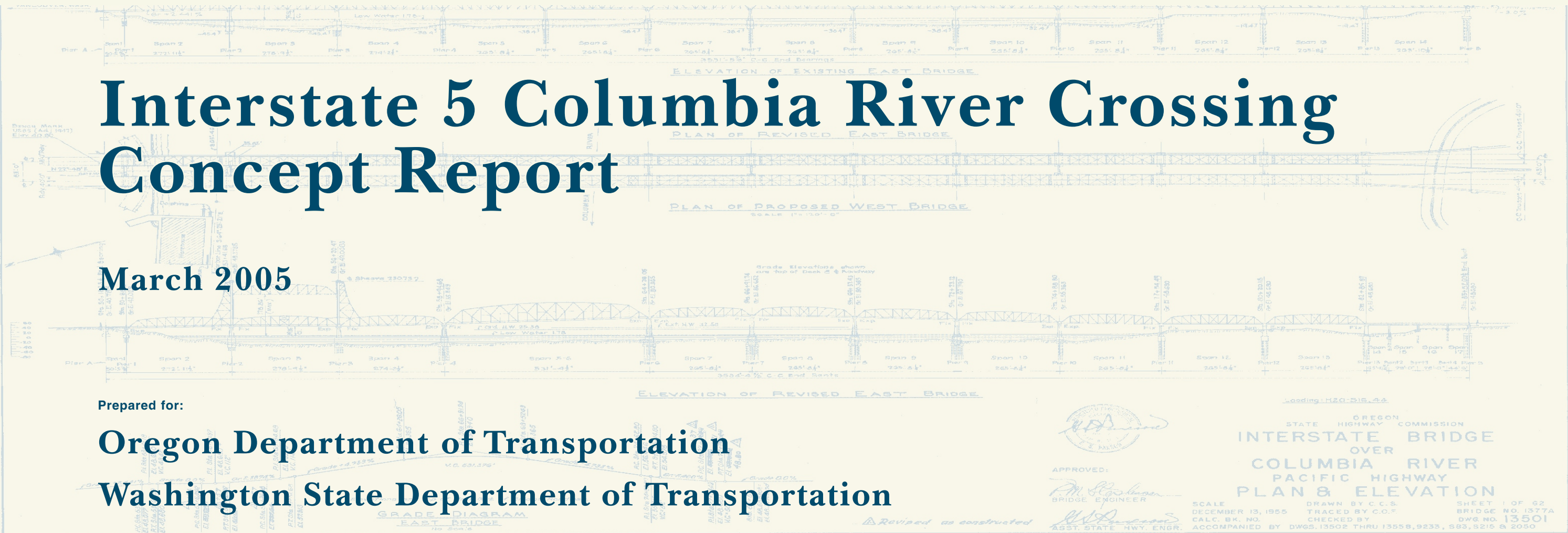


# Interstate 5 Columbia River Crossing Concept Report

March 2005

Prepared for:  
**Oregon Department of Transportation**  
**Washington State Department of Transportation**



APPROVED: *[Signature]*  
 BRIDGE ENGINEER

ASST. STATE HWY. ENGR. *[Signature]*

STATE HIGHWAY COMMISSION  
**INTERSTATE BRIDGE**  
 OVER  
**COLUMBIA RIVER**  
**PACIFIC HIGHWAY**  
**PLAN & ELEVATION**

SCALE: DECEMBER 13, 1955  
 CALC. SK. NO. 15  
 DRAWN BY C.C.S.  
 TRACED BY C.O.  
 CHECKED BY  
 ACCOMPANIED BY DWGS. 13502 THRU 13558, 9233, 563, 5215 & 2050

SHEET 1 OF 52  
 BRIDGE NO. 1377A  
 DWG NO. 13501

Prepared by:  
**Kittelson & Associates, Inc.**  
 610 SW Alder, Suite 700  
 Portland, Oregon 97205  
[www.kittelson.com](http://www.kittelson.com)

