Columbia River CROSSING

DRAFT Meeting Agenda

MEETING TITLE: Task Force Meeting

DATE: September 27, 4-8:00 pm

LOCATION: WSDOT, Southwest Region
11018 NE 51st Circle, Vancouver, WA

Note: Please turn off all cell phones, handheld devices, and pagers during the meeting as they can disrupt the audio and recording equipment. Thank you.

TIME	AGENDA ITEM	ACTION
4:00 – 4:15	Welcome & Announcements	
4:15 – 4:20	CRC Project Update	
4:20 – 4:35	Public Comment	Receive public comment
4:35 – 4:40	August 16 Meeting Summary	Approval
4:40 – 6:45	Preliminary Design Concepts – Part Two	Discussion
6:45 – 7:30	Report on Existing Interstate Bridge	Discussion
7:30 – 7:45	Report on US Coast Guard Hearing	Discussion
7:45 – 7:55	Performance Measures	Discussion
7:55 – 8:00	Wrap Up and Next Steps	
	Next Meeting: October 25, 4-6:30 p.m. OAME, Portland	

BUS DIRECTIONS from PORTLAND:

From Downtown Portland (SW Salmon and 6th Avenue) take C-Tran Bus #105 (I-5 Express) or TriMet Bus #6 (MLK Jr. Blvd) to Downtown Vancouver (7th Street Transit Center). Then follow directions below from Vancouver.

BUS DIRECTIONS from VANCOUVER:

From Downtown Vancouver (7th Street Transit Center) take C-TRAN Bus #4 (Fourth Plain) eastbound to the Vancouver Mall Transit Center. Other buses to Vancouver Mall are #32, 72, 76, and 78. From the VM Transit Center, transfer to Bus #80 (Van Mall/Fisher's) eastbound to 49th and 112th Avenue. WSDOT SW Regional Headquarters is 2 blocks north of this bus stop.

Meeting Summary

Meeting: Columbia River Crossing Task Force
Date: August 16, 2006
Location: WSDOT SW Region Headquarters,
11018 NE 51st Circle, Vancouver, Washington

Members Present:

Last Name	First Name	Organization	Alternate Attending
Adams	Sam	City of Portland	
Ambruster	Grant	Portland Business Alliance	
Branch	Wayne	Clark College	
Burkholder	Rex	Metro	
Byrd	Bob	Identity Clark County	
Caine	Lora	Friends of Clark County	
Dengerink	Hal	Wash. State University- Vancouver	
Eki	Elliott	Oregon/Idaho AAA	
Frei	Dave	Amada Neighborhood Association	
Grossnickle	Jerry	Columbia River Tugboat Association	
Halverson	Brad	Overlook Neighborhood Association	
Hansen	Fred	TriMet	Alan Lehto
Hewitt	Henry	Stoel Rives, LLP	
Holmes	Eric	City of Battle Ground	
Lookingbill	Dean	Regional Transportation Council	
Lynch	Ed	Vancouver National Historic Reserve Trust	
Morris	Betty Sue	C-TRAN	Scott Patterson
Paulson	Larry	Port of Vancouver	Katy Brooks
Phillips	Bart	Columbia River Economic Development Council	
Russel	Bob	Oregon Trucking Association	
Stuart	Steve	Clark County	
Sundvall-Williams	Jeri	Environmental Justice Action Group	
Valenta	Walter	Bridgeton Neighborhood Association	
Walstra	Scot	Greater Vancouver Chamber of Commerce	
Wyatt	Bill	Port of Portland	Susie Lahsene

Members Absent:

Becker	Charles	City of Gresham
Brown	Rich	Bank of America
Cruz Walsh	Serena	Multnomah County
Fuglister	Jill	Coalition for a Livable Future
Hinsley	Brett	Columbia Pacific Building Trades
Isbell	Monica	Starboard Alliance Company, LLC
Malin	Dick	Central Park Neighborhood Assn.
Pollard	Royce	City of Vancouver
Pursley	Larry	Washington Trucking Association
Ray	Janet	Washington AAA
Schlueter	Jonathan	Westside Economic Alliance
Schmidt	Karen	Washington Freight Mobility Strategic Investment Board
Zelenka	Tom	Schnitzer Group

Project Staff Present:

Ron Anderson
Mike Baker
Ray Barker
Daniele Cogan
Doug Ficco
Frank Green
Heather Gundersen
Barbara Hart
Zach Horowitz
Ryan LeProwse
Jay Lyman
Tom Markgraf
Kay McLaughlin
John Osborn
Peter Ovington
David Parisi
Laura Reilly
Lynn Rust
Ted Stonecliffe
Audri Streif
Kris Strickler
Rex Wong

1. Welcome & Announcements

- **Video on-demand**. Recent Task Force meetings can be viewed on the Internet through a link on the project web site (www.columbiarivercrossing.org under the Task Force Meeting Materials page).
- **Welcome new members**. Larry Pursley will join us on behalf of the Washington Trucking Association. Grant Armbruster, from Columbia Sportswear, is the new Portland Business Alliance representative.
- **The purpose of the meeting** is to begin discussion of functional design issues, hear from the project team about how the alternative packages will be screened, and get a report on fuel costs and travel demand.

NOTE:	*Task Force questions and comments are in italics* (Staff responses are in parentheses)

2. Communications & Outreach Report

CRC Communications staffperson Barbara Hart provided a brief report on public outreach activities:

- Media Coverage Summary will be provided at future meetings
- Portland/Vancouver outreach has been going very well
- Community and Environmental Justice Group kick-off happens this week
- Initial Design workshop was held in Vancouver on August 10th
- Newsletter will be mailed out this month

Are the neighborhood leaders seeing things that we (the task force) have not seen?

(Yes, those that are most affected have been given a preliminary look at what we are doing.)
(We are always open to having people take a look at our design concepts. We would like to meet one on one or in a small group to go over the designs and maps.)

3. Other Announcements

Doug McDonald, Washington State Secretary of Transportation, was in the audience and was invited to say a few words. Highlights included the following:

We are hearing a lot good things about the progress being made There's a recognition that this project is as important as any that are in the Seattle newspapers, and the forward progress is very welcome. I now work directly for the Governor, and can confidently say that Governor Gregoire understands the importance of this project and the needs of Clark County. People from this part of the state need to appreciate that the Governor has a lot of support for this project and for this area. Paying for this project will take us to some new places but that is ok because we need to get it done. .

Commissioner Adams gave an update about the Hayden Island moratorium:

--Portland City Council vote on the development moratorium will occur Oct. 4th and I would like to request time on the agenda at the next meeting to discuss our findings and gather support. We don't know when we will be asking for support from individual jurisdictions.

4. Meeting Summary Approval

- ***Action*:** Approved draft summary of July 12, 2006, task force meeting

5. Design Concepts – Part One

Introductions- Jay Lyman

We have this meeting and next month to introduce preliminary design concepts. Tonight we will focus on one aspect of five alternative packages – arterial connections. This is an information piece only, to help you understand the scope and complexity of the issues related to local street connections on both ends of a new bridge. We have begun discussion of preliminary design issues with neighborhood and business leaders in Vancouver, and will soon be holding similar meetings with Portland neighborhoods.

Slide Presentation by David Parisi:

- What is an arterial?
- What are the issues we will be considering when talking about an arterial?
- Alternative 3 details
- Alternative 4 & 5 details

--*Why will there only be two lanes on one span?*
(There needs to be room for shoulders, and be able to abide by good safety design standards)
--*Would you keep two bridges?*
(Yes, the other would be for high capacity transit. They with both be lift bridges as well.)

- Alternative 6 & 7
- Vehicle trip lengths across I-5
- Counts
- Potential Arterial Trips
- Summary

Discussion

--It seems to me that the numbers might be different if there was a freeway interchange on Hayden Island.
(The numbers I used are with existing conditions)

--My point is that if there is not an interchange on Hayden Island then there will be more traffic on the arterial.
(Yes, that may be true)

--Are these spans safe enough to be used for arterial use?
(We do not know yet. For freeway purposes, they would need to be upgraded. For transit or arterial use, the affected local agency (city or county) would have to decide if they want the bridges without upgrades).

--When is the seismic evaluation being completed?
(Geotechnical engineers are already drilling on the Oregon shore. We should be able to provide seismic data at the Sept. meeting)

--Is this data consistent with 60 – 70 percent of on and offs that we heard occur within the BIA?

(Yes, it is. The trips we are talking about today are ones that get on and off in the BIA vs. on or off in the BIA)

--Thank you for doing this extra data about Alternative 3. We do need to do modeling. Current use of freeways is not very useful when we do not have an arterial bridge. If we have a different type of facility then we will have different use. We need to evaluate it differently. Highway capacity tables are based on arterials without access management and with many intersections. Because we are talking about a bridge with few access points there would be more capacity than you think. We need more modeling to be sure that it is does not work.

(Good points. We do not know what an arterial would look like yet and what connection we would have. We did try to use worst case scenario and assume everyone who could use the arterial would, but it is true that it could produce more trips.)

--Thank you for the reminder why we are doing this presentation. Will there be a second piece that will be on replacement bridges only?

(We will have an in-depth discussion of design concepts at the next meeting.)

--All the downstream options for a replacement bridge seem to have the same alignment of all downstream supplemental.

(If we keep the current spans then we would have to make space for two parallel corridors to provide for right of way for both alignments. If you create a new crossing and eliminate the existing bridges, the right of way for the approaches to the existing bridges will be freed up for other uses.)

--I look forward to seeing more designs.

--On the travel model you did, we have been concentrating our conversations on the BIA; will we get a better idea of what happens when trips go south of this area?

(Yes, we are currently modeling down to the Marquam Bridge)

--One of my concerns is that we can only build so much and there will be the same congestion because the parts south of the BIA are still small.

--Slide 7 needs translation.

(For every trip that crossed the Interstate Bridge today, how far are the people traveling all together. The average trip length for people that travel across the bridge is 19 miles)

--One of the most interesting points is that 8% are long haul trips.

(The bridge is carrying very long regional trips)

--How are the population projections calculated into the trip data and are they pinpointed for a specific point in time?

(This data is based on 2005 data and we will be projecting based on this data out to 2030.)

--Data will be updated?

(Yes, RTC and Metro, who are running our traffic models, will be providing the data for 2030)
(Upcoming presentations will be providing in depth detail and design. This is only the beginning of those presentations.)

6. Task Force 2007 Meetings Schedule

We are preparing the schedule of meetings for next year. Preferably, the fourth week of each month on Tuesdays. Will the fourth Tuesday of every month work for members as our scheduled meeting date?

--*Yes, except during holiday season — Nov. and Dec.*

7. Alternatives Screening Process

Slide Presentation by Mike Baker:

- Introduction
- Process to date
- Key decisions
- Criteria to support decisions
- Upcoming task force activities

October meeting has been rescheduled from Oct. 11 to Oct. 25.

Discussion

--*How will we be evaluating the alternatives in January and February?*

(We will present data and information on the alternatives in September and October. We are hoping staff can introduce a smaller set of results based on data, to the task force in November. We will begin public comment and outreach, and the results will be brought back to you to help you make a recommendation about the right set of alternatives in February.)

--*Will these dates change to the fourth Tuesday?*

(No, none of the dates already set will be changed. The change to the fourth Tuesday of each month will start in 2007 – although at this point none of the 2007 dates have been set)

(Please take some time to look at the criteria and make sure that they are all there. We can be nimble at this point at addressing how we do our analysis, so if you have any suggestions please contact Jay.)

--*Can we have those criteria sent to us again?*

(Yes, Barbara can provide you with a link to where they are on the internet.)

8. Fuel Costs and Travel Demand

Introduction

Several meetings ago, some of you asked for a discussion about how the rising price of oil would affect the travel demands we are using for our models.

Slide Presentation by David Parisi:

- Oil and transportation - where are we today, where are we going
- Fuel prices and travel demand -what is the history and relationship between these two

--*Is there any indication that people drive less often in other parts of the world where the price of gas is higher?*

(Yes, there is data that shows when gas prices are sustained at very high prices, vehicle miles traveled (VMT) decreases.)

--What is very high?
(That is relative.)

--The utilization of household expenditures spent on transportation, did you look at it by sector? I think that in this area it may not be even.
(That may be true.)

--Are fuel economy standards implemented by the government?
(Yes.)

--They are not market-driven?
(To a certain degree they are. When gas prices are high, then people want vehicles with higher fuel economy.)

- Short and long term affects - what are some short-term and long range effects consumers, industry and government do to mitigate higher gas prices
- Regional travel demand modeling - what do policy objectives of RTC and Metro mean, what does state of the practice mean to modeling

--What happened in about 1995, when there was a sharp increase in VMT?
(We don't know.)

--The appropriate measurement for our data should be not VMT, but number of trips across the bridge.
(Yes, we will have some information about that coming up)

--I think if you look at your issues, when looking at fuel (slide 9), we're not so ahead of ourselves yet to have the latest information. Knowing that we have gone through serious gentrification in our community and knowing our incomes don't meet our rents. People who are most affected by the BIA are not even wealthy enough to have cars. Some people are making choices between rent and buying a car. I would challenge the information you have presented.
(Socio-economic data is being figured into the model.)

--Has inflation been factored out of the cost?
(Yes.)

--The Vehicle Operating Cost slide is misleading because it does not factor in cost of living.
(To the average consumer, most costs are fixed compared to gas prices, which can change daily.)

--The bottom line (green line in graph) is showing the improvements that are in technology related to car design. The blue line is driven by the cost of gas.

--Metro's approach supports that we should be looking at how fuel cost will affect the economy, but not so much how will it affect the number of trips across the bridge. The travel demand in the BIA will still be high, but how will the cost of gas affect us? As a public body, we need to think about how changes will affect industry, and those of low income communities. How do we maintain access to goods and schools? We need to look at future demand on the bridge, despite the possible rise in gas prices.

- Travel demand in the CRC project area – what does demographics and population tell us about travel demand

--Has an elasticity model been done that demonstrates at which point congestion gets so bad that people will switch to transit? I'm sure there is a point at which people would switch their mode of travel, but what is it? Congestion is a good way to get people to switch travel modes. Could we get some data about that?

(I will have to get back to you about that. I do not have that information at this time.)

Discussion

--I think there are studies and places to model the point at which congestion is so bad that people will take public transit. In New Jersey, the Lincoln and Holland tunnels show that traffic has forced people to switch to transit.

--Freight really isn't considered in the fuel economy data presented here. I have found that in the Pacific Northwest, although a lot of freight will move by rail in the future, we are so short on rail capacity large manufacturers will be bumping off boutique cargo and smaller businesses, which will then move to truck freight. Freight traffic on trucks is going to increase substantially in the next few years. VMT will increase when talking about trucks. This is related to fuel economy, even though there will be changes made in freight engines, freight travel will increase a lot.

(We are expecting almost a doubling in truck use of the BIA. Trucks, air, and transit account for 60% of fuel use.)

--The freight industry is looking at alternative fuel sources such as bio-fuel, hybrid trucks, fuel cells, and engine upgrades.

--Elasticity of the rail system: it is difficult to add capacity to rail, and so we will have to move to truck. As fuel goes up, value of freight movement goes up vs. single-occupancy vehicles. When will policy or consumer demand play into people's decision to drive their cars? Will that play into your equation?

--Regarding funding sources, is vehicle weight tax/miles being considered? Especially since more trucks will be on the road, it sounds like a great funding source. I hope that will be considered.

--Aggressive TDM in my mind is when I-5 allows only bikes, light rail, and trucks.. That is aggressive TDM. It includes options that we are not considering. It could be considered that eventually there won't be cars allowed in downtown Portland and light rail will be the only option. And if we want to get there we will have to take transit. Education needs to start here.

--Are we going to have the same sort of analysis of tolling as we had on VMT?

(Yes.)

9. Public Comment

Ulysses Martinez: *We are at a pivotal point in history because there are many different that we need to consider keeping this nation strong. Relying on oil is becoming a sticky situation. Light rail from Oregon to Washington would benefit everyone. Relying on transit would increase air quality. Other devices are available such as wave technology. I think light rail should be considered. We need to consider the environment because there are many others on this planet and no amount of money can*

save us from the detriment that could be caused from keeping cars on the road. We could be working on fuel efficiency, but there are those that are fighting that for profit. The environment should be something we are considering heavily. I have one thing in common with all of you, I breathe the same air.

Jim Howell: *When travel forecasting, the further out we go, the less accurate it is. Go back 50 years, I had driven across the country many times and gas was 23 cents a gallon and there was only one four-lane highway, all others were two lane. Eisenhower enacted a law to create the interstate system and by now we would have spent a trillion dollars on it. Pretend our new president would spend that much money on transit instead of on highway projects. What would happen? We have no idea. I know we have come up with a few $2 billion solutions and the no build solution, but there needs to be a middle sized project being looked at in the $200 million range.*

Calvin White: *I am a cancer survivor. I only had to come two miles to get here. If you wait long enough, everything will come to you. See Portland came here. Hayden Island is a pretzel or maze for bikes and pedestrians. I would like to see a foot bridge from the where the old K-mart was and the cement factory, or Expo Center. We are given a lot of priority for fast vehicles to go short distances. Why don't we go shorter distances in slower vehicles. We should make a bridge for slow vehicles and let the faster ones go around. You get more efficiency with a fast vehicle going long distances than a slow vehicle going long distances. Bicycle per passenger mile costs more than cars. Have you ever spent $20.00 on a bicycle tire that lasts more than 500 miles?*

Sharon Nasset*: There is a difference between fear and reality. Fear is that we might have an earthquake in a few years. Reality is that we have only two bridges crossing the Columbia, less than any comparable urban area divided by a major river. We have just painted the existing I-5 bridge plus electrical upgrades. It has a 50 year life span left in it.. We need to do both sides of "the what if." If we build a third bridge, and then there is an earthquake and the bridge falls down – guess what will happen? The federal government will come in and build a new bridge, new roads, and a new hospital. If we play "what if" then we need to look at the positive "what if's" too. What if we have an earthquake and the bridge does just fine?*

The location of this meeting is not acceptable. People can not get here without taking three buses. It is held in a governmental building, which is not comfortable for many people. And the time is not convenient. All this has been pointed out and nothing has been done. Next year's schedule needs to not just accommodate task force but also the public. It is not fair, and not one person on the Task Force is objecting.

We need a third bridge corridor. There is no reason to widen the bridge if we are just going to get caught in traffic on either end.

Jim Karlock: *Building the MAX would cost as much as buying condos in the Pearl for the people who would switch to the rail. Ninety percent of the money came from the Federal government, but my understanding is that the money came from road users, not from transit users. Rail costs too much and does too little. National Academy of Science showed that there is plenty of oil capacity until 2015. Road users only pay a small percentage of the cost of transportation. Federal dollars that go to roads are paid by road users. Federal dollars that go to transit are taken from road users.*

(The federal dollars are generally tax payer's dollars.)

Next Meeting Date / Location

Wednesday, September 27, 2006, 4pm – 8pm
WSDOT SW Region Headquarters, Room 102, 11018 NE 51st Circle, Vancouver, Washington

Columbia River CROSSING

Project Updates to Task Force
September 2006

The Interstate Collaborative Environmental Process (InterCEP)

InterCEP passed their second 'formal comment' point on September 6, for the Method and Data Reports, which outline the method for analyzing impacts of various alternatives in the Draft Environmental Impact Statement (DEIS). The next decision point will be in February or March 2007, when they will 'concur' on the range of alternatives to enter into the DEIS

United States Coast Guard Preliminary Hearing

The U.S. Coast Guard and the CRC project will host an open house and public hearing Thursday, Sept. 21, 2006, to obtain public input on current proposals for an additional or replacement bridge serving vehicle traffic over the Columbia River for I-5 traffic between Portland and Vancouver. Bridge alignments, pier placement and navigational concerns will be discussed.

