a single-story federal office building (not historic) and a garage (not historic) in the VNHR. The office building space would likely need to be replaced.

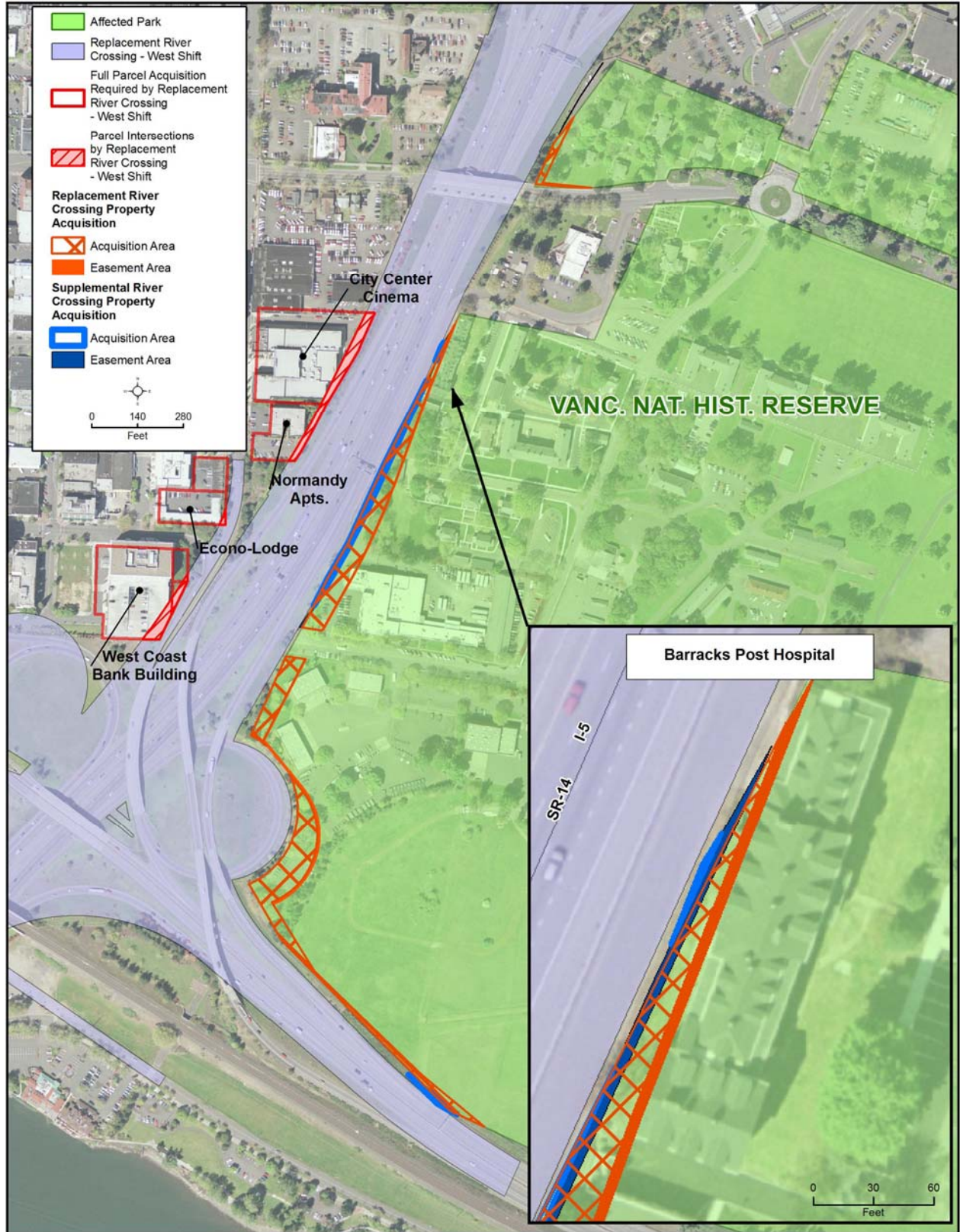
Because 4(f) resources are located on both sides of the I-5 right-of-way, it is not possible to make this shift without impacting the resources on the west side of I-5. There are also relatively large residential and commercial uses abutting the west side of I-5. Shifting the I-5 alignment west, in order to fully avoid acquiring any property from the VNHR, would result in:

- Demolishing at least a portion of the Normandy Apartments building (a historic resource that is eligible for the National Register of Historic Places).

- Displacing several and up to 40 households from the studio and one-bedroom apartments in the Normandy building. Based on US Census data some of these could be low income households. House-by-house surveys would be required to confirm the demographics of each household.
- Demolishing at least a portion of the parking garage associated with the West Coast Bank Building. This is a recently constructed project (70,000 square feet of commercial space and 21 condominium units) that is an important part of the downtown's revitalization and provides parking to residents and businesses in the vicinity.
- Demolishing at least a portion of the Econo-Lodge motel located just north of the West Coast Bank Building.
- Demolishing at least part of the City Center Cinema building (a 12-theatre complex – the largest in downtown Vancouver – that attracts people and activity to downtown, making it integral to the City's overall vision for an active and vibrant urban center).

Exhibit 5.5-2

**Highway Alignment and Proposed Improvements Shifted West<sup>a</sup>**



DIMENSIONS ARE APPROXIMATE.

<sup>a</sup> This shifted alignment of I-5 has three through lanes and four auxiliary lanes in each direction. All lanes and shoulders are standard width, but the barrier between the collector-distributor and through lanes has been narrowed by 8 feet. This results in a typical cross section that is 238 feet across.

This evaluation assumes that each of the buildings hit by this minimization measure would be only partially demolished, thus allowing some portion of the existing use of the buildings to continue. However, full demolition of one or more of the buildings may be required. Additional analysis would be conducted prior to finalizing the I-5 design and the ROD, to determine the feasibility and cost-effectiveness of fully demolishing versus partially demolishing and refacing each of these buildings.

The CRC project team has been meeting regularly with the NPS staff members who administer and manage the VNHR. The NPS has provided records from past archaeological investigations and historic research, as well as input regarding the relative importance of different elements of the VNHR and the potential impacts that the CRC alternatives would have on the VNHR. The NPS has provided a letter to WSDOT identifying various mitigation measures they would like the project to consider to address the effects on the VNHR associated with Alternatives 2 and 3. Some of these measures are among the potential mitigation listed in Section 3.8.5 of the DEIS. WSDOT and NPS are also preparing a Memorandum of Agreement that would allow the VNHR Partners to provide staff to assist in on-going archaeological investigations for the CRC project.