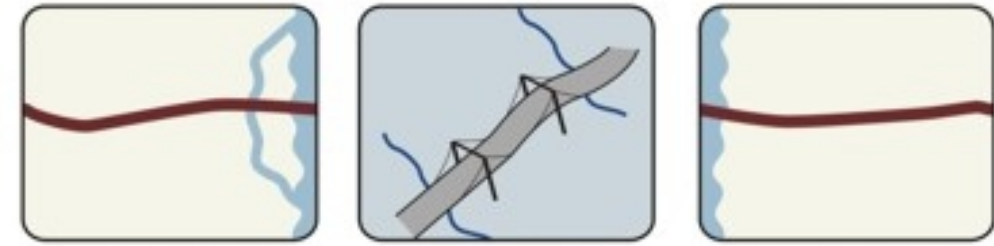
In association with:  
**CH2M HILL**  
**Howell Consulting, LLC**  
**JD White Company**  
**Parsons Brinckerhoff**  
**Right-of-Way Associates, Inc.**





# Interstate 5 Columbia River Crossing Concept Report

March 2005



Prepared for:

**Oregon Department of Transportation  
Washington State Department of Transportation**

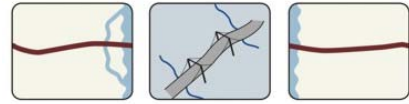
Prepared by:

**Kittelson & Associates, Inc.**  
610 SW Alder, Suite 700  
Portland, Oregon 97205  
[www.kittelson.com](http://www.kittelson.com)

In association with:

**CH2M HILL**  
Howell Consulting, LLC  
JD White Company  
Parsons Brinckerhoff  
Right-of-Way Associates, Inc.





**Table of Contents**

Why This Report?..... 1

Why This Report?..... 1

What Work Has Already Been Done? ..... 1

Where Are We Now?..... 1

River Crossing Concepts ..... 3

What Happens During Scoping?..... 3

Next Steps..... 4

Environmental and Engineering Considerations ..... 5

**List of Figures**

Figure 1 - Project Vicinity Map ..... 1

Figure 2 - Overview of Interstate 5 Columbia River Crossing Concepts and Approach and  
Alignment Strategies ..... 2

Figure 3 NEPA Process..... 4

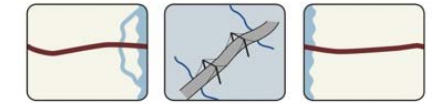
Figure 4 - I-5 Columbia River Crossing Environmental Considerations..... 6

Figure 5 - I-5 Columbia River Crossing Engineering Considerations..... 8

**List of Tables**

Table 1- River Crossing Concept Schematic Concept Description.....3





### Why This Report?

After six years of discussions and preliminary planning, the I-5 Columbia River Crossing Project is now beginning formal environmental analysis under the guidance of the National Environmental Policy Act (NEPA). One of the first steps in the NEPA process is called "Scoping". The Scoping process is an opportunity for the region's citizens, businesses, public agencies, and jurisdictions to help determine what project alternatives will be studied during the environmental analysis and how they will be evaluated. Figure 1 illustrates the project vicinity map.

This Concept Report has been prepared as a project summary to assist with the scoping process. It is a reference tool to help people get up to speed quickly on the project work already done, and to describe the context for the upcoming environmental analysis.

### What Work Has Already Been Done?

- 1999** A committee of community leaders examined I-5 Trade Corridor to consider how to address growing congestion in the I-5 corridor between Portland and Vancouver. The committee's report emphasized the need for action.
- 2001** A Governor's Task Force was appointed to guide the development of a strategic plan for the corridor. The Task Force engaged the public, affected communities, businesses, and other stakeholders to ensure that a broad range of viewpoints was reflected in their work. The Task Force developed 20 possible concepts, and conducted an additional analysis on nine full corridor options.
- 2002** The Governor's Task Force issued its Final Strategic Plan for the Interstate-5 Corridor with the following recommendations for further study:
  - I-5 operating with three through lanes in each direction, including southbound through Delta Park.