Inter-tribal Meeting

An Inter-tribal meeting will be held on September 28, to discuss technical issues related to cultural and natural resources. All eight consulting tribes have been invited to send staff.

Yakama Nation
Confederated Tribes of the Umatilla Indian
Confederated Tribes of Grand Ronde
Confederated Tribes of Warm Springs
Spokane Indian Tribe
Nez Perce Tribe
Cowlitz Indian Tribe
Confederated Tribes of Siletz Indians

Columbia River CROSSING

Communications Summary
August 16 – September 20, 2006

Where We've Been

In the past five weeks, CRC staff has been to the following events. The number of people we discussed the project with is in parentheses.

Neighborhoods
Oregon:
- Jantzen Beach Moorage Inc. (20)
- Humboldt Neigh. Assn. (16)
- Hayden Island Neigh. Network
  - (11) on Sept. 7
  - (60) on Sept. 14

Businesses
Oregon:
- Lake Oswego Chamber of Commerce (18)

Community
Oregon:
- Arbor Lodge Community Fair (37)

Washington:
- Kiwanis Club, Vancouver (8)
- Lions Club, Vancouver (18)
- Fern Prairie Grange (8)

Fairs and Festivals
Oregon:
- PROPER Festival, North Portland (32)
- SeptemberFest, Holy Cross Catholic Church (35)
- Alberta Cooperative Farmers Market and Alberta Street Fair (13)

Washington:
- Taste of Vancouver (93)
- Uptown Village Street Festival (187)

Other
Washington:
- Vancouver City Council (7 councilors; televised on CVTV)
- Friends of Clark County annual picnic (35)

The Totals

598 people reached in this five week period.
2,647 people reached since March 1, 2006.

What else is happening?

Community and Environmental Justice Group

The kick off meeting of the CEJ Group occurred Aug. 17, with a follow up longer briefing on Aug. 19. Feedback from the members was generally positive. They provided good input on how the CRC project can further improve on outreach efforts.

The next meeting occurred September 14 and the EJ training session is schedule for Sept. 30. Two area bus tours are being planned for October.

Open House and Public Hearing

The U.S. Coast Guard and CRC are holding an open house and preliminary public hearing on bridge alignment, pier placement and navigational concerns Sept. 21 at the Jantzen Beach Red Lion. CRC staff will be available during the 4 p.m. open house to provide information about the bridge proposals currently under consideration and answer questions. The Coast Guard will then hear oral testimony beginning at 6 p.m. Information is posted to the CRC Web site under "Open Houses."

Portland Design Concepts Workshop

A date has been set for the Portland Design Workshop: Monday, Sept. 25. The event will occur 6-9 p.m. at OAME in north Portland.

Invitations have been sent to neighborhood and business leaders and planning with the City of Portland is ongoing.

Focus Groups

Focus groups are scheduled for the third and fourth weeks in October. A discussion guide currently is being developed.

Media Coverage

- KEX aired an interview with John Osborn Aug. 14 that focused on general project information.
- The Battle Ground Reflector published an opinion piece Aug. 23 regarding public comment at Task Force meetings.
- The Columbian published a column by Tom Koenninger Aug. 23 that supported light rail.
- The Columbian published a story Aug. 22 about the CRC presentation to the Vancouver City Council.
- The Oregonian's Randy Gragg published a commentary Sept. 3 about the design of a new bridge and freeway alignment.
- The Oregonian published an editorial Sept. 7 about the 25th anniversary of the MAX and mentioned a link with Vancouver.
- The Portland Tribune ranks the northbound commute from Portland to Vancouver as the worst in the metro area

Outreach Materials

Final touches were made to a project newsletter, which will be printed and then mailed to the project mailing list. This issue will provide information about the 12 preliminary alternative packages. Look for it in your mail box this week.

- The monthly project email will be sent out this week to about 2,300 subscribers.
- The updated 2006 Task Force meeting schedule was uploaded to the Web as well as a page describing the 12 alternative packages. We will be posting a new page on the Community and Environmental Justice Group.
- A CRC project display will be put on view at the Fort Vancouver Library beginning Oct. 2.

What We're Hearing

- Support for light rail from Portland to Vancouver was expressed at public events in Portland.
- Concerns expressed with livability of Hayden Island and with the access to Hayden Island from north Portland.
- Support voiced for tolling from Oregon residents.
- We received 11 emails with comments or questions in this two week period. Of those:
- Support received at festivals for retaining the existing spans for some transportation modes, especially arterial traffic. People want another travel option in case there is an accident on a new I-5 bridge. They are willing to put up with bridge lifts on the existing structures.
- Several people said we need a third crossing – most said near Camas/Washougal.
- Support voiced for the Delta Park project.
- A couple of comments from Portland residents and realtors who said they or their clients would consider living in Vancouver if it wasn't for the congestion.
- Several comments about tolls – both in support and in opposition.

Columbia River Crossing In the News

Reflections – A Better Plan
Marvin F. Case
The Reflector – September 13, 2006

Which commute is the worst?
Peter Korn
The Portland Tribune – September 12, 2006
(republished in *Clackamas Review*)

Coast Guard sets hearing on I-5 bridge
Thomas Ryll
The Columbian – September 12, 2006

Riding on the vision of our predecessors
The Oregonian – September 7, 2006

Project threatens to scar Vancouver a second time
Randy Gragg
The Oregonian – September 3, 2006

Reflections – A Better Plan
Marvin F. Case
The Reflector – August 24, 2006

Opinion – New bridge must carry light rail
Tom Koenninger
The Columbian – August 23, 2006

Mayor: Numbers to dictate new I-5 bridge agenda
Jeffrey Mize
The Columbian – August 22, 2006

Columbia River Crossing on Television & Radio

Infamous Hwy. 26 upstaged by new 'worst commute'
Compiled by kgw.com staff
Tuesday, September 12, 2006

Columbia River CROSSING

DRAFT Memorandum

September 20, 2006

TO: Task Force

FROM: CRC Project Team

SUBJECT: **DRAFT MEMORANDUM:** Considerations for Replacing Versus Reusing the Existing Interstate 5 Bridges

1. Introduction

1.1. What is the purpose of this memo?

This memo describes key considerations associated with replacing versus reusing the existing I-5 Columbia River bridges. Over the next few months the CRC project team will decide which alternatives to drop and which to carry forward into the Draft Environmental Impact Statement (DEIS). These decisions will include narrowing the river crossing options, with a key choice being whether to remove or keep the existing bridges over the Columbia River. The "replacement" alternatives would remove the existing I-5 bridges and build new structures. The "reuse" alternatives would keep one or both of the existing bridges in addition to building a new structure.

The primary reason for preparing this memo is to ensure that the pending decision about which alternatives to include in the DEIS will comply with a specific and very rigorous federal environmental law. Because the northbound I-5 bridge is listed on the National Register of Historic Places (NRHP), it is afforded special protection under Section 4(f) of the Department of Transportation Act. This law prohibits the USDOT from funding any project that would have an adverse impact on significant historic resources (as well as public park lands), unless it can be demonstrated that there are no prudent and feasible alternatives that would avoid that impact. An alternative is feasible if it is technically possible to design and build. An alternative may be feasible but imprudent for several reasons, such as: it adds costs of an extraordinary magnitude; it does not meet the project purpose and need; or, it would have an accumulation of factors that collectively have adverse impacts of a unique or extraordinary nature. The formal Section 4(f) analysis and documentation cannot be completed prior to the Final EIS phase in 2008. The purpose of this memo is to test the "prudence and feasibility" of avoidance alternatives that might be dropped by early 2007, prior to the DEIS. The intent of this test is to decrease the risk that future regulatory evaluations might find that such alternatives should have been carried forward. Non-compliance with Section 4(f) requirements would make the project ineligible to receive federal funds from USDOT.

1.2. What issues must be considered before deciding to reuse or replace the existing bridges?

Key issues to consider in the decision to remove or reuse the existing bridges are:

- Traffic and transit operations and safety;
- Navigation operations and safety;
- Community and economic impacts;
- Natural environment impacts;
- Costs; and
- Other considerations, including Ownership.

360/737-2726 503/256-2726 WWW.COLUMBIARIVERCROSSING.ORG 700 WASHINGTON STREET, SUITE 300, VANCOUVER, WA 98660

2. Key Findings and Next Steps

Alternatives that replace the existing bridges generally perform better than alternatives that supplement and reuse the existing bridges on nearly all criteria. This is based on current information on traffic and transit performance, navigation issues, impacts to community and natural resources, and seismic safety. However, Section 4(f) establishes a higher threshold than "which option is more desirable?" Section 4(f) requires anyone seeking federal transportation funding to select only from those options that avoid adverse impacts to significant historic resources, unless none of those options are prudent and feasible. Therefore the test is which, if any, of the reuse options are prudent and feasible?

Based on current data and analyses, it appears likely that many, if not all, of the reuse options have potentially serious problems or disadvantages. However, it is also clear that there is not yet adequate data or analysis to determine whether each reuse option is prudent or imprudent in the Section 4(f) context. The following are the current key findings and the critical missing information:

- Interstate traffic remaining on the existing bridges would not meet the project's stated need related to traffic safety. Regardless of other considerations, this factor alone makes this reuse option imprudent.
- Arterial traffic could likely function with adequate safety on the bridge. However, it would be affected by frequent (including peak period) bridge lifts, and would result in through-traffic intrusion, queuing, and other impacts in downtown Vancouver. It would also require a major seismic upgrade. This option may not be prudent, but it is currently inconclusive without (1) cost analysis including cost effectiveness and (2) more definitive understanding of the traffic impacts in downtown Vancouver.
- Light Rail Transit (LRT) would require major seismic upgrades and design retrofit to the existing bridge. The existing bridge, due to unrestricted bridge lifts interrupting service and reliability, would have substantial operational disadvantages for LRT. This option may not be prudent, although this determination requires (1) cost analysis including cost effectiveness, and (2) a better understanding of how the bridge lifts would affect key transit performance measures such as travel time, ridership, reliability, etc.
- Bus Rapid Transit (BRT) on the existing bridge would require major seismic upgrades. The existing bridge, due to unrestricted bridge lifts interrupting service and reliability, would have substantial operational disadvantages for BRT, although the impacts would not be as regionally disruptive as with LRT. This option may not be prudent, although this determination requires (1) cost analysis including cost effectiveness, and (2) a better understanding of how the bridge lifts would affect key transit performance measures such as travel time, ridership, reliability, etc.
- Using an existing bridge for bicycles and pedestrians only would likely require some seismic upgrades. The lower elevation makes the existing bridge easier to access than a new bridge, although that advantage is contradicted by the interruptions due to bridge lifts. The cost of this option would likely be substantially higher than the cost of accommodating bikes and pedestrians on a new highway and transit bridge (replacement alternatives). The prudence of this option rests largely on the cost analysis.

Other factors affecting the prudence of all of the reuse options are:

- Ownership is a significant consideration for any reuse option other than interstate use. This may be a fatal flaw if WSDOT and ODOT are not willing and not required to maintain ownership and no alternative owner can be found. Answering these questions requires additional research.
- The river navigation problems associated with the existing bridges would be largely fixed if they were replaced by a new bridge. These problems would be exacerbated by supplementing and reusing the existing bridges. While this is clearly a disadvantage for reuse options, the US Coast Guard has not yet provided a definitive, official opinion or determination on the severity or permittability of a bridge that would further degrade navigation. This will be an important consideration for determining the prudence of all of the reuse options.

- Adverse land use and right-of-way (ROW) impacts are generally greater for alternatives that reuse and supplement the existing bridges versus alternatives that use a replacement bridge.
- Natural resource impacts are generally greater for supplemental versus replacement alternatives, especially from a long-term perspective.

Finally, Section 4(f) guidelines state that an alternative will be considered imprudent if it would result in an accumulation of factors that collectively, rather than individually, has adverse impacts of a unique or extraordinary nature. A number of the reuse options are approaching this threshold.

The next steps are to continue the data collection and analyses necessary to make clearer determinations on the prudence of the reuse options as outlined above.

3. Traffic and Transit Operations and Safety

3.1. How well would interstate traffic operate on the existing bridges?

The existing bridges do not meet current interstate highway standards. Sub-standard design features reduce traffic speeds and capacity and increase accident rates for interstate traffic using the bridges. Furthermore, bridge lifts occur during off-peak periods, causing accidents and increasing the chance of congestion throughout the day. Given their through-truss design, it is not prudent to widen the existing structures to meet current interstate highway design standards. Therefore, alternatives that keep interstate traffic on the existing bridges would not meet the project's purpose and need.

The existing bridges have steep vertical grades approaching the crest of the structures (the "hump"). Because the crest limits sight distance, the bridge does not meet stopping sight distance standards for speeds greater than about 35 mph. This contributes to increased accident rates on the bridges. Cars approaching the hump cannot see traffic on the downward slope, causing rear-end collisions if traffic has stopped on the other side of the hump.

The shoulders on the bridges are approximately 1 foot wide, well below the standard 10 – 12 feet. This is inadequate as a storage location for disabled vehicles and forces drivers on the outside lanes to be undesirably close to the physical barriers that border the bridges. The lack of safe areas for incident response, disabled vehicle pullout, and driver recovery impairs the ability to manage highway operations and recover from events that interrupt traffic flow. As a result, accidents occur more frequently and even minor accidents can cause severe delay crossing the bridges.

Upgrading the existing bridges to reduce vertical grades and provide sufficient shoulder widths is not prudent because it is too expensive. Reducing the vertical grades would require significant modifications to piers and reconstruction of selected truss spans. Though technically feasible, this would be prohibitively expensive and would impact river navigation by lowering vertical clearance under the high span channel. The existing bridges are not wide enough to retain three lanes of interstate traffic and provide at least a 10-foot-wide shoulder. Removing one lane of traffic in each direction would provide enough room for one standard width shoulder but would further limit the capacity of the bridges, which are undersized to meet demand even with three lanes in each direction. It would not be technically feasible to widen the existing bridges to provide enough width for a standard shoulder without virtually rebuilding the structures. The existing truss members would have to be removed and replaced with new, wider through truss members, which would be prohibitively expensive, close the bridges during construction, and change the visual character of the existing structures.

Currently, the Coast Guard permits the DOTs to prohibit bridge lifts during peak periods, restricting lifts to off-peak periods. Bridge lifts create congestion because they require traffic to wait for as much as 20 minutes. This is often long enough to create long lines of traffic waiting to cross the bridge, which can take up to 1 hour or more to clear. Bridge lifts also can cause collisions as drivers do not expect to stop as they approach the bridge. Bridge lifts would likely continue to be limited to off-peak traffic periods if the existing bridges remain in use for interstate traffic. However, lift restrictions might be removed if the Coast Guard were to determine that a supplemental bridge created safety concerns for river navigation.

It is imprudent to reuse the existing bridges for interstate traffic. The substandard features on the existing bridges increase accident rates and cause even minor accidents to create congestion. Furthermore, bridge lifts would continue to create operational problems for interstate traffic during off-peak periods. Since the existing substandard design features cannot practicably be corrected, continuing to route interstate traffic on these bridges would not meet the project's purpose and need.

3.2. How well would arterial traffic operate on the existing bridges?

Reusing the existing bridges for arterial traffic would encounter some of the same problems as reusing them for interstate traffic. This would also result in complex intersection arrangements due to the proximity of a new interstate crossing. Providing a crossing devoted to arterial traffic would also substantially increase through-traffic in downtown Vancouver and Hayden Island.

Because arterial traffic would have lower speeds and volumes than interstate traffic, it would not be as adversely affected by sub-standard design features, such as the steep grades approaching the "hump" of the bridges. The currently narrow shoulders that do not allow vehicle storage and can cause even minor accidents to create congestion could be widened by converting the six lanes to just four lanes (two lanes per bridge) into an 8-foot-wide outside and 4-foot-wide inside shoulder. An arterial could potentially be posted for travel speeds of 35 mph, which would meet the existing limitations on stopping sight distance.

One significant concern for reusing the existing bridges for arterial traffic is the effect of bridge lifts. Currently, the Coast Guard restricts lifts to off-peak periods. If the bridges are used for non-interstate purposes, discussions with Coast Guard officials have indicated that the lift restrictions may be removed. This would permit lifts on-demand throughout the day. Lifts during peak periods would disrupt arterial traffic and increase congestion, travel time, and accidents during these times.

An arterial crossing's connections in downtown Vancouver, on Hayden Island, and near Marine Drive could also create operational and safety concerns because the supplemental highway bridge and its ramp connections would be immediately adjacent. The interface between the arterial's intersections and the new highway ramps cause complex intersection arrangements and potentially prohibit some turning movements from the arterial or require circuitous routing.

Perhaps most importantly, an arterial crossing would likely substantially increase through-traffic in downtown Vancouver and on Hayden Island. Initial traffic forecasts indicate that there would be few close-in or short trips that would use an arterial crossing (only 3.5% of the vehicle-trips currently using the existing bridges travel five miles or less). Motorists taking longer trips may divert to an arterial crossing, especially during congested periods on I-5, and increase traffic intrusion in downtown Vancouver (e.g., along Columbia, Washington, Main, and Broadway Streets), and on Hayden Island streets (e.g., along Center Avenue, Jantzen Drive, and Hayden Island Drive). This would impact intersection services levels, interactions with other modes (e.g., pedestrians and bicyclists), and may introduce safety concerns on locals streets.

These factors, combined with traffic impacts to local roads in downtown Vancouver and on Hayden Island, might make alternatives that reuse the existing bridges for arterial traffic imprudent.

3.3. How well would transit operate on the existing bridges?

Reusing the existing bridges for LRT or BRT would require substantial upgrades and would still limit transit operations when compared to using LRT or BRT on a new bridge.

To run LRT on the existing bridges would require adding an electric power system, rail tracks, and most likely complete deck reconstruction and substantial structural improvements to ensure sufficient load capacity. More importantly, major seismic upgrades (see Section 2.5) would be required to the bridge's substructure and superstructure and the lift towers and bearings would need to be replaced.

Furthermore, since a new supplemental bridge would be located west of the existing bridges, LRT would need to cross under I-5 at both ends of the bridge in order to access Hayden Island and downtown Vancouver. Such crossings would consume more ROW and likely require tight radius curves which would slow LRT operations.

One advantage of operating LRT on the existing structures would be the lower elevation of those bridges on Hayden Island and at the south end of downtown Vancouver. Being closer to ground level allows easier access to the LRT stations by pedestrians, buses, and autos. However, this advantage would be contradicted by the slower LRT speeds and longer LRT route that would result from the two additional I-5 crossings and tight radius curves mentioned above.

Bridge lifts would cause severe limitations on LRT or BRT operations by delaying trains or buses for extended periods of time. These delays, particularly during peak period when such delays are most harmful, disrupt schedules and limit the travel time benefits that a major transit project is expected to deliver. For LRT, this would also impair signal prioritization — requiring train operators to manually override automated operation — and impede operators' ability to coordinate signalization at the Steel Bridge in Portland. If the Coast Guard were to allow bridge lifts throughout the day, which is likely, transit operations would be severely impeded because lifts during peak periods may result in up to three trains waiting at both ends of the bridges. This would substantially reduce capacity during times of peak demand. Delays of this magnitude would also impact all other trains operating through the Rose Quarter and across the Steel Bridge and disrupt schedules along the entire Portland Mall because service in these areas is provided by weaving two or more train lines together.