While Alternatives 2 and 3 would directly impact the VNHR, some of these impacts would be consistent with the NPS's VNHR Long-Range Plan and other VNHR management objectives described in Section 5.2.3. The NPS has plans to remove Anderson Road (located between I-5 and the Barracks Hospital) and replace it with landscaping that would better reflect the historic context of the hospital and/or to place sound barriers to reduce noise levels from I-5 traffic. Alternatives 2 and 3 would remove most of Anderson Road in this location, and would likely install a sound barrier and vegetation between I-5 and the hospital.

In addition, potential mitigation proposed by the administrator of the VNHR would further allow the NPS to implement important aspects of VNHR Long-Range Plan, Interpretive Plan, and other plans noted in Section 5.2.3. With mitigation, Alternatives 2 and 3 could have an overall benefit to the VNHR.

The impacts on buildings west of I-5 that would result from shifting I-5 to the west, and the lost opportunity for the VNHR to receive the mitigation-related benefits associated with direct impacts on VNHR land, may not be a reasonable trade-off for the VNHR impacts and mitigation that would be avoided with this minimization measure. A final determination will depend on on-going coordination with the NPS regarding impacts and mitigation, as well as analysis of the feasibility and cost-effectiveness of partially versus fully demolishing the buildings outside the VNHR on the west side of I-5.



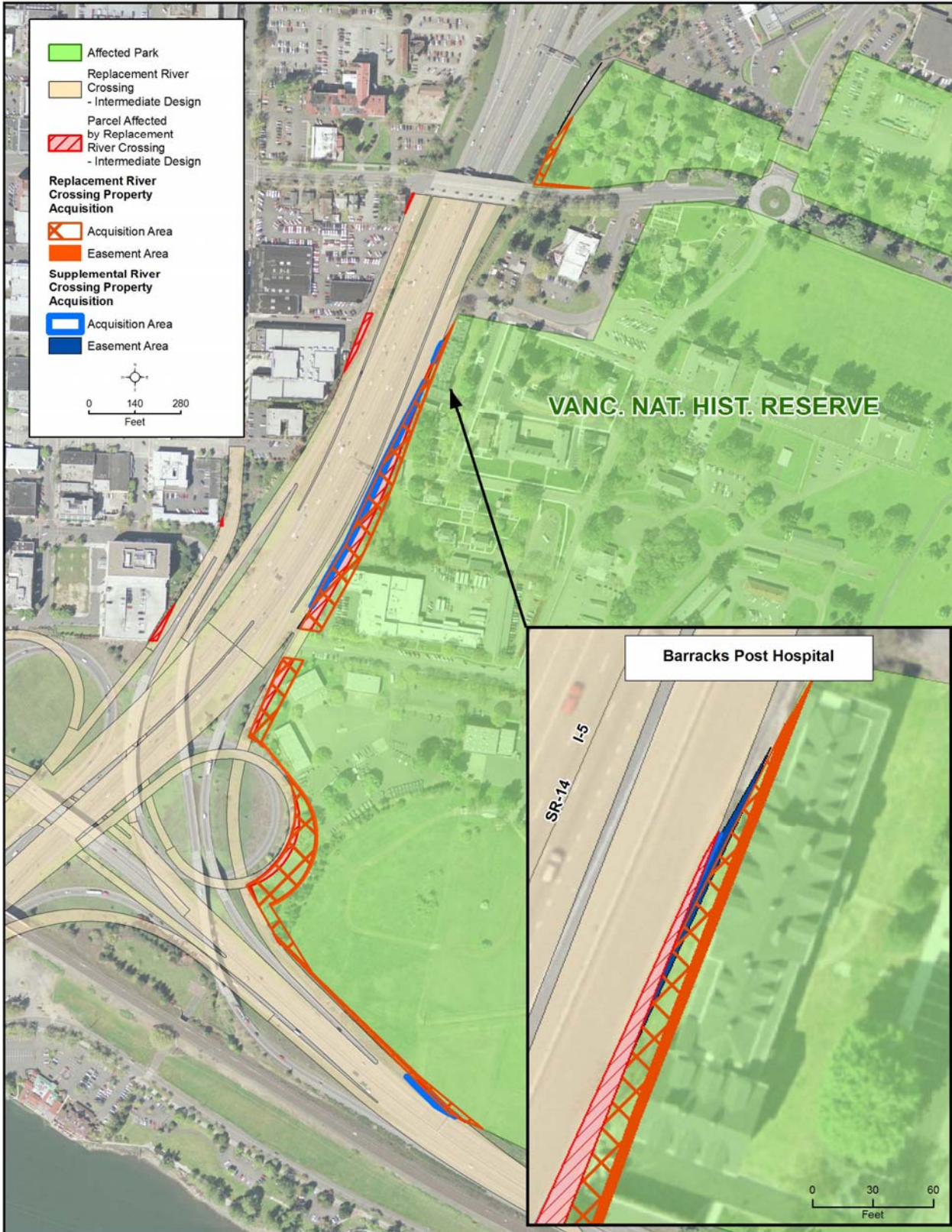
**Shift the Replacement Crossing to an Intermediate Alignment**

The CRC team has evaluated a potential refinement of the highway design for Alternatives 2 and 3 that would shift the I-5 alignment and proposed improvements slightly west in order to reduce impacts on the VNHR (Exhibit 5.5-3), while also minimizing impacts to 4(f) and non-4(f) resources on the west side of I-5. Selecting this alignment would reduce land acquired from VNHR along the I-5 and SR 14 interchange to about 0.8 acre, rather than 2.7 acres. This would also avoid directly affecting the federal office building on the VNHR, and could avoid affecting the Normandy Apartments building, the City Center Cinema building, and the parking garage associated with the West Coast Bank building.

This potential design refinement calls for narrowing the overall cross-section of I-5 in this location. The design shown does not appear to require any highway design standard exceptions. However, at this early phase of design, it is prudent to generally note that as design information progresses, some design standard exceptions may be necessary in order to achieve this level of minimization. If design exceptions are not required, or are required and warranted, this minimization measure would be a reasonable approach to minimizing harm to 4(f) resources, while also reducing impacts to other properties and community resources.

Exhibit 5.5-3

**Shift the Replacement Crossing to an Intermediate Alignment<sup>a</sup>**



DIMENSIONS ARE APPROXIMATE.

<sup>a</sup> The Intermediate Alignment has three through lanes and four auxiliary lanes in each direction. All lanes and shoulders are standard width, resulting in a typical cross section that is 246 feet across.

### **Stack I-5 Ramps to Reduce Overall Right-of-Way Width**

Stacking ramps vertically where I-5 is adjacent to the VNHR and Barracks Hospital would reduce the width of the proposed right-of-way. Selecting this measure (a modification of the highway improvements associated with Alternatives 2 and 3) could reduce but not avoid direct property acquisition from the west edge of the VNHR, but would locate a two-lane elevated structure approximately 25 feet above grade, adjacent to the VNHR from about SR 14 to north of Evergreen. The structure would be adjacent to the second story of the Barracks Hospital, a historic resource located on the VNHR. This would increase the visual and potential noise impacts to the Barracks Hospital, other parts of the VNHR, and other locations in downtown Vancouver. The National Park Service staff has indicated that this option is undesirable because of the substantially greater visual impacts to the Barracks Hospital and other parts of the VNHR. This measure would also eliminate the SR 14 to Mill Plain direct connection; current conditions include this direct connection, and keeping this connection is a high priority to the City of Vancouver. This is not considered to be a reasonable measure for minimizing harm to the VNHR, especially since there are other measures for reducing harm that would result in fewer adverse impacts.