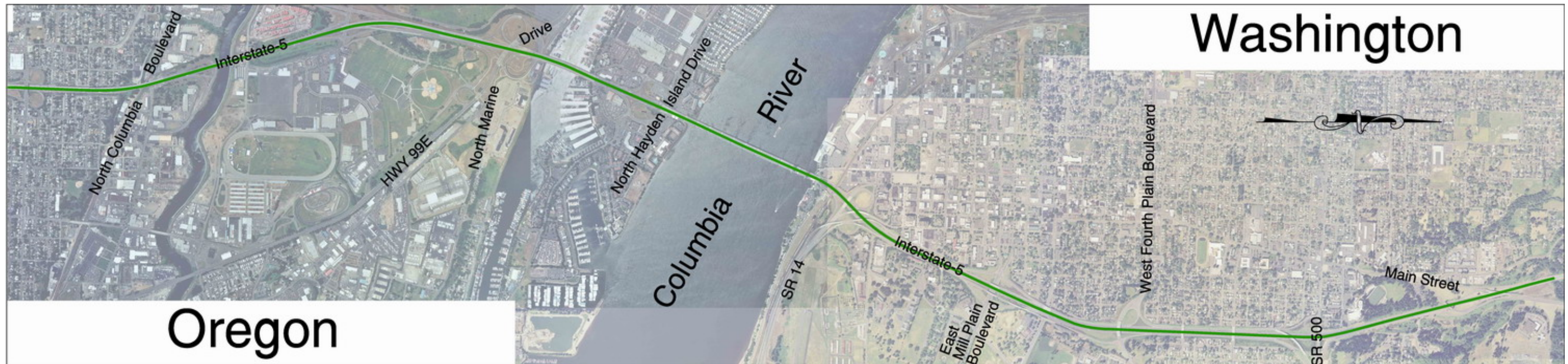
- A phased light rail loop operating in Clark County in the vicinity of the I-5, SR-500/4th Plain and I-205 corridors.
- A new bridge or bridges to supplement or replace the existing bridges with three through lanes in each direction plus up to two additional lanes in each direction to serve merging traffic, plus two light rail tracks.
- Interchange improvements and additional merging lanes where needed between SR-500 in Vancouver and Columbia Boulevard in Portland, including a full interchange at Columbia Boulevard.
- Additional analysis of possible improvements in a Bridge Influence Area (BIA), defined as I-5 between Columbia Boulevard and SR-500.
- 2004** Oregon and Washington Departments of Transportation prepared additional analysis of Columbia River Crossing project concepts, including traffic and transportation performance, financing issues, statutory/regulatory issues and engineering and environmental review.

### Where Are We Now?

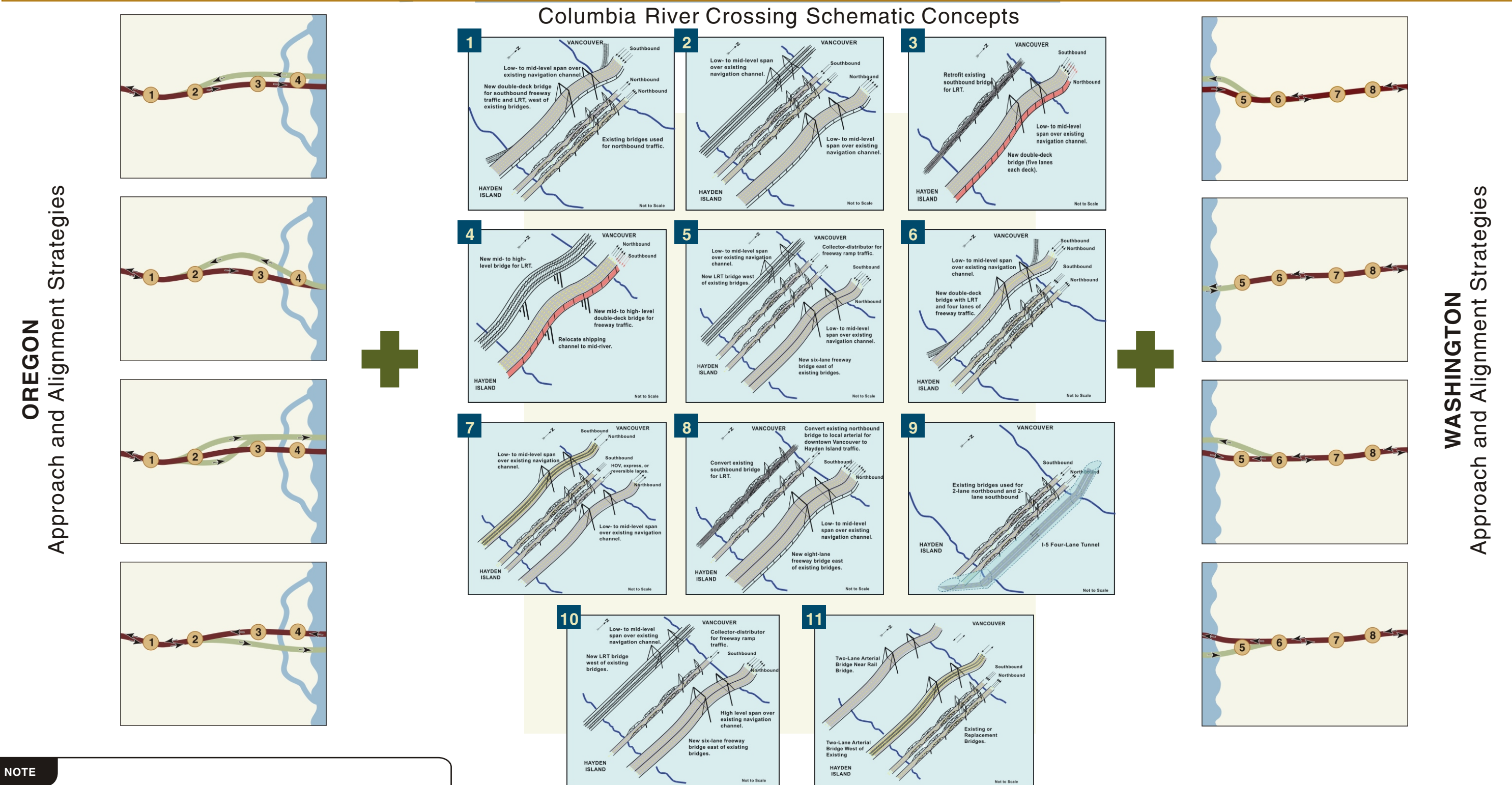
The current status of the Columbia River Crossing Project is:

- There are four roadway alignment strategies for I-5 on the Oregon and Washington sides of the river, illustrated in Figure 2. Different roadway alignment strategies are needed to connect with different river crossing concepts.
- There are 11 multi-modal concepts for the Columbia River Crossing (CRC) illustrated in Figure 2. These include options for: supplementing or replacing the current bridges; single- and double-deck concepts; single or multiple bridges as well as a supplemental tunnel; and fixed-span or lift-span bridges. A tabular summary of each concept is provided in Table 1.
- While each of the illustrations represent the transit component of the concept with railroad tracks, the environmental process will study a range of high capacity transit options, including but not limited to enhanced bus service, bus rapid transit and light rail transit (LRT).

Figure 1- Project Vicinity Map



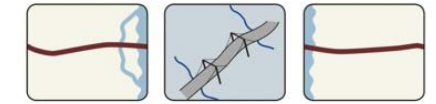




**NOTE**  
Not all river crossings concepts fit with all approach and alignment schematic strategies and vice versa. Through NEPA, the strengths of different concepts and alignment strategies will be evaluated to develop alternatives that meet the purpose and need of the project while minimizing the environmental and community impact.

**Overview of Interstate 5 Columbia River Crossing Schematic Concepts and Approach and Alignment Strategies**

**FIGURE 2**

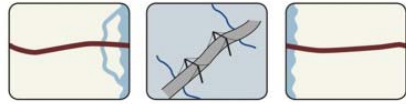


### River Crossing Concepts

Table 1 provides a description of the 11 Columbia River Crossing schematics concepts that have been considered to date. Figure 2 provides an illustration of the schematic concept. The possible crossings concepts include single or double deck bridges, a tunnel, additional bridges for high capacity transit or new arterials, lift and fixed spans, and bridges on either the east or west side of the existing bridges.

