



# JOINT TRANSPORTATION COMMITTEE

P.O. Box 40937 · 3309 Capitol Boulevard SW · Tumwater, WA 98501 · (360) 786-7313 · <http://www.leg.wa.gov/jtc>

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## Agenda

### Columbia River Crossing Oversight Subcommittee – Meeting # 3

Tuesday, October 9, 2012

1:30 pm – 5:30 pm

WSDOT SW Region Offices

11018 NE 51<sup>st</sup> Circle, Vancouver, WA 98682

- 1:30 PM**      **Welcome .....** **Rep. Mike Armstrong**
  
- 1:35 PM**      **Update on bi-state toll setting agreement .....** **Paul Parker, Jennifer Ziegler**
  - Overview of ESSB 6445
  - Update on Sept 19<sup>th</sup> meeting in Pendleton between Oregon and Washington Transportation Commissions, including an outline of governance options developed and discussed; the Commissions’ reactions to them; and next steps.
  
- 1:50 PM**      **Review of financing assumptions from each state .....** **Nancy Boyd and Kris Strickler**
  - Project cost and finance assumptions
  - How much funding is needed to satisfy the conditions of ESSB 6445 (Sec 7)?
  
- 2:05 PM**      **Detailed finance plan discussion**
  - Overview of financial plan .....** **Amy Arnis, WSDOT; Nancy Boyd and Kris Strickler**
    - Outline the elements of the CRC financial plan, current status, and the schedule to develop a complete financial plan
  - Tolling .....** **Nancy Boyd, Kris Strickler and Craig Stone, WSDOT**
    - Discuss the elements at play in the tolling conversation, including relevant budget provisos, status of updated traffic and revenue work, tolling and bonding assumptions, fuel and gas price assumptions, cost of toll collections, whether pre-completion tolling is under consideration, and related topics.

(OVER)

**Federal TIFIA loan ..... Amy Arnis**

- Discuss specifics related to the project’s application for a federal TIFIA loan, including how much the project expects to apply for and the schedule for doing so, what the TIFIA loan will pay for, what happens if the award is less than anticipated, whether phasing the project would reduce the likelihood of success in obtaining the TIFIA loan, and related topics.

**3:20 PM BREAK**

**3:30 PM Update on Coast Guard Bridge Permit ..... Kris Strickler and Jay Lyman**

- Coast Guard response to bridge permit workplan
- Bridge height
- Survey of river users

**4:20 PM Public comment**

- Members of the public are invited to provide comments to the Oversight Subcommittee. Presentations will be limited to no more than 3 minutes each.

**5:20 PM Future meetings and agenda topics ..... Mary Fleckenstein**

**5:30 PM Adjourn**

**Next meeting: Monday, December 10, 2012, Vancouver, WSDOT’s SW Region Headquarters**

# Columbia River Crossing

A long-term, comprehensive solution

**Paula Hammond**

Secretary of Transportation

# Topics to be covered

- **Bi-state toll setting agreement update**
- **Cost and finance assumptions**
- **Finance plan**
  - **Overview**
  - **Tolling**
  - **Federal TIFIA loan**
- **General bridge permit update**

# Bi-state toll setting agreement update



## **2012 Washington tolling legislation, ESSB 6445**

- **Designated the Columbia River Crossing project as an “Eligible Toll Facility”**
- **Creates the Columbia River Crossing account**
- **Authorizes the Washington State Transportation Commission to enter into agreements with the Oregon State Transportation Commission regarding the joint setting, adjustment and review of toll rates.**
- **Any agreement between the two Commissions is not enforceable until 30 days after the next regular legislative session.**
- **If the Washington Commission has not entered into an agreement by December 31, 2015, this authority expires.**

# Bi-State tolling structure options

- **Separate state bonds and joint toll-setting with**
  - The full commissions, or
  - Commission subcommittees, or
  - Full commissions and subcommittees.
- **Washington issues all toll-back bonds and sets tolls**

# Washington-Oregon Tolling Discussion

The preferred approach identified at the meeting:

- Joint toll setting structure, where each commission maintains their existing rate setting authority.
- Develop a subcommittee of the two Commissions to advise each Commission on rate setting.
- Separate debt in each state for their share of the toll backed portion of the project.
- Much discussion, but no agreement among Commissioners, on whether to include a tie-breaker process.
- If there must be a tie-breaker, strong preference from Washington Commissioners to avoid the third-party consultant option that was suggested.



# Washington-Oregon Tolling Discussion



## Next steps:

- Prepare a joint letter of commitment for forward movement to be signed by both chairs
- Work with a subcommittee to address and work on the Intergovernmental Agreement between the two Commissions.

The two commission chairs are scheduled to talk to this Oversight Committee on December 10.

# Washington-Oregon Tolling Discussion

Joint Subcommittee members are:

- \* Oregon: Chairman Pat Egan and Mary Olson
- \* Washington: Dick Ford, Philip Parker, Anne Haley

# Cost and finance assumptions



# Construction cost estimates and fund sources



Oregon Roadway and Interchanges	Cost	Funding Source	Columbia River Bridge and Approaches	Cost	Funding Source	Light Rail Transit Extension	Cost	Funding Source	Washington Roadway and Interchanges	Cost	Funding Source
<b>Oregon Roadway and Interchanges Total</b>	\$595 million	State and/or federal funds	<b>Columbia River Bridge and Approaches Total</b>	\$1.2 billion	Tolls and State or Federal funds	<b>Light Rail Transit Extension Total</b>	\$850 million	FTA New Starts	<b>Washington Roadway and Interchanges Total</b>	\$435 million	State and/or Federal Funds

Total costs based on 2011 CEVP and assume a 95-foot bridge height = \$3.1 billion

Targeted Columbia River Crossing Funding Sources	Amount (billions)
FTA New Starts (light rail).....	\$0.85
FHWA.....	\$0.4
Tolls.....	\$0.9 - \$1.3
OR/WA.....	\$0.9
<b>TOTAL FUNDING SOURCES</b>	<b>\$3.05 - \$3.45</b>

# ESSB 6445 (Sec 7)

- **Tolls may not be collected until:**

- (1) Certification by Secretary of Transportation to Governor that WSDOT has received satisfactory evidence that sufficient funding, including federal funds, will be available to complete the phase of the CRC that includes construction of the Columbia River bridge and landings; and
- (2) The agreements described in Section 4 have taken effect
  - Tolling authority may enter into agreements with Oregon State Transportation Commission regarding the mutual or joint setting, adjustment, and review of toll rates
  - Any agreement between the tolling authority and OTC takes effect 30 days after adjournment of the next ensuing regular legislative session.
  - If the tolling authority hasn't entered into an agreement with OTC by Dec. 31, 2015, this section expires

- **If certification isn't submitted by Dec. 31, 2015, the statutory designation of the Columbia River Crossing as an eligible toll facility is void.**

# Proposed construction sequence

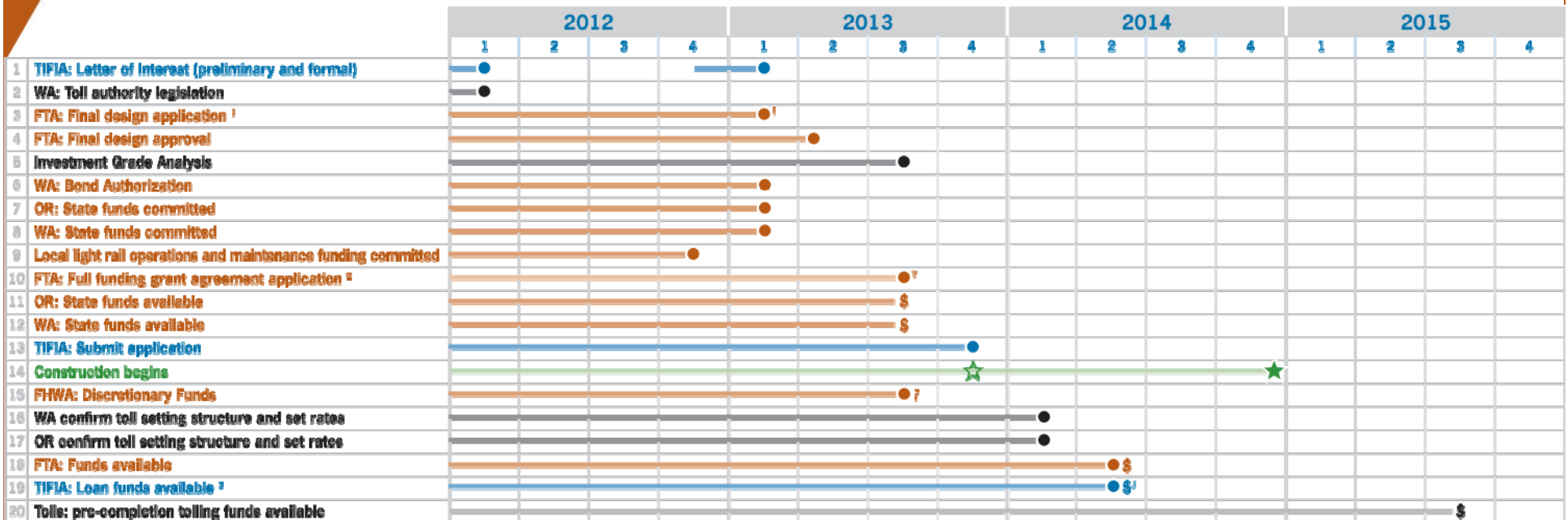


- Marine Drive/Hayden Island  
(4 years, starting 2018)
- Mainland connector  
to Hayden Island  
(2 years, starting 2015)
- OR Transit  
(3-4 years, starting 2016)

- River Crossing  
and approaches  
(6 years, starting 2014)
- Bridge demolition  
(1.5 years, starting 2021)

- WA North (Mill Plain Blvd., Fourth Plain Blvd.,  
29th St., 33rd St., SR 500)  
(5 years, starting 2016)
- Park and rides  
(and misc. transit)  
(2 years, starting 2015)
- WA Transit  
(4-5 years, starting 2015)

# Funding schedule (subject to change)



## Estimated funding sources

Federal Transit .....	\$850 M
Federal Highway .....	\$400 M
Tolls* .....	\$900 M - \$ 1.3 B
OR/WA state funds (\$450/each) .....	\$900 M

\*TIFIA is a federal loan and credit program. Tolls are the revenue source for the loan. The federal backed loan program reduces coverage ratio for tolls.

<sup>1</sup> Must have 50% non-FTA funds committed or budgeted. Tolling authority in 2012 expected to meet this requirement. MAP-21 may effect FTA New Starts requirements.

<sup>2</sup> Must have all funds authorized.

<sup>3</sup> TIFIA is typically the last funding source. Must have full finance plan and FTA approved.

## KEY

● ● ● ★ = Due Date    BLUE = TIFIA    BLACK = Tolling    ORANGE = FTA, FHWA and State Funding

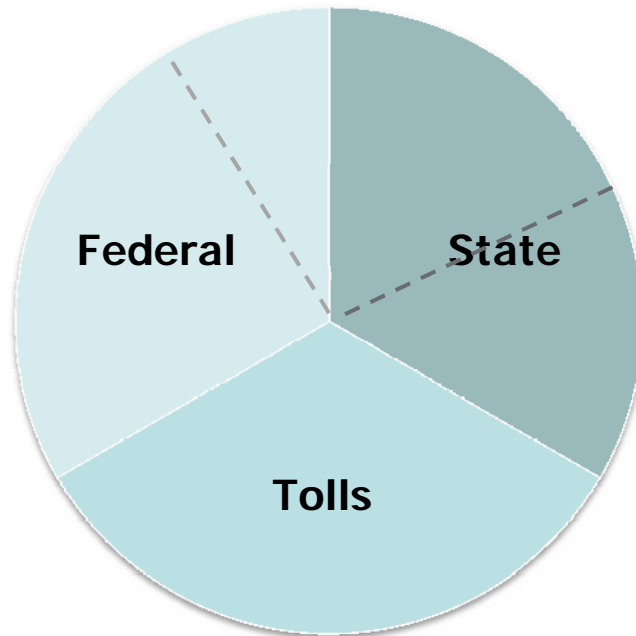
DATE: 10/09/12

# Finance Plan





# Final EIS finance plan for locally preferred alternative

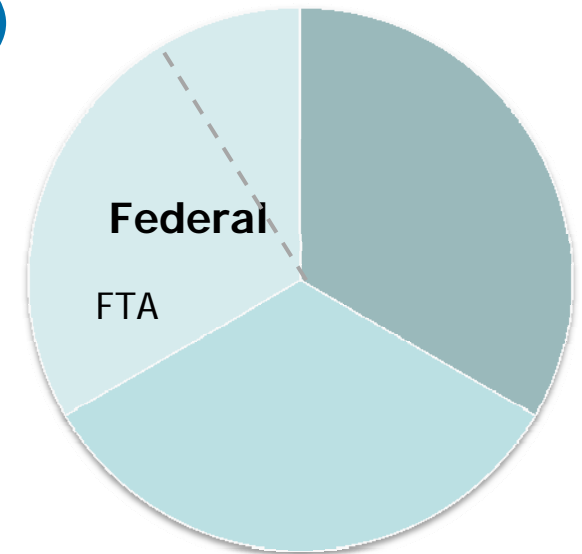


Targeted Columbia River Crossing Funding Sources	Amount (billions)
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Washington .....	\$0.45
Oregon.....	\$0.45
<b>TOTAL FUNDING SOURCES</b>	<b>\$3.05-3.45</b>

# Federal funds

- **FTA New Starts funds (\$850 million)**

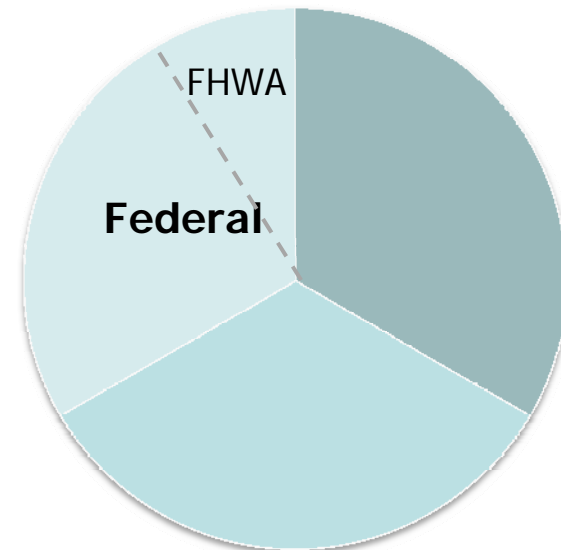
- **Uses:** Light rail route, stations, park and rides, ped/bike access
- **Availability:** 2014 or later – must have all funds (state, tolling) secured
- **Current status:**
  - Submitted annual New Starts application, Sept. 2012
- **Process ahead:**
  - Spring 2013 - Apply to enter final design. Requires locally preferred alternative, FTA risk assessment.
  - Spring 2013 - Enter final design.
  - Fall 2013 - Submit Full Funding Grant Agreement application. Requires local financial commitment.