### **Reduce I-5 Lane Widths and/or Shoulder Widths**

Reducing the width of I-5 lanes and/or shoulders (associated with Alternatives 2 and 3) in this segment would reduce the right-of-way width and thus reduce the direct property acquisitions on one or both sides of I-5. This could reduce, although not likely completely avoid, the amount of property acquired from the west side of the VNHR or from the Providence Academy. The impacts to the VNHR at this location would be relatively limited, as currently proposed, and would not require displacement of any historic buildings or above-ground features. The disadvantage of this measure is that narrower lanes and shoulders reduce highway safety and increase crashes. Some narrowing of lanes and shoulders may be acceptable, but would require additional safety and design analysis, as well as coordination with the NPS, to determine if the trade-off is reasonable.

### **Eliminate One or More I-5 Auxiliary Lanes between SR 14 and Mill Plain Interchanges**

Between SR 14 and Mill Plain Boulevard, the impact of Alternatives 2 and 3 on 4(f) resources (including the western edge of the VNHR, the Providence Academy, and the Normandy Apartments) could be reduced by eliminating one or two of the proposed auxiliary lanes in this section of I-5. This would reduce the basic I-5 lane configuration of Alternatives 2 and 3 to that of Alternatives 4 and 5 (the supplemental crossing) in this section of I-5. As currently designed, Alternatives 2 and 3 would not require displacing any buildings on the Providence Academy property or Normandy Apartments, or any historic buildings or features on the VNHR property. Therefore, reducing the auxiliary lanes in this section of I-5 would not preserve any historic buildings or historic features that would otherwise be displaced (see Section 6.3 for a description of the use of these properties). Eliminating auxiliary lanes would provide a meaningful but perhaps not substantial benefit to these 4(f) resources.

Such a benefit is likely not warranted given the degradation in highway safety, congestion and operations associated with this minimization measure.

Proposed auxiliary lanes in this area are used to extend the currently substandard weaving distance between the SR 14 and Mill Plain interchanges. Eliminating one or more of the proposed auxiliary lanes would violate highway design principles that were developed to help ensure safety and operational efficiency. Thus, this potential minimization measure is not reasonable.

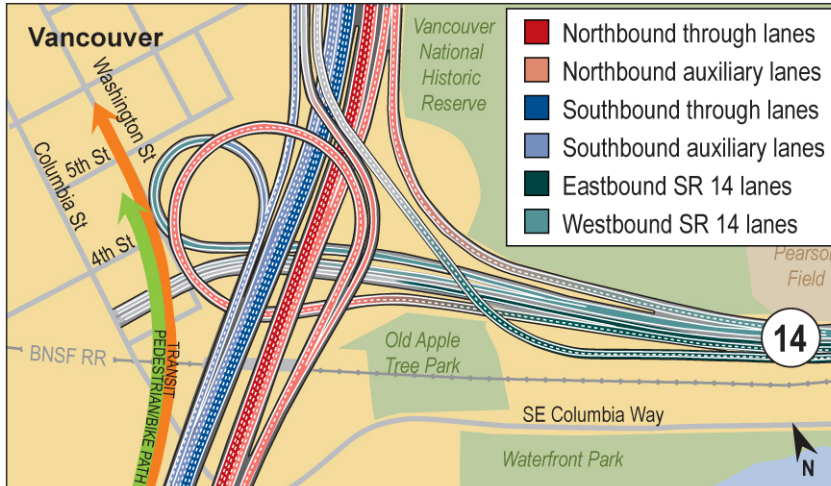
### **Select the SR 14 Left-Loop Interchange Design to Reduce the Direct Impact**

With Alternatives 2 and 3, two basic interchange designs are being considered for I-5/SR 14. The dual-loop was designed to meet highway design standards to bring the exit ramps down to grade from the higher bridge structure, while still providing a tight connection to SR 14 and downtown Vancouver.

The left-loop design (Exhibit 5.5-4) could reduce the direct use of VNHR property near the Fort Vancouver Village (“Kanaka” Village) area. The affected VNHR property is currently vacant, but is a Section 4(f) resource and likely contains archaeological resources. The disadvantages of the left-loop design are that it would be higher in the air and more visually intrusive on views from the VNHR, would cost more, would have greater traffic safety risks, and would intrude farther into the Pearson Field air space. This design would likely require design exceptions from FHWA. This minimization measure will receive further safety and design analysis to determine if it is reasonable.

Several meetings have been held with Federal Aviation Administration (FAA) and Pearson Field Airport staff to discuss CRC alternatives, identify concerns, and review conceptual alternatives and options. The FAA reaffirmed its procedure in stating that once a proposal is submitted the FAA aeronautical review will issue a finding of “hazard to aviation” or “no hazard to aviation.” They noted that it is ultimately up to the community to determine the preferable mode of transportation, and that service to Pearson may be affected if proposed improvements are not safe for aviation. Once a locally preferred alternative (LPA) is identified, FAA Form 7460 can be submitted to the FAA. Submitting this form will initiate the formal FAA aeronautical review process. FAA will review proposed construction and how it affects the Part 77 imaginary surface.