**Table 1 - Columbia River Crossing Schematic Concept Descriptions**

| Crossing Characteristic   | Concept 1  | Concept 2                             | Concept 3   | Concept 4  | Concept 5  | Concept 6   | Concept 7   | Concept 8  | Concept 9  | Concept 10  | Concept 11   |
|---|--|---------------------------------------|---|--|--|---|---|--|--|---|--|
| <b>Crossing Type</b>  | Double-deck Bridge (High Capacity Transit on lower deck) | Single-deck Bridge                    | Double-deck Bridge  | Double-deck Bridge   | Single-deck Bridge   | Double-deck Bridge (High Capacity Transit on lower deck)              | Single-deck Bridge  | Single-deck Bridge   | Tunnel   | Could be developed as Concepts 3, 4, 5, or 8 (shown as Concept 5) | Two Single-deck Bridges  |
| <b>Location</b>   | West of existing bridges                                 | Near existing east bridge             | Near existing bridges   | East of existing bridges   | East of existing bridges   | West of existing bridges  | Vehicle bridge east of existing bridges.  | East of existing bridges   | East of existing bridges   | Could be developed as Concepts 3, 4, 5, or 8 (shown as Concept 5) | One immediately west of existing bridges and one further west near existing BNSF |
| <b>Northbound Traffic</b>   | Existing bridges (five-lanes)                            | New bridge (five-lanes)               | Lower-deck (five-lanes)   | Upper-deck (five-lanes)  | Three-lanes on east side of new bridge   | Two lanes on new bridge and three lanes on existing northbound bridge | New three-lane bridge. Possible HOV, express or reversible lane traffic on existing northbound I-5 bridge.          | Three-lanes on the east side of new bridge   | Two northbound and southbound-lanes in Tunnel Arterial Traffic on Existing Bridges | Could be developed as Concepts 3, 4, 5, or 8 (shown as Concept 5) | Three-lanes on existing east bridge; arterial traffic on new bridges             |
| <b>Southbound Traffic</b>   | Upper-deck (five-lanes)                                  | Existing bridges (five to six -lanes) | Upper-deck (five-lanes)   | Lower-deck (five-lanes)  | Three-lanes on west side of new bridge)  | Two lanes on new bridge and three lanes on existing southbound bridge | Existing southbound I-5 bridge. Possible HOV, express or reversible lane traffic on existing northbound I-5 bridge. | Three-lanes on the west side of new bridge   | Two-lanes in Tunnel Arterial Traffic on Existing Bridges                           | Could be developed as Concepts 3, 4, 5, or 8 (shown as Concept 5) | Three-lanes on existing west bridge; arterial traffic on new bridges             |
| <b>High Capacity Transit</b>                                      | Lower deck of new bridge                                 | New bridge west of existing bridges   | Retrofitted existing southbound bridge  | New fixed span bridge west of new structure  | New lift span bridge west of existing bridges  | On lower deck of new bridge   | New bridge west of existing bridges   | On retrofitted existing southbound I-5 bridge.   | New bridge west of existing bridges  | Could be developed as Concepts 3, 4, 5, or 8 (shown as Concept 5) | On new arterial bridges immediately west of existing bridges                     |
| <b>Lift Span?</b>   | Yes; Over existing channel                               | Yes; Over existing channel            | Yes; Over existing channel<br>This concept could be converted to an elevated lift span concept over the existing shipping | No – fixed span. Requires relocation of shipping channel to mid-river<br>This concept could be converted to an elevated lift span concept over the existing shipping channel | Yes; Over existing channel<br>This concept could be converted to an elevated lift span concept over the existing shipping channel. | Yes; Over existing channel  | Yes; Over existing channel  | Yes; Over existing channel<br>This concept could be converted to an elevated lift span concept over the existing shipping channel. | Yes: Over Existing Channel   | No – Fixed Span   | Yes; Over existing channel   |
| <b>Separate Collector-Distributor Roads or Arterial Crossings</b> | No   | No                                    | No  | No (See Concept #3)  | Yes, Retrofitted   | No  | No  | Yes, Northbound Bridge   | Yes  | No  | Yes  |
| <b>New Rail Freight Bridge</b>                                    | No   | No                                    | No  | Potentially  | Existing, No   | No  | No  | No   | No   | No  | No   |



As the environmental process proceeds, the approach and alignment strategies and crossing concepts developed to date may be considered as pieces of a puzzle for developing NEPA project alternatives.

In addition to the physical configurations of river crossing and freeway elements, the upcoming work will also look at project financing. At least some options are likely to consider bridge tolls to finance project construction and operations.