# Federal funds

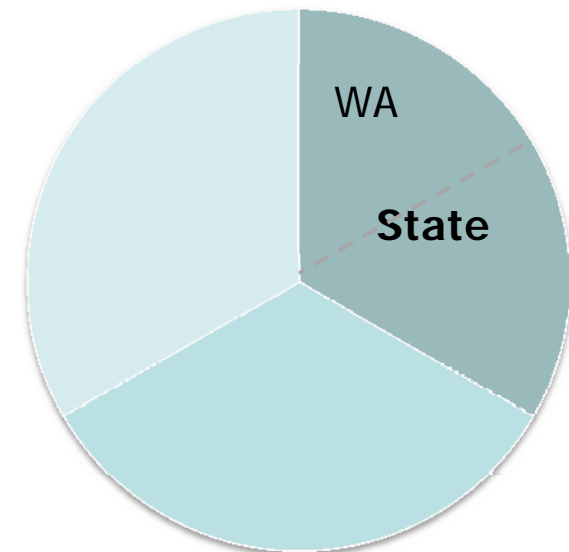
- **FHWA funds (\$400 million)**

- **Uses:** Bridge, highway, interchanges
- **Availability:** 2013 or later
- **Current status and process ahead:**
  - Well positioned to meet funding criteria when discretionary funds become available, timing is uncertain



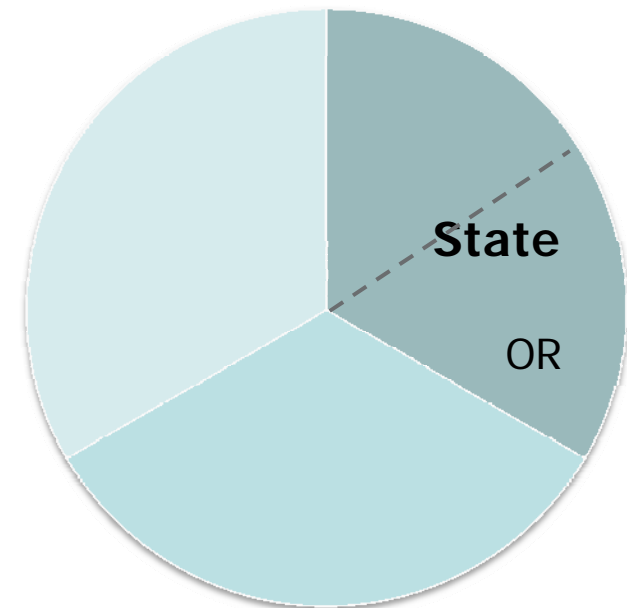
# Washington state funds

- **Uses:** Washington highway, interchanges, local improvements, bike/pedestrian
- **Availability:** Authorized by 2013 to meet FTA eligibility and apply for TIFIA loan
- **Current status and process ahead:**
  - 2012 Joint Transportation Committee, Columbia River Crossing Oversight Subcommittee review
  - Equity contribution is \$450 million. Cash flow needs dependent on updated cost estimate



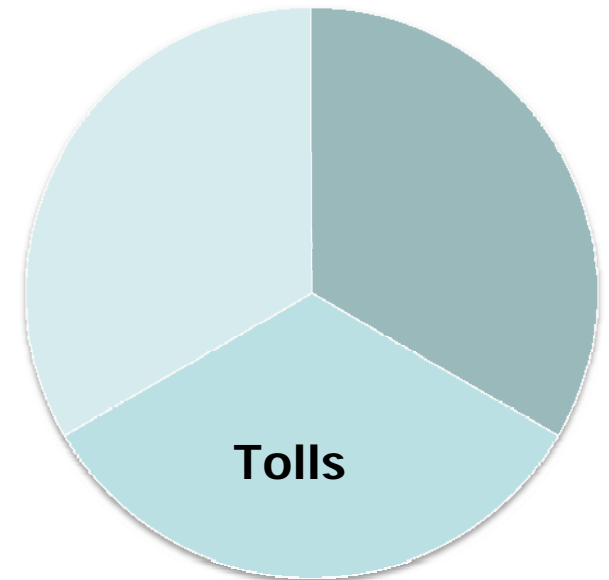
# Oregon state funds

- **Uses:** Oregon highway, interchanges, local improvements, bike/pedestrian.
- **Availability:** Authorized by 2013 to meet FTA eligibility and apply for TIFIA loan
- **Current status and process ahead:**
  - 2012 Legislative Oversight Committee and Interim Transportation Committees, and legislators review project.
  - Legislature needs to act in 2013 to meet FTA eligibility



# Toll revenue

- **Process:** WA toll authorization legislation (ESSB 6445); develop bi-state toll policy structure for Transportation Commissions; and begin investment grade analysis in 2012.
- **Uses:** Must follow state requirements
- **Availability:** Pre-completion tolling in 2015



# Tolling: Traffic and revenue study

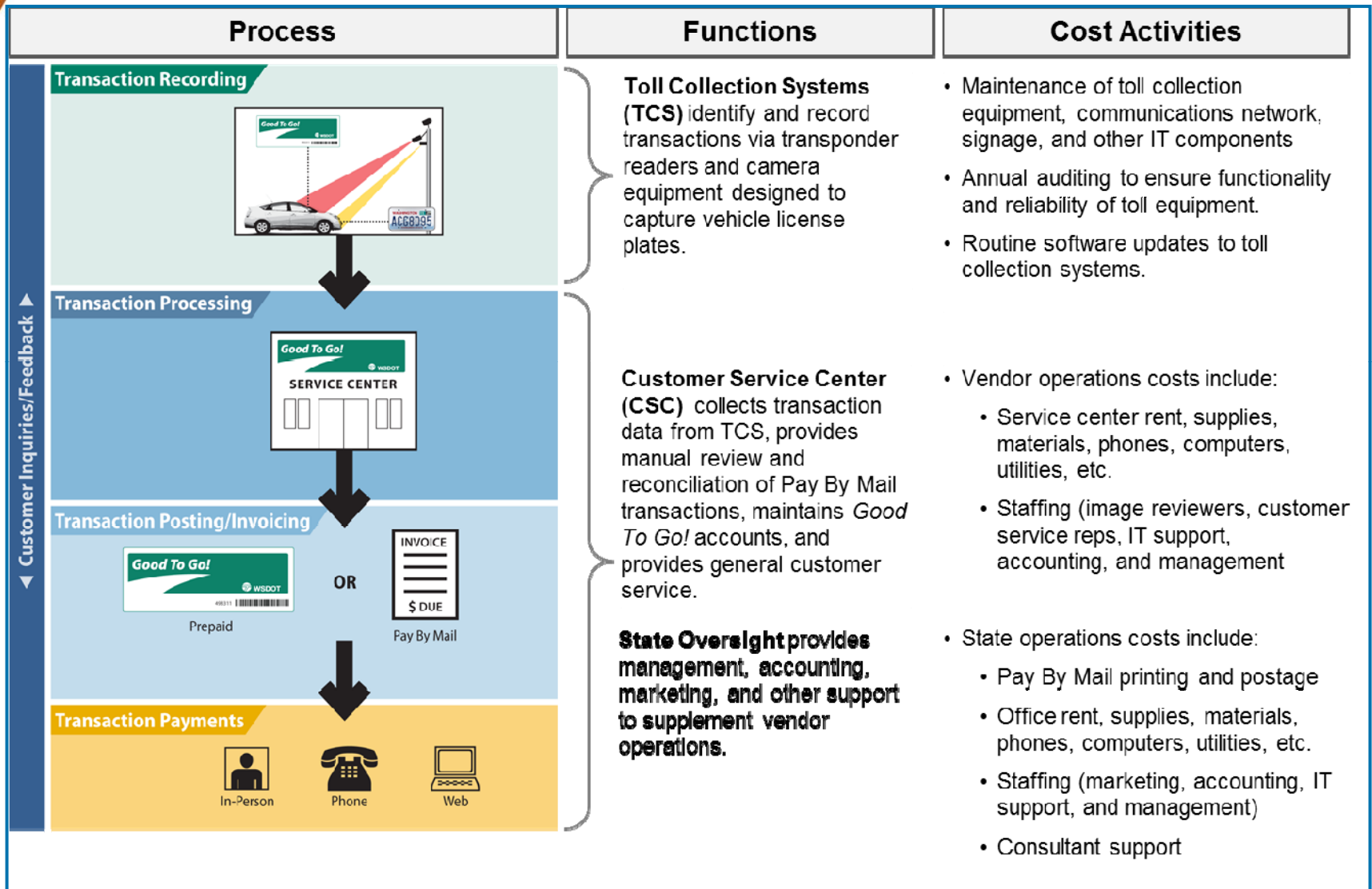
- **CDM Smith & Associates, Inc. awarded contract – Sept. 2012**
- **Phase 1 Work:**
  - **Analysis process development (Oct 2012 – Feb 2013)**
    - Used for toll scenario evaluation
  - **Data compilation and collection (Oct 2012 – Mar 2013)**
    - Compile existing data and collect new data as necessary
  - **Development of investment grade parameters (Oct 2012 – Mar 2013)**
    - Conduct travel pattern and user stated preference surveys
  - **Toll policy scenario development and analysis (Jan – June 2013)**
    - Provide toll analysis scenarios for project planning and toll rate setting analysis

# Final EIS tolling assumptions

- **Toll commencement**
  - Pre-completion tolling – 2015
  - Toll point location
- **Toll rate setting process**
- **Assumptions**
  - Timing
  - Rates
  - O&M
  - Business rules
  - Adjudication
  - Enforcement
  - Collections



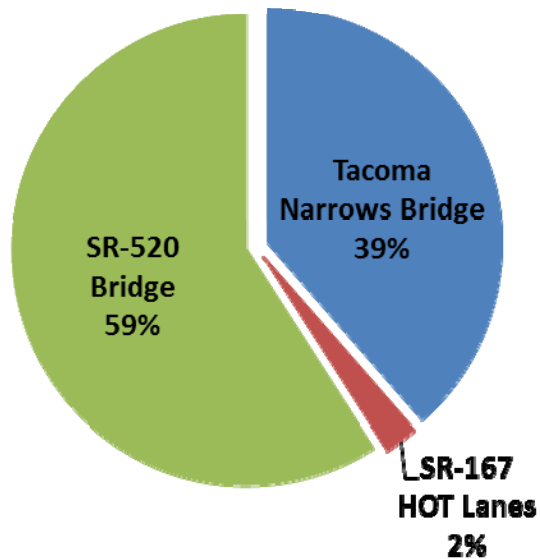
# Cost of toll collection



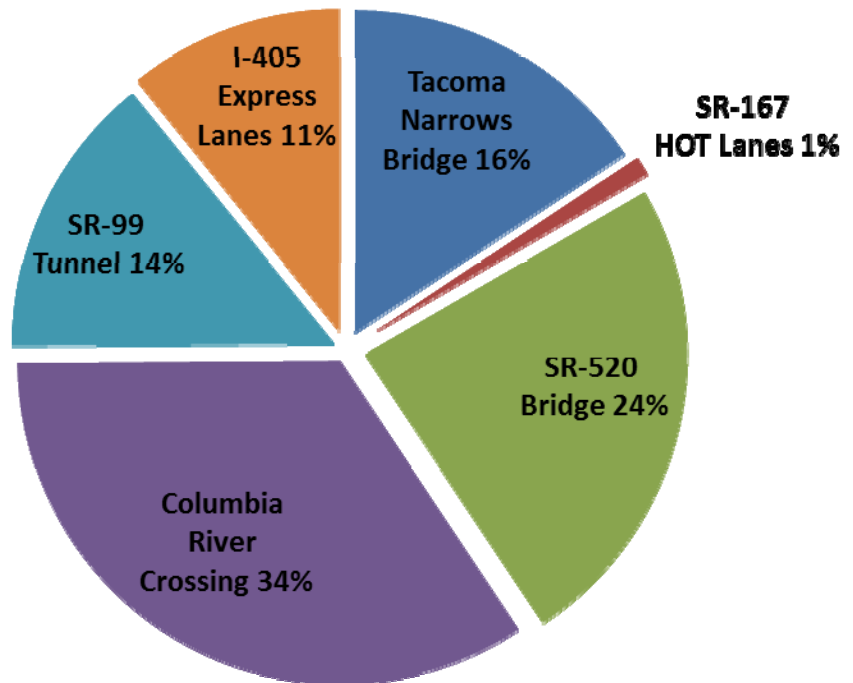
# Cost of toll collection

## Allocating Cost Among WSDOT Toll Facilities Customer service center and state oversight costs of toll collection

Existing Tolled Facilities



All Legislatively Authorized Toll Facilities



# Traffic and revenue study next steps

- Early 2013 legislative information
  - Reasonable range of toll revenue
- July 2013 legislative report per budget proviso
  - Toll exemptions for vehicles with two more occupants;
  - Tolls that vary by time of day and day of the week;
  - Frequency-based tolls;
  - Impact of light rail on toll revenue;
  - Level of I-5 corridor diversion and toll revenue impacts; and
  - Estimated toll revenue from trips originating within and outside the region by vehicle type.
- Late 2013 traffic and revenue study
- Education about the process

# TIFIA and tolling

- **TIFIA is a FHWA loan program to finance transportation projects of national and regional significance**
  - Low borrowing costs in current market
  - Minimal impact on state's general obligation credit
  - Repayment through toll revenues
- **MAP 21 expanded and enhanced TIFIA program**
  - TIFIA authorized for \$750M in FY13, and \$1B in FY14
  - TIFIA financing may now account for up to 49% of total project costs
  - Rolling applications - letters of interest/applications accepted throughout the year
  - Master credit agreement for programs of projects, phased single projects

# Coast Guard Bridge Permit



# Columbia River **CROSSING**

700 Washington Street, Suite 300  
Vancouver WA, 98660

**Washington 360-737-2726**

**Oregon 503-256-2726**

**Toll-Free 866-396-2726**

[www.ColumbiaRiverCrossing.org](http://www.ColumbiaRiverCrossing.org)

[feedback@columbiarivercrossing.org](mailto:feedback@columbiarivercrossing.org)



Federal Transit Administration • Federal Highway Administration  
City of Vancouver • City of Portland • SW Washington Regional Transportation Council • Metro • C-TRAN • TriMet

## COLUMBIA RIVER CROSSING TOLL-SETTING STRUCTURE OPTIONS

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September 10, 2012

This document summarizes information on four options for toll-rate setting and bonding structures for the Columbia River Crossing project. References to bonds in this document are exclusive to those bonds which would be repaid by the net toll revenue stream. Project funding will be provided through federal funding, state funding and tolls. This document does not deal with how each state will meet its own equity contribution, i.e. state funding. The following information regarding bonds should be kept in mind when reviewing this document.

### Bond Background

Toll-backed bonds incorporate a contractual commitment by the issuer to set toll rates to produce revenue to repay the debt. Investors typically require projected toll revenues to be in excess of debt service to protect their investment if actual revenues do not keep pace with projections; this requirement is called coverage. The higher the coverage ratio, the smaller the amount that can be financed on a given toll revenue stream. Toll-backed bonds can either be revenue bonds or general obligation (GO) bonds. The types of toll-backed bonds considered in this analysis include:

Stand-alone toll revenue bonds backed only by toll revenues.

- Likely to require high coverage ratios (annual toll revenues at least twice the size of annual debt service)
- Higher borrowing costs
- Minimal impact on state's GO credit

Toll bonds supported by a state backstop, e.g. triple pledge bonds issued by the State of Washington which are first backed by toll revenues, second by motor vehicle fuel taxes and third by the full faith and credit of the state.

- Relatively low coverage ratios (annual toll revenues no less than 1.3 times the size of annual debt service)
- Low borrowing costs at the state's long-term GO rates
- Negative impact on GO credit as increases debt burden

TIFIA loan (long-term borrowing from the federal government at subsidized rates tied to the 30-year U.S. Treasury rate). The availability of TIFIA loans is limited although recently substantially increased with the new transportation act. The application process can be lengthy and uncertain.