Exhibit 5.5-4

**SR 14 Interchange Replacement Crossing Left-Loop Design**

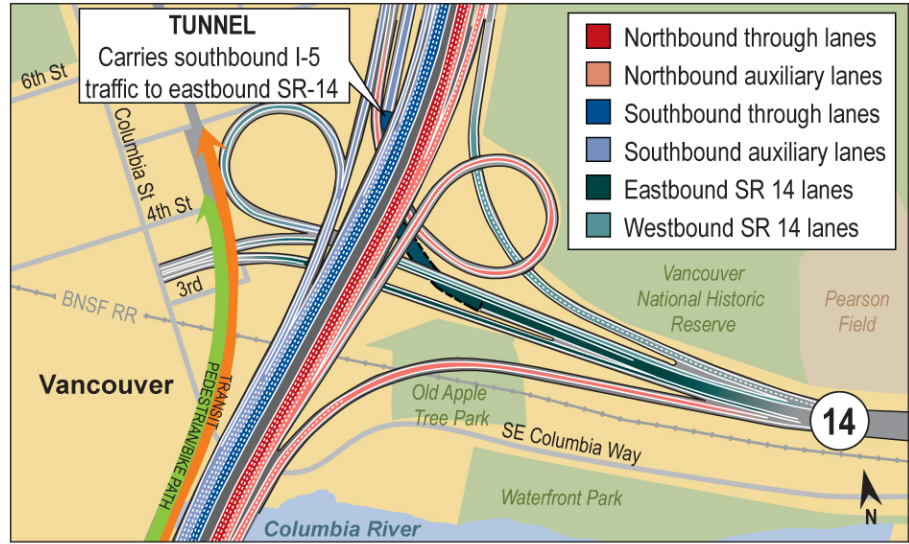
NOT TO SCALE

**Refine the SR 14 Dual-Loop Interchange Design to Reduce the Direct Impact**

Another potential measure for minimizing the impact of Alternatives 2 and 3 in this area would be to refine the design of the eastern loop of the SR 14 dual loop interchange (specifically, the I-5 northbound to City Center off-ramp and the SR 14 westbound to I-5 northbound ramp) so that neither of these would intrude into VNHR property (including the Fort Vancouver Village area) (Exhibit 5.5-5). This could be done by tightening the curve on the City Center off-ramp (to about a 20-15 mph design speed) and tightening the curve on the SR 14 to I-5 northbound ramp (to about a 35-30 mph design speed), as well as increasing ramp grades and decreasing spacing between off-ramps.

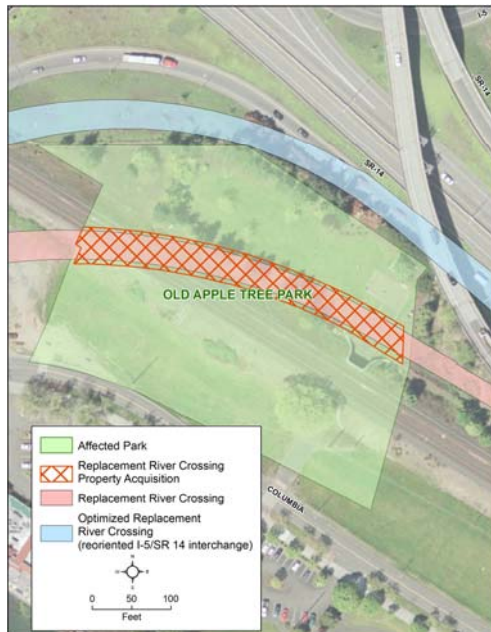
These changes would require design exceptions because they would not meet design safety standards for curve radius, ramp design speeds, grade, or spacing between ramps. Full avoidance of VNHR at this location may not be reasonable, given these impacts. However, it might be possible to make design revisions with acceptable safety standard exceptions that reduce, but do not avoid, the *use* of VNHR property. This is a potentially reasonable minimization measure and will be further evaluated for safety, design and other impacts.

Exhibit 5.5-5

**SR 14 Interchange Replacement Crossing Dual-Loop Design****Reorient the I-5/SR 14 Dual-Loop Interchange Design to Reduce Direct Impacts**

This refinement of the dual loop SR 14 interchange design (part of Alternatives 2 and 3) would reorient the I-5/SR 14 interchange, locating the I-5 northbound to SR 14 eastbound ramp farther north to avoid direct use of the Old Apple Tree Park, and shift the alignment of the I-5 mainline slightly west to enter the SR 14 interchange from a different angle. Exhibit 5.5-6 shows how the ramp that cuts across Old Apple Tree Park under the standard design for the replacement crossing would be relocated to avoid the Old Apple Tree Park with this reoriented design of the I-5/SR 14 interchange. This refinement would increase the impact on the hotel (Red Lion) property located on the west side of the SR 14 interchange. This hotel property would already be impacted by the CRC project even without this reorientation of the I-5/SR 14 interchange. The Red Lion property is not a 4(f) resource. This change would not compromise the design speeds of the loop ramps. This appears to be a reasonable minimization measure and will continue to be considered.

Exhibit 5.5-6

**Two Ramp Alignment Options at Old Apple Tree Park**

DIMENSIONS ARE APPROXIMATE.

**Other Measures for Reducing Impacts to 4(f) Resources in This Segment**

Use of the Waterfront Trail might be avoided by ensuring that bridge demolition and construction of new facilities and structures (1) would meet Section 4(f) temporary *use* criteria and (2) would involve replacement or relocation of the trail and its recreational qualities and functions in a manner approved by the official having jurisdiction. This is a reasonable measure to minimize harm to the trail.

A variety of other measures, such as sound walls and vegetative buffers where I-5 borders the VNHR, could help reduce harm to the VNHR.

**5.5.4 Minimizing Harm to 4(f) Resources in Vancouver, North of the I-5/Mill Plain Interchange**

This subarea includes resources that would be impacted by potential highway or transit improvements along I-5, as well as by potential transit improvements on the Lincoln terminus. Section 4(f) resources potentially *used* by the CRC alternatives include:

- Marshall Community Park
- Clark College recreation fields
- Residence, 903 E 31 Street
- Office, 300 E 37th Street
- Office, 3212 Main Street
- Leverich Park
- Kiggins Bowl Area

- Residence/office, 401 E McLoughlin
- Residence, 611 E McLoughlin
- Residence, 3000 K Street
- Residence 3110 K Street

Potential measures for minimizing harm to these resources are described below.

**Select the Supplemental Crossing and Highway Option**

The supplemental crossing (part of Alternatives 4 and 5) would generally have lower impacts to 4(f) resources than the replacement crossing (part of Alternatives 2 and 3), including slightly lower impacts on the Clark College recreation fields and Leverich Park. However, it is not a reasonable option given its deficient performance, other impacts, and accumulation of unique problems. The discussion above outlines why the supplemental crossing and highway improvements are not a reasonable approach to minimizing harm to 4(f) resources, compared to the replacement crossing.