Reusing the existing bridges for BRT would require the same seismic upgrades (major retrofit of substructure and superstructure and replacement of lift towers and bearings) as for other reuse options. However, unlike LRT, it would not require reconstructing the deck or adding rail and an electric traction power system. The only deck improvements required would be roadway restriping and resurfacing.

There are no meaningful operational advantages to running BRT on the existing bridges versus a new bridge, but there are clear disadvantages. While the operational limitations would not be as severe to BRT as to LRT, they would still be substantial. Bridge lifts would not be as disruptive to system-wide performance compared to LRT, but they would result in holding up to three buses at each end of the bridge during the peak periods, thus increasing travel times and decreasing reliability and passenger-carrying capacity.

The existing bridges can be retrofitted to meet design standards for LRT and BRT use. However, these retrofits would be substantial for LRT and would still result in much lower operational efficiency and reliability compared with transit operation on a new structure. Seismic safety would require major seismic upgrades to nearly all bridge elements, whether used for LRT or BRT. If the Coast Guard were to allow bridge lifts during peak periods, which appears likely, the negative impact on either LRT or BRT reliability, travel time, and ridership would likely fall short of meeting the project's purpose and need.

The increased cost and reduced performance of BRT or LRT on the existing bridges raises significant concern about the ability of the transit project to secure federal funds. This project must compete nationwide for a limited funding pool, and any options that add costs and decrease transit rider benefits decrease the competitiveness of the project.

3.4. How would the existing bridges work for pedestrians and bicyclists?

Existing bicycle and pedestrian facilities across the existing bridges are 4-6 feet narrower than the 12-foot standard and are located extremely close to traffic lanes, impacting safety for pedestrians and bicyclists. Furthermore, connectivity between the bridges and adjacent areas is poor; bicycle and pedestrian connections between Marine Drive, Hayden Island, and Vancouver require out-of-direction travel.

Options for reusing the existing bridges for bicycles and pedestrians range from retaining the current conditions to devoting one of the existing bridges entirely for these users. The former option would not address part of the project purpose, while the latter could improve capacity and safety for bicycles and pedestrians comparable to a facility on a new bridge. Minimal upgrades would be required to convert one of the existing bridges for bicycle/pedestrian use.

However, seismic safety may still require substantial seismic upgrades as discussed in Section 2.5, thus adding substantial cost to this bike/ped option, compared to accommodating pedestrians and bicycles on a new multi-use bridge. In addition, the lift span would be allowed to open at any time and would require

24-hour staffing. This could make the bridge a very expensive bicycle/pedestrian facility and it is doubtful that there is a public entity that would be willing and able to assume ownership. Although lifts would likely occur even during peak periods, they would not be expected to substantially impact bicycle or pedestrian safety, though they would introduce delays and uncertainty.

The existing bridges can be retrofitted to meet design standards for bicycle/pedestrian use. Reusing one of the bridges exclusively for bicycles and pedestrians would perform nearly as well as a facility on a new structure as long as the connections at each end were improved. Nonetheless, this reuse option may be imprudent because of the cost of seismic upgrades and the cost of long-term lift span operations. It is unlikely that any public entity would be willing and able to own and operate one of the existing bridges exclusively for bicycles and pedestrians due to the high cost of operation and maintenance.

3.5. Can the existing bridges be seismically upgraded to current standards?

The project convened an "Expert Seismic Panel" of structural engineering and geotechnical engineering experts for a two-day workshop on August 28 and 29, 2006 to discuss the seismic vulnerabilities and retrofit strategies of the existing bridges. Based on the age and design of the bridges, the soils in which the bridge piers are located, and the seismic vulnerability of this region, the Seismic Panel considered the existing bridges to be highly vulnerable to significant damage and/or collapse from a seismic event. Key findings from this panel included:

- Soil will liquefy to a significant depth, requiring a full foundation seismic retrofit to avoid foundation failure;
- The rebar in the pier columns lacks adequate confinement and could be severely damaged;
- The bridge bearings would be significantly overstressed in a major seismic event and would fail;
- The movement of the unrestrained bridge counterweights during a seismic event could severely damage the bridges; and
- The tower and truss span members and connections are vulnerable to overstress and damage during a seismic event.

The bridges currently do not meet basic "no collapse" criteria for safety in the occurrence of a major seismic event. The panel determined that it is technically feasible to retrofit the existing bridges to a level of service that would meet "no collapse" criteria, though the expense could be equal to a substantial portion of the cost of a new structure. The panel discussed the structural elements that were considered to be most vulnerable to severe damage or failure in a seismic event and retrofit strategies that addressed these vulnerable elements. The panel recommended that any alternative that reuses the existing bridges should, at a minimum, have a seismic retrofit strategy that protects against collapse (rather than maintain an operational level of service) in a 500-year event. Such a decision would likely rest with the entity owning the bridge.

Seismic retrofits would change the visual character of the existing bridges due to added and strengthened structural members and rebuilt towers and reduce the horizontal clearance between their piers. Visual changes would likely not be apparent to traffic traveling over the bridges, but would be visible to viewers on Hayden Island and in downtown Vancouver. Seismic retrofits would include encasing the existing foundations. This would extend the current foundation limits and reduce the horizontal clearance between piers, worsening the already restricted navigation route (see section 3.1) that many vessels must traverse between the existing bridges and the downstream railroad bridge. Increasing the width of the existing bridge foundations and adding a supplemental new bridge would combine to further tighten the horizontal navigation clearances.

The existing bridges are clearly vulnerable to seismic events and major seismic retrofits are necessary to reuse the bridges. These retrofits are expensive, potentially change the visual character of the bridges, and reduce the safety of marine traffic traveling between the piers. Further analysis is needed to determine how severe the navigation impacts would be, and until cost estimates are available to compare

the price of replacing the bridges to supplementing them (which includes seismic upgrades), it is unclear whether the cost alone of seismic retrofits makes reuse alternatives imprudent.

4. Navigation Considerations

4.1. How would river navigation be affected by reusing versus replacing the existing bridges?

Vessels traveling under the existing I-5 bridges and through the swingspan of the Burlington Northern Santa Fe (BNSF) railroad bridge often choose a less direct route between the bridge piers to avoid delay. The most direct navigation channel through this river section is through the lift spans of the I-5 bridges and the BNSF bridge swing span. This route is relatively straight and is preferred during times of high velocity river flow. However, it is subject to lift span restriction periods that can delay vessels. As vertical clearance allows, vessel operators can avoid delays during lift span restriction periods by traveling through the I-5 bridges' wide or high spans. Since the wide and high spans are south of the BNSF bridge swing span, this path dictates a more complex maneuver than the route through the I-5 lift spans. Vessels using the wide or high spans must navigate an "S" curve path between the I-5 bridges and the BNSF bridge.

Alternatives that reuse and supplement the existing bridges complicate river navigation by placing additional piers between the existing bridges and the BNSF bridge. There are two options that have been analyzed for pier locations — one with 600-foot spacing and another with 800-foot spacing. Both spacing options impact river navigation for the high span channel and the 800-foot span length impacts the lift span channel. Additional piers from supplemental bridges make navigation routes through the high span more difficult. Recreational vessels that typically use the high span may be forced to use the lift span if a supplemental bridge is constructed. In general, additional piers will decrease vessel safety, particularly along routes using the wide and high spans. This may cause more vessels to use the lift span, increasing the impact that the lift has on traffic using the existing bridges.

Replacing the existing bridges would remove the piers currently in the river and provide a fixed span that would accommodate all vessels that currently navigate through this portion of the river. This would eliminate the current conflict between navigation operations under the existing bridges and traffic operations over them. A new bridge could also be built to current seismic standards without seismic retrofits that would narrow navigation channels (see section 3.3). Furthermore, the crest of a replacement bridge, and thus the channel with the highest clearance, could be better aligned with the swing span of the BNSF railroad bridge and simplify the route for vessel operators. A replacement bridge would allow river traffic and bridge traffic to traverse without conflict.

The existing bridges create a navigational hazard and restricted bridge lifts impact navigation operations. Seismically upgrading the existing bridge foundations and adding a new supplemental bridge would increase the navigational hazards and the conflict between river vessels and bridge users. This hazard could be eliminated and the operational restrictions avoided by removing the existing bridges and replacing them with a new bridge. Supplemental options that reuse the existing bridges for non-interstate uses might slightly improve navigation conditions by allowing more frequent bridge lifts.

4.2. How will restrictions on bridge lifts affect river navigation?

Currently, the Coast Guard allows ODOT and WSDOT to restrict bridge lifts during peak traffic periods. However, the Coast Guard would likely require bridge lifts to be allowed throughout the day if the existing bridges are reused for non-interstate uses (i.e., arterial traffic, transit, or bike/ped) or if a supplemental bridge were to exacerbate existing impacts on marine safety and operational efficiency. Current restrictions on bridge lifts cause some marine traffic to take the safety risk of making the "S" curve to avoid the delay of waiting to use the lift span, while other vessels that do not want to risk this maneuver must wait to use the lift span during off-peak periods. Thus, alternatives that reuse the existing bridges for non-interstate traffic could have a beneficial effect on river navigation since they might cause the Coast Guard to allow lifts on demand throughout the day.

Continued use of the existing bridges for interstate traffic will maintain, and probably worsen, navigational operation and safety problems that could be eliminated with a replacement bridge. Navigational operations might be improved with supplemental bridge alternatives that shift all interstate traffic to a new bridge because these alternatives may prompt the Coast Guard to allow bridge lifts on demand throughout the day.

4.3. How would river navigation be affected by a major earthquake?

Without significant seismic upgrades, a major earthquake would likely cause bridge piers to sink in liquefied soils, bridge spans to shake off of their piers, and lift towers to topple or be severely damaged. This damage would have a severe impact on river navigation by closing the lift span and potentially reducing vertical and horizontal clearances in other spans. Severe damage or collapse of these spans would reduce or completely remove the ability for vessels to safely travel through this section of the Columbia River.

Major seismic upgrades to the bridge, as discussed above, would likely prevent bridge collapse and thus avoid major navigation impacts.

The existing bridges are vulnerable to seismic events, but could be retrofitted to withstand a 500 or even 2500-year seismic event. However, these retrofits, despite their high cost, would still constrain the existing navigation channels by adding cladding to piers and make the “S” curve maneuver more dangerous. Retrofits that eliminate or substantially impact navigation would not be prudent.

5. Community and Economic Considerations

5.1. How does the historic status of the bridge affect decision-making?

The northbound bridge was constructed in 1917 and is on the NRHP, which gives the bridge special federal regulatory status. The southbound bridge was constructed in 1958 and was previously determined not to be eligible for listing on the NRHP. This evaluation may need to be updated. In the mean time, the 1958 bridge has no regulatory status as a historic resource. Any significant alteration or demolition of the 1917 bridge will likely be considered an “adverse effect” under the federal Historic Preservation Act. The most restrictive regulatory protection is afforded by Section 4(f) of the US Department of Transportation Act. Relevant to the CRC project, this law states that the US Secretary of Transportation cannot approve funding for any transportation project that would adversely affect a significant historic resource (such as the 1917 bridge) unless it can be shown that there are no prudent and feasible alternatives that would avoid impacting the bridge. The law and subsequent amendments and regulations describe the analyses required to determine whether or not there are any such prudent and feasible alternatives that would avoid the impact.

While the official federal regulatory evaluation of Section 4(f) compliance cannot be concluded until the Final EIS phase, it is important that the project understand the ramifications of either dropping or advancing “reuse” alternatives into the DEIS. The primary purpose of this memo is to test the “prudence and feasibility” of avoidance alternatives that might be dropped at this stage in order to decrease the risk that future regulatory evaluations might find that such alternatives should have been carried forward. Non-compliance with Section 4(f) requirements would make the project ineligible to receive federal funds from USDOT.

Removal of the northbound bridge would be considered a “4(f) use” and would thus trigger the need to conduct a robust analysis of avoidance alternatives. Seismic retrofits or design upgrades to the northbound bridge could constitute a significant alteration and thus could also trigger Section 4(f). However, such retrofits and upgrades might be accomplished in a manner that adequately preserves the historic character and look of the bridge. Conceptual descriptions of possible seismic retrofits indicate they might have a minimal impact to the steel trusses which make up the most prominent and identifiable part of the bridges, even though they would significantly alter the piers and foundations and replace the lift towers. If the trusses were only minimally altered (maintaining the integrity of materials, design, and

scale of the bridge superstructure) the bridge would likely maintain its eligibility for and listing on the NRHP.

The historic status of the northbound bridge places substantial protection on it. USDOT can only fund a replacement bridge if none of the alternatives that reuse the northbound bridge are prudent and feasible. The formal analysis that determines whether USDOT can fund a replacement bridge cannot be approved until 2008 or 2009. Therefore, the project sponsors are conducting a preliminary "prudent and feasible" test at this time in order to reduce the risk that alternatives eliminated prior to the DEIS will comply with Section 4(f) evaluation to be completed at the FEIS phase.

5.2. What is the importance of the bridges as a local cultural resource?

Both of the existing bridges have played a transportation role in the region and have become cultural and community resources. The northbound I-5 bridge is the second largest (in size) historic resource in Vancouver and the largest on Hayden Island. As a result of their historic nature, size, use, and location as a gateway between Washington and Oregon, the I-5 bridges have become a part of Vancouver and Hayden Island's sense of place. Any new supplemental and replacement alternatives would also function as a gateway and contribute to a sense of place.

The existing bridges also have negative impacts on some aspects of the the community and other historic resources. The bridge lift towers negatively impact views from the Vancouver National Historic Reserve and the Fort Vancouver National Historic Site. The upland ends of the bridges are a physical barrier that divides the eastern neighborhood areas of Hayden Island from the western commercial areas, and traffic from I-5 generates substantial noise and affects noise-sensitive uses along the central corridor. Replacement alternatives would remove both the positive and negative visual effects of the existing bridges, and add the visual element of a new bridge and approaches. Supplemental alternatives would combine the visual and physical impacts of the old bridge with those of the new one. The new bridge (with both supplemental and replacement alternatives) would be considerable lower than the existing bridge lift towers but higher than the existing truss structures. They would also be higher across Hayden Island and in southern Vancouver compared to the existing bridges and approaches.

The CRC project has received a few comments from community members related to the historic nature of the I-5 bridge. In general, these comments expressed an interest in preserving the historic structure. The public has not been directly asked whether they prefer to reuse or replace the existing bridges.

5.3. Would replacing the existing bridges be consistent with locally adopted plans?

The existing and proposed new bridges are included in local plans mostly in terms of the functions they currently or potentially could provide. The plans discuss congestion management, freight mobility, mass transit, pedestrian connectivity, etc. For each of these sets of plan policies, the supplemental and replacement options have little difference. For example, both replacement and supplemental bridge packages are able to provide similar levels of vehicular capacity, can provide a high capacity transit link, and will include pedestrian/bicycle improvements. However, those options that keep the existing bridges as an arterial bridge, and thus direct more through-traffic onto local Vancouver streets, would be less consistent with local plans, as discussed in Section 4.4.

In nearly every local land use plan there is a set of policies that call for the preservation of historically significant places and structures. These policies tie historic preservation goals to broader goals for the community, including cultural tourism and protecting a sense of place. Such policies exist in the plans of the Cities of Vancouver and Portland, Multnomah and Clark Counties, and in many sub-area plans. The historic built environments of the Kenton neighborhood, downtown Vancouver, and in the Vancouver National Historic Reserve are all near the existing bridges, include the bridges, or include a view of the bridges. These areas tie their economic success and community livability to the general protection of historic resources. Alternatives that reuse the existing bridges are generally more consistent with the policy direction of preserving historic resources, although there is no specific mention of the I-5 bridges in these documents. Furthermore, the existing bridges are considered to be intrusive on the views from the Vancouver National Historic Reserve and the Fort Vancouver National Historic Site. A new bridge would

further intrude on those views, although not likely as much as the combined effects of keeping the existing bridges and adding new ones.

5.4. Will impacts to land use and neighborhoods differ if the bridges are reused or replaced?

There are two primary differences in how supplemental and replacement alternatives are likely to impact land use and neighborhoods: 1) greater ROW requirements from reuse alternatives will consume more community resources and create a more substantial barrier through Hayden Island and downtown Vancouver and 2) reusing the existing bridges for arterial traffic could cause traffic problems on Hayden Island and in downtown Vancouver.

Comparing ROW requirements between reuse and replacement alternatives is difficult to describe succinctly because there are numerous alternative packages for replacement and supplemental bridge options, each of which has different impacts on different areas. Furthermore, ROW acquisitions have not been fully developed for each alternative. However, initial assessments of ROW requirements indicate that, on average, reuse alternatives consume more land than replacement alternatives. Not only does reusing the bridges require more ROW, these alternatives will oblige the project to maintain ownership of all the existing land that is currently occupied by elements of the existing bridges and roadways. In contrast, replacement alternatives entail a new bridge that is either east or west of existing structures and could allow some of the area used by the existing bridges and interstate roadway to be sold to new owners and converted to other uses. Therefore, it is reasonable to assume that reuse alternatives generally consume considerably more land compared to replacement options. This will cause reuse alternatives to have greater impacts to existing land use and neighborhood resources such as commercial amenities at Jantzen beach or riverfront property that is valuable to Vancouver's revitalizing downtown that faces the Columbia River.

Alternatives that reuse the existing bridges as an arterial crossing could substantially increase through-traffic in downtown Vancouver and Hayden Island. Especially during congested periods on I-5, traffic would likely divert from the new bridge to the arterial crossing and increase traffic intrusion along local streets. This could deteriorate the social cohesion that downtown Vancouver is developing and disrupt neighborhoods on Hayden Island.

Reuse alternatives generally require more ROW than replacement options. This could increase disruption and create a larger barrier to social cohesion on Hayden Island and downtown Vancouver. Alternatives that reuse the existing bridges for arterial traffic exacerbate this by adding through-traffic in these areas at all times and especially during periods when I-5 is congested.

5.5. How would development and economic opportunities be affected?

A qualitative comparison of development/redevelopment impacts of supplementing versus replacing the existing bridges indicates that the extra land requirements of building a supplemental crossing would consume additional valuable land in downtown Vancouver and add constraints to redevelopment opportunities along the Vancouver waterfront and Hayden Island waterfront. Overall, supplemental alternatives appear to reduce, or at least increase to a lesser degree, redevelopment potential in the project area compared to replacement alternatives.

6. Natural Environment Considerations

The natural resource impacts from supplemental bridge alternatives versus replacement bridge alternatives would not be significantly different in magnitude, although replacing the bridges provides a moderate advantage compared to reusing and supplementing them.

The temporary impacts from each would be similar in magnitude. Deconstructing and removing the existing bridges would disturb species protected by national and state Endangered Species Acts such as salmon, peregrine falcons, and bald eagles. There is also potential to impact water quality through increased sediment/turbidity from debris and dust falling into the river, though these would be minimized by containment plans. Though alternatives that reuse the existing bridges would avoid deconstruction impacts, they would require major seismic retrofits to the in-water substructure and the lift towers. This

construction activity would cause disturbances similar to the deconstruction activities associated with replacement alternatives.

Replacement alternatives would have less long-term impacts on fish habitat and passage because they would have less structure over the water and less permanent fill in the water compared to the reuse alternatives. Replacing the existing structures could also allow an opportunity to restore riparian vegetation where the existing bridges stand.

Long-term stormwater impacts on water quality are likely to be slightly worse for alternatives that reuse the existing bridges than alternatives that replace them, though both would substantially improve upon current conditions. Currently, stormwater from the existing bridges flows untreated into the Columbia River. Reusing the existing bridges could include retrofitting parts of them with stormwater retention and treatment facilities, although it would be difficult and expensive to retrofit the lift span portion of the bridges. Stormwater collection and treatment may only be feasible for the bridge sections south of the existing high span. Replacement alternatives would allow stormwater to be collected and treated from the entire structure.