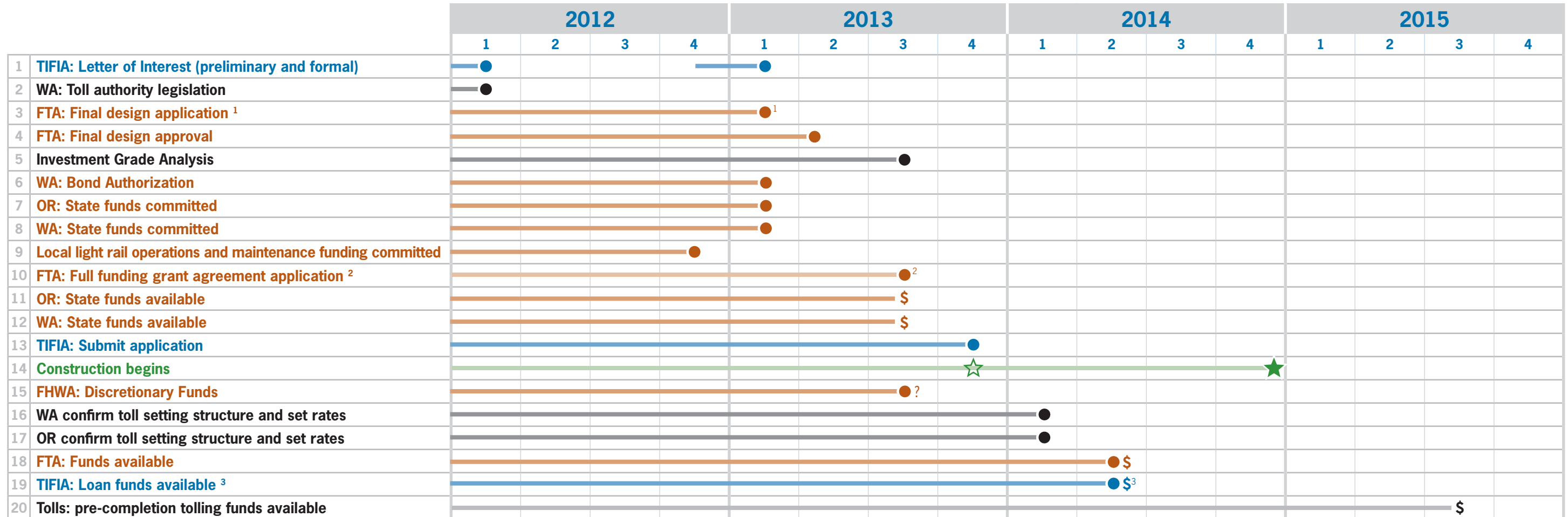
- Coverage ratios determined by perceived risk of the credit; i.e. strong credits require relatively low coverage and no additional credit enhancement, weaker credits require higher coverage as well as debt service reserve funds
- Low borrowing costs in the current market
- Minimal impact on state's GO credit

Option	Policy Considerations	Financial Market Considerations	State Considerations	Other Considerations
<p><b>Separate State Bonds and Joint Toll-Setting with the Full Commissions</b></p> <p><u>Toll-backed Bonds:</u> Each state issues bonds backed by its predetermined share of CRC toll revenues. Revenue collection to be conducted by Washington. Each state adopts substantially identical bond covenants. Each state pledges to bond holders that it will adjust toll rates as necessary to meet all of the bond covenants.</p> <p><u>Toll-setting:</u> The two commissions negotiate an initial rate structure. Each commission separately adopts the agreed-upon rate structure by a majority vote of that commission. In the event of a disagreement on subsequent rate adjustments there would be a predetermined rate adjustment (based upon third-party recommendation) that would automatically occur to sufficiently meet rate covenants and pay the debt for the project. Alternatively, in the event of a disagreement concerning the structuring of tolls, the states pledge to increase/adjust toll rates based upon a predetermined “equation” or “calculation” as defined by the agreement between the WSTC and the OTC.</p> <p><u>Variation on this Option (Suggested by WA Commission):</u> If the two commissions reach an impasse on a rate adjustment, both commissions would vote and a majority vote of the combined commissions would prevail (a majority of 12 members).</p>	<ul style="list-style-type: none"> <li>• Gives each state a definitive and equal role in setting toll rates and structure.</li> <li>• There may be a question of delegation of authority in the case of a combined Commission majority vote.</li> </ul>	<p>Issuance of bonds by two separate governmental entities secured by the same toll revenue stream is unprecedented and could result in more expensive debt if bonds are not supported by a state backstop.</p>	<ul style="list-style-type: none"> <li>• Spreads the debt burden across two states.</li> <li>• Different borrowing conditions, choices, covenants and issuance conditions in each state may result in different borrowing capacity based on equivalent revenue streams. This could require the state that delivers fewer proceeds for construction to fund additional equity contributions from other sources.</li> </ul>	<ul style="list-style-type: none"> <li>• May require the use of a third party trustee to administer the flow of funds so that bondholders of both states are protected.</li> <li>• Both states responsible for TIFIA borrowing, likely complicating TIFIA application, negotiations and commitments.</li> </ul>
<p><b>Separate State Bonds and Joint Toll-Setting with Commission Subcommittees</b></p> <p><u>Toll-backed Bonds:</u> Each state issues bonds backed by its predetermined share of CRC toll revenues. Revenue collection to be managed by Washington. Each state adopts substantially identical bond covenants. Each state pledges to bond holders that it will adjust toll rates as necessary to meet all of the bond covenants.</p> <p><u>Toll-setting:</u> A bi-state committee consisting of a subset of transportation commission members from both states establishes and adjusts tolls as necessary to comply with bond covenants. The toll rates are expected to produce revenues required by the states’ equivalent bond covenants. In the event of a disagreement concerning the structuring of toll rates, the committee chair (an “odd” numbered member of the</p>	<ul style="list-style-type: none"> <li>• Gives each state a definitive and equal role in setting toll rates and structure.</li> <li>• Neither state currently has statutory authority to delegate toll-setting authority to a subcommittee of their transportation commission.</li> <li>• Relies on an individual from one state as the tie-breaker which may politicize timing and/or frequency of toll increase requests; potential for politicization may be mitigated with defined rate increases during the construction period.</li> </ul>	<p>Issuance of bonds by two separate governmental entities secured by the same toll revenue stream is unprecedented and could result in more expensive debt if bonds are not supported by a state backstop.</p>	<ul style="list-style-type: none"> <li>• Spreads the debt burden across two states.</li> <li>• Different borrowing conditions, choices, covenants and issuance conditions in each state may result in different borrowing capacity based on equivalent revenue streams. This could require the state that delivers fewer proceeds for construction to fund additional equity contributions from other sources.</li> </ul>	<ul style="list-style-type: none"> <li>• May require the use of a third party trustee to administer the flow of funds so that bondholders of both states are protected.</li> <li>• Both states responsible for TIFIA borrowing, likely complicating TIFIA application, negotiations and commitments.</li> </ul>



Option	Policy Considerations	Financial Market Considerations	State Considerations	Other Considerations
<p>committee) casts the tie-breaker vote. The committee chair position rotates between the states annually or biennially.</p>				
<p><b>Separate State Bonds and Joint Toll-Setting with Full Commissions and Subcommittees</b></p> <p><u>Toll-backed Bonds:</u> Each state issues bonds backed by its predetermined share of CRC toll revenues. Revenue collection to be managed by Washington. Each state adopts substantially identical bond covenants. Each state pledges to bond holders that it will adjust toll rates as necessary to meet all of the bond covenants.</p> <p><u>Toll-setting:</u> The two transportation commissions jointly establish and adjust toll rates as necessary to comply with bond covenants. The transportation commissions coordinate with a bi-state transportation commission sub-committee that recommends a single toll rate structure for adoption by both transportation commissions in separate actions. In the event of a disagreement concerning the structuring of tolls, the states pledge to increase all toll rates to the extent necessary based on the recommendation of a Joint Toll Consultant as to what set of rates is likely to produce revenues to meet all bond covenants.</p>	<ul style="list-style-type: none"> <li>• Gives each state a definitive and equal role in setting toll rates and structures.</li> <li>• Bi-state sub-committee may avoid issues related to delegation of authority.</li> <li>• Toll rate setting relies on action by three groups making it difficult to take action quickly; potential for difficulty to take action quickly may be mitigated with defined rate increased during the construction period</li> </ul>	<p>Issuance of bonds by two separate governmental entities secured by the same toll revenue stream is unprecedented and could result in more expensive debt if bonds are not supported by a state backstop.</p>	<ul style="list-style-type: none"> <li>• Spreads debt burden across two states.</li> <li>• Different borrowing conditions, choices, covenants and issuance conditions in each state may result in different borrowing capacity based on equivalent revenue streams – This could require the state that delivers fewer proceeds for construction to fund additional equity contributions from other sources.</li> </ul>	<ul style="list-style-type: none"> <li>• May require the use of a third party trustee to administer the flow of funds so that bondholders of both states are protected.</li> <li>• Both states responsible for TIFIA borrowing, likely complicating TIFIA application, negotiations and commitments.</li> </ul>
<p><b>Washington Issues all Toll-Backed Bonds and Sets Tolls</b></p> <p><u>Toll-backed Bonds:</u> Washington issues all bonds backed by CRC toll revenues, either as revenue bonds or as general obligation bonds. Through a bond resolution, Washington makes a rate covenant, i.e. contractually commits to set toll rates to produce toll revenues as required in the bond resolution. Washington contractually commits to Oregon and pledges to bond holders that it will adjust tolls as necessary to meet all of Washington’s bond covenants.</p> <p><u>Toll-setting:</u> Washington collaborates with Oregon in the determination of appropriate toll rates, although only Washington is ultimately responsible for taking actions to satisfy the rate covenants.</p>	<ul style="list-style-type: none"> <li>• Concept previously used for Oregon and Washington bi-state bridges funded by tolls.</li> <li>• Oregon currently does not have statutory authority to delegate toll-setting to the Washington State Transportation Commission.</li> <li>• The single-state rate covenant diminishes Oregon’s role in influencing the structure and level of toll rates. Oregon decision-makers and citizens may have significant concerns with Washington having sole authority to set toll rates for Oregon bridge users.</li> <li>• Washington state legislators may want to specify use of funds</li> </ul>	<p>The simplicity and clarity of the toll-setting process and security pledge support the strongest credit and therefore this option likely provides for the lowest cost of capital compared to the other three options.</p>	<ul style="list-style-type: none"> <li>• The single-state structure places 100% of the debt burden on Washington; effect on GO credit variable depending on how bonds are supported</li> <li>• Oregon has little say as to how toll-backed debt will be structured.</li> </ul>	<p>A single-state structure simplifies the TIFIA application, negotiations and commitments.</p>

# Columbia River CROSSING Funding Schedule (subject to change)



## Estimated funding sources

Federal Transit ..... \$850 M  
 Federal Highway ..... \$400 M  
 Tolls\* ..... \$900 M - \$ 1.3 B  
 OR/WA state funds (\$450/each) ..... \$900 M

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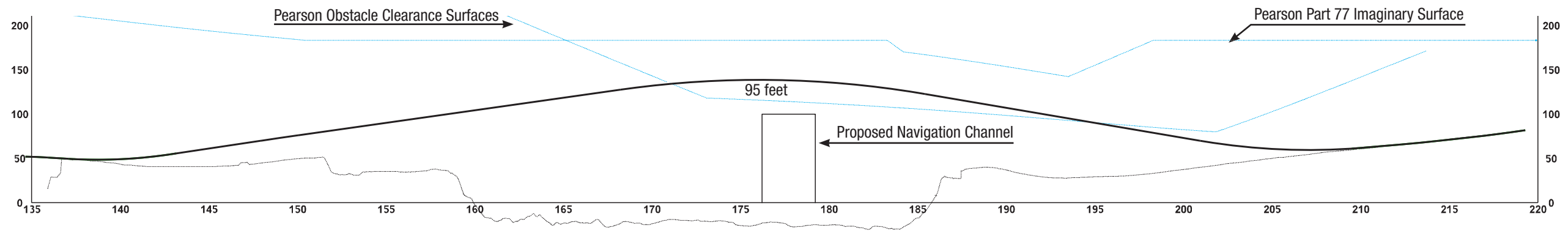
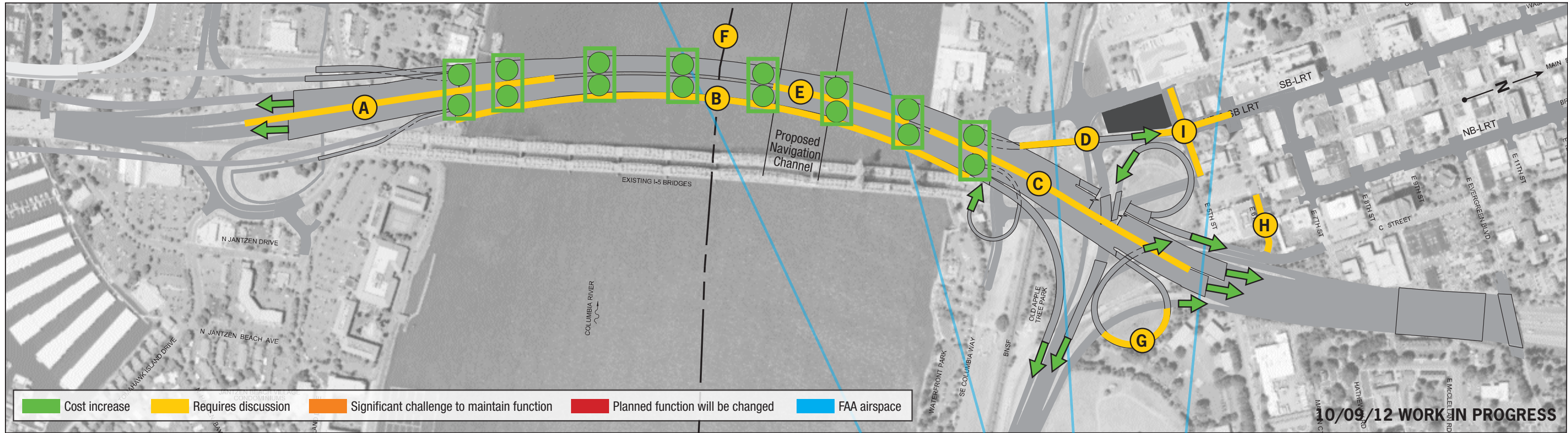
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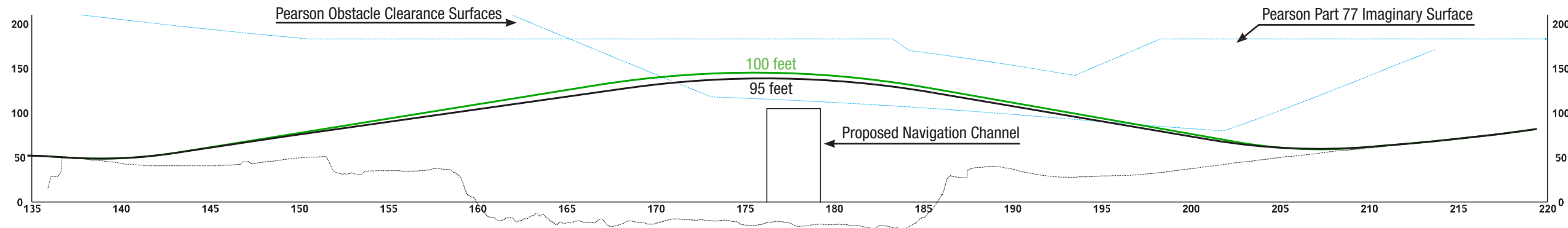
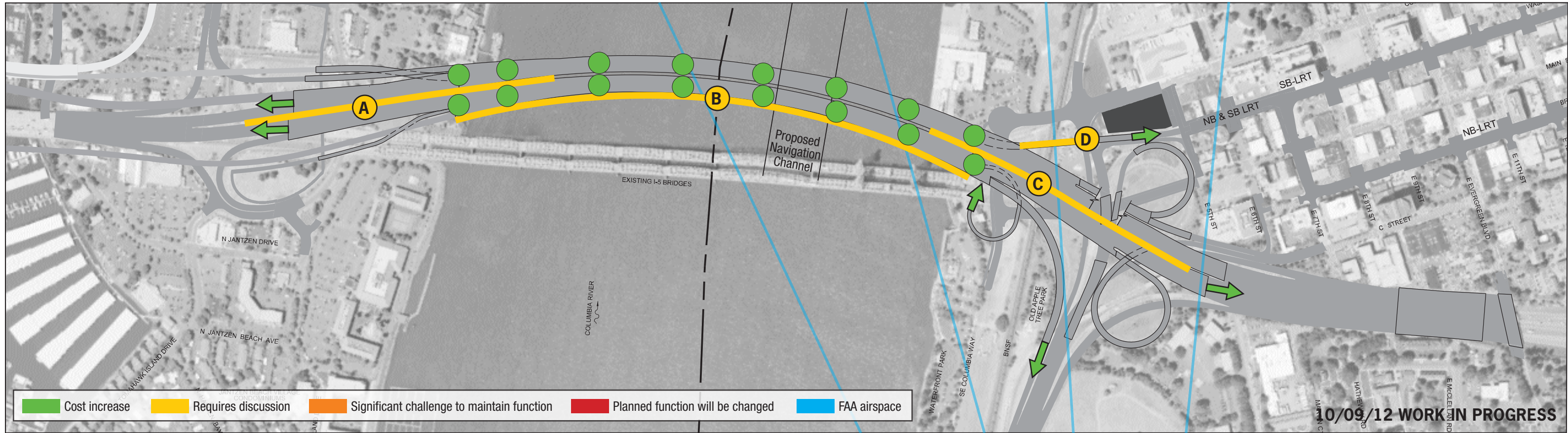
Columbia River **CROSSING** Vertical clearance - affected areas