**Select the Replacement Crossing and Highway Option**

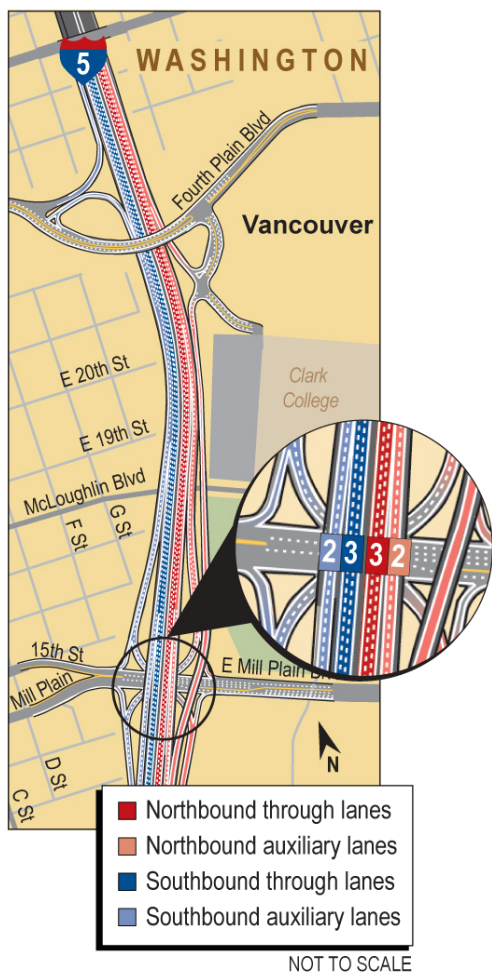
The replacement crossing (part of Alternatives 2 and 3) would have less impact on the potentially historic residence at 3000 K Street than the supplemental crossing. The replacement crossing would also completely avoid impacting the historic residence at 3110 K Street. However, although this crossing and highway option would minimize or avoid impacts to these two resources, they would result in greater impacts to other 4(f) resources. Additional measures, discussed below, could further reduce the impacts of the replacement crossing on 4(f) resources. Selecting this option is a reasonable measure.

**Revise the Replacement Crossing and Highway Options**

Three potential revisions to the replacement crossing highway improvements (associated with Alternatives 2 and 3) are being considered in order to reduce harm to Marshall Community Park, Leverich Park, and potentially, the historic residence at 3000 K Street.

- Realigning or narrowing the Mill Plain to Fourth Plain ramps just north of the Mill Plain interchange along the east side of I-5 (Exhibit 5.5-7) could reduce the impacts on Marshall Community Park. This measure appears reasonable, but would require additional design to make a final determination.
- Under the proposed design in the DEIS, Leverich Park air space is impacted and there could be one or more piers on park property. Realigning the westbound SR 500 to northbound I-5 elevated ramp (Exhibit 5.5-8) and using a fill wall could reduce the impacts on Leverich Park. Realigning this ramp would require a shorter radius curve. Given the safety tradeoff associated with this measure, and given that the impact is likely *de minimis*, this is likely not a reasonable approach for minimizing harm to Leverich Park.

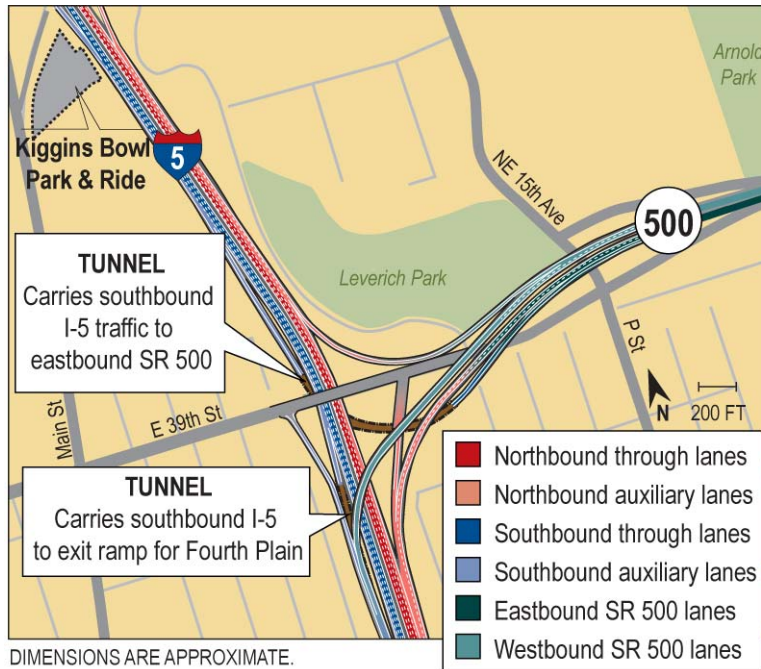
Exhibit 5.5-7  
**Supplemental Crossing – Fourth Plain and Mill Plain Interchanges**





- Realigning I-5, narrowing lanes and shoulders, or modifying a retaining wall type could reduce impacts to the historic residence at 3000 K Street. However, the impact to this resource would not be a full acquisition, only a portion of the parcel. Reducing lane and shoulder widths to reduce highway safety and adjusting the alignment further west would likely result in additional full displacements on the west side of I-5. Therefore, this is not likely a reasonable measure for minimizing harm to 4(f) resources.

Exhibit 5.5-8  
SR 500 Interchange



### Select the Lincoln or Mill Plain MOS Terminus Options

Selecting the Lincoln or Mill Plain MOS terminus option (under all alternatives) would likely be a reasonable measure for minimizing harm to 4(f) resources. It would avoid the adverse effects of the Kiggins Bowl or Clark College MOS terminus options, including the *use* of the residences at 401 E McLoughlin (partial property acquisition) and 611 E McLoughlin (partial property acquisition). It would also avoid the adverse effects unique to the Kiggins Bowl terminus, including the full displacement of the residence at 903 E 31st Street and the *use* of a portion of Leverich Park. It would, however, have greater impacts to residences and businesses and would require greater overall property acquisition.

### Select the Kiggins Bowl Terminus

Selecting the Kiggins Bowl terminus (with all alternatives) would result in greater harm to 4(f) resources than selecting the Lincoln terminus. However, this would avoid using the one historic resource *used* by the Lincoln terminus, would displace fewer businesses and residences, and would acquire less property. Although it would cause greater harm to 4(f) resources, that would be offset by notably lesser direct impacts on other community resources. Therefore, this is likely a reasonable measure for minimizing harm.

### Revise the Lincoln Terminus

It might be possible to reduce the impacts of the Lincoln terminus option to the Clark College recreation fields, the office at E 37th Street, the office at 3212 Main Street, and the Kiggins Bowl area.

- Reducing or adjusting the footprint of the Clark College Park and Ride could potentially reduce the effect on the Clark College recreation fields. This is potentially reasonable and will be further explored.
- Adjusting the alignment or narrowing traffic lanes or sidewalks could potentially reduce impacts on the offices at E 37th Street and 3212 Main Street. Given the narrow right-of-way in this location and the anticipated safety impacts, this may not be reasonable, but it will be further explored.
- Reducing or adjusting the footprint of the Kiggins Bowl Park and Ride could potentially reduce the effect on the recreational trail. The effect might be considered a *de minimis* impact. This is potentially reasonable and will be further explored.

### Revise the Kiggins Bowl Terminus

It might be possible to reduce the impacts of the Kiggins Bowl terminus option to the Clark College recreation fields; the residences at 903 E 31st Street, and at 401 and 611 E. McLoughlin Boulevard; Leverich Park; and Kiggins Bowl.