- Tolling I-5 Only: This study option would assume that travelers pay a toll on the I-5 bridge in both the northbound and southbound directions. The I-205 Bridge would provide a toll-free alternative.
- Tolling I-5 and I-205: This study option would assume that travelers pay a toll on both bridges, but only in one direction. That is, both bridges would be tolled either northbound or southbound.

In addition to evaluating tolling as a financing option, the Environmental Impact Statement would also study tolling related facilities and impacts, including toll plazas, the freeway widening to accommodate the plazas, and the associated buildings, lighting and other features.

### What Happens During Scoping?

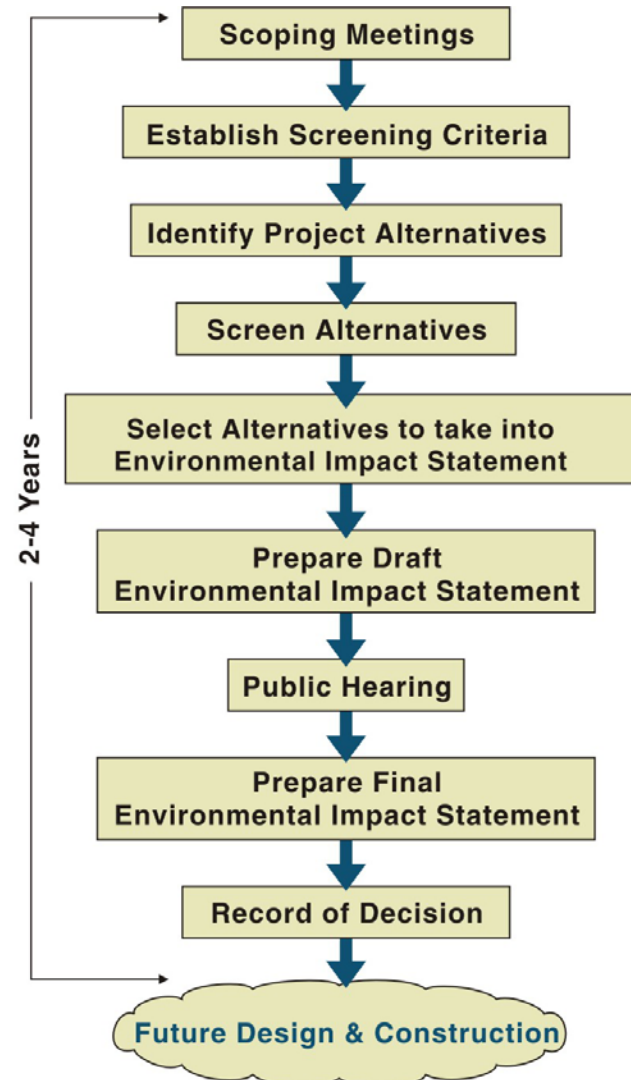
The Scoping process is a series of meetings with agencies and jurisdictions and with interested citizens, organizations and businesses. Well-publicized public meetings will be scheduled at convenient places and times to encourage people to attend.

At the scoping meetings this report will be supplemented with additional display materials and presentations. Staff from the Oregon and Washington Departments of Transportation and other agencies and jurisdictions will be available to answer questions, engage in discussion and record comments. Comments can also be submitted in writing.

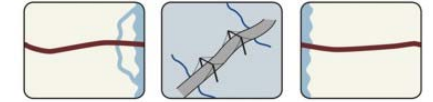
### What Happens After Scoping?

Based on all of the work done to date, and the discussion and comments received during the scoping process, the project sponsors (both states and the federal government) will establish screening criteria and select alternatives to carry forward into the NEPA environmental analysis. Partner agencies, jurisdictions and the public will continue to be involved in the project work throughout the NEPA process, from beginning to end. There are a series of standard steps (Figure 3) that the environmental process will follow after the scoping meeting. All of these steps will include extensive public involvement. This Concept Report has been prepared as a summary document to assist with the initial scoping meetings. It is a reference tool for agencies, jurisdictions, and public stakeholders to use to quickly come up to speed and understand the context for the upcoming environmental analysis.

Figure 3 - NEPA Process







## Environmental and Engineering Considerations

In the work that has been completed to date, the I-5 Columbia River Crossing project extends from the Victory Boulevard interchange in Oregon to the SR-500/39th Street Interchange in Washington. As the project evolves, the geographic project limits will be developed consistent with the requirements of NEPA.