- A** Mainline grade
- B** Traffic performance
- C** Mainline grade
- D** Transit grade
- E** FAA airspace
- F** Foundation sizes
- G** FAA airspace
- H** 6th Street - I-5 South
- I** Transit alignment and stations

# Columbia River CROSSING Vertical clearance - 100 feet

43 vessels/users potentially impacted\*



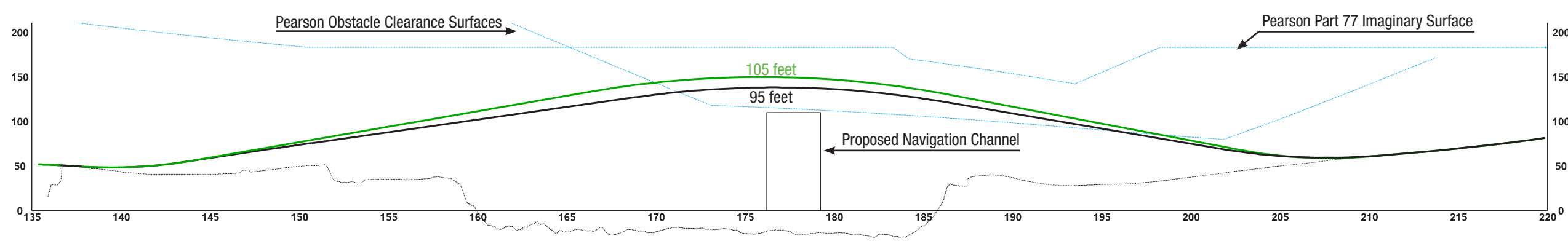
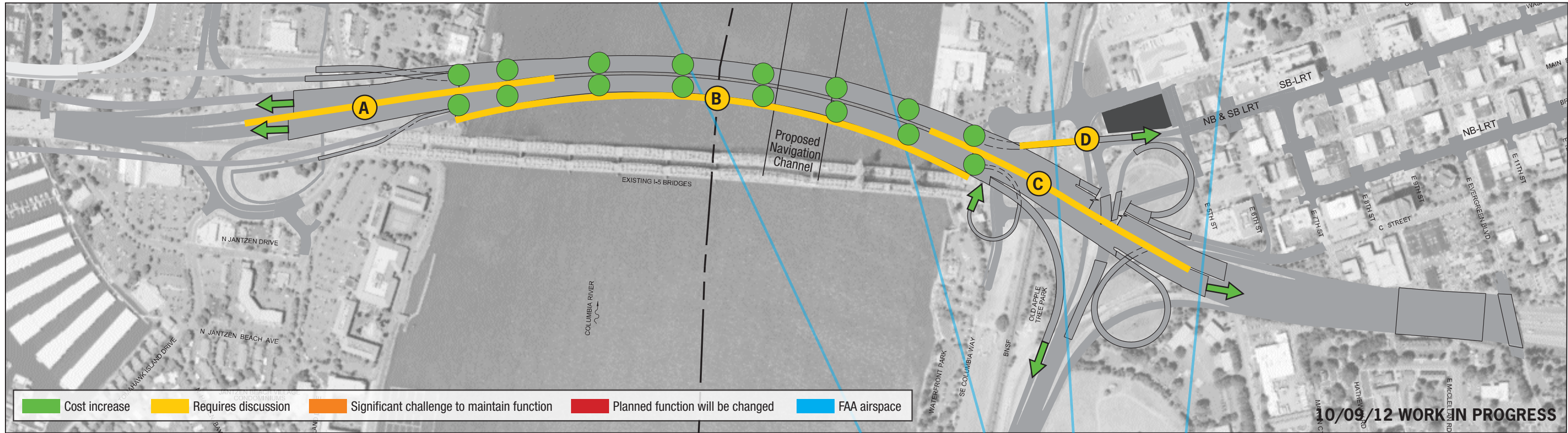
\* Potential impacts at 16 ft river stage and 10 ft air gap. Some of the vessels would pass at a lower river stage and/or with a smaller air gap. For this illustration each fabricator was represented by 1 vessel.

		Hayden Island	Main Crossing	Vancouver	Totals
<b>Cost Increase over 95 feet (\$ millions)*</b>	<b>60%</b>	<b>5</b>	<b>2</b>	<b>6</b>	<b>13</b>
<b>Highway/Transit</b>		<p><b>A</b> In Oregon the mainline grade increases to 3.16% from 2.83%. This would need a design exception for a grade above 3%.</p>	<p><b>B</b> More traffic analysis needed to address changes to traffic operations due to increased grades.</p>	<p><b>C</b> In Washington the mainline grade increases to 3.61% from 3.40%.</p> <p><b>D</b> Transit grade on Washington approach is 6% for an additional 120 feet.</p>	

\*Based on 2011 CEVP, does not include mitigation costs.

Columbia River **CROSSING** Vertical clearance - 105 feet

27 vessels/users potentially impacted\*



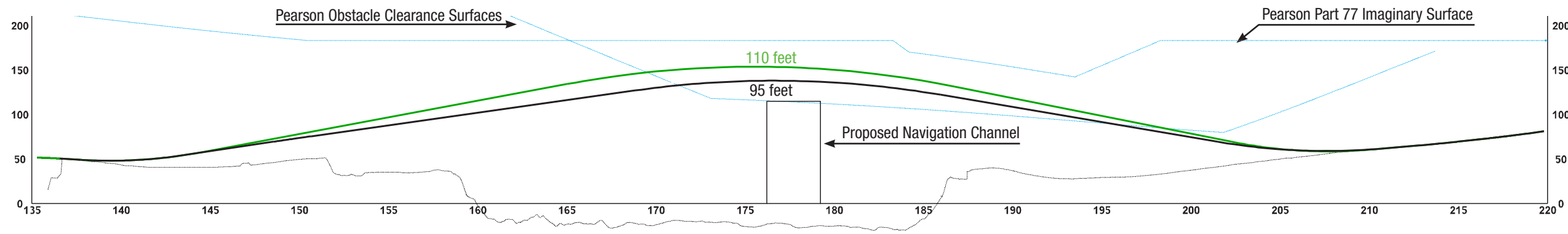
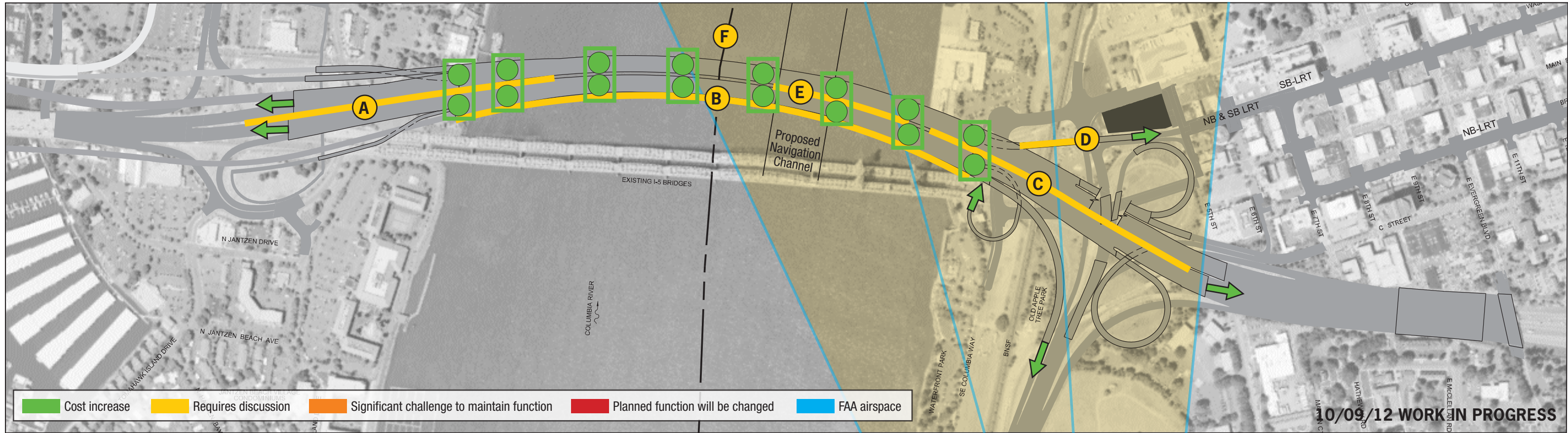
\* Potential impacts at 16 ft river stage and 10 ft air gap. Some of the vessels would pass at a lower river stage and/or with a smaller air gap. For this illustration each fabricator was represented by 1 vessel.

		Hayden Island	Main Crossing	Vancouver	Totals
<b>Cost Increase over 95 feet (\$ millions)*</b>	<b>60%</b>	<b>9</b>	<b>3</b>	<b>10</b>	<b>22</b>
<b>Highway/Transit</b>		<p><b>A</b> In Oregon the mainline grade increases to 3.48% from 2.83%. This would need a design exception for a grade above 3%.</p>	<p><b>B</b> More traffic analysis needed to address changes to traffic operations due to increased grades.</p>	<p><b>C</b> In Washington the mainline grade increases to 3.81% from 3.40%.</p> <p><b>D</b> Transit grade on Washington approach is 6% for an additional 120 feet.</p>	

\*Based on 2011 CEVP, does not include mitigation costs.

# Columbia River CROSSING Vertical clearance - 110 feet

20 vessels/users potentially impacted\*



\* Potential impacts at 16 ft river stage and 10 ft air gap. Some of the vessels would pass at a lower river stage and/or with a smaller air gap. For this illustration each fabricator was represented by 1 vessel.

		Hayden Island	Main Crossing	Vancouver	Totals
<b>Cost Increase over 95 feet (\$ millions)*</b>	<b>60%</b>	<b>9</b>	<b>17</b>	<b>10</b>	<b>36</b>
<b>Highway/Transit</b>		<p><b>A</b> In Oregon the mainline grade increases to 3.73% from 2.83%. This would need a design exception for a grade above 3%.</p>	<p><b>B</b> More traffic analysis needed to address changes to traffic operations due to increased grades.</p> <p><b>E</b> Top of roadway deck at centerline is 29' below FAA surface.</p> <p><b>F</b> Foundation sizes may increase, however, they are still consistent with FEIS.</p>	<p><b>C</b> In Washington the mainline grade increases to 3.99% from 3.40%.</p> <p><b>D</b> Transit grade on Washington approach is 6% for an additional 130 feet.</p>	

\*Based on 2011 CEVP, does not include mitigation costs.

## Thompson Metal CEO on the CRC: Communication is much better

Written by Nicholas Shannon Kulmac

Thursday, 04 October 2012

Thompson Metal Fab CEO John Rudi knows the height of the Columbia River Crossing (CRC) will have a major impact on his business. What remains to be seen is whether that impact will be manageable following mediation with CRC staff.



Since originally voicing concern with the height of the CRC in 2006, Thompson (TMF) – a Vancouver-based steel fabricator – has struggled to find common ground with the agencies sponsoring the bridge project. The company produces and ships large metal structures that require 90 to 160 feet of vertical height clearance under the I-5 Bridge to get down river. However, the new bridge design falls well short of that mark.

At odds over the height issue, TMF took legal action against the CRC earlier this summer. Since that time, Rudi said conversations between his company and CRC staff have improved dramatically.

“Communication has been a lot better and I think their goal in this process is to make sure we stay a viable company and that the benefit to the community in terms of jobs continues,” Rudi said.

“We’re continuing to meet with CRC and work through some different scenarios that make sense, don’t make sense or can get ruled out,” he added. “We’re just trying to work through those to reach some sort of plan that addresses how the CRC can mitigate our situation here and still meet the needs of some of the other river users.”

While optimistic about the progress of mediation, Rudi noted that there are some “real time-related issues that must be recognized.” For example, he said, clients have already started to comment about the bridge conflict, and he’s anxious to not let it go beyond that.

“A lot of these companies do long range capital expenditure planning,” he explained. “If they think there’s a risk that you may not be able to support their need in four or five years then you fall off of the planning cycle. It’s very important to stay on board with these guys early on in these large projects because trying to get on board late is very difficult.”

## Thompson Metal CEO on the CRC: Communication is much better

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TMF works on contract with organizations like the U.S. Army Corps of Engineers and the oil and gas industry on the North Slope of Alaska. Currently, the company is fabricating six and a half miles of elevated rail track that will be used for rapid transit in the Bay Area. And next year, Rudi said, TMF will be working with the U.S. Navy.

“We’ve got a pretty good backlog in and through next year and we have quite a few projects that are out there pending in Alaska, Washington and California,” he said.

Located just east of the I-5 Bridge on a 15-acre parcel of land along the Columbia River, TMF employs approximately 250 people and has an estimated annual payroll of \$16.2 million. Rudi said he expects that number to grow as the company takes advantage of new opportunities in the market.

“We’ve got a lot of people looking at us,” he said. “The rising fuel costs, transportation costs and administration costs for large projects overseas will start to make us more competitive now.

“We are in much better position to present a facility and a workforce that will make us competitive – possibly in the oil sands and some other areas that [require] big modules that are currently being brought in from overseas,” Rudi added.

With many of TMF’s opportunities hinging on successful mediation with CRC staff, Rudi stressed that both parties are doing a good job of staying engaged.

“We’re not at opposite polar ends,” he said. “We’re all working to try and find a solution.”





**Washington State  
Department of Transportation**  
Paula J. Hammond, P.E.  
Secretary of Transportation



**Oregon Department  
of Transportation**  
Matthew L. Garrett  
Director

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August 16, 2012

**MEMORANDUM**

**TO:** Rear Admiral Taylor, U.S. Coast Guard  
Rick Krochalis, FTA Region 10 Administrator  
Dan Mathis, FHWA Washington Division Administrator  
Phil Ditzler, FHWA Oregon Division Administrator

**FROM:** Paula Hammond, Washington State Transportation Secretary  
Matt Garrett, Oregon Department of Transportation Director

**CC:** Col. John Eisenhower, U.S. Army Corps of Engineers  
Capt. Michael Gardiner, U.S. Coast Guard  
Kris Strickler, Oregon Director, Columbia River Crossing  
Nancy Boyd, Washington Director, Columbia River Crossing

**SUBJECT:** Columbia River Crossing Project – Work Plan for Finalizing Bridge Height and Submitting Bridge Permit Application

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Thank you for your continued assistance related to the Columbia River Crossing project's development of a work plan to prepare an application for a general bridge permit for the replacement Interstate 5 bridge over the Columbia River. We have intended to reflect your feedback throughout the work plan and look forward to your comments.