- Reducing or adjusting the footprint of the Clark College Park and Ride could potentially reduce the effect on the Clark College recreation fields. This is potentially reasonable and will be further explored.
- Shifting the transit and/or highway alignment, narrowing travel lanes and shoulders, or modifying wall construction techniques could potentially reduce the *use* (full displacement) of the residence at 903 E 31st Street. However, reducing lane and shoulder widths would reduce highway safety, and adjusting the alignment would likely result in additional full displacements on the west side of I-5. Therefore, this is likely not a reasonable measure for minimizing harm to 4(f) resources but will continue to be explored.

- Shifting the alignment or narrowing traffic lanes and sidewalks could reduce the impact to the residences at 401 and 611 E McLoughlin Boulevard. This measure would reduce traffic and pedestrian safety, or would increase the impact on the opposite side of McLoughlin, which also contains eligible historic resources. This is likely not a reasonable measure for reducing harm to 4(f) resources, but it will be further explored.
- Adjusting the transit terminus alignment or modifying the retaining wall construction technique could potentially reduce the direct effect on Leverich Park. This might be reasonable, but would require further study if the Kiggins Bowl terminus option is selected. This impact might be considered a *de minimis* use.
- Reducing or adjusting the footprint of the Kiggins Bowl Park and Ride (with bus rapid transit) could potentially reduce the effect on the recreational trail and Kiggins Bowl. Revising the proposed bus rapid transit alignment between Kiggins Bowl and I-5 could reduce the *use* of the Kiggins Bowl parcel by the transit terminus. Both of these measures are potentially reasonable and will be further explored. The effect might be considered a *de minimis* use.

#### **Select the Mill Plain Minimum Operable Segment**

Terminating high-capacity transit at the Mill Plain terminus would avoid the 4(f) *uses* associated with the Kiggins Bowl terminus option, including the *use* of Leverich Park and the residences at 903 E 31st Street (full displacement), 401 E McLoughlin (partial property acquisition), and 611 E McLoughlin (partial property acquisition). It would also avoid the *use* (full displacement) of the office at 300 E 37th Street and the *use* (no displacement) of the office at 3200 Main Street. Selecting this MOS would reduce harm to 4(f) resources. However, it would not provide the same transit service benefits envisioned with either of the full-length transit terminus options.

#### **Select the Clark College Minimum Operable Segment**

Terminating high-capacity transit at the Clark College Park and Ride would avoid the Section 4(f) *uses* associated with the Kiggins Bowl terminus option north of Clark College, including the *use* of Leverich Park and the *use* of the residence at 903 E 31st Street (full displacement). It would also avoid the *use* (full displacement) of the office at 300 E 37th Street and the *use* (no displacement) of the office at 3212 Main Street. Selecting this MOS would reduce harm to 4(f) resources. However, it would not provide the same transit service benefits envisioned with either of the full-length transit terminus options.

## 5.6 Net Impact Analysis

As discussed above, there are no prudent and feasible alternatives that can avoid all Section 4(f) resources. Therefore, it is necessary to determine which alternative would result in the least overall harm to 4(f) resources, taking into account the net impacts to 4(f) resources after applying reasonable measures to minimize harm. Based on the analysis in Section 5.5, some of the measures that could minimize harm to 4(f) resources are not reasonable, when the potential benefit those measures would provide to some 4(f) resources is weighed against the additional impacts that would result to other 4(f) and non-4(f) resources. Such options and measures are not recommended and are therefore not analyzed in this section.

Because the CRC project is currently in the conceptual design phase, it is not possible to draw conclusions about the reasonableness of all potential measures to minimize harm. This draft 4(f) Evaluation carries all reasonable and potentially reasonable measures forward for consideration. These measures will be further evaluated as the CRC project sponsors identify a locally preferred alternative and refine the project design. In all cases, measures to minimize harm to 4(f) resources will be considered in coordination with the relevant consulting parties for historic resources, and with the officials with jurisdiction for park resources.

Exhibits 5.6-1 and 5.6-2 summarize the potential measures that have been considered to avoid or minimize harm, and indicate which 4(f) resources would be benefited by each measure. They also indicate whether each measure would be considered reasonable, potentially reasonable, or unreasonable, based on the analysis in this chapter.

The preliminary findings on least net harm are presented by geographic area, consistent with the organization of Section 5.5.

### 5.6.1 Net Section 4(f) Resource Impacts in Portland

Based on preliminary findings, the least net harm to 4(f) resources in Portland, using reasonable measures to minimize harm, would result with the replacement river crossing combined with the realignment of the proposed on-ramps to northbound I-5 at the Marine Drive interchange. This realignment, intended to avoid displacing the Pier 99 Marina (a 4(f) resource), will require further design evaluation to ensure that it is reasonable and feasible and that the design exceptions it would require are justified.

### 5.6.2 Net Section 4(f) Resource Impacts to the 1917 Interstate Bridge

There is no reasonable measure for avoiding a 4(f) *use* of the 1917 Interstate bridge. The supplemental river crossing would result in less harm to this bridge than the replacement crossing, but it is not a reasonable measure, for the reasons listed below and described in greater detail in Section 5.5.2. The supplemental crossing would have:

- Higher seismic vulnerability
- Greater impacts and degradation of river navigation safety, potentially to levels that are unacceptable to the United States Coast Guard

- Minimal benefits to traffic safety, mobility, congestion and travel time
- Higher adverse impacts on downtown Vancouver land use, circulation, and development
- Higher adverse impacts to neighborhoods and populations on Hayden Island
- Higher adverse impacts and fewer benefits to threatened and endangered species and the natural environment
- Higher maintenance and operation costs.

The least net harm to the 1917 bridge, using reasonable measures to minimize harm, would result from the replacement river crossing, combined with mitigation measures to be developed through a Memorandum of Agreement in compliance with Section 106 of the National Historic Preservation Act. Such measures could include documentation, relocation and adaptive reuse of elements of the existing bridge, developing interpretive information, and other measures to be determined in coordination with the Section 106 consulting parties.