Environmental Studies for the Columbia Boulevard interchange are being completed as part of a different project.

### ENVIRONMENTAL CONSIDERATIONS

Figure 4 illustrates the currently known environmental considerations that need to be explored. The considerations include possible neighborhood and business impacts, fish and wildlife impacts, and potential wetland and park impacts. These and many other issues will be raised and discussed at the agency, jurisdiction and stakeholder/public scoping meetings.

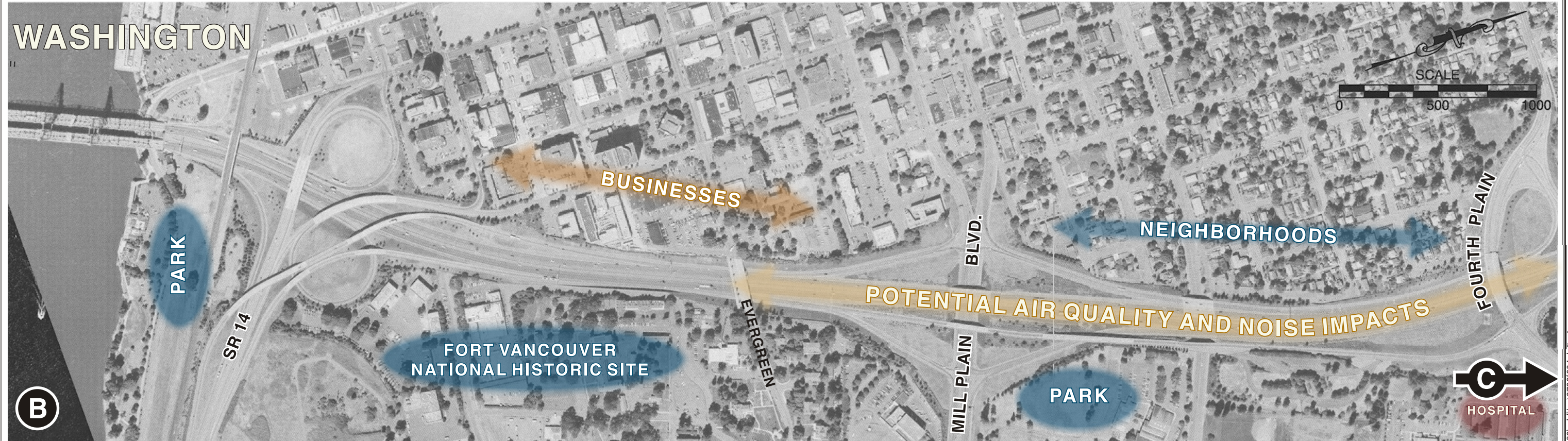
### ENGINEERING CONSIDERATIONS

Engineering considerations are shown in Figure 5. Vertical clearance requirements (that is the space under and over the bridge(s) to accommodate rail, river and aviation traffic) will directly influence the type of crossing and the connections between Interstate-5 and SR-14, Marine Drive, and Downtown Vancouver.

The distance between current interchanges is relatively short on both the Oregon and Washington approaches – this will influence the possible interchange forms, possible connections between the interchanges and bridge, and the degree of connectivity to the surrounding roadways.

These and many other issues will be considered as part of the project scoping process to ensure that the environmental impact study team has sufficient knowledge to develop a project plan that appropriately addresses all critical issues.