The approach taken in our plan is to build on the work to date, including recently completed vessel surveys and technical analysis, while also demonstrating that we have taken the necessary steps to avoid impacts to river users. It outlines what steps will be taken to minimize and mitigate impacts to river users if avoidance is not feasible or reasonable; continued analysis of incremental increases in bridge heights to help assess vessel impacts as well as cost, environmental and community impacts; a thorough review of future river needs; and how we will continue to balance the needs of river users with the other transportation needs in the corridor, including air, freight, transit, and drivers.

We appreciate the cooperation and input from you and believe it will result in a bridge permit application that will allow for a thorough and comprehensive review by your agency at the end of the year.

Thank you again and we look forward to continuing to work with the U.S. Coast Guard on this critical safety and mobility project with national and regional significance.

**August 16, 2012**

## **Introduction**

The U.S. Coast Guard (USCG) requires a General Bridge Permit prior to construction of the Interstate 5 replacement bridge across the Columbia River. The following work plan outlines elements for finalizing a bridge height and informing an application for the General Bridge Permit. It starts with a brief project background, followed by USCG policy requirements, a description of technical work elements and a schedule for completion of the work.

## **Background**

Designated in 2008 as a project of national significance, the Columbia River Crossing project is a one of a kind, multi-modal and safety improvement project affecting about 134,000 vehicle trips a day and more than 7,000 vessels a year. Local, regional, state, national and international trade markets depend on moving goods and services over the bridge and through at least one of the seven interchanges connecting the interstate system with access to deep water shipping, up-river barging, two water-level transcontinental rail lines, and the ports of Vancouver and Portland. Trucks carry 67 percent of all freight in the region today, twice as much as the other five modes (rail, ocean, barge, pipeline, and air) combined. By 2030, with another one million people expected in the region and freight movements projected to almost double, studies predict that this five and a half mile stretch will be stuck in congestion at least 15 hours each day, with freight and commuters likely delayed by one of the 750 projected collisions that will occur each year.

Since 1999, citizen groups, business and community leaders, elected officials, transportation and transit agencies, and designers and engineers have studied the project area. As early as 2000, studies of the corridor concluded that a balanced set of improvements to the highway, transit and freight systems was needed to ensure continued economic competitiveness and community livability in the region. Alternatives would need to consider the effects to highway and transit transportation performance as well as safety and access for air travel; cost of bridge lift delays for transit, autos and trucks; and the existing condition of river vessels negotiating multiple bridge piers and calling for a bridge lift.

This early work identified the Interstate Bridge as a significant bottleneck and called attention to bridge lifts as a contributor to time delays and queuing. Since then subsequent research and technical analyses have confirmed that the lift on the I-5 Interstate Bridge:

- Is the last lift bridge between Mexico and Canada on I-5
- Contributes to congestion
- Is unsafe, creating a 3 to 4 times higher likelihood of a collision
- Disproportionately affects freight traffic

A replacement bridge, rather than building a new, supplemental bridge next to the existing structures, was ultimately recommended as key part of the Locally Preferred Alternative (LPA) by a 39-member bi-state task force and six local and regional governments (Metro, Southwest Washington Regional Transportation Council, C-TRAN, TriMet, cities of Vancouver and Portland). The replacement bridge was selected, in part, because it provides increased safety for river users with fewer piers in the water and elimination of the existing “S” curve maneuver river users must make between the Interstate Bridge and the Burlington Northern Santa Fe railroad bridge.

#### A mid-height bridge

As the replacement bridge was considered, the project team sought to avoid, minimize and mitigate any potential impacts. Different heights were discussed in relationship to impacts on river users, traffic safety, airspace, transit, downtown Vancouver, Washington, and Hayden Island, Oregon, and overall footprint. Local communities and the states recognized the need to balance these (at times) competing interests as potential solutions were evaluated. The bi-state task force considered the need for:

- improved navigational safety and access
- observing Federal Aviation Administration requirements that obstructions should be avoided for the safe operation of aircraft
- replacement of substandard features and improved sightlines for safety on the Interstate
- improved interstate traffic and freight mobility
- grades that would accommodate transit
- bridge landings that are compatible with local land use and community plans
- improved bicycle and pedestrian access
- safer connections to adjacent state highway system

In 2006, three representative bridge heights were discussed for a replacement bridge: low with a movable span (around 65 feet), mid (95 to 110 feet), and high (around 130 feet). After further study, the bi-state task force recommended:

- 1) Removing the low level, movable span bridge components from consideration due to negative effects to highway mobility, highway safety, freight movement, maintenance costs and the lack of a significant difference in community impacts when compared to a higher mid-level fixed span bridge.
- 2) Removing four high-level bridge components (greater than 130 feet) because of safety concerns with Pearson Airfield and 2004 findings that all known commercial and recreational vessels could be accommodated at 125 feet.
- 3) Advancing the mid-range height component based on the 2004 boat survey findings that a fixed span of 80 feet would accommodate all but six known vessels.

Also in 2006, the USCG accepted “cooperating agency” status and provided critical guidance to the project including offering a public hearing for review and comment of a mid-level replacement bridge. At the Sept. 2006 USCG public hearing, 17 people testified: one construction barge owner requested a bridge with a “high” level of navigation clearance and one fabricator requested 100 feet.

During this same period, the Federal Aviation Administration reported it had “no objections” to the mid-level bridge height provided for the agency’s consideration.

The bi-state task force moved the mid-level bridge component forward within different multi-modal alternatives for technical analysis in the Draft Environmental Impact Statement (EIS). About 1,600 public and agency comments were received on the Draft EIS in 2008. Of the comments stating a preference on the bridge element, the majority favored a replacement (mid-level bridge) as compared to no action or a supplemental bridge.

Based on the technical analysis in the Draft EIS and public comment, the bi-state task force and six boards and councils of each local sponsor agency unanimously recommended a replacement bridge at mid-range height with an extension of light rail to Clark College in Vancouver for the LPA.

The development and refinement of the LPA was informed by public input - over 29,000 public contacts at more than 1,000 public events - elected councils and commissions from two states, local, state and federal partners, topic specific peer reviews and two independent reviews with national experts.

In early 2011, the Oregon and Washington governors initiated a three-month bridge type review process and ultimately identified a deck truss bridge for the replacement river crossing structures. More than 250 people and organizations provided comment. Of those, fewer than 10 provided comments on vertical navigational clearance or highway grade. Only one said the mid-level height would potentially impede river navigation. The others suggested that a higher bridge would impact air navigation and bicycle and pedestrian mobility.

During 2011, the USCG forwarded an amended height request from an existing river user, and a new river user was also identified with concerns about the bridge height. In September 2011, the Final EIS was published and available for review and comment. During this time, the USCG expressed formal concern with the proposed 95-foot bridge height based on comments received from river users and notified the project that 125 feet clearance would be given serious consideration during their review.

As part of responding to the Final EIS comments from USCG, the project provided very preliminary information to federal agencies on the 125-foot clearance with the understanding that an updated vessel assessment, impact analysis, and engineering evaluation would be necessary to fully explore 125-foot clearance. The early analysis on 125 feet-bridge height concluded that:

- Major items amount to approximately \$150-\$200 million in increased cost for a higher bridge.
- There would be a steeper profile grade for the Interstate and would exceed the 4 percent in AASHTO guidance, and deviate from state standards.
- Increasing grades may require connecting on and off ramps on the main river crossing with an auxiliary lane.
- The light rail transit maximum grade of 6 percent lengthened from 500 to 1,200 feet in Washington, impacting maintenance and operations.
- In Vancouver, 5th Street would be closed, and the Columbia Park and Ride would be accessed solely from Columbia Street, causing operational issues.

- The increased elevation of 30 to 40 feet of the Interstate in downtown Vancouver results in additional impacts to downtown, including closed 6th Street access to southbound I-5.
- Bicycle and pedestrian grades would steepen and lengthen on both sides of river.
- It is likely that one or more light rail stations would need to be re-evaluated and redesigned.

After seven years of planning, public involvement and technical analyses this work culminated in December 2011 with a Record of Decision (ROD) issued by the Federal Highway Administration and Federal Transit Administration validating the project’s purpose and need, public process and technical work. With the ROD the project moved into the next phase of design, construction planning, funding, and permitting.

### **USCG Permit Requirements**

The USCG has statutory authority to approve the location and clearances for all bridges over navigable waterways. That authority is rooted in the Commerce Clause of the US Constitution and further defined in numerous laws.<sup>1</sup> Congress’ intent in enacting the legislation has been to retain exclusive jurisdiction for all bridges over navigable waterways of the United States. Under that exclusive jurisdiction, the USCG is responsible to preserve the public right of navigation, and bridges are permitted only when they serve the needs of land transportation. Inherent in that responsibility is the obligation “to accommodate, to the greatest practical extent, the needs of all surface transportation modes.”<sup>2</sup> In considering a permit application, the USCG must “promote and expedite projects that facilitate national and international commerce and provide for the reasonable needs of present and prospective land and marine transportation.”<sup>3</sup> In that context, bridge statutes require that in issuing a bridge permit the USCG must provide for the reasonable needs of navigation, not all needs. The CRC project is preparing to apply for a USCG bridge permit that complies with the requirements. The application must demonstrate a balanced approach to meeting the needs of all modes of transportation. It is the obligation of the project, which has demonstrated substantial proposed benefits to land-based modes of transportation, to also provide the analyses and documentation needed for the USCG to determine that the reasonable needs of current and future marine navigation are addressed.

### **Work Plan to Finalize Bridge Height and Submit Bridge Permit Application**

The following lays out a comprehensive work plan designed to inform the application for a USCG bridge permit for the main span crossing the Columbia River, a necessary step prior to the start of bridge construction, which is scheduled to begin in 2014 if funding is available. It fully incorporates and respects the requirements of the USCG, was developed in cooperation with USCG staff, and specifically addresses the following issues raised in USCG correspondence:

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<sup>1</sup> The laws relating generally to the protection, preservation, and safety of the nation’s navigable waterways are found in Section 9 of the Act of March 3, 1899, as amended, 33 U.S.C. 401; the Act of March 23, 1906, as amended, U.S.C. 491; the Act of June 21, 1940, as amended (Truman-Hobbs Act), 33 U.S.C. 511-523; the General Bridge Act of 1946, as amended, 33 U.S.C. 525; the International Bridge Act of 1972, 33 U.S.C. 535; and the Ports and Waterways Safety Act of 1972; as amended by the Port and Tanker Safety Act of 1978, 33 U.S.C. 1221-1225

<sup>2</sup> U.S. Coast Guard Bridge Administration Manual, p. 1-2

<sup>3</sup> Ibid.

1. Updating the study of river users to accurately document the number of vessels that may be affected by a change in existing vertical clearance at the I-5 bridge;
2. Identifying potentially impacted vessels and developing strategies to avoid, and if that is not possible, then minimize or mitigate those impacts;
3. Working collaboratively to avoid, minimize and mitigate impacts to upstream fabricators that rely on access to the Columbia river system to ship large industrial assemblies by finding creative and cost-effective solutions; and
4. Assessing current and future impacts to waterway users resulting from alternative vertical clearances for the I-5 Bridge.

This work plan also acknowledges and respects the years of work from local, state, and federal partners developing the LPA with a recommendation for a mid-range bridge height and the corresponding ROD issued in December 2011. The plan intentionally recognizes the importance of developing strategies to avoid and minimize potential impacts to river users first and then focus on mitigation as necessary. The results of the work plan will provide a thorough and detailed analysis of the mid-range bridge height alternatives and potential impacts on river users, freight, transit, aviation, and local communities. It will evaluate vertical clearance alternatives to document the trade-offs at different clearances between surface transportation, land use, and river navigation needs.

In addition to developing strategies to avoid and minimize impacts to current river users, the work plan specifically addresses questions about potential future river uses, future navigation needs, and corresponding impacts. This analysis combined with an analysis of the project's economic impacts will provide a more complete context for informing the bridge permit application.

The following seven tasks will be undertaken to complete the data collection and technical analyses, coordinate with all state and federal partners, and prepare the NEPA re-evaluation and bridge permit application.

- 1. Coordination between USCG/USACE/ODOT/WSDOT/FHWA/FTA/FAA.** Develop and implement a plan for communication between all the federal and state partners. Elements of the plan will include:
  - a. Permit oversight team (WSDOT, ODOT, project staff) meetings.
  - b. Coordination meetings with FTA, FHWA, project staff.
  - c. Coordination meetings with USCG staff.
  - d. Coordination with FAA regarding obstructions to aviation (see task 5 below).
  - e. Principals meetings between USCG, FTA, FHWA, WSDOT, and ODOT at key milestones.
  - f. Briefings at key milestones to FHWA Administrator Mendez and FTA Administrator Rogoff pursuant to meetings with USCG Commandant Papp.
- 2. Avoidance and Minimization.** To support a permit decision that will result in impacts to vessels, the USCG administrative record must demonstrate that the applicant has considered reasonable alternatives to avoid and minimize impacts to marine navigation.
  - a. **Demonstrate that the vertical clearance to be proposed in the permit application avoids impacts to navigation as much as is reasonably practicable.** The impact analyses currently

underway will consider design alternatives consistent with the ROD supporting a mid-level bridge that demonstrate trade-offs between alternative navigation clearances and landside transportation and land use impacts. A review of design assumptions and analyses to date will confirm and validate conclusions about viable alternative bridge heights. Design criteria, functional requirements, costs, and prior environmental studies will be considered to determine whether alternative vertical profiles for the bridge are practicable, and whether impacts to vessels have been reasonably avoided and/or minimized while protecting the functionality of the proposed crossing.

- b. **Vessel Impact Analysis.** A detailed description of potential impacts to current and future river users resulting from the construction of the new main span bridges will be prepared. Specific vessels and owners that are potentially impacted will be identified, and potential effects to their historic and planned operations will be described. The seasonality of use vis-à-vis historic river elevation data will be considered. Alternative vessel operating scenarios that could potentially minimize impacts from vertical clearance limitations created by the new bridges will be described.
    - i. Use field surveys and interviews with owners/operators to verify the data gathered to date to better understand the extent of impact, including vessel height, air gap requirement, frequency and time of year, and past history from bridge log data.
    - ii. Analyze data by type of vessel, user and user class/type.
    - iii. Conduct an analysis of future river user needs, addressing currently anticipated user needs, including future uses identified by current river users, and currently known plans by port districts and industrial users upriver of the I-5 Bridge. This work will be supplemented by an analysis of potential changes in land use along that portion of the river that might affect future maritime traffic.
    - iv. Conduct a vessel-by-vessel impact analysis for each alternative clearance above 0 Columbia River Datum considered under 2.a.
- 3. Mitigation options and costs.** For each potentially impacted vessel, continue to develop and evaluate alternatives for mitigating the impacts if those impacts cannot be avoided. Alternatives will vary depending on the type of vessel and use:
- a. Barges carrying large fabricated assemblies. Discussions with fabricators will be conducted to develop an understanding of their operations, including the extent to which their current and predicted future business activities will be impacted. Working with the fabricators, alternative mitigation strategies will be developed. Such strategies may include (but are not necessarily limited to) partial assembly of the modules in their existing yards with full assembly downstream, or the relocation of part or all of their operations to a site that could accommodate the height of their shipments. The technical team working with the fabricators will include marine/industrial engineers and a business economist to support development and evaluation of mitigation alternatives.
  - b. Dredges, construction barges, and commercial/government vessels. Discussions with owners/operators and field inspections of vessels by a naval architect will be conducted to evaluate seasonality of operations, frequency of passage, and potential changes in operating

procedures. If anticipated operations cannot be supported by operational changes, re-configuring the vessel superstructure or equipment to permit passage under the proposed clearances will be considered.