Exhibit 5.6-1

**Measures to Minimize Harm: Portland to Mill Plain Boulevard Interchange**

Minimization Measure	Reasonable Measure? <sup>a</sup>	4(f) Resources that would be used by one or more CRC alternatives											
		Pier 99 Marina	1917 Interstate Bridge	VNHR/ FVNS	Apple Tree Park	Heritage Apple Tree	Fort Vancouver Village	Barracks Hospital	Normandy Apts	The Providence Academy	The Kiggins House	Waterfront Renaissance Trail	Waterfront Park
Relocate Marine Drive/I-5 Interchange farther east	Likely not reasonable	Minimizes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Relocate Marine Drive/I-5 Interchange ramps farther west	Potentially reasonable	Minimizes; Potentially Avoids	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Select supplemental river crossing	Not reasonable	N/A	Minimizes	Minimizes	Avoids	Avoids	Avoids	Minimizes	Avoids	Minimizes	Avoids	Minimizes	Minimizes
Shift replacement crossing alignment west to avoid VNHR	Potentially reasonable	N/A	N/A	Avoids	N/A	N/A	Minimizes	Avoids	Higher impact	N/A	N/A	N/A	N/A
Shift replacement crossing west to intermediate alignment	Potentially reasonable	N/A	N/A	Minimizes	N/A	N/A	Minimizes	Minimizes	Avoids	N/A	N/A	N/A	N/A
Stack I-5 on-ramps from SR 14 vertically	Not reasonable	N/A	N/A	Minimizes	N/A	N/A	N/A	Minimizes	N/A	Minimizes	Minimizes	N/A	N/A
Reduce I-5 lane/shoulder widths	Potentially reasonable	N/A	N/A	Minimizes	Minimizes	N/A	Minimizes	Minimizes	N/A	Minimizes	Minimizes	N/A	N/A
Eliminate one or more I-5 aux. lanes between SR 14 and Mill Plain	Likely not reasonable	N/A	N/A	Minimizes	Minimizes	N/A	Minimizes	Minimizes	N/A	Minimizes	Minimizes	N/A	N/A
Select the SR 14 Left-loop design	Likely not reasonable	N/A	N/A	Minimizes	N/A	N/A	Minimizes	N/A	N/A	N/A	N/A	N/A	N/A
Refine SR 14 Dual-Loop design	Potentially reasonable	N/A	N/A	Minimizes	N/A	N/A	Minimizes	N/A	N/A	N/A	N/A	N/A	N/A
Reorient I-5/SR 14 interchange	Reasonable	N/A	N/A	Minimizes	Avoids	Avoids	Minimizes	N/A	N/A	N/A	N/A	N/A	N/A

<sup>a</sup> "Potentially reasonable" indicates that, based on the current level of design and information, this measure appears to be reasonable. "Likely unreasonable" indicates that based on the current level of design and information, this measure appears to be unreasonable. These measures will be further examined during the preparation of the FEIS prior to any final determination.

Exhibit 5.6-2

**Measures to Minimize Harm: North of Mill Plain Boulevard Interchange**

Minimization Measure	Reasonable Measure? <sup>a</sup>	4(f) Resources that would be used by one or more CRC alternatives											
		Marshall Community Park	Clark College Fields	Residence, 903 E 31st	Office, 300 E 37th St	Office, 3200 Main Street	Office, 3212 Main Street	Leverich Park	Kiggins Bowl Area	Residence/office, 401 E McLoughlin	Residence, 611 E McLoughlin	Residence, 3000 K St	Residence, 3110 K St
Select Supplemental Crossing and Highway	Not reasonable	N/A	N/A	N/A	N/A	N/A	N/A	Minimizes	N/A	N/A	N/A	N/A	N/A
Select Replacement Crossing and Highway	Reasonable	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Minimizes	Avoids
Realign or narrow ramps north of Mill Plain	Potentially reasonable	Minimizes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Realign WB SR 500 to NB I-5 elevated ramp	Likely not reasonable	N/A	N/A	N/A	N/A	N/A	N/A	Minimizes	N/A	N/A	N/A	N/A	N/A
Realign I-5 north of Fourth Plain	Likely not reasonable	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Minimizes	Minimizes
Narrow lanes and shoulders of I-5	Potentially reasonable	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Minimizes	Minimizes
Modify retaining wall	Potentially reasonable	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Minimizes	Minimizes
Select Lincoln terminus option	Potentially reasonable	N/A	N/A	Avoids	N/A	N/A	N/A	N/A	N/A	Avoids	Avoids	N/A	N/A
Select Kiggins Bowl terminus option	Potentially reasonable	N/A	N/A	N/A	Avoids	Avoids	Avoids	N/A	N/A	N/A	N/A	N/A	N/A
Reduce/adjust footprint of Clark College P & R	Potentially reasonable	N/A	Avoids or Minimizes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Adjust transit alignment, or narrow traffic lanes/sidewalks	Potentially reasonable	N/A	N/A	Minimizes	Minimizes	Minimizes	Minimizes	N/A	N/A	Minimizes	Minimizes	N/A	N/A
Reduce/adjust footprint of Kiggins Bowl P & R	Potentially reasonable	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Minimizes	N/A	N/A	N/A	N/A

Minimization Measure	Reasonable Measure? <sup>a</sup>	4(f) Resources that would be used by one or more CRC alternatives											
		Marshall Community Park	Clark College Fields	Residence, 903 E 31st	Office, 300 E 37th St	Office, 3200 Main Street	Office, 3212 Main Street	Leverich Park	Kiggins Bowl Area	Residence/office, 401 E McLoughlin	Residence, 611 E McLoughlin	Residence, 3000 K St	Residence, 3110 K St
Adjust Kiggins Bowl terminus or retaining wall construction method	Potentially reasonable	N/A	N/A	N/A	N/A	N/A	N/A	Minimizes	N/A	N/A	N/A	N/A	N/A
Select Mill Plain MOS	Potentially reasonable	N/A	N/A	Avoids	Avoids	Avoids	Avoids	Avoids transit-related use	N/A	Avoids	Avoids	N/A	N/A
Select Clark College MOS	Potentially reasonable	N/A	N/A	Avoids	Avoids	Avoids	Avoids	Avoids transit-related use	N/A	N/A	N/A	N/A	N/A

<sup>a</sup> "Potentially reasonable" indicates that, based on the current level of design and information, this measure appears to be reasonable. "Likely unreasonable" indicates that based on the current level of design and information, this measure appears to be unreasonable. These measures will be further examined during the preparation of the FEIS prior to any final determination.



### 5.6.3 Net Section 4(f) Resource Impacts in Vancouver, South of the I-5/Mill Plain Interchange

Based on preliminary findings, the least net harm to 4(f) resources in Vancouver south of the I-5/Mill Plain interchange, using reasonable measures to minimize harm, would result with the following:

1. The replacement river crossing.
2. Shift I-5 alignment west (or to an intermediate alignment if the full shift proves to be unreasonable) in order to avoid or reduce direct *use* of the VNHR, avoid impacts to Normandy Apartments, and reduce impacts on non-4(f) properties adjacent to I-5.
3. For the SR 14 interchange, either:
  - a. The SR 14 left loop interchange, or
  - b. A refined version of the dual loop interchange (to reduce direct *use* of the VNHR). This would include re-orienting the I-5/SR 14 interchange and relocating the I-5 northbound to SR 14 eastbound ramp, to avoid *use* of the Old Apple Tree Park and the Heritage Apple Tree and reduce direct *use* of the VNHR.
4. Mitigation for impacts to the VNHR. These would be developed through a Memorandum of Agreement (MOA) in compliance with Section 106 of the National Historic Preservation Act. Discussions of potential mitigation with the National Park Service have already begun. Mitigation could include reconstruction of historic buildings, development of curation and/or interpretive facilities, construction of an expanded overpass/cover-connection between Evergreen Boulevard and 5th Street, and/or other measures to be determined through the MOA. Mitigation for impacts to the VNHR will be determined in coordination with the Section 106 consulting parties.