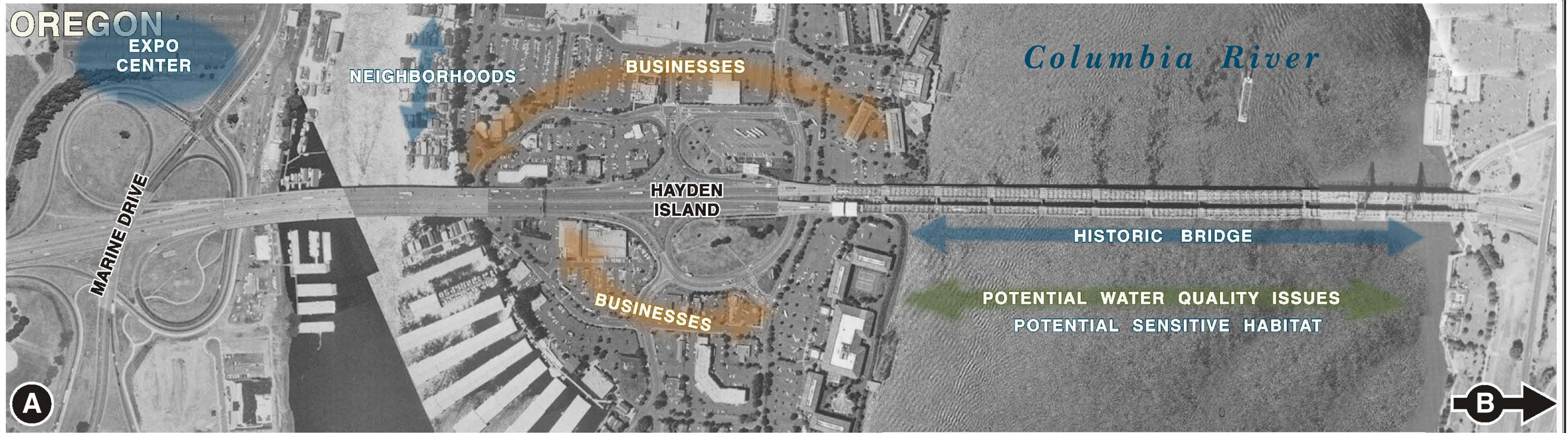


Note: Actual impacts have not been analyzed.

I-5 Columbia River Crossing Environmental Considerations

FIGURE 4



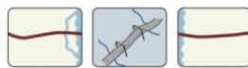


Note: Actual impacts have not been analyzed.

I-5 Columbia River Crossing Environmental Considerations

FIGURE 4

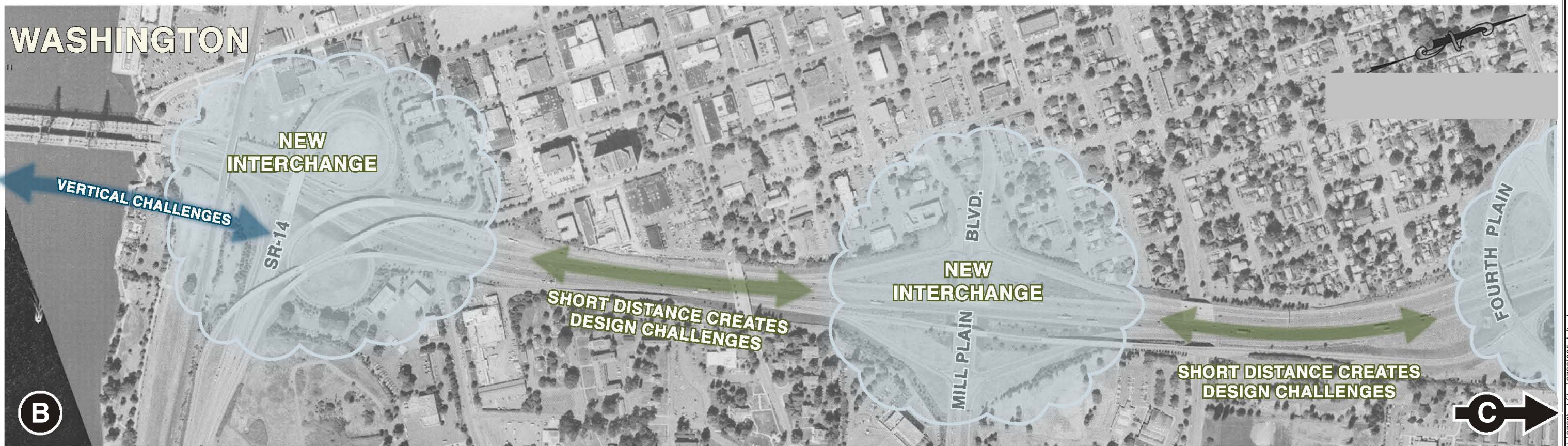




# OREGON



# WASHINGTON



I-5 Columbia River Crossing Engineering Considerations

FIGURE 5

I:\profile\6780\cdrfiles\6780\005\_1left.cdr





I-5 Columbia River Crossing Engineering Considerations

FIGURE 5