- c. Recreational sailboats. Anticipated seasonality of use and frequency of passage will be discussed with the vessel owner. If projected passage requirements cannot be accommodated, mitigation options will be evaluated such as minor changes to antennas or masts, or potential relocation to a downstream slip.

**4. Document economic impacts of the project.** The project provides improvements to safety, mobility, congestion relief, and freight movement for land and water transportation modes. It is important context to consider overall economic benefits when evaluating impacts to river users. This analysis will describe the overall effects of the project to the region relative to the no build alternative:

- a. Describe the value or economic benefit in terms of: improvements in safety and efficiency for all modes (landside, rail, river, and air); future economic growth from improved access and mobility (job creation, tax revenue, etc.); and jobs from construction.
- b. Quantify economic benefits of improved river navigation resulting from construction of the proposed bridge, such as improved horizontal clearance, and no bridge lifts or time of day restrictions.
- c. Consider incremental benefits or costs from higher bridge clearance alternatives.

**5. Coordination with FAA regarding obstructions to aviation.** For the CRC project, a balanced approach to addressing the needs of marine and land transportation must also consider the potential impacts to aviation, due to the close proximity of Pearson Airfield and Portland International Airport. CRC will need to file notice with the FAA Administrator of the potential for a conflict with aviation airspace. Once that notice has been filed, FAA will conduct aeronautical studies and make a determination of whether or not the project is a hazard to air navigation. In advance of filing the notice, CRC staff will schedule informal discussions with the FAA to coordinate the notice and the FAA review.

**6. NEPA Re-evaluation.** Conduct a NEPA re-evaluation on new information generated in this permit process, using information from the river users survey and potential impacts resulting from alternative bridge heights considered. FHWA and FTA stated in a letter to the USCG on August 3 that this approach will address the USCG requirement to satisfy NEPA for their federal action of issuing a permit.

**7. General Bridge Permit application.** Prepare draft permit application for submittal to USCG in compliance with permit application guide COMDTPUB P16591.3C (dated October 2011). Coordinate to ensure that all relevant data is submitted. Prior to submittal, work closely with USCG staff to ensure that the application is comprehensive and provides the data needed for a permit decision.



## **Work to Date with Draft Findings**

Concurrent with the development of the work plan, the project identified critical technical work and analysis that would be timely and provide essential information. Preliminary work and findings are outlined below. This work is still in draft form and will be incorporated as part of the work plan above.

1. The project completed preliminary bridge, highway and transit engineering analyses to assess technical feasibility, cost, and environmental impacts associated with vertical clearance alternatives of 95, 100, 105, and 110 feet in order to avoid some impacts to users. Similar work will be conducted on additional five foot increments with results expected by mid to late September. This work will update and expand upon the preliminary findings shared with FHWA and FTA prior to the ROD in 2011.

*Key draft finding:* Bridge heights at 95, 100, 105 and 110 feet appear to be technically feasible at moderately increasing costs and without significant additional environmental impacts that would require supplemental environmental studies. The technical analysis has identified that at some height above 110 feet the substructure would need to be modified significantly in order to sustain the additional weight and seismic load on the structure. Such modifications will be costly, and likely have greater impacts which would require additional environmental review. Further work will identify the height at which substantially increased substructure costs will be incurred.

2. The project has completed an extensive outreach effort to update the assessment of vessels potentially affected by the construction of the replacement bridge over the Columbia River. The outreach, which included public notices, letters to registered vessel owners, phone calls and in-person interviews, identified a total of about 170 vessels that report a history or plans to transit the river at the I-5 Bridge. From that total, the work documents vessels potentially impacted at a range of vertical clearances consistent with a mid-level fixed span bridge as determined by the Record of Decision.

*Key draft finding:* A mid-level bridge has the potential to address navigation needs for all but a small number of river users (the exact number will depend on the final height of the bridge).

3. The Army Corps of Engineers dredge *Yaquina* was identified as a potentially impacted vessel. A naval architect inspected the vessel and has prepared a conceptual mitigation plan for review by the Corps.

*Key draft finding:* The conceptual mitigation plan for the *Yaquina* appears to provide a cost-effective solution that would allow the Corps unimpeded transit under a 95-foot bridge. The project has also identified potential alternatives that avoid impacts to the *Yaquina* within the mid-range. The project will work with the Corps to reach concurrence on an acceptable mitigation plan if the impacts cannot be avoided.

4. A preliminary analysis of current river users' future needs has been completed. This includes those future uses identified by current river users, and currently known plans by port districts and industrial users upriver of the I-5 Bridge, taking into account the designated Columbia River Gorge National Scenic

Area which begins a few miles upriver from the bridge. This work will be supplemented by an analysis of potential changes in land use along the river that might affect future maritime traffic, which will be completed in the next several weeks.

*Key draft finding:* Currently anticipated future river uses are generally consistent with the existing types of vessels and clearance requirements associated with existing river uses.

5. CRC project engineers have completed a preliminary assessment of the technical feasibility and cost of adding a lift span to the proposed deck truss bridge. Additional work is underway to further document the effects of adding a lift span.

*Key draft finding:* To date, it appears that adding a lift span to the proposed deck truss bridge and alignment would result in a structure of unprecedented complexity with the associated technical challenges. A lift span would increase the cost of the project by approximately \$250 million. The technical challenges of placing a lift span on the proposed bridge would require a re-evaluation of the bridge type, configuration, and alignment, which would also open up the project to additional environmental reviews and approvals and further costs associated with delay.

6. Outreach to fabricators and property owners (on-going).

- Project staff members have met with all three fabricators (Thompson Metal Fab, Greenberry, Oregon Iron Works).
- Discussions are underway to address the confidential use of proprietary information, and will start in the next several days to develop and analyze potential mitigation strategies.
- Industrial engineers (BergerABAM) and business economists (BST Associates) have been added to the technical staff to support the development and evaluation of mitigation strategies.

## **Schedule**

In support of an anticipated start of bridge construction in 2014, it is the intent of the project to submit a permit application in late December 2012, with a goal to achieve a general bridge permit issued by the Coast Guard in mid to late 2013. We anticipate that mitigation discussions with potentially impacted river users will continue into 2013, and will need to be substantially completed prior to the Coast Guard completing action on the bridge permit.

## United States Coast Guard section 9 permit task schedule

### Avoidance and Minimization

- a. Bridge clearance alternatives analysis
- b. Vessel impact analysis
  - Verify reported data
  - Document impacts at 95 ft CRD
  - Document impacts at alternative heights

### Mitigation Options and Costs

- a. Fabricators
  - Determine sites and costs for fab relocation
  - Evaluate alternative fabrication processes
- b. Dredges, construction barges, etc.
  - Vessel retrofit options and costs
- c. Recreational sailboats
  - Relocation alternatives and costs

### Economic Benefits Analysis

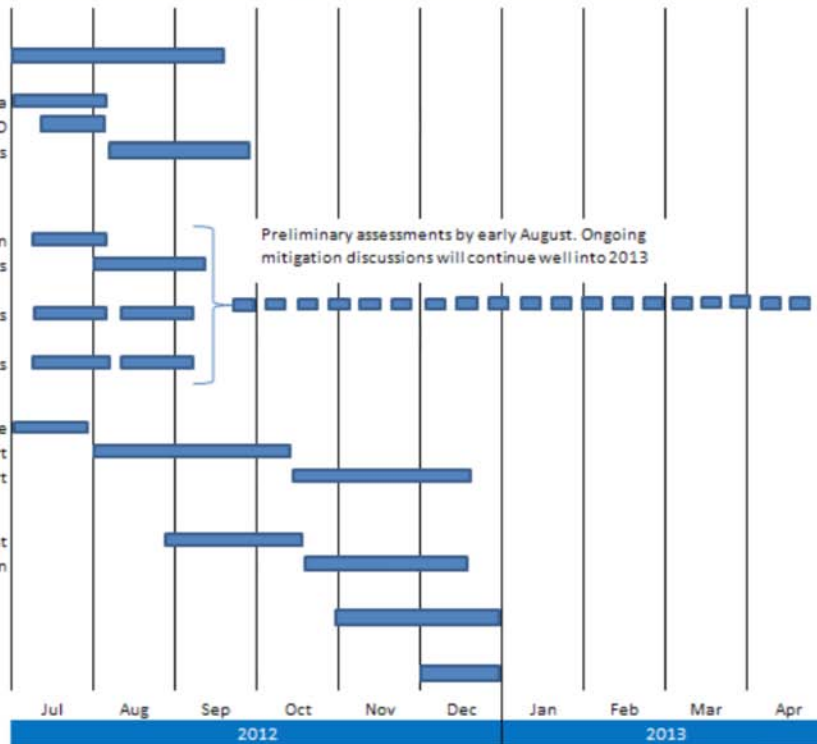
- Confirm subconsultant, scope, budget, schedule
- Prepare Draft Report
- Final Report

### FAA Coordination

- Submit draft materials for proposed height
- Draft response re: hazards to air navigation

### NEPA Re-evaluation

### General Bridge Permit Application



U.S. Department of  
Homeland Security

United States  
Coast Guard



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SEP 10 2012

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#### RESPONSE TO WORK PLAN FOR SUBMITTING BRIDGE PERMIT APPLICATION

Thank you for inviting the Coast Guard to comment on the draft "Work Plan for Finalizing Bridge Height and Submitting Bridge Permit Application."

As you know, the Coast Guard is required to determine the reasonable needs of navigation when acting upon a permit application. As stated in 33 Code of Federal Regulations (C.F.R.) "[a]ll bridges are obstructions to navigation and are tolerated only as long as they serve the needs of land transportation while allowing for the reasonable needs of navigation." Given this statutory requirement, the permit analysis must thoroughly consider the reasonable needs of navigation, and how the impacts to the reasonable needs are either avoided, minimized or mitigated. Because the Coast Guard is the federal agency responsible for bridge permitting, an analysis of the technical documents relating to the bridge permit will be given deference by a court of law.

The enclosed is a summary of our comments with regard to the draft Work Plan.

Sincerely,

A handwritten signature in blue ink, appearing to read "KAT", with a long horizontal flourish extending to the right.

K. A. Taylor  
Rear Admiral, U.S. Coast Guard  
Commander, Thirteenth Coast Guard District

Enclosure: Comments on CRC Work Plan

Copy: Rick Krochalis, FTA Region 10 Administrator  
Dan Mathis, FHWA Washington Division Administrator  
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Col. John Eisenhauer, U.S. Army Corps of Engineers  
Kris Strickler, Oregon Director, Columbia River Crossing  
Nancy Boyd, Washington Director, Columbia River Crossing

## OVERVIEW

A significant potential misunderstanding appears on page nine of the Work Plan under the section titled “Schedule.” The plan states: “it is the intent of the project to submit a permit application in late December 2012, with a goal to achieve a general bridge permit issued by the Coast Guard in mid to late 2013. As a point of clarification, the Coast Guard cannot accept a permit application while “mitigation discussions with potentially impacted river users” continue. The Coast Guard must know what the mitigation measures are before it can consider a permit application. As a matter of procedure, when an application is received, the Coast Guard reviews the application and plans for sufficiency, ascertains the views of local authorities and other interested parties, and ensures that the application complies with relevant environmental laws, regulations, and orders. If the application contains any defects that would prevent issuance of a permit (as for example, if the proposed bridge provided insufficient clearance), the applicant is notified that the permit cannot be granted and given reasons for this determination.<sup>1</sup> Moreover, the EIS itself must state that “all planning and mitigation to minimize these impacts have been accomplished.”<sup>2</sup> The Coast Guard anticipates mitigation discussions with potentially impacted river users will continue into 2013 and has expressed concern that failure to mitigate the vertical clearance might compel a permit denial. Noting such, the remainder of the document provides page by page comments of the rest of the Work Plan.

### *Background Section*

- On page one it indicates that replacement bridge “alternatives would need to consider...the existing condition of river vessels negotiating multiple bridge piers and calling for a bridge lift.” While much attention has been given to possible positive impacts to navigational safety by eliminating the optional “S” curve (for those vessels that choose to make the optional “S” curve maneuver around bridge piers), it is equally important that the proposed bridge design avoid, minimize and mitigate the impacts to reasonable needs of navigation.
- On page two it states that “the replacement bridge was selected in part, because it provides increased safety for river users with fewer piers in the water and the elimination of the existing “S” curve maneuver river users must make between the Interstate Bridge and the Burlington Northern Santa Fe railroad bridge.” As the primary existing channel is a straight course and does not require an “S” curve maneuver, it is likely the benefit realized by removing the optional “S” curve maneuver may not justify potential impacts to the reasonable needs of navigation. Providing for safety of navigation and the reasonable needs of navigation are not mutually exclusive goals.
- On page two it describes that a mid-height bridge was selected in order to avoid, minimize, and mitigate impacts on a number of different interests, including river

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<sup>1</sup> 35 CFR 115.60(a)

<sup>2</sup> (See COMDTINST M16590.5C Ch 4 IV (2)(b)(2))

users. The Coast Guard remains concerned this conclusion is based on a 2004 boat survey data that did not capture all of the current impacted river users.

- On page two, the mid-height bridge section describes how three representative bridge heights were discussed and studied. However, it is not clear that in 2006 the bi-state task force fully captured the impacts to navigation when deciding what type of bridge to recommend. For example, the 2004 Boat Survey did not capture the full extent of the river users indentified in the 2012 Columbia River User Data report. The Coast Guard is concerned that the subsequent river analysis demonstrates that the 2004 boat survey data was not comprehensive. For example, it appears there may be over one hundred vessel transits per year impacted by the mid-height bridge being reviewed.
- On page three, the Work Plan discusses the analysis of a 125 foot vertical clearance and the additional costs and difficulties for light rail and local municipalities. While the Coast Guard appreciates the significance, difficulty and complexity of a project of this scale, the Service must also ensure impacts to the reasonable needs of navigation are avoided, minimized or mitigated in order to permit a bridge. If the impacts associated with raising the bridge are unacceptable, as the Work Plan states, a thorough analysis of alternatives that avoid, minimize and mitigate the impacts to reasonable needs of navigation is necessary to properly review the bridge permit. We recommend that the last sentence of the first paragraph on page four “With the ROD the project...and permitting” be deleted because the Coast Guard is concerned the assumptions that led to the ROD are incomplete. We instead suggest replacing this language with the following: “While the review of river users is ongoing, the project moved into the next phase of design, construction planning, funding, and permitting. However, if the impacts associated with raising the bridge to meet the reasonable needs of navigation is unacceptable, a thorough analysis of various alternatives, such as various bridge heights, will be necessary to properly review the bridge permit.”
- On pages four through six, the Coast Guard remains concerned that the Work Plan focuses solely on mitigation to users, and does not include an analysis of alternatives that avoid or minimize the impacts to the needs of navigation, which are critically important to properly evaluating a permit request.