Measures 2, 3a, and 3b above would require additional design analysis before a final decision could be made on the least net harm alternative in this corridor segment. On-going design analysis will be needed to ensure that exceptions to highway design standards required by these proposed design modifications would be justified. In addition to safety concerns, the visual impacts of the SR 14 left-loop interchange option (3a) on views from the VNHR could make this an unreasonable measure. Making a final determination on this measure will require additional design and impact analysis as well as coordination with consulting parties. This will occur prior to publication of the Final 4(f) Evaluation and Final EIS.

#### **5.6.4 Net Section 4(f) Resource Impacts in Vancouver, North of the I-5/Mill Plain Interchange**

The least net harm to 4(f) resources in Vancouver north of the I-5/Mill Plain interchange, using reasonable measures to minimize harm, would result with the following:

1. The replacement river crossing.
2. Realigning or narrowing the Mill Plain to Fourth Plain ramps, just north of the Mill Plain interchange, along the east side of I-5 (to reduce the impacts on Marshall Community Park).
3. Reducing lane and shoulder widths near 3000 K Street (to reduce the impacts to the historic residence at 3000 K Street).
4. For the transit terminus, either:
  - a. The Kiggins Bowl terminus with revisions, as described in Section 5.5.4 (to reduce harm to the Clark College recreation fields; the residences at 903 E 31st Street, 401 E McLoughlin Boulevard, and 611 E McLoughlin Boulevard; and Leverich Park and Kiggins Bowl); or
  - b. The Lincoln terminus with revisions, as described in Section 5.5.4 (to reduce harm to the Clark College recreation fields, the offices at E 37th Street and 3212 Main Street, and Kiggins Bowl).

Measures 2 and 3 require additional design analysis before a final conclusion can be made on the least net harm alternative in this corridor segment. On-going design analysis would be needed to determine whether exceptions to highway design standards required by these proposed design modifications would be justified.

The least net harm to 4(f) resources from the two full-length transit alignments cannot be determined at this time. The net harm to 4(f) resources from the Kiggins Bowl and Lincoln terminus options would be similar. Reaching a conclusion regarding least net harm will require additional analysis of the potential measures to minimize harm for each alignment. This will be part of the on-going design, impact analysis, and coordination that will be included in the Final EIS and 4(f) Evaluation.

## 5.7 Preliminary Conclusion

As discussed above, none of the alternatives that could avoid all Section 4(f) resources is prudent and feasible.

The range of alternatives includes components and options that can avoid one or more 4(f) resources, and a variety of measures have been evaluated that could further minimize harm to 4(f) resources. The net impact of the various measures and the reasonableness of the measures has been evaluated. Additional design work, mitigation development, and coordination will be required to make a final conclusion on which measures are reasonable, and what combination of reasonable measures will cause the least overall harm. However, based on the current conceptual designs and the analysis completed to-date, the least overall harm to 4(f) resources, using reasonable measures to minimize harm, would result with the following:

**The Replacement River Crossing and Highway Improvements.** The replacement crossing, with the following modifications, is the reasonable approach to achieving the least net harm to 4(f) resources:

- Realign the proposed on-ramps to northbound I-5 at the Marine Drive interchange to avoid displacing the Pier 99 Marina.
- Shift the I-5 alignment west (or to an intermediate alignment if the full shift west proves to be unreasonable) to avoid or reduce direct *use* of the VNHR, avoid impacts to Normandy Apartments, and reduce impacts to non-4(f) properties adjacent to I-5). These measures will need further design and analysis to determine whether they are reasonable and any design exceptions justified.
- Select either the SR 14 left loop interchange, or a refined version of the dual loop interchange (to reduce direct *use* of VNHR). Both of these options will need further design and analysis to determine whether they are reasonable and the design exceptions justified.
- Reorient I-5/SR 14 and relocate the I-5 northbound to SR 14 eastbound ramp, to avoid *use* of the Old Apple Tree Park and Heritage Apple Tree, and reduce direct *use* of the VNHR.
- Realign or narrow the Mill Plain to Fourth Plain ramps just north of the Mill Plain interchange along the east side of I-5, to reduce the impacts to Marshall Community Park. This measure will need further design and analysis to determine whether it is reasonable and the design exceptions justified.
- Reduce lane and shoulder widths near 3000 K Street to reduce the impacts to the historic residence at 3000 K Street. This measure will need further design and analysis to determine whether it is reasonable and the design exceptions justified.

**Either Light Rail or Bus Rapid Transit.** The transit mode makes no meaningful difference to the impacts on 4(f) resources, although light rail would result in lower noise levels at adjacent 4(f) resources than bus rapid transit. Transit noise levels would not cause a *use* of any 4(f) resources.

**Either the Kiggins Bowl or Lincoln Terminus Options.** The net harm to 4(f) resources from the Kiggins Bowl and Lincoln terminus options would be similar in magnitude. Measures to minimize harm to 4(f) resources have been evaluated for both of these terminus options. Reaching a final conclusion regarding least net harm will require additional design work and analysis of the potential of each measure to minimize harm. This will be part of the on-going design, impact analysis, and coordination that will be included in the Final EIS and 4(f) Evaluation. Choosing either the Clark College MOS or Mill Plain MOS would result in a substantially shorter transit alignment, and would avoid the *use* of several 4(f) resources thus resulting in less net harm to 4(f) resources than either of the longer terminus options to Kiggins Bowl or Lincoln. However, MOS options are generally considered to be the first phase of a multi-phased transit line. As such, an MOS could be constructed as an interim phase until additional funding could be acquired to extend the transit line further. The MOS options are therefore not considered to be least net harm alternatives.

**Other Measures.** A variety of mitigation measures for historic resources will be developed through a Memorandum of Agreement in compliance with Section 106 of the National Historic Preservation Act. Discussions of potential mitigation for impacts on the VNHR have begun with the National Park Service. Final mitigation for impacts to the VNHR will be determined in coordination with the Section 106 consulting parties.

The CRC project team will continue to evaluate ways to reduce impacts on 4(f) resources, so that the proposed action will include all possible planning to minimize harm to Section 4(f) properties. A final conclusion will be made as part of the Final Section 4(f) Evaluation that will accompany the Final Environmental Impact Statement.

## 5.8 Coordination

Project sponsors have coordinated with nine Tribes, the Washington Department of Archaeology and Historic Preservation, the Oregon State Historic Preservation Office, the National Park Service, the City of Vancouver, the City of Portland, and other interested parties in identifying 4(f) resources, evaluating the *use* of 4(f) resources, and considering potential measures for minimizing harm. This coordination will continue through selection of a locally preferred alternative, final design, and construction.