7. Cost Considerations

Cost estimates of alternatives will not be available until November 2006. Once estimated, the project team will compare the total estimated cost of constructing and operating a supplemental alternative versus a replacement alternative. Key cost considerations include:

- Cost to demolish and remove the existing bridges
- Cost to seismically retrofit the existing bridges
- Cost to upgrade design features of the existing bridges for different reuses
- ROW costs for supplemental and replacement alternatives
- Capital cost to construct a supplemental versus replacement bridge
- Operation and maintenance costs of a replacement bridge versus a supplemental bridge (which includes O&M of the existing bridges).

Once each of these costs is estimated, the project team will compare lifecycle costs of the supplemental versus replacement bridges.

8. Other Considerations

ODOT and WSDOT have indicated they would choose to not retain ownership of the existing bridges if they are not used for interstate traffic. The question of ownership could be an important challenge if any of the non-interstate reuse options prove to be prudent.

Currently, no other entity has expressed interest in assuming ownership of the existing bridges. However, there has been no formal solicitation from ODOT or WSDOT, and such a determination would likely require extensive negotiations. Any prospective owner would need to be willing to assume the operation and maintenance costs, and perhaps substantial capital expenses for seismic safety upgrades and design retrofit for the new transportation mode (e.g., arterial traffic, transit or bicycle/pedestrian). Such costs would be part of ownership transfer negotiations. There may be revenue potential if the new owner was able to effectively toll the bridge(s). None of these issues have been explored extensively by the project team, and will only be assessed for any reuse options that appear prudent after further analyses are performed.

If the bridges(s) were no longer used for transportation purposes, US Coast Guard policy related to their jurisdiction over navigable waterways would require that the bridge(s) be removed. This eliminates pure “preservation” options that would keep the structure(s) in place but not provide any transportation function on them.

Columbia River CROSSING

Welcome

Task Force Meeting

September 27, 2006

Columbia River CROSSING

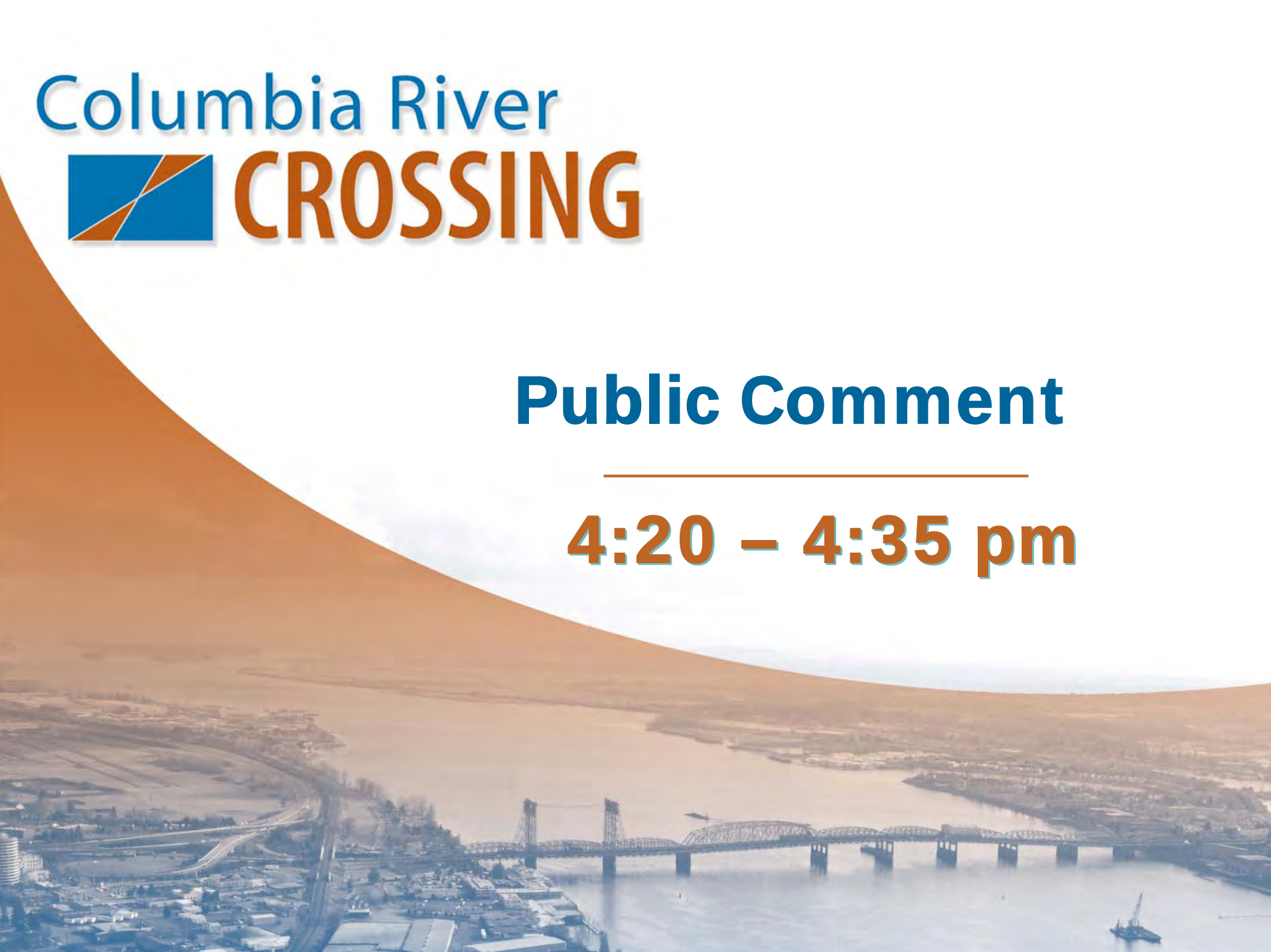
Welcome and Announcements

4:00 – 4:15 pm

Columbia River CROSSING

Public Comment

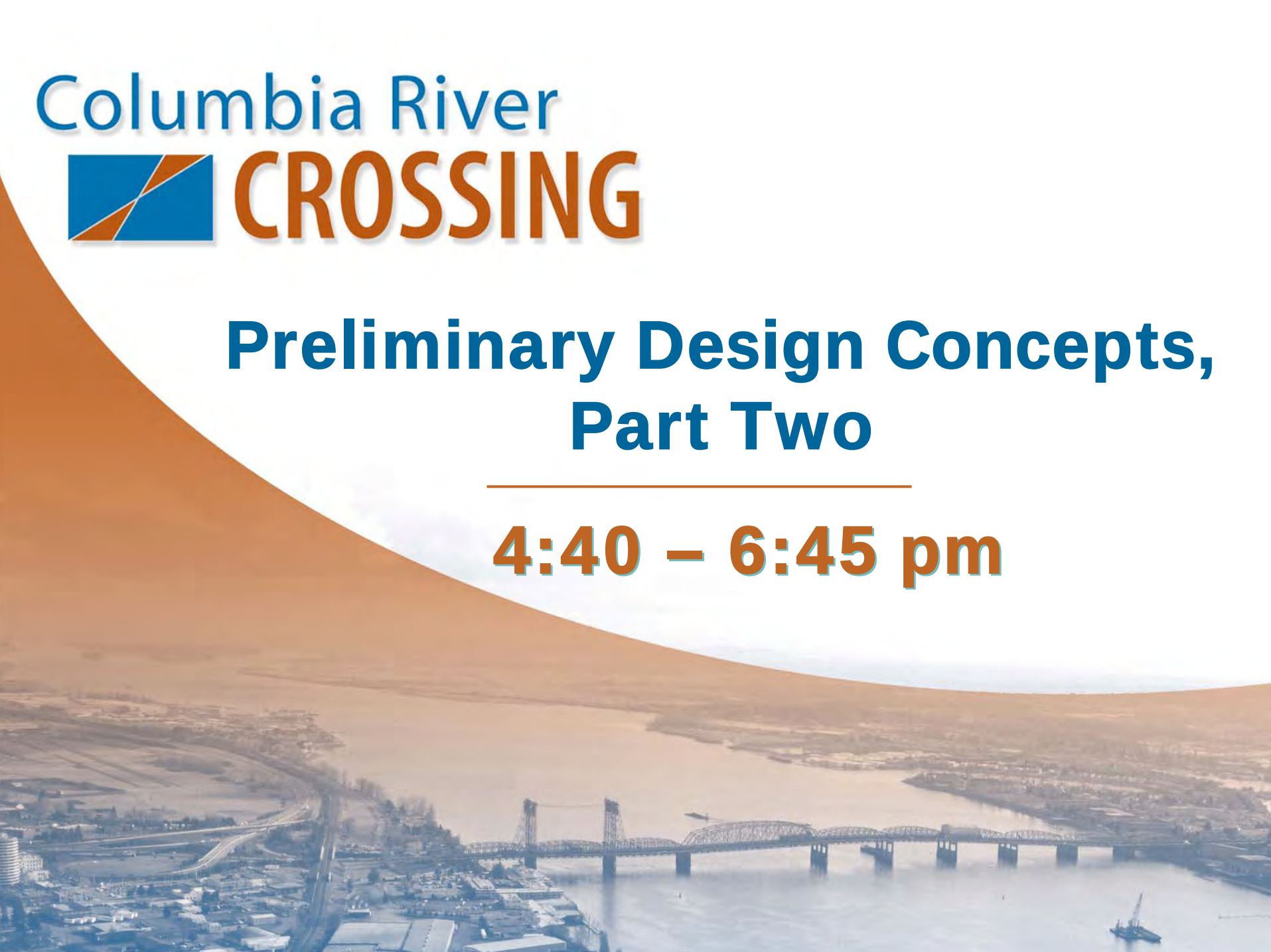
4:20 – 4:35 pm



Columbia River CROSSING

Preliminary Design Concepts, Part Two

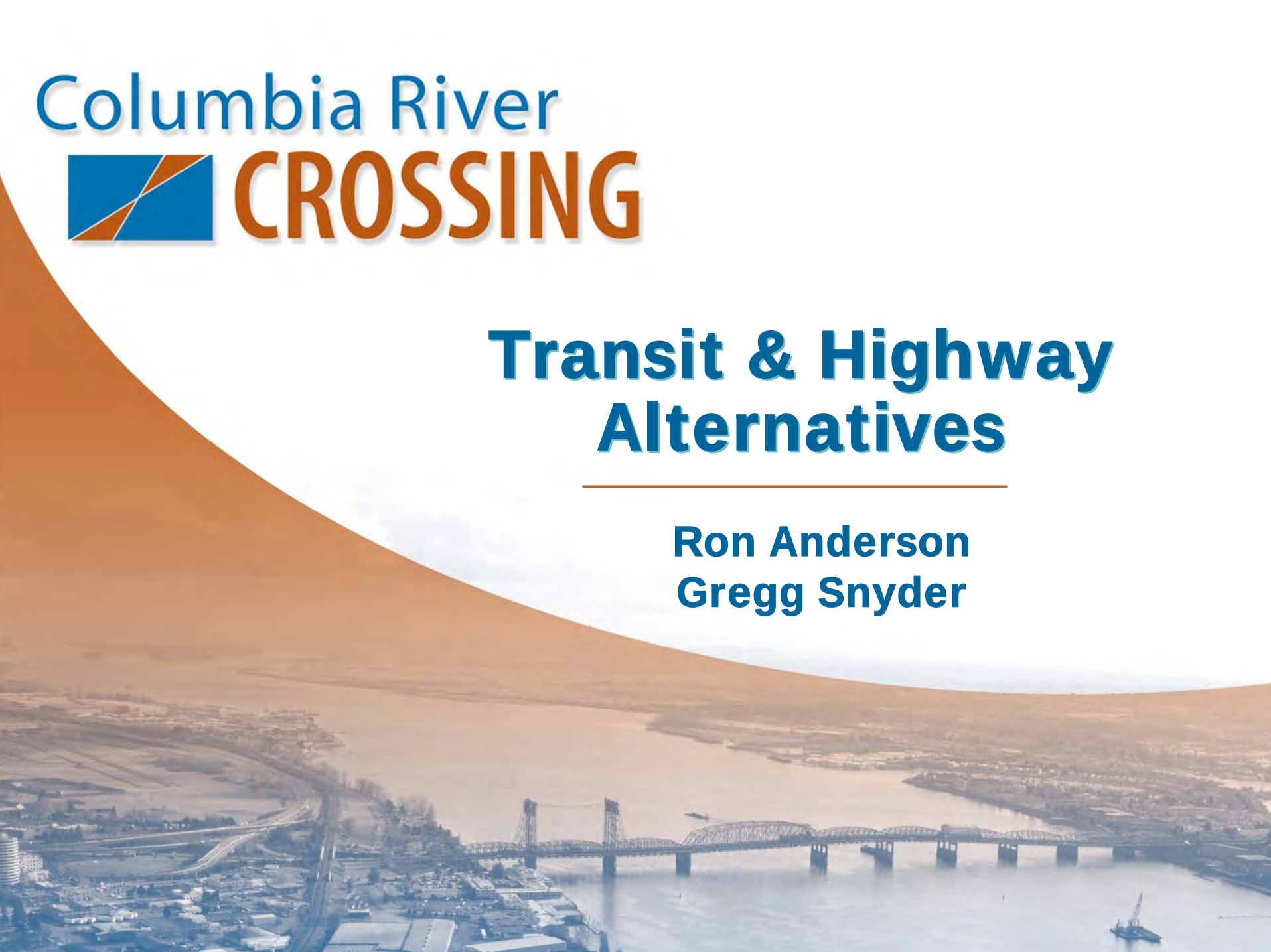
4:40 – 6:45 pm



Columbia River CROSSING

Transit & Highway Alternatives

Ron Anderson
Gregg Snyder



Organizational Tool – Matrix of Alternative Packages

	Existing Bridges Only		Supplemental Bridge with Existing Bridges					Replacement Bridge				
	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12
Title	No Action	Trans. System Management/Trans. Demand Management	Supplemental Bridge for Arterial Traffic with Light Rail	Supplemental Bridge for I-5; Light Rail on Existing Bridge	Supplemental Bridge for I-5; Bus Rapid Transit on Existing Bridge	Supplemental Bridge for I-5; Bus Rapid Transit Lite on Existing Bridge	Supplemental Bridge for I-5 and Express Bus	Replacement Bridge for I-5 w/ Light Rail and Express Bus	Replacement Bridge for I-5 w/ Light Rail	Replacement Bridge for I-5 w/ Bus Rapid Transit	Replacement Bridge for I-5 w/ Bus Rapid Transit Lite	Replacement Bridge for I-5 w/ Express Bus
Themes	No Action	Minimum Investment: TDM/ TSM Emphasis	Maximum Transit Ridershio, Minimum I-5 improvements	Balanced Transit/Highway Improvements w/ Light Rail	Balanced Transit/Highway Improvements w/ Bus Rapid Transit	Balanced Transit/Highway Improvements w/ Bus Rapid Transit -Lite	Maximum Vehicle Capacity	Balanced Transit/Highway Improvements w/ Light Rail	Balanced Transit/Highway Improvements w/ Light Rail	Balanced Transit/Highway Improvements w/ Bus Rapid Transit	Balanced Transit/Highway Improvements w/ Bus Rapid Transit -Lite	Maximum Vehicle Capacity
High Capacity Transit Mode across Col. River	None	None	Light Rail	Light Rail	Bus Rapid Transit	Bus Rapid Transit -Lite	None	Light Rail	Light Rail	Bus Rapid Transit	Bus Rapid Transit -Lite	None
Other Transit Mode(s) across bridge	Express bus, local bus	Express bus, local bus	Express bus, local bus	Local bus	Express bus, local bus	Local bus	Express bus, local bus	Express bus, local bus	Local bus	Local bus	Local bus	Express Bus, local bus
Function of Existing Bridges	I-5 General Purpose lanes	I-5 General Purpose	I-5 General Purpose	Arterial+ Light Rail	Arterial+ Bus Rapid Transit	Arterial + Bus Rapid Transit	Arterial	N/A	N/A	N/A	N/A	N/A
Function of New Bridge	N/A	N/A	Arterial + Light Rail	I-5 w/ Managed Lane	I-5 w/ Managed Lane	I-5 w/ Managed Lane	I-5 w/ Managed Lane	I-5 w/ Managed Lane & Light Rail	I-5 w/ Managed Lane & Light Rail	I-5 w/ Managed Lane & Bus Rapid Transit	I-5 w/ Managed Lane & Bus Rapid Transit	I-5 w General Purpose lanes
Bike & Pedestrian Improvements	N/A	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

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Alternative Package #1
No Action

Alternative Package #2
TSM/TDM focus

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Alternative Package #3

Transit Emphasis

Supplemental Bridge for Arterial Traffic with Light Rail

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Alternative Packages #4-6

Balanced Transit / Highway Emphasis

Supplemental Bridge for I-5

Existing Bridge Used for Light Rail or Bus Rapid Transit

Pictured: Alternative #4

Columbia River CROSSING

Alternative Package #7

Vehicle Capacity Emphasis

Supplemental Bridge for I-5
and Express Bus

Existing Bridge Used for Arterial Traffic

Columbia River CROSSING

Alternative Packages #8-11

Balanced Transit / Highway Emphasis

Replacement Bridge for I-5 with...

#8 LRT, Express Bus
#9 LRT
#10 BRT
#11 BRT Lite

Pictured: Alternative #8

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Alternative Packages #12

Vehicle Capacity Emphasis

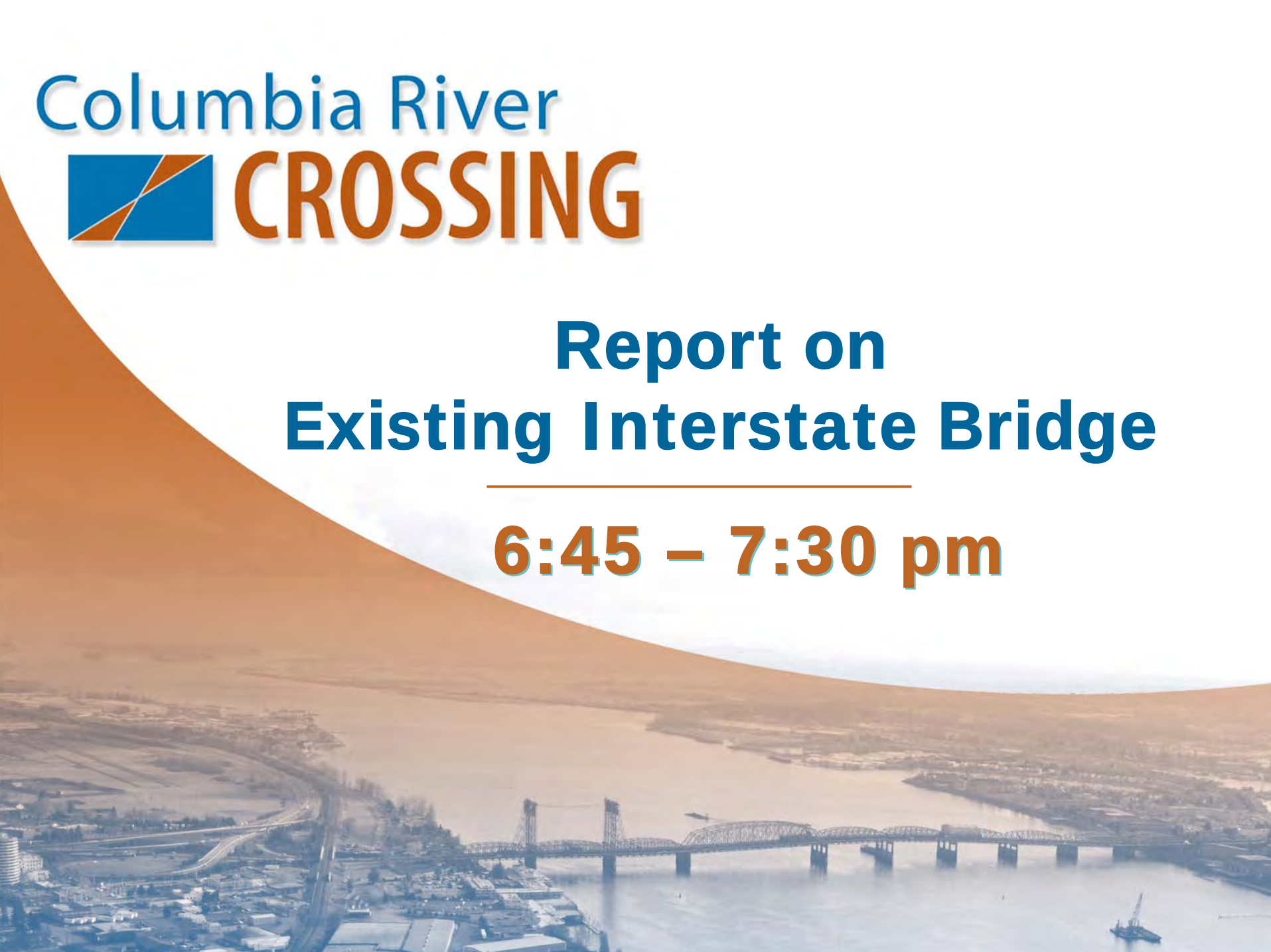
Replacement Bridge for I-5 with Express Bus

Columbia River CROSSING

Columbia River CROSSING

Report on Existing Interstate Bridge

6:45 – 7:30 pm

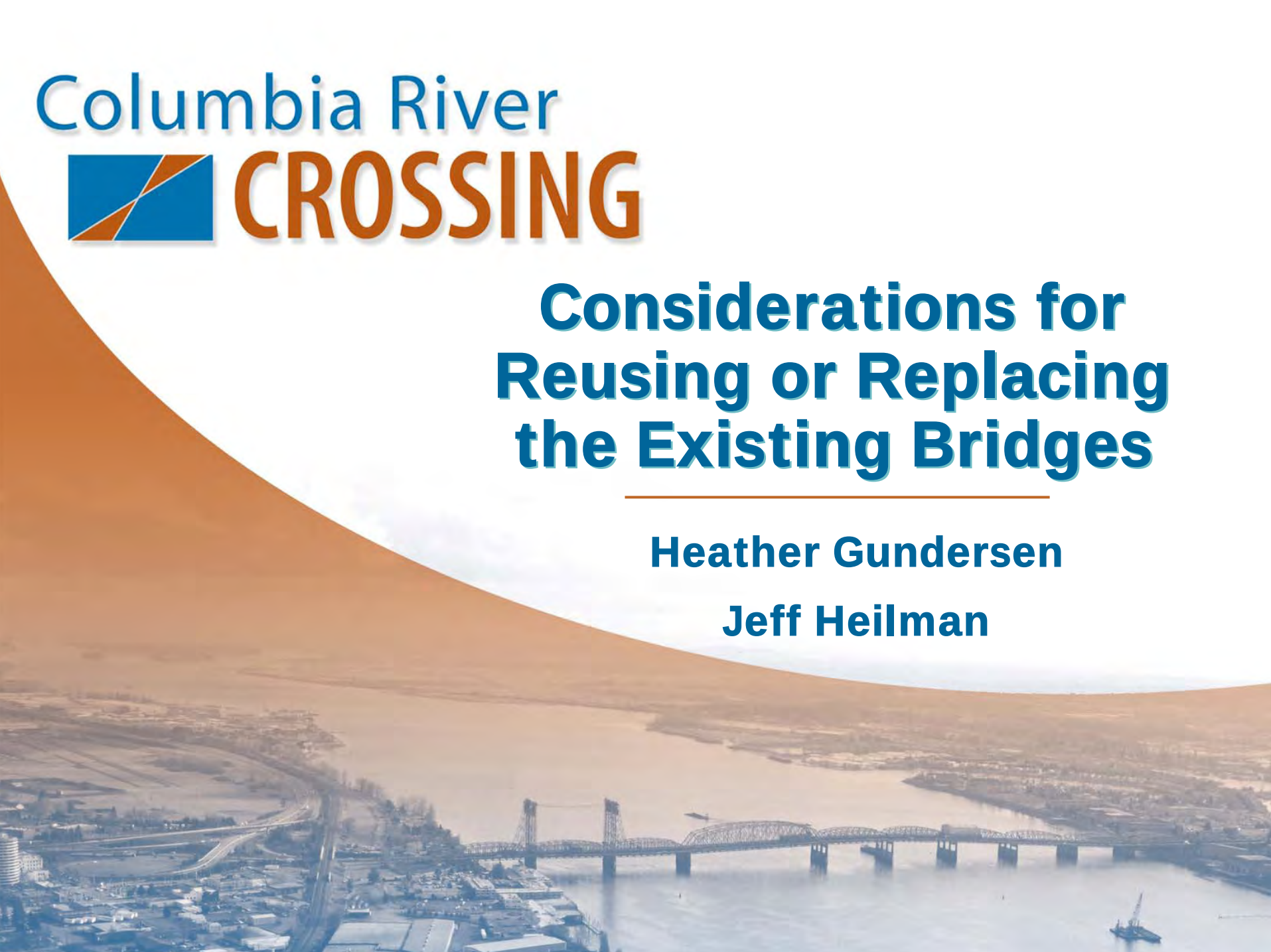


Columbia River CROSSING

Considerations for Reusing or Replacing the Existing Bridges

Heather Gundersen

Jeff Heilman



What is the purpose of the memo?

1. Inform the upcoming decisions about future uses of the existing bridges in the DEIS.
2. Ensure compliance with federal regulations protecting the existing northbound bridge.

Columbia River CROSSING

What regulation protects the bridge?

- Section 4(f) of the Department of Transportation Act protects the northbound bridge (built in 1917) because it is on the National Register of Historic Places and the CRC project is federally-funded

What protection does 4(f) provide?

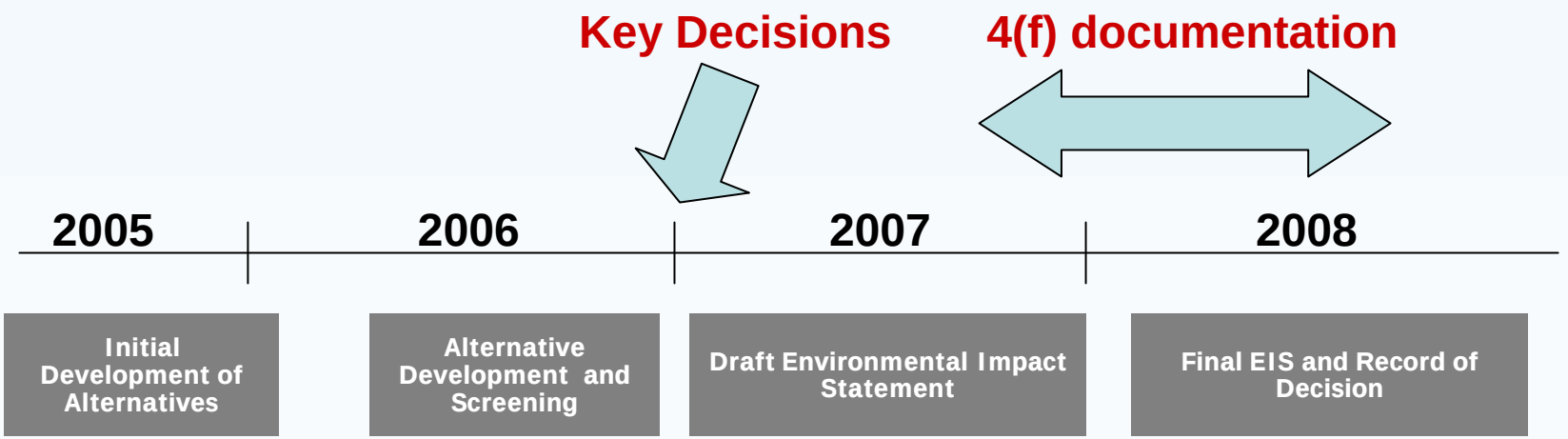
- 4(f) protected resources
  - Publicly owned parks (Delta Park)
  - Recreation area (Delta Park)
  - Wildlife or waterfowl refuge (Oaks Bottom Wildlife Refuge)
  - Significant historic site (Fort Vancouver, northbound bridge)
- Federal transportation agencies cannot approve the change (or 'use') of a 4(f) resource unless:
  - There is no *feasible* or *prudent* alternative; and
  - The project includes all possible planning to minimize harm

What is feasible and prudent?

- Alternatives are *feasible* if they are possible to engineer, design and build.
- Alternatives are not *prudent* if they exhibit unique problems of an extraordinary magnitude, including:
  - Does not meet the project Purpose and Need
  - Operational or safety problems
  - Social, economic, or environmental impacts
  - Community disruption
  - Additional cost
  - Or, an accumulation of these factors that collectively have adverse impacts of an extraordinary magnitude

Objective of Memo

- To make a preliminary determination about which alternatives, if any, are prudent



Avoidance Alternatives

- Reusing them for transportation
  - Interstate traffic
  - Arterial traffic
  - Light rail transit
  - Bus rapid transit
  - Bicycles and pedestrians
- Preserving them but not using them for transportation

What factors are we considering to determine "prudence"?

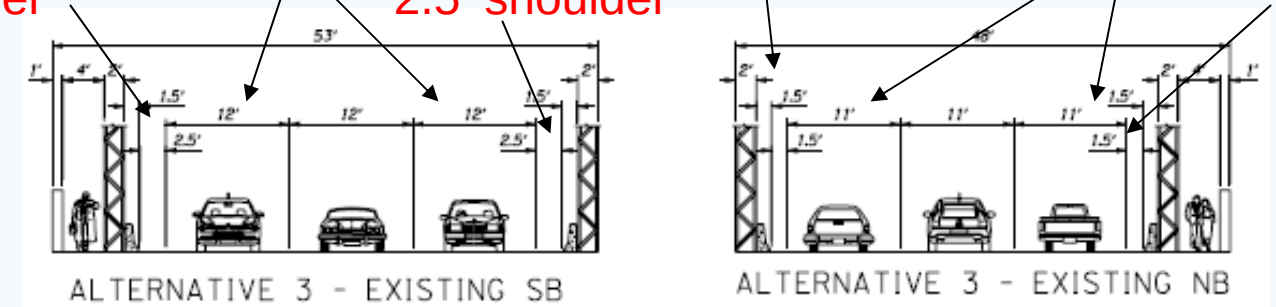
- How would they affect:
  - Traffic performance?
  - Transit performance?
  - Navigation safety and operations?
  - Community and the economy?
  - Natural resources?
- How much do they cost?
- What other considerations? (ownership)
- Prudence is based on performance and impacts relative to the non-avoidance alternatives

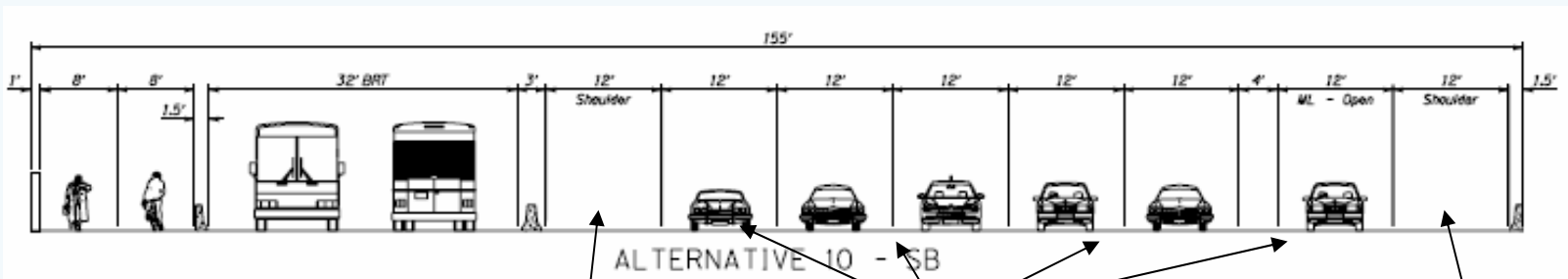
Findings

- All Supplemental Alternatives would have:
  - Slightly greater long-term natural resource impacts
  - Larger total footprints
  - Greater impacts to navigation
  - Added costs from seismic upgrades and other retrofits
- For reuse options that do not include Interstate traffic on existing bridges:
  - Ownership would be a challenge
  - US Coast Guard would likely remove bridge lift restrictions
    - More frequent lifts
    - Lifts during peak traffic periods

Findings – Interstate reuse

- Would not adequately meet one of the key needs for the project: to improve I-5 traffic safety.
- Not prudent





Findings – Arterial reuse

- Frequent bridge lifts impact travel time and reliability
- Seismic retrofits and other upgrades add cost
- Cut-through traffic on local streets in downtown Vancouver and Hayden Island
- Next steps to determine prudence:
  - Cost estimates
  - Traffic analysis to better understand impacts on local streets

Columbia River CROSSING

Findings – Light Rail reuse

- Bridge lifts disrupt service system-wide, and decrease reliability and ridership
- Major design upgrades and seismic retrofits add cost
- Next steps to determine prudence:
  - Quantify impact of bridge lifts on travel time, ridership, reliability and operations
  - Cost estimates
  - Cost effectiveness

Columbia River CROSSING

Findings – BRT reuse

- Bridge lifts cause service interruption and decrease reliability and ridership
- Design upgrades and seismic retrofits add cost
- Next steps to determine prudence:
  - Quantify impact of bridge lifts to travel time, ridership, reliability and operations
  - Cost estimates
  - Cost effectiveness

Columbia River CROSSING

Findings – Bicycle/pedestrian reuse

- Design upgrades and seismic retrofits would add cost
- Bridge lifts would increase travel times and reliability
- Bridge lifts may deter commuter use
- Separation reduces noise levels
- Next steps to determine prudence:
  - Cost analysis of retrofitting existing bridge compared to including capacity on new bridge

Columbia River CROSSING

Findings – Preservation Option

- What is this option?
  - Preserve the bridge(s) but do not use for transportation
- The US Coast Guard would require that the bridges be removed if they are not used for transportation.
- Not prudent

Next Steps

- Estimate costs:
  - Construction, operations, maintenance and lifecycle costs
  - Cost-effectiveness
- Analyze local traffic impacts of reusing bridges for arterial traffic
- Analyze how bridge lifts would affect LRT and BRT operations
  - Travel-time
  - Reliability
  - System disruption, and
  - Ridership

Next Steps

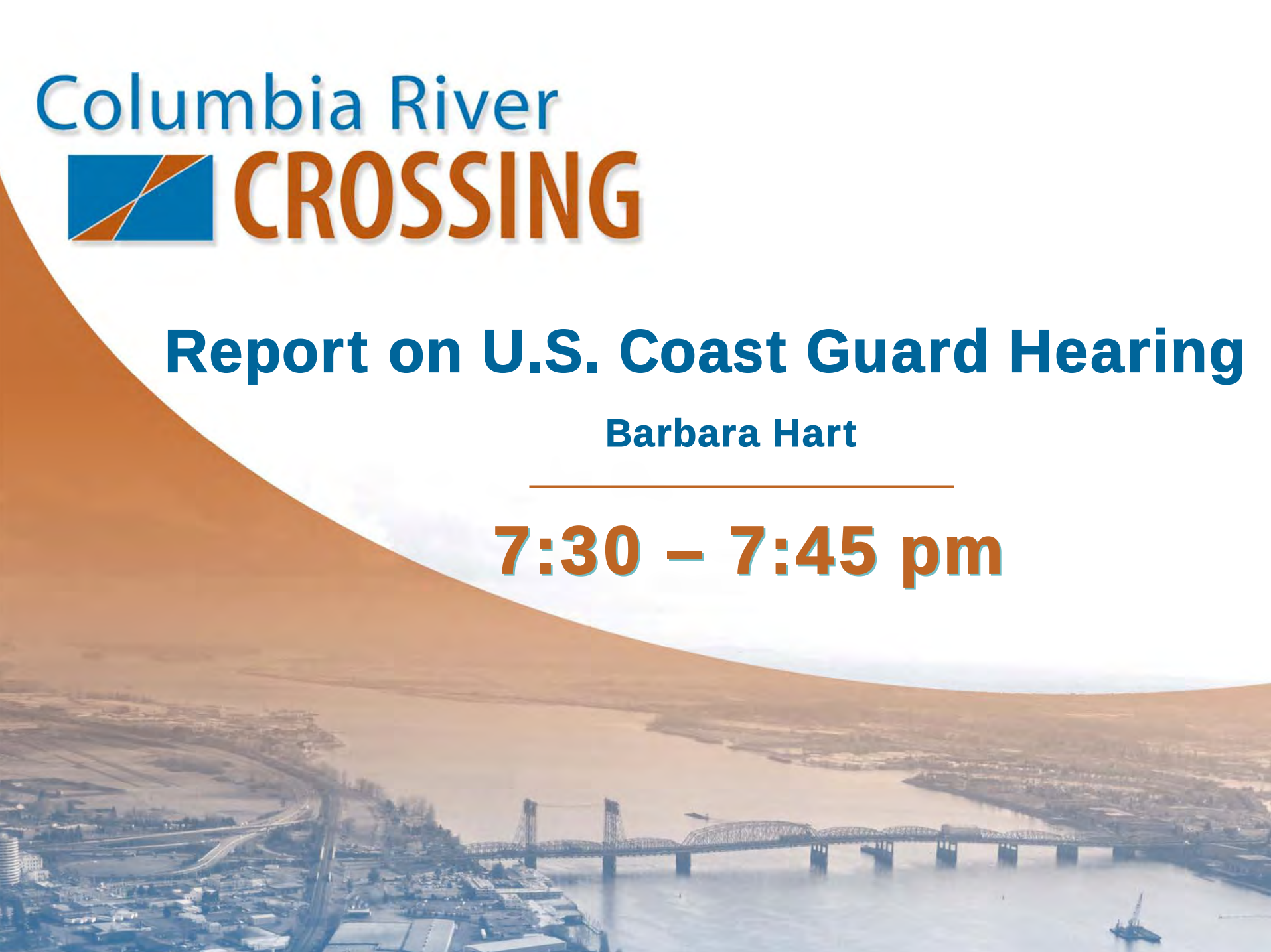
- Compare Reuse options to Replacement options to determine prudence
  - Any single significant disadvantage that makes it imprudent?
  - Accumulation of disadvantages that make it imprudent?
- Investigate ownership possibilities for Reuse options that appear prudent
- Finalize Existing Bridges Memo
  - By November
  - Some considerations may take longer (cost-effectiveness, ownership, if necessary)

Columbia River CROSSING

Report on U.S. Coast Guard Hearing

Barbara Hart

7:30 – 7:45 pm

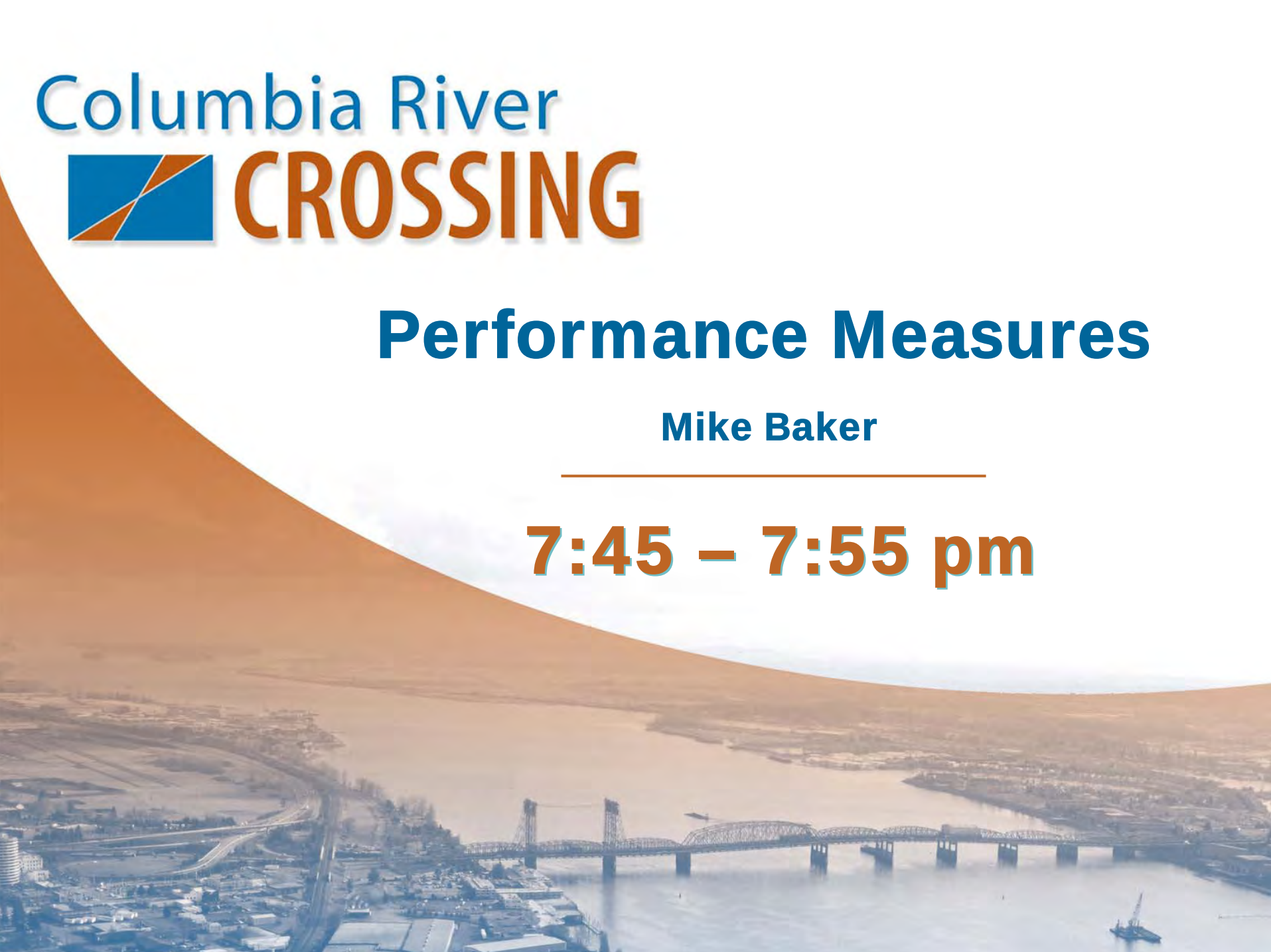


Columbia River CROSSING

Performance Measures

Mike Baker

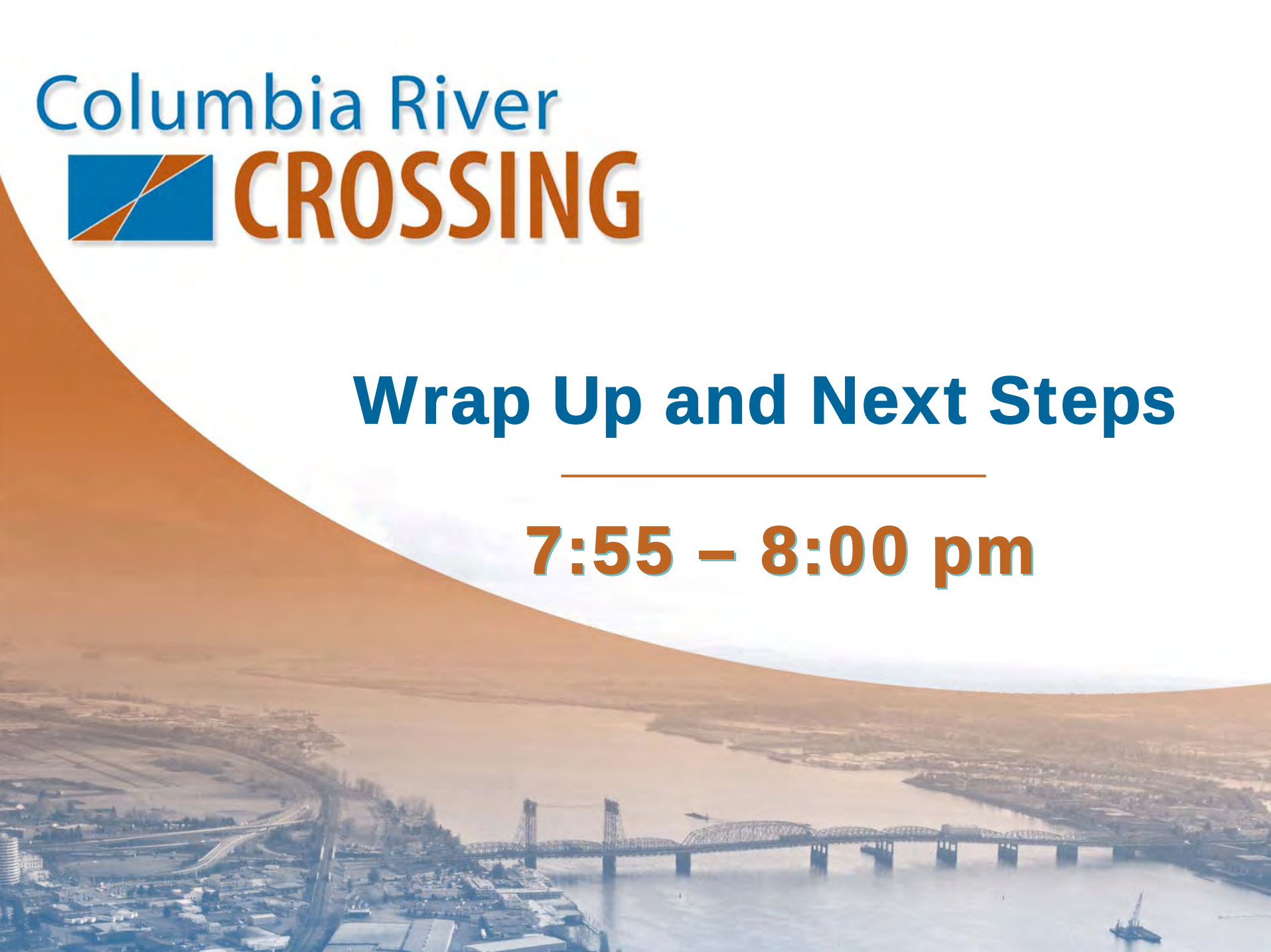
7:45 – 7:55 pm



Columbia River CROSSING

Wrap Up and Next Steps

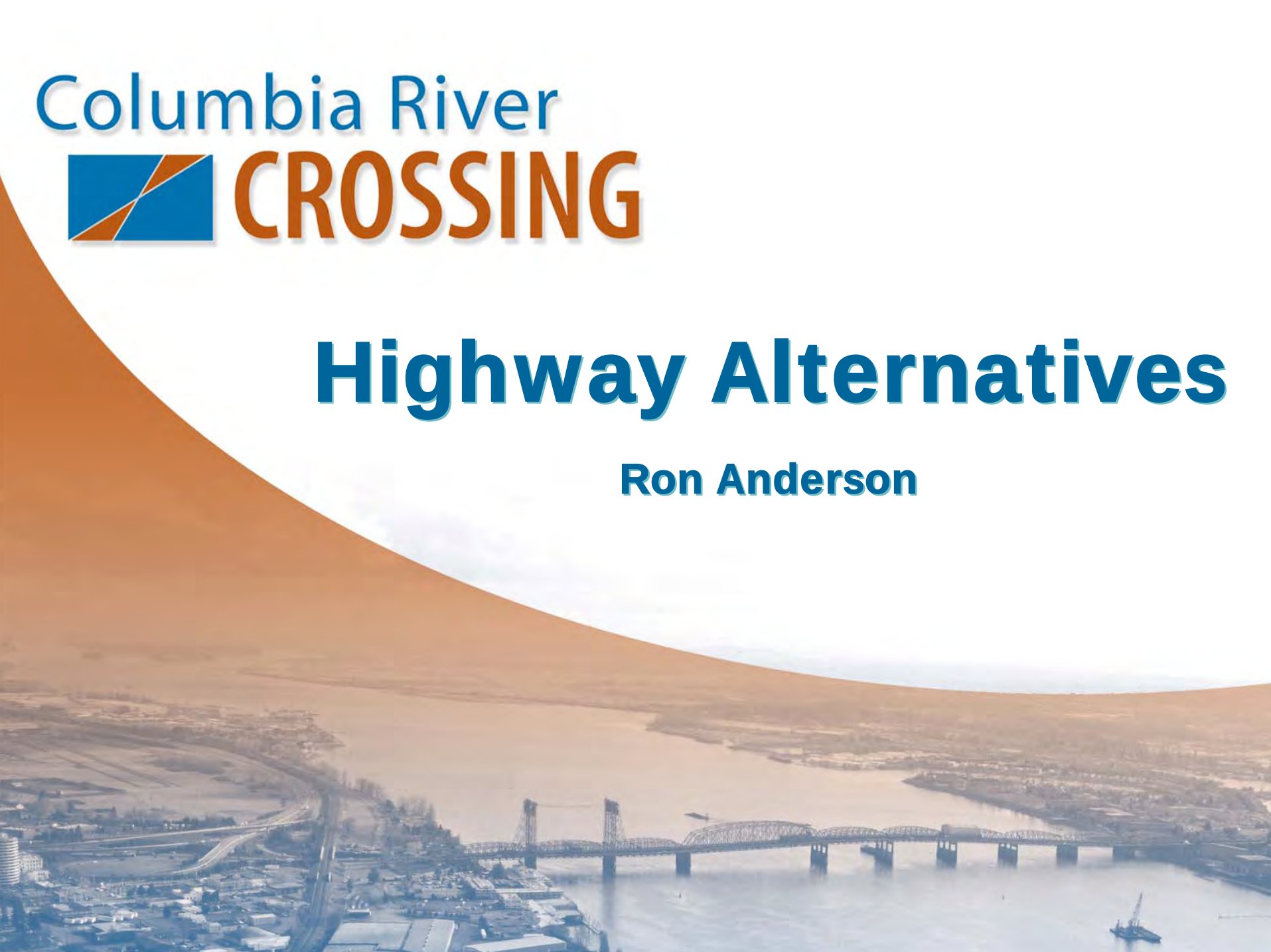
7:55 – 8:00 pm



Columbia River CROSSING

Highway Alternatives

Ron Anderson



General Design Assumptions

- Project limits generally fall within the BIA
  - South matches ODOT expansion at Delta Park
  - North ends at connections with SR 500/39th
- Maintain as much of the existing infrastructure as possible
- Minimize impacts on adjacent properties (neighborhoods and businesses)
- Meet current design criteria where possible
- Maintain access where possible

Design Solutions Should Fix Existing Problems

- Address travel demand and provide lane balance
- Improve system flow and operations
- Provide multi-modal integration (transit and highways must work seamlessly)

Designs Should be Constructible

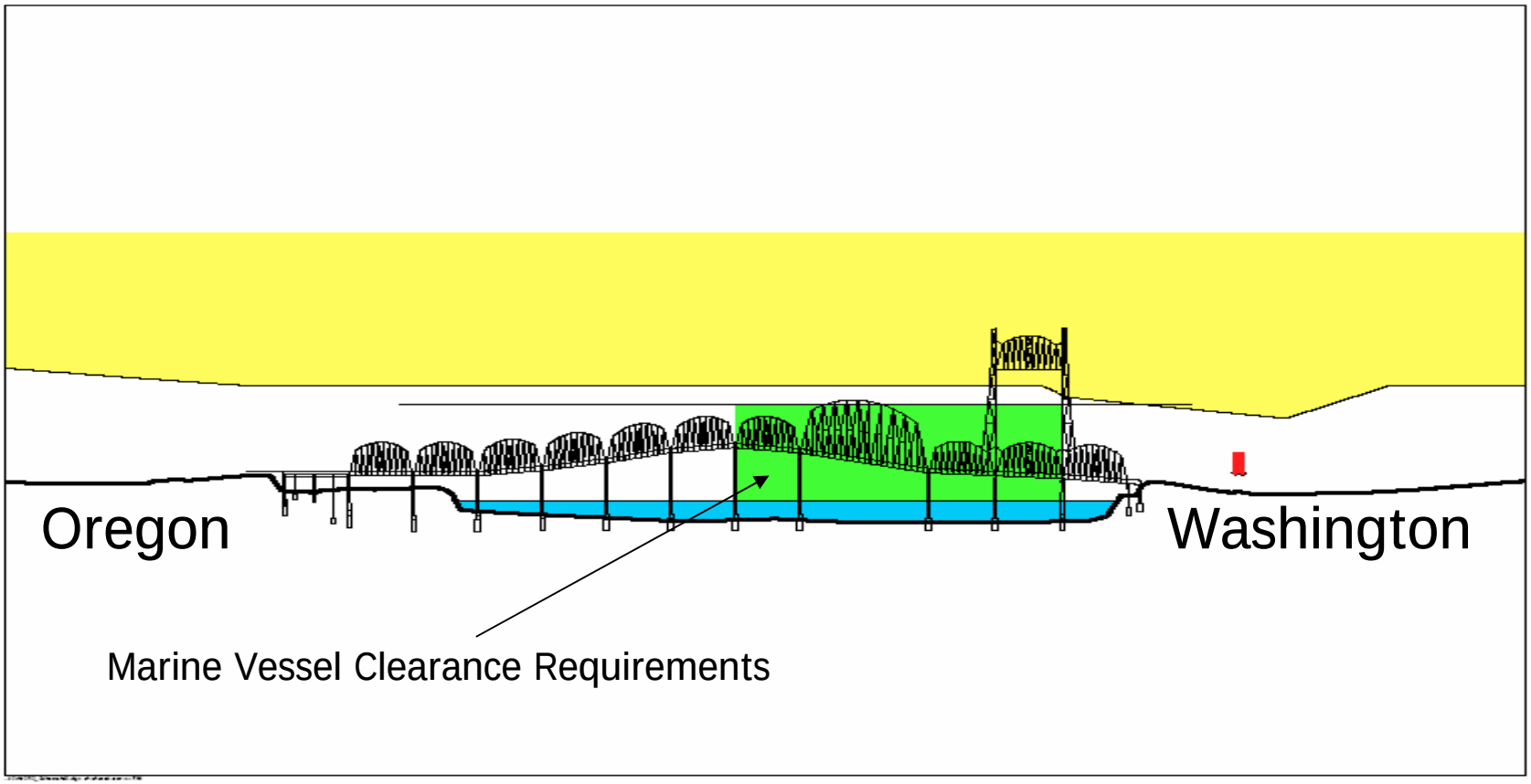
- Improvements should be supported by impacted users and communities
- Solutions must be affordable and fundable
- Improvements should minimize disruptions to traffic during construction

Developing Ten Build Alternatives

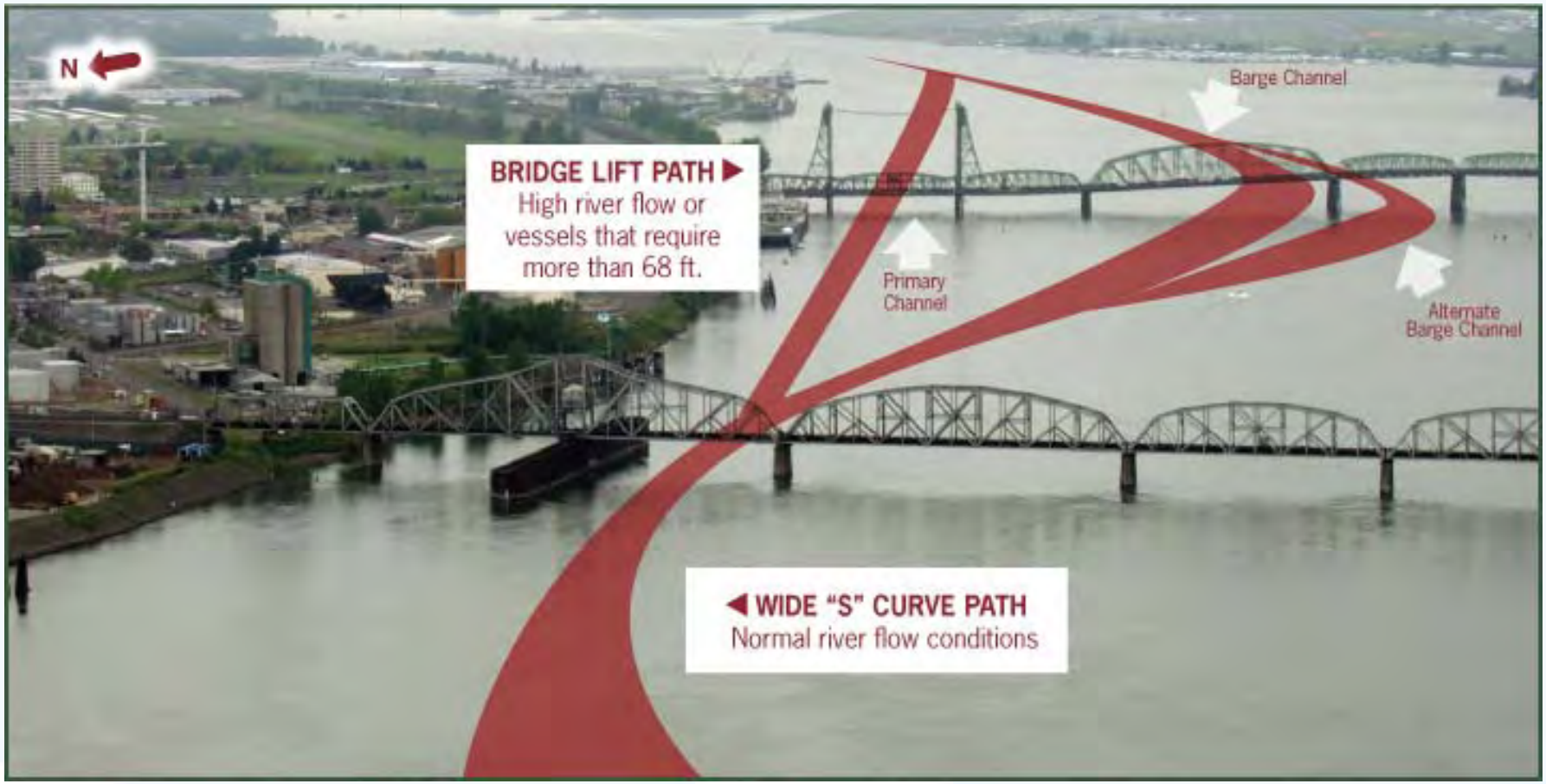
- Today you will see pieces of 10 representative “build” alternatives
- Alternatives will be measured against criteria to test how well they perform and what they will cost to build
- Alternatives are conceptual and preliminary – They will undergo continual refinement to improve performance

Air and Marine Navigation

Vertical Constraints



Proximity of rail bridge to the I-5 Bridges

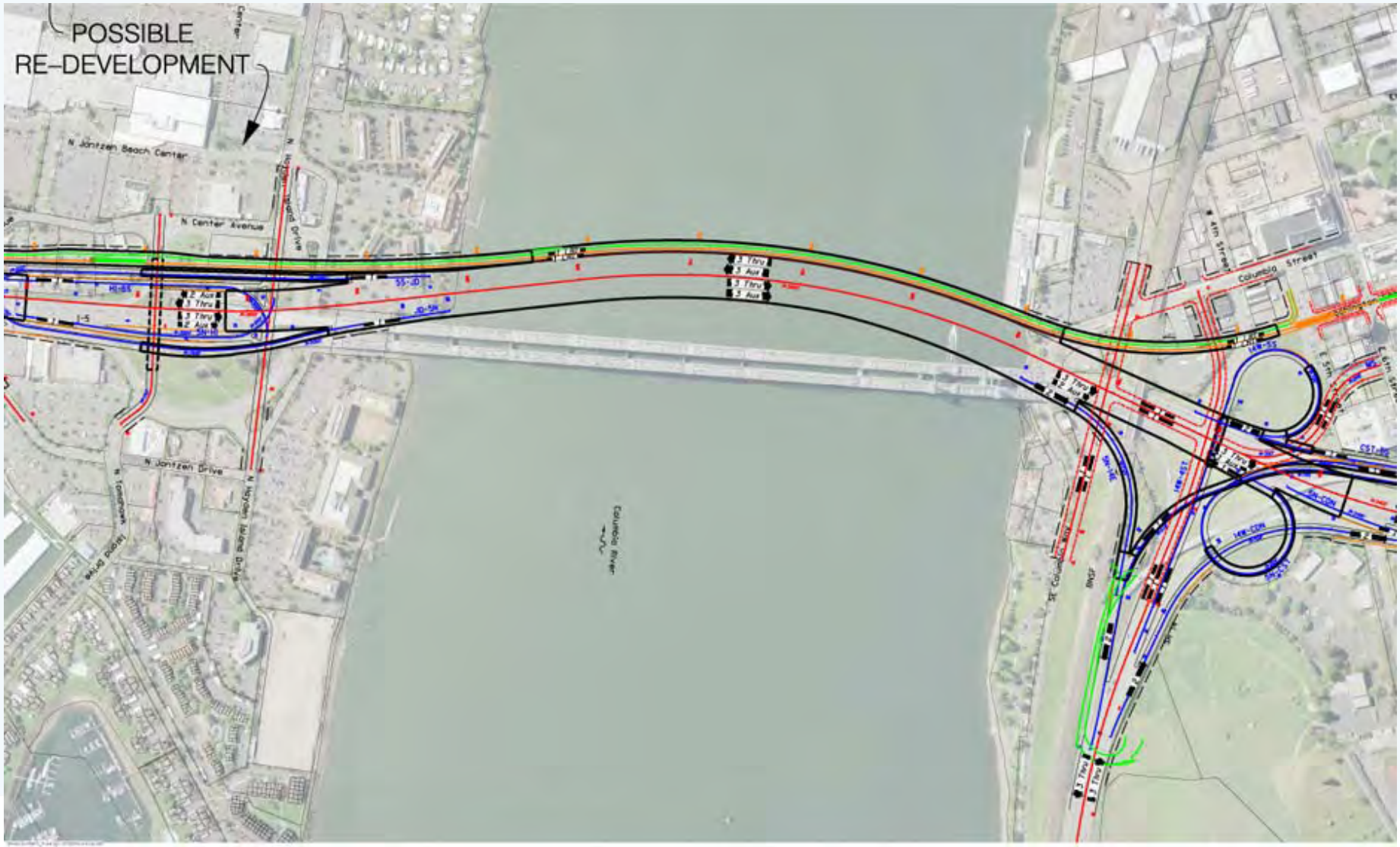


Columbia River CROSSING

River Crossing Ideas Still Advancing

- Replacement Bridge Downstream Midlevel
- Replacement Bridge Upstream Midlevel
- Supplemental Bridge Downstream Midlevel
- Arterial Crossing with I-5 Improvements

Downstream Alignment for I-5



Columbia River CROSSING

Supplemental Bridge Downstream

Upstream Alignment for I-5

Columbia River CROSSING

Downstream Alignment for Arterial

Columbia River CROSSING

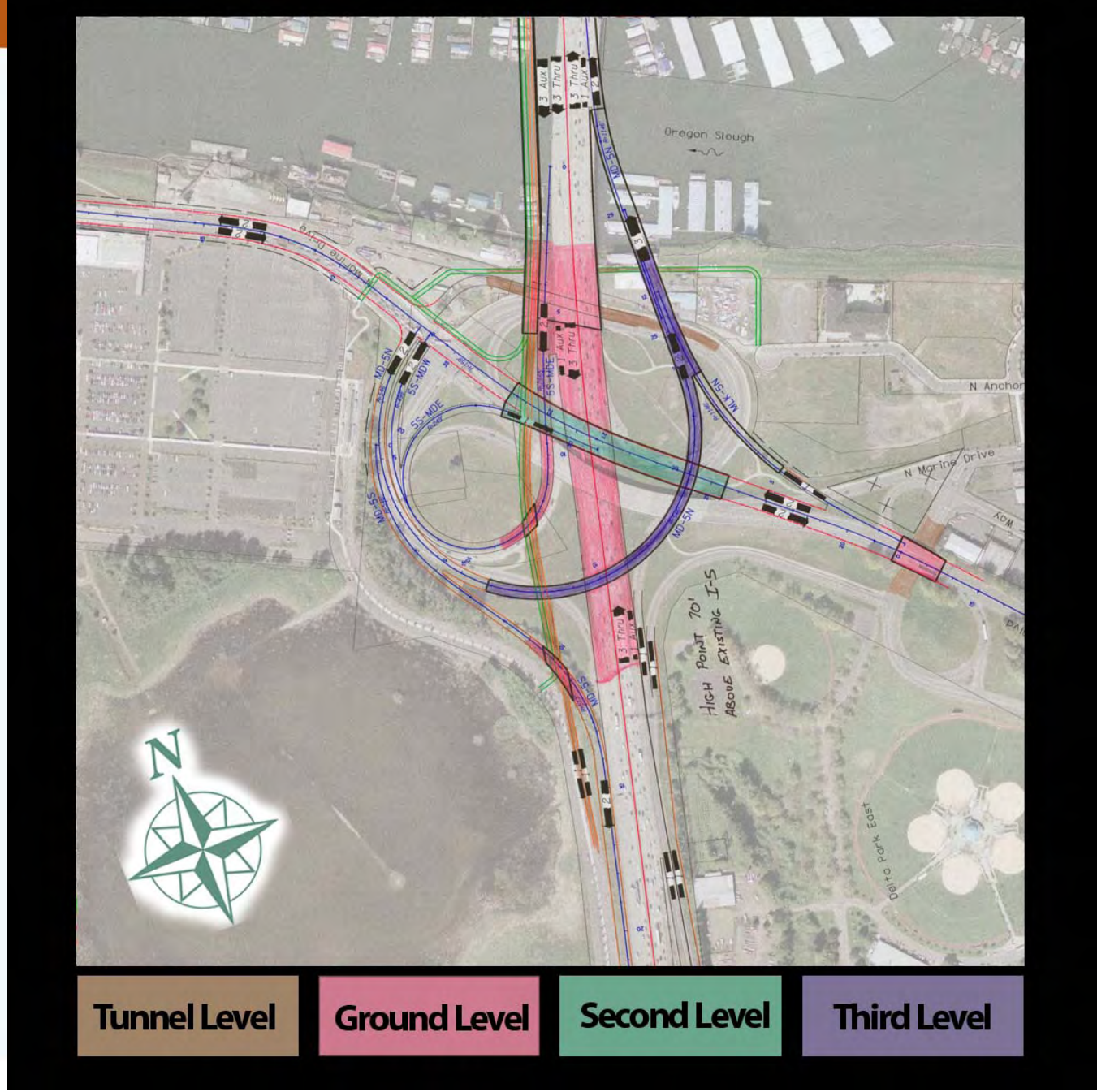
Roadways in Oregon and Washington

- Designs for interchanges influenced by river crossing options
- Interchange designs range from simple to complex
- The following slides depict representative segments of the 10 “build” alternatives

Marine Drive Interchange, Portland

(Alt. 4)

Balanced Transit/Highway Improvements with Light Rail Transit

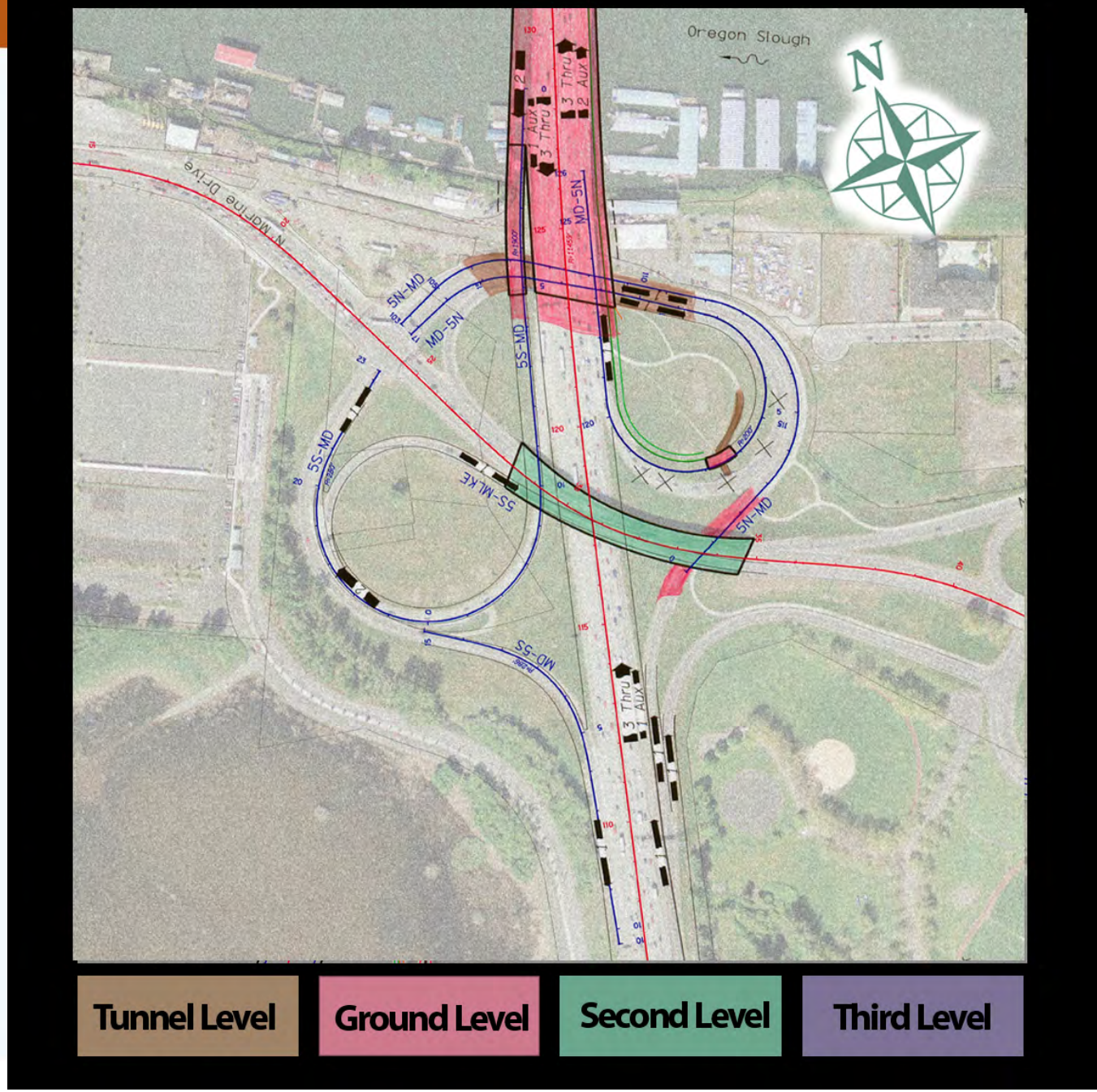


Columbia River CROSSING

Marine Drive Interchange, Portland

(Alt. 6)

Balanced Transit/Highway Improvements with Bus Rapid Transit Lite

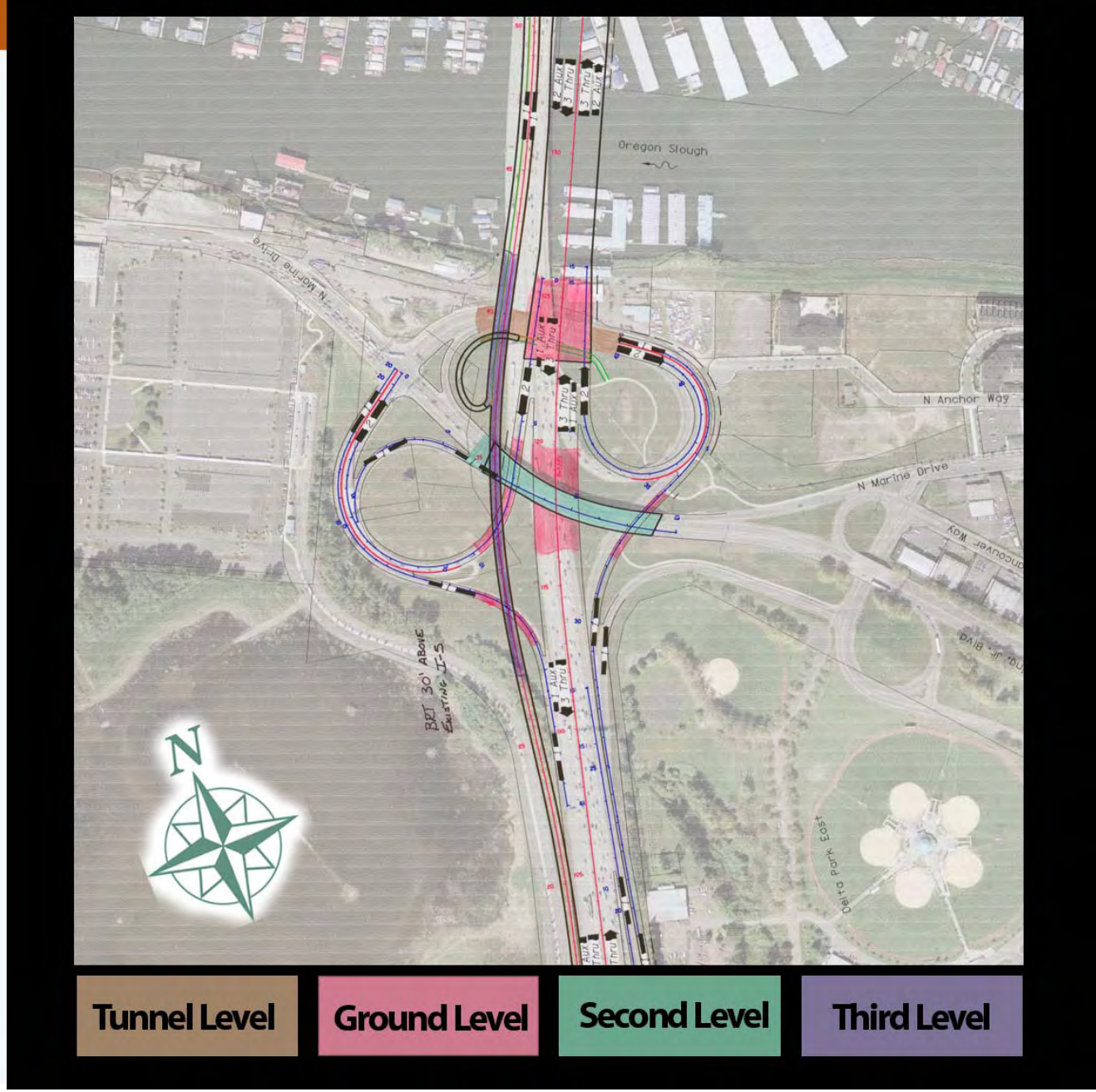


Columbia River CROSSING

Marine Drive Interchange, Portland

(Alt 10)

Balanced Transit/Highway Improvements with Bus Rapid Transit

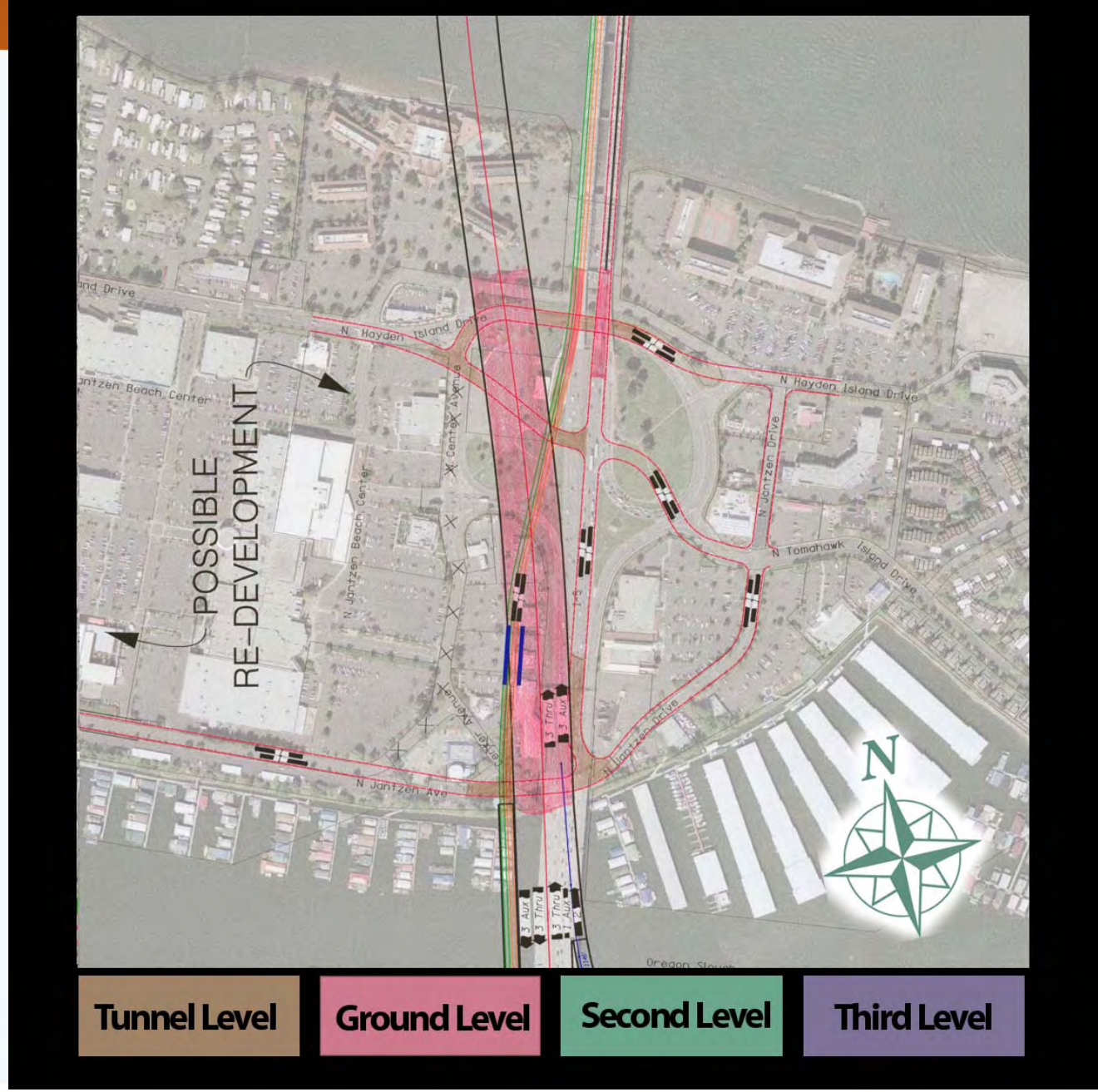


Columbia River CROSSING

Hayden Island Interchange, Portland

(Alt. 4)

Balanced Transit/Highway Improvements with Light Rail Transit

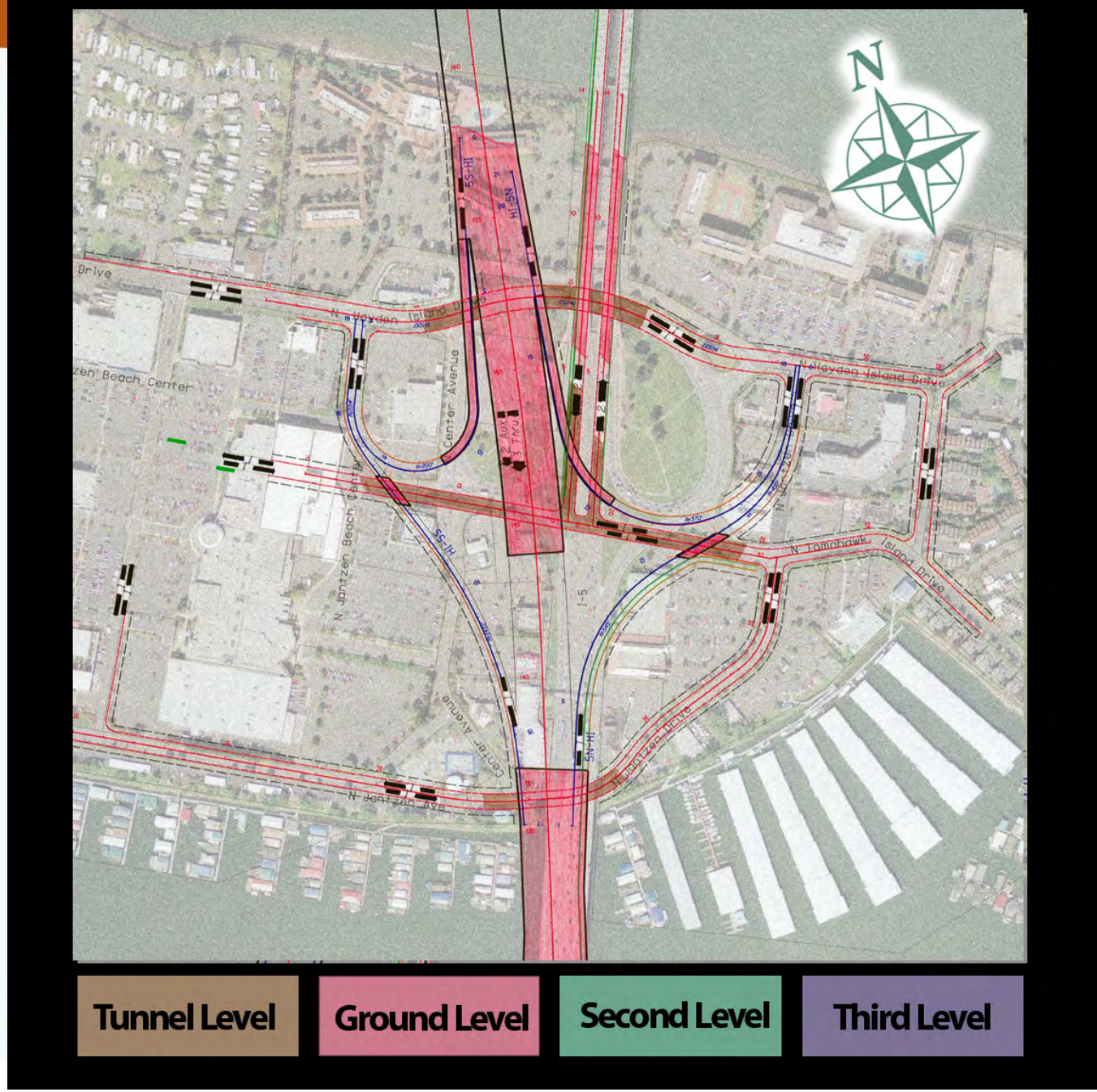


Columbia River CROSSING

Hayden Island Interchange, Portland

(Alt. 6)

Balanced Transit/Highway Improvements with Bus Rapid Transit Lite

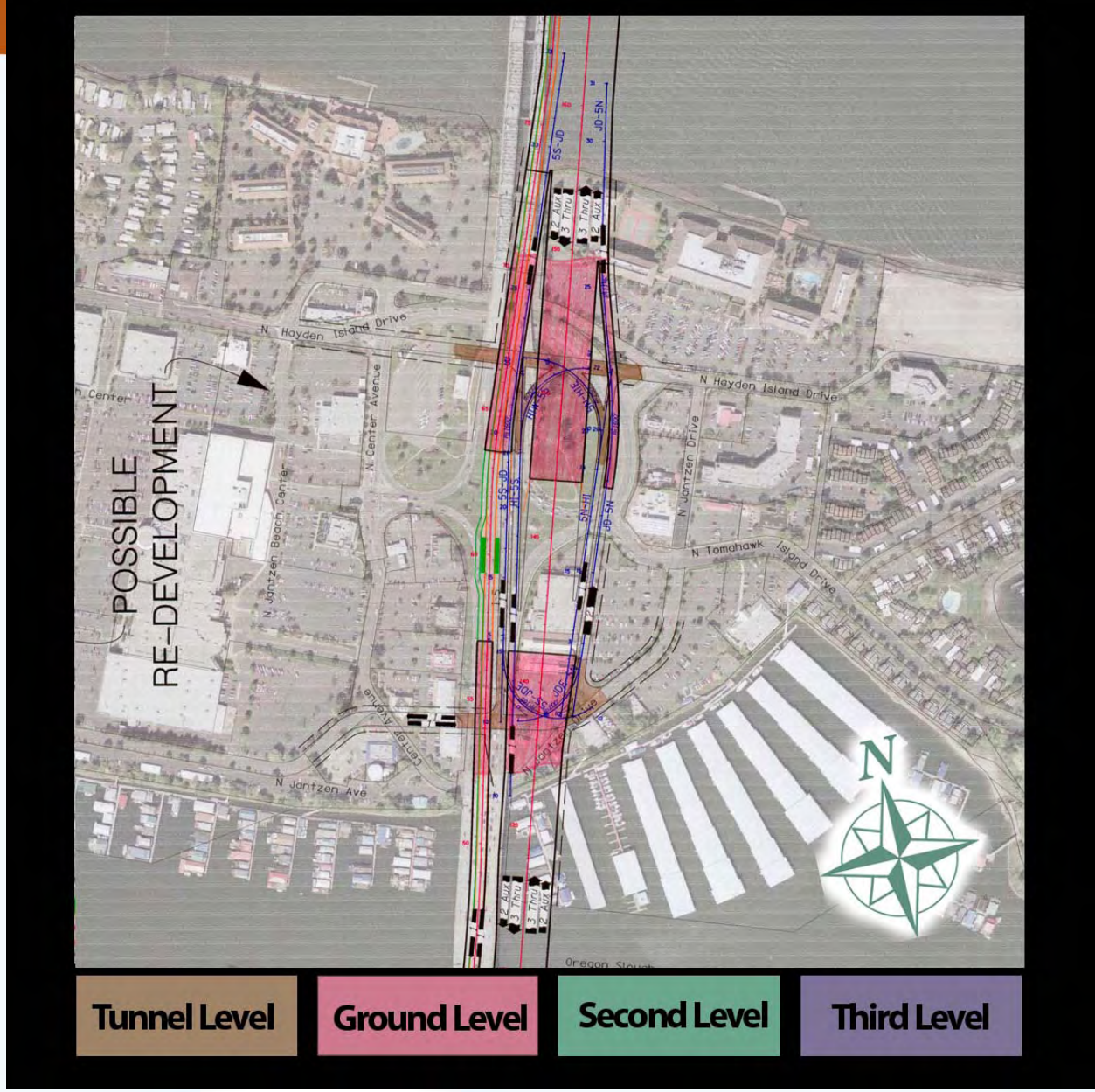


Columbia River CROSSING

Hayden Island Interchange, Portland

(Alt. 10)

Balanced Transit/Highway Improvements with Bus Rapid Transit

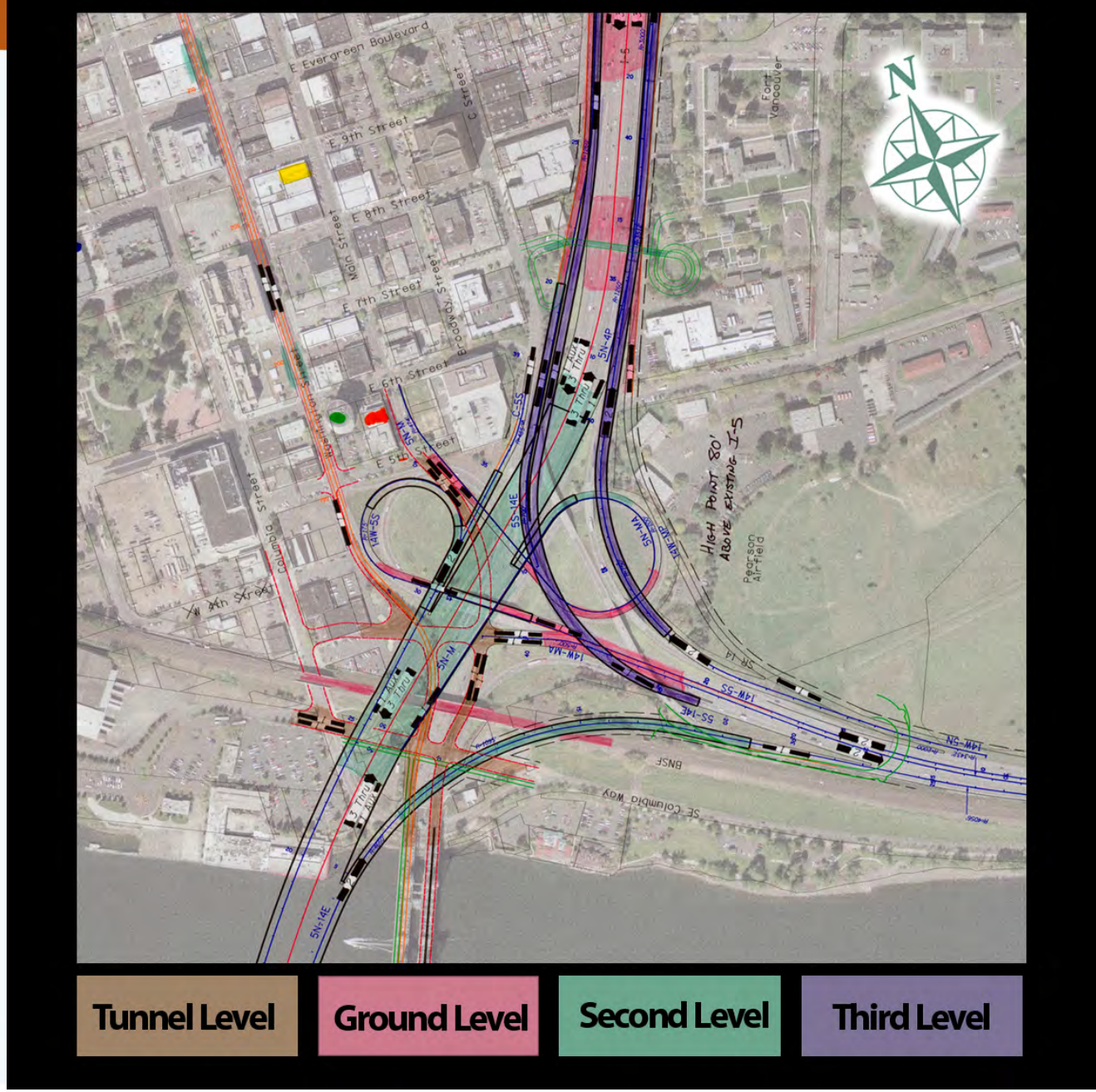


Columbia River CROSSING

SR-14 Interchange, Vancouver

(Alt. 4)

Balanced Transit/Highway Improvements with Light Rail Transit

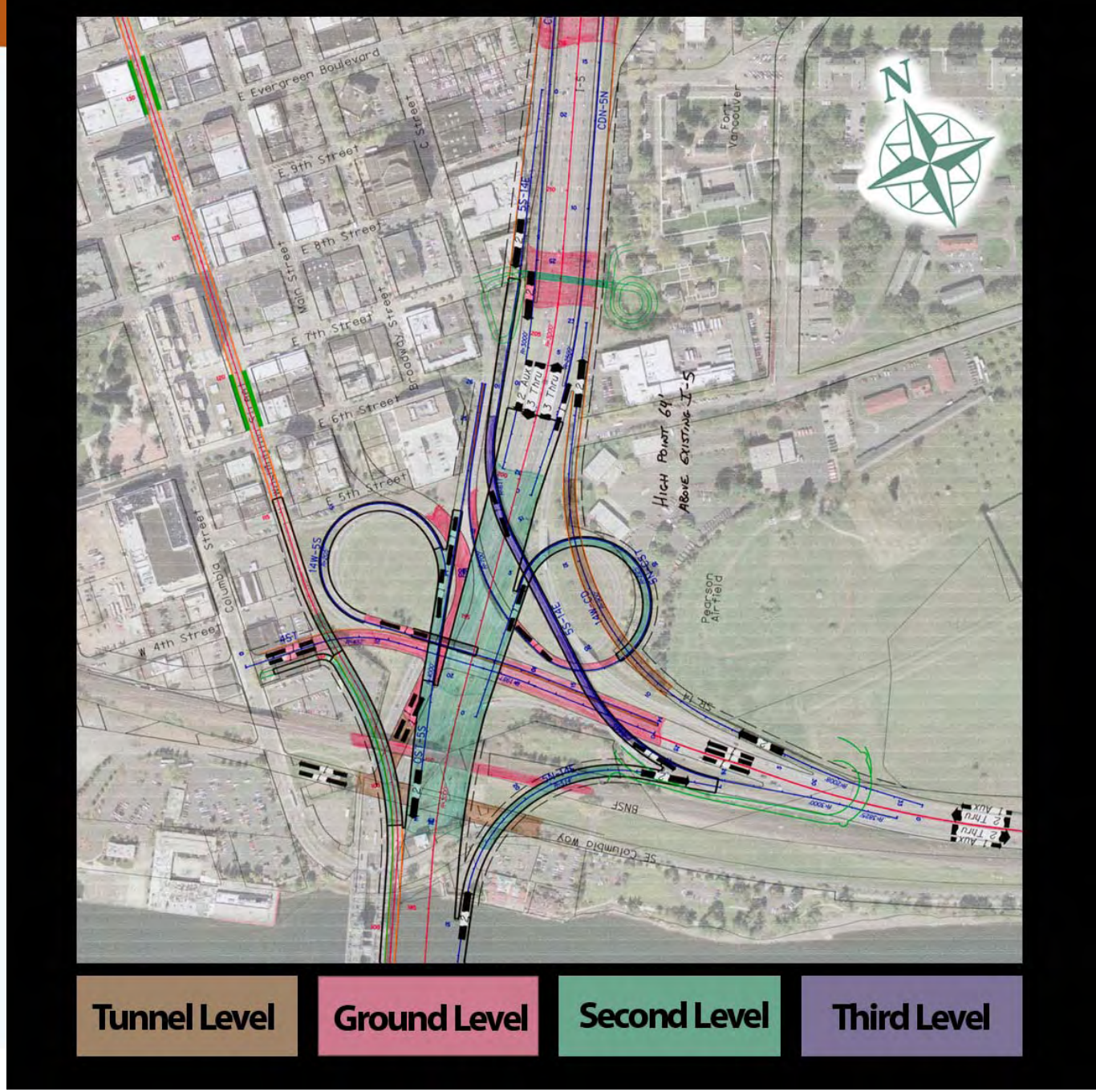


Columbia River CROSSING

SR-14 Interchange, Vancouver

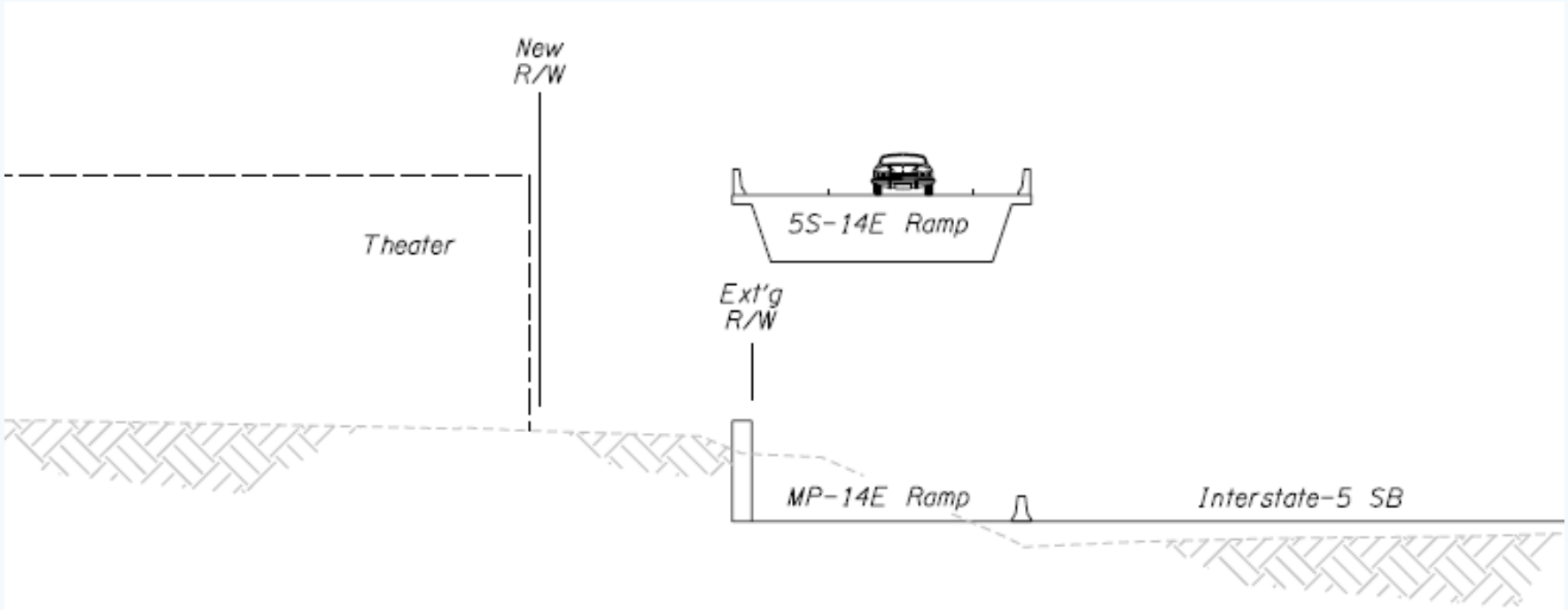