#### *Technical Corrections*

- The Work Plan uses language from the Coast Guard Bridge Administration Manual,<sup>3</sup> but at times its use is not technically correct. For example, the Work Plan states that the “USCG is responsible to preserve the public right of navigation, and bridges are permitted only when they serve the needs of land transportation.” While this language is found in the manual, the actual sentence reads as follows:

“The Coast Guard's duty and responsibility, under the authorities delegated to the Commandant, is to preserve the public right of navigation. Bridges across the navigable waters of the United States are considered obstructions to navigation,

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<sup>3</sup> COMDTINST M16590.5C

permitted only when they serve the needs of land transportation. While the public right of navigation is paramount to land transportation, it is not absolute. This right may be diminished to benefit land transportation, provided that the reasonable needs of navigation are not impaired.”<sup>4</sup>

- To clarify this language, a bridge may be allowed to diminish that right only when the reasonable needs of navigation are fully met through avoidance, minimization, and mitigation. An inference that bridges are permitted only to serve the needs of land transportation is not technically correct, and may cause the thrust of justification in a bridge application to miss the mark.
- The Work Plan states that “inherent in that responsibility is the obligation ‘to accommodate, to the greatest practical extent, the needs of all surface transportation modes.’” While the Coast Guard will attempt to accommodate all modes of transportation, the Bridge Administration Manual provides: “It is the Commandant’s policy, when considering bridge actions, to work toward promoting the overall goals of the Department of Homeland Security in a balanced manner in order to accommodate, to the greatest extent practicable, the needs of all transportation modes. However, the safety of navigation is a paramount consideration that cannot be compromised when addressing bridge program issues.”<sup>5</sup>
- The Work Plan assertion on page four that it “fully incorporates and respects the requirements of the USCG, was developed in coordination with USCG staff, and specifically addresses the following issues raised in USCG correspondence” is not correct. For example, during the 5 July 2012 meeting with the CRC team, the Coast Guard expressed concern that alternate to avoid or minimize the reasonable needs of navigation were not being incorporated into the permit application.

#### *Work Plan Task Items*

- On page five of the Work Plan, the end of the first paragraph states: “It will evaluate vertical clearance . . .and river navigation needs.” Please add to this: “Should the mid-range bridge height alternatives prove unable to meet the reasonable needs of navigation, other alternatives that avoid or minimize the impact to navigation need to be thoroughly explored and properly analyzed.”
- On page five of the Work Plan, under item two of the tasks entitled “Avoidance and Minimization,” it states that “To support a permit decision that will result in impacts to vessels, the USCG administrative record must demonstrate that the applicant has considered reasonable alternatives to avoid and minimize impacts to marine navigation.” This statement is not technically correct. As stated previously, in order for the Coast Guard to properly review and analyze a bridge permit, the application

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<sup>4</sup> COMDTINST M16590.5C, Chapter 1.A.1.

<sup>5</sup> COMDTINST M16590.5C, Chapter 2.E.1.

should include design alternatives that will not unreasonably obstruct navigation.<sup>6</sup> As noted previously, as the full extent of navigational needs were not known until completion of the Columbia River User Data Report in 2012, the Coast Guard remains concerned that these needs were not taken into consideration when the range of alternatives were developed in 2006.

- On page five, the Work Plan indicates that it will “demonstrate that the vertical clearance to be proposed in the permit application avoids impacts to navigation as much as reasonably practicable.” Technically, the Coast Guard authority to approve or deny a bridge permit is not based on the practicability or reasonability of the avoidance measures, but rather whether or not the proposed bridge meets the reasonable needs of navigation.
- On page six of the Work Plan, under item two of the tasks entitled “Avoidance and Minimization,” the CRC indicates that current impact analysis is considering design alternatives of a mid-height bridge “that demonstrates trade-offs between alternative navigation clearances and landside transportation and land use impacts.” Though the cost-benefit analysis of alternatives may be useful to CRC in evaluating avoidance and minimization measures, an analysis of a “trade-off” between land and navigational use is technically not relevant to Coast Guard Bridge permitting decisions if that “trade-off” results in a bridge that does not meet the reasonable needs of navigation.
- The Coast Guard is also concerned that the mitigation options discussed in the draft Work Plan are focused on changing the impacted users, not how the bridge design can be altered to avoid or minimize navigational impacts. The degree and scope of mitigation efforts on impacted vessels is a factor taken into consideration when determining whether the bridge design is an unreasonable obstruction to navigation.
- Task three in the Work Plan states: “For each potentially impacted vessel, continue to develop and evaluate alternatives for mitigating the impacts if those impacts cannot be avoided.” For clarification, if a proposed bridge impacts the navigational needs of vessels currently using the waterway, then a thorough analysis of alternatives minimizing those impacts, such as different bridge heights, is needed to conduct a proper review of the bridge permit application.

The key draft findings in the Work Plan indicate that the proposed bridge design “has the potential to address navigation needs for all but a small number of river users.” However, as noted previously, the Coast Guard is concerned that subsequent river analysis has shown that the 2004 boat survey data informing the choice of alternatives was not comprehensive. As previously noted, there may be over one hundred vessel transits per year impacted by the mid-height bridge being reviewed that were not accounted for in 2004. Current and potential future river users must be taken into consideration when determining the reasonable needs of navigation.

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<sup>6</sup> Bridge Act § 494, “No bridge erected or maintained under the provisions of sections 491 to 498 of this title shall at any time unreasonably obstruct the free navigation of the waterway over which it is constructed.”



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## Environmental Review and Locally Preferred Alternative

### **1. What was the process and who selected the Locally Preferred Alternative?**

The boards and councils of all six local partner agencies (Metro, RTC, Portland, Vancouver, TriMet, C-Tran) unanimously passed resolutions supporting a replacement bridge with light rail as the locally preferred alternative (LPA) in 2008. This led to its formal selection by the project owners, WSDOT and ODOT. The same agencies reaffirmed the LPA when they signed the Final Environmental Impact Statement (EIS) in 2011. The LPA selection occurred after a multi-year process that began in 2005 with local stakeholders, elected officials, and federal, state, and local agencies. The steps in the process included alternatives development, evaluation in the draft and final EIS, and publication of the Record of Decision. Approximately 1,600 public and agency comments were submitted on the draft EIS.

### **2. Beyond the partner agencies, which groups and individuals were involved in the LPA selection process and when were they involved?**

The CRC project team engaged five citizen advisory groups with nearly 100 collective members before selecting the LPA. The general public was also engaged through 525 open houses, community presentations, and information booths from 2005 to 2008. This resulted in more than 15,000 individual contacts with members of the public and the receipt of 4,380 written and verbal comments. Of the people who expressed a preference for an alternative under consideration, more people supported a replacement bridge over a supplemental bridge and more people supported light rail compared to bus rapid transit. (See attachment for names of advisory groups and their members.)

### **3. Was there a group called the Project Sponsors Council before 2008?**

A group called the Project Sponsors Council met eight times from 2005 to 2007 to reach consensus on project development. Members included elected officials and regional leaders of the project’s sponsoring agencies. This group was formed by WSDOT and ODOT to advise the agencies and made no

formal recommendations while it existed. A second group, also known as the Project Sponsors Council, was appointed by the Washington and Oregon Governors in 2008 to advise on completion of the Final EIS, project design, project timeline, sustainable construction methods, compliance with greenhouse gas emission reduction goals and the financial plan. Their meetings resulted in recommendations to the governors, WSDOT and ODOT, which were implemented.

**4. What is the process to amend the selected alternative and what are the implications to the project in terms of time, cost, and New Starts funding availability?**

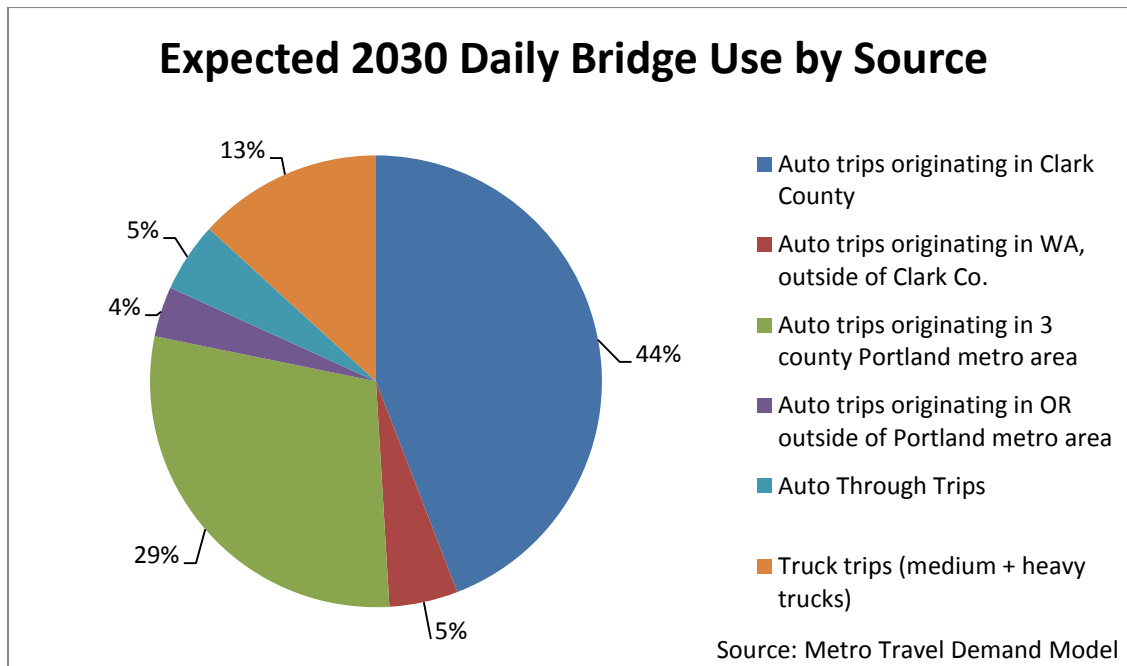
Amending the LPA requires describing the design changes and the associated environmental impacts in a NEPA re-evaluation document. FTA and FHWA would review the document and decide a course of action. If FTA and FHWA determine the re-evaluation finds no new significant impacts, they will amend the Record of Decision and the project proceeds. If a change to the preferred alternative results in new and significant impacts, a supplemental EIS is required. A supplemental EIS would likely require 12 to 24 months to complete. The New Starts Full Funding Grant Agreement would be delayed until completion of the supplemental EIS because it cannot be awarded without a current Record of Decision. With a 12 to 24 month schedule delay, FTA funding is uncertain.

**Transportation**

**5. What are the traffic volumes on I-5?**

About 127,000 vehicles crossed the I-5 bridge each weekday in 2010.

**6. Who will use the I-5 and adjacent interchanges?**



## **7. Will CRC worsen congestion at the Rose Quarter?**

No. The southbound traffic congestion that currently exists near the I-5/I-405 split (Rose Quarter) will not be improved or worsened by the CRC project. Just north of the Rose Quarter (three miles south of the project's southern boundary), the forecasted morning traffic volumes for both the build and no-build scenarios are the same. About 35 percent of the southbound traffic from Washington in the morning exits I-5 within two miles of the bridge. Traffic volumes do increase as traffic enters I-5 from north Portland toward the Rose Quarter. The Oregon Department of Transportation and the City of Portland are currently working on a project related to Rose Quarter congestion.

## **8. Do the improvements result in any real time savings for commuters?**

Drivers heading north on I-5 from I-84 in Portland to 179th Street in Vancouver will save 20 minutes compared with the No Build Alternative. Drivers using the short segment of I-5 from Columbia Boulevard to SR 500 in Vancouver will save eight minutes compared to the No Build Alternative. The duration of congestion on the bridge is reduced from a predicted 15 hours a day in 2030 under the no-build scenario, to 5.5 hours when the locally preferred alternative is constructed.

## **Transit**

### **9. Why was light rail transit selected over bus rapid transit and by whom?**

Light rail was selected over bus rapid transit by the Vancouver City Council, C-TRAN Board, Southwest Washington Regional Transportation Council, Portland City Council, TriMet Board, Metro Council, and the bi-state CRC Task Force for the following reasons:

- Light rail will travel faster than bus rapid transit within the project area (averaging 17 mph versus 14.5 mph, including stops) because it will have signal priority, shorter wait times at stations, and quicker acceleration. Bus rapid transit would travel in exclusive lanes, but would be mixed with general traffic outside the project area, and would be delayed due to congestion in those areas.
- Light rail has more capacity and will carry 6,100 people over the I-5 crossing northbound during the peak period, while the alternatives with bus rapid transit would only carry 5,150 to 5,350 people.
- Integration with the existing system will allow transit users to travel between Vancouver and Portland without a transfer. Transfers add travel time and decrease trip reliability and convenience.
- Operation and maintenance costs are 25 percent lower per rider compared to bus rapid transit.

WSDOT and ODOT selected the locally preferred alternative, which was endorsed by FHWA and FTA in the Record of Decision.

### **10. What percentage of traffic in the project area will be served by light rail?**

Adding light rail to the I-5 corridor will double the number of river crossings made on transit in 2030, compared to the No Build Alternative. This means 16 percent of all trips will be made on transit. Of those transit passengers, 91 percent (over six million annual trips) would travel on light rail and nine percent on buses. This amount of transit ridership equates to about one highway lane of traffic.

**11. Describe and compare a light rail, bus rapid transit, bus and auto trip from downtown Vancouver and downtown Portland (Pioneer Square).**

The following tables are from the Final EIS Transit Technical Report :

Average Weekday A.M. Peak Hour Transit Travel Time <sup>1</sup> between Select Locations – Year 2030 (minutes)			
	LPA (LRT)	2030 No Build Alternative <sup>2</sup> (Bus)	BRT <sup>3</sup>
Northern Terminus to Pioneer Square	38	50	43
Downtown Vancouver (7 <sup>th</sup> St. and Washington St.) to Pioneer Square	32	47	35

<sup>1</sup> Transit travel time in this table includes in-vehicle and wait time for transfers.  
<sup>2</sup> The definition of the No-Build Alternative (Alternative 1 in the DEIS) was updated since the DEIS was published to reflect most current information.  
<sup>3</sup> BRT was Alternative 2 (Replacement Bridge with BRT) in the DEIS.

Transit Average Weekday and Annual Transit Passenger Trips Crossing the I-5 Bridge – Year 2030			
	LPA (LRT)	2030 No Build Alternative <sup>1</sup> (Bus)	BRT <sup>2</sup>
C-TRAN Express and Local Bus	1,900	10,200	11,300
High-Capacity Transit	18,700	0	5,400
Total	20,600	10,200	16,800

<sup>1</sup> The definition of the 2030 No Build Alternative (Alternative 1 in the DEIS) was updated since the DEIS was published to reflect most current information.  
<sup>2</sup> Alternatives 2 (BRT) and 3 (LRT) were the Replacement Bridge with BRT and LRT in the DEIS, respectively.

**12. Did the analysis of bus rapid transit assume it would operate in a dedicated lane?**

The analysis assumed bus rapid transit operating in a dedicated lane from Clark College to Portland’s Expo Center. Bus rapid transit riders would then transfer to the existing light rail line at the Expo Center and continue south.

**13. Describe bus rapid transit versus light rail costs in terms of short-term and long-term capital and operating expenses.**

The capital cost to construct bus rapid transit is between \$600 and 750 million. Light rail is estimated to cost \$850 million to build. Bus rapid transit operating costs for the corridor were estimated in the draft EIS to be about \$2 million a year greater than light rail due to the greater number of drivers and buses needed compared to light rail operators and vehicles to meet the ridership demand. (\$5.15 million for BRT compared to \$2.96 million for light rail in 2030, represented in 2007 dollars.)

**14. Are ridership forecasts for light rail and bus rapid transit the same as the ridership time-value-of-money considerations used in the tolling models? If not, why are they different?**

Yes, the value of time is a model input for all travel modes (e.g. transit, personal vehicle).

### **15. How do ridership projections on bus rapid transit compare to light rail?**

In the Draft EIS, the total number of annual transit riders crossing the I-5 bridge in 2030 with bus rapid transit was estimated to be 4.8 million compared to 6.1 million with light rail.

### **16. Describe congestion impacts, short-term and long-term, of bus rapid transit vs. light rail.**

Light rail will reduce congestion by carrying six million passengers annually or 16 percent of all trips crossing the river, which is the equivalent of one lane of traffic. Because bus rapid transit carries fewer passengers per vehicle, it would contribute to less congestion reduction on local city streets and on the highway compared to light rail. Short-term construction congestion has the potential to be less with BRT because the track infrastructure is not required.

### **17. If we switched to BRT, what would be the impacts on the project?**

Changing the LPA requires describing the design changes and the associated environmental impacts in a NEPA re-evaluation document. FTA and FHWA would review the document and decide a course of action. If the re-evaluation finds no new significant impacts, FTA and FHWA amend the Record of Decision and the project proceeds. If a change to the preferred alternative results in new and significant impacts, a supplemental EIS is required. A supplemental EIS would likely require 12 to 24 months to complete.

The New Starts Full Funding Grant Agreement would be delayed until completion of the supplemental EIS because it cannot be awarded without a current Record of Decision. A new grant application would be submitted, which FTA would re-rank. With a 12 to 24 month schedule delay, FTA has stated that federal funds may not be available for the CRC Project.

### **18. Both Portland and Vancouver, have or plan to have, both bus rapid transit and light rail. Why does bus rapid transit make sense in some locations, but not across the bridge?**

The best mode for a particular corridor hinges on the characteristics of the corridor. In this case, the “single seat ride” connectivity between Vancouver and Portland with the existing light rail line is the most effective. The high ridership on light rail better handles the demand, and light rail will provide continuous service throughout the corridor, cost-effective operations in the long-term on a per passenger basis, and supports the City of Vancouver’s vision for the development of downtown.

### **19. How much is TriMet’s current debt obligation?**

TriMet does bond for defined capital costs, including but not limited to new buses and TriMet’s share of light rail projects. The TriMet Board has set a policy that TriMet’s senior lien (or payroll tax backed debt) will not go beyond a sustainable level of 7.5 percent of net continuing revenue. Current levels of senior lien debt for Fiscal Year 2013 are approximately 5.4 percent. TriMet’s most recent bond rating is AAA (Standard & Poor’s highest) and Aa1 (Moody’s second highest). TriMet has sold capital grant receipt bonds as well, but these are being paid off by outside resources, such as federal funds from regional flexible funds or from the FTA through a Full Funding Grant Agreement for a light rail project, so these bonds do not have an effect on TriMet financial resources.

## Bridge

### **20. How was the current bridge type and configuration selected?**

A two structure bridge with two levels was selected through a public and technical process. This included consideration by the CRC Task Force, Urban Design Advisory Group, Pedestrian and Bicycle Advisory Committee, and Project Sponsors Council as a way to minimize the project footprint and environmental impacts. A Value Engineering Study in 2007 proposed reducing the number of structures across the Columbia River from three to two to reduce the footprint, environmental impacts and costs. This was confirmed by the bridge expert review panel in 2011.

With highway and transit alignments in close proximity, it is more cost effective to combine both modes onto the same set of structures. A separate transit bridge would increase in-water environmental impacts and increase hazards to maritime traffic. A stacked deck design was chosen because putting all the activity at one level would result in a bridge whose width would be at the limits of current technology. Even if proven to be technically feasible, it would increase the complexity of construction and the project cost.

### **21. Why not build a third bridge?**

A third bridge would not address transportation problems in this corridor, including crashes, congestion, and risk of failure in an earthquake nor would it get people where they want to go. Most trips using I-5 have origins and/or destinations within the project area itself. Between 68 and 75 percent of all peak hour cross-river trips enter and/or exit I-5 near I-5 because it provides the most efficient route to key destinations including the ports of Portland and Vancouver and downtown Vancouver and downtown Portland. Traffic analysis found that most I-5 trips would not be diverted to a new upstream or downstream bridge and the existing safety issues on I-5 would remain.

### **22. Has the project considered the Third Bridge Now option?**

Many options and alternatives were considered, including new arterial and highway corridors, which Third Bridge Now advocates. Only those proposals that could adequately address all six identified problems in the I-5 corridor were advanced for comprehensive analysis in the Draft EIS. The analysis prior to the draft EIS found that building a bypass option with a new river crossing, in place of making I-5 improvements, would not meet the basic elements of the project's goals of improving safety, reducing congestion, improving freight mobility, reducing seismic risk, improving transit and enhancing the bicycle and pedestrian path in the I-5 corridor.

### **23. Why was a replacement bridge chosen over a supplemental bridge next to existing I-5 bridges?**

The supplemental alternative would have retained the existing Interstate Bridge for northbound traffic and constructed a new bridge structure for southbound traffic and light rail downstream of the existing bridge. The replacement bridge was selected because it provides greater congestion relief, more traffic capacity, safer highway features, safer river navigation, greater improvements for bicyclists and pedestrians, fewer community effects on Hayden Island, and better potential for future waterfront development in the Bridge Influence Area.

## **24. Would a separate local traffic bridge for Hayden Island reduce congestion on I-5 near the Interstate Bridge?**

A separate arterial bridge between north Portland and Hayden Island is included in the project plans as part of the Hayden Island improvements. A non-highway bridge connecting Hayden Island to North Portland without replacing the Hayden Island interchange would cause longer delays and queues at the ramps associated with the Marine Drive interchange. It would not accommodate the traffic generated by development on Hayden Island planned by the City of Portland or provide enough relief to I-5 to eliminate the need to replace the Hayden Island interchange.

## **25. Are the bridges structurally stable? Can they be seismically retrofitted using low cost measures that result in a 95 percent reduction in bridge lifts?**

The Interstate Bridge is not seismically stable. The existing bridges do not comply with modern seismic standards and are vulnerable to damage or collapse in an earthquake. Both existing structures are supported by wooden pilings set in liquefiable soils. Retrofitting the Interstate Bridge to reduce seismic risk would increase the footprint of the existing piers, narrow the navigation channel, and still leave the potential for bridge lifts. Half of the bridge lifts are required for maintenance and non-commercial marine traffic. A retrofit would not address the high crash rate, duration of congestion, freight immobility, poor bicycle and pedestrian facilities or limited transit options.

## **26. How/why/when was a 95-foot bridge agreed upon?**

The project team, working with the 39-member bi-state task force, sought to avoid, minimize and mitigate any potential impacts. Different heights were discussed in relationship to impacts on river users, traffic safety, airspace, transit, downtown Vancouver, and Hayden Island and overall footprint. Local communities and the states recognized the need to balance these (at times) competing interests as potential solutions were evaluated. In 2006 the bi-state task force recommended:

- Removing the low level, movable span bridge components from consideration due to negative effects to highway mobility, highway safety, freight movement, maintenance costs and the lack of a significant difference in community impacts when compared to a higher mid-level fixed span bridge.
- Removing four high-level bridge components (greater than 130 feet) because of safety concerns with Pearson Airfield and 2004 findings that all known commercial and recreational vessels could be accommodated at 125 feet.
- Advancing the mid-range height component based on the 2004 boat survey findings that a fixed span structure about 80 feet above Columbia River Datum (CRD, a fixed, low water benchmark specific to the river) would accommodate all but six known vessels.

## **27. If light rail were built on the same level as the bridge deck, how much additional clearance would be available? Are there other impacts of changing to a single-level bridge?**

If light rail was moved to the top deck and bridge type remained the same, there would be little additional vertical clearance for vessels. The clearance is being driven by engineering standards due to the bridge type, not the placement of light rail or the multi-use path on the lower deck. Some additional height could be gained with a change in bridge type or number of structures. However, there would be greater environmental impacts, a schedule delay associated with the design change, potential for

worsening navigation in the river channel and the need for additional environmental reviews and approvals, which would result in further cost associated with schedule delay.

**28. Describe the current bridge lift frequency now and for the past five years. Is the number, type and timing of the lifts the same from year to year?**

Since 2006 there has been more than one bridge lift per day on average. There have been as few as 407 (2009) bridge lifts in a year and as many as 572 (2007).

- 2011 – 429
- 2010 – 412
- 2009 – 407
- 2008 – 474
- 2007 – 572
- 2006 – 460

The number of lifts varies across years, months, and days based on water level, maintenance needs and river traffic. More bridge lifts occur during spring runoff when currents and high water require bridge lifts to avoid the difficult “S-curve” navigation. At low water, there can be as few as two to three lifts per month (July - October) and during high water as many as nine lifts can occur in one day (May 2011).

**29. High water levels will mean that the clearance may be as low as 75 feet some time of the year. When and how long do high water conditions exist?**

The highest water levels generally occur between April and June. With a 95-foot bridge, a clearance of 75 feet would equate to a high water level of 20 feet above Columbia River datum, which rarely occurs. Ordinary high water is 16 feet above the Columbia River datum. The river has exceeded that height less than 2 percent of the time between 1973 and 2012.

**30. For whom, and how tall were the loads? How many times have there been shipments of 95 feet or taller? What happens to these 365 loads with the proposed bridge? Describe the businesses and affected users who say the 95-foot clearance is unacceptable. Who are they and what clearance do they say they need? For the periods of the year when clearance would actually be as low as 75 feet, are there more users who say this is unworkable for them?**

CRC staff is preparing a navigation impact report, which will include analysis of the historical frequency of vessels transiting through the area with a clearance need of greater than 95 feet. At this point, we have identified the potentially impacted river users, including shippers and vessels, and their highest reported clearance requirements. At an Ordinary High Water condition of 16 ft. (exceeded less than 2 percent of the time), there are 50 distinct vessels and three fabricators that would potentially be impacted at a 95-foot bridge height. The 50 vessels includes: 36 construction barges owned by 12 separate firms; eight sailboats; three federal vessels (the Corps of Engineers Dredge Yaquina, the Job Corps M/V Ironwood, and the US Navy YTT 10 Battle Point); two passenger sailing ships (the Lady Washington and the Hawaii Chieftain); and the proposed transit of the USS Ranger to a permanent berth as a visitor attraction in Fairview, Oregon. The three fabricators include Thompson Metal Fab, Oregon Iron Works, and Greenberry Industrial.

**31. What are the impacts of a higher bridge?**

A preliminary analysis in 2011 found that a 125-foot bridge could have the following impacts:



- **Safety:** Potential intrusion into airspace of Pearson Airfield
- **Freight:** Steeper grades, which slow freight and could necessitate a climbing lane.
- **Landings on both sides of the river:** The bridge landing could move north, become steeper, or have longer grades and ramps. The transit station may be moved further north and result in a smaller community connector in Vancouver.
- **Costs:** Project costs could increase with any height above 95-feet.
- **Other issues:** CRC staff is recalculating substructure costs associated with a higher bridge, which may increase costs. With steeper grades, transit run time could be affected and the bicycle/pedestrian pathway would be less inviting and accessible.

### **32. What are FAA concerns with regard to the bridge height? Are those concerns the same for Pearson Airfield?**

FAA’s major concern is safety. FAA analyzes the proposed structures’ impacts to the defined airspaces and is the only agency that can issue a “hazard to aviation determination.” If this determination was made, all liability could be placed upon the owner of the structure. An additional 30 feet of bridge height (125 foot bridge) would encroach into airspace for Pearson Airfield and potentially receive a “hazard to aviation determination.” An additional 30 feet of vertical height would likely not impact airspace for Portland International Airport.

### **33. Why can’t we do a lift and limit lifts to the middle of the night (2 to 5 a.m.)?**

If a lift span was put in place, it is not likely that it could be restricted to night time use only. Federal law ( [Title 33, Part 177 Draw Bridge Operations](#) ) gives marine traffic the right-of-way over vehicular traffic. The SR 520 floating bridge (with significantly less marine traffic) has recently received approval from the Coast Guard to limit bridge openings to non-peak times only during bridge construction. With a lift span, there would be continued traffic delays and operations and maintenance costs.

### **34. What would be the cost of a mid-level bridge with a movable span?**

Work completed to date shows that adding a lift span to the proposed deck truss bridge and alignment would result in a structure of unprecedented complexity with the associated technical challenges. A lift span would increase the cost of the project by at least \$250 million. The technical challenges of placing a lift span on the proposed bridge would lead to a re-evaluation of the bridge type, configuration, and alignment. This would require additional environmental reviews and approvals and increase costs due to delay.

### **35. At what point will we spend more on mitigation than we would have spent on a bridge lift?**

Conversations with the fabricators and vessel owners are underway. It is too early to estimate the cost of mitigation, however, because the bridge height has not been finalized. Our preliminary investigation has found that adding a lift span to the existing bridge type and alignment could cost at least \$250 million in construction costs.

## Funding

### **36. What funding commitments are needed and by when to ensure access to federal funding?**

The CRC's schedule takes advantage of federal financial support, especially transit funding from the FTA's New Starts program. The New Starts program is currently funded and the project is well positioned to receive support. The project's favorable rating with FTA has earned the project a favorable spot in the competitive queue for New Starts funds, about \$850 million. To apply for the New Starts transit funds in 2013, FTA requires both Oregon and Washington to have committed state funds. After 2013, however, our federal partners have made it clear that there is less certainty about federal transit funding and other projects may move into a leading spot.

### **37. What is the funding schedule? Why is there such a sense of urgency?**

The funding schedule is designed to access FTA New Starts funds, which will exist through 2013. FTA has said there is less certainty after 2013, and CRC is one of a few projects at the top of the list. State funds must be committed in 2013 to continue the process as well as potentially secure a TIFIA loan.

### **38. Can we still get federal transit funding if light rail is removed from the project?**

The project will likely not be as competitive for the New Starts federal transit funding if light rail is not included in the project. If a decision was made to select a mode other than light rail as approved in the Record of Decision, a supplemental EIS would likely be required, FHWA and FTA would have to approve a new Record of Decision, and FTA would re-evaluate the project and assess its competitiveness compared to other projects. If light rail was removed from the project, it would be virtually impossible to receive federal transit funding on the current timeline.

### **39. Is there federal funding for bus rapid transit and if so, how much would be needed and what would be the timeline to secure it?**

New Starts/Small Starts funds can be used for bus rapid transit. If a decision was made to change the transit mode from light rail to bus rapid transit, we would have to restart the New Starts application process, which would delay the project by several years and likely result in a decrease in potential funding because CRC would step out of the "queue" and would likely not rank as high in terms of cost effectiveness and ridership.

### **40. The funding plan identifies \$850 million from FTA. Would bus rapid transit, which costs less than light rail, still be eligible for \$850 million in federal funding?**

It is not possible to speculate on how much federal funding may be available for a project that included bus rapid transit. If a decision was made to select a transit mode other than light rail as identified in the Record of Decision, the Federal Transit Administration would re-evaluate the project and assess its competitiveness compared to other projects across the country.

**41. Does the \$850 million funding from FTA require a local match? If so, how much and what is the source?**

In general, FTA requires a minimum 20 percent local match. Congressional language adopted in 2010 directs FTA to consider the entire CRC project when determining the match requirements. The exact amount of the match is under discussion, but would be paid by the two states.

**42. Is a tax increase required to fund bus rapid transit? How does it compare to a light rail tax increase?**

Neither light rail transit nor bus rapid transit requires a sales tax increase to fund operations and maintenance. A sales tax increase is one option for operations and maintenance funding. Operations and maintenance costs are greater for bus rapid transit than light rail transit.

**43. Who is responsible for debt repayment of light rail operations and maintenance if light rail ridership and therefore revenue are lower than estimated in the financial plan?**

The capital construction of light rail will be funded through the FTA New Starts program. The operations and maintenance costs will be funded by the local transit agencies through local revenues and fare box recovery. There is no current plan to issue debt to pay for transit operations and maintenance.

**44. Who is responsible for debt repayment if toll revenues are less than estimated in the financial plan?**

Like other toll projects, the responsibility of debt repayment depends on the bond covenants and the types of bonds. The responsibility to repay the bonds lies with the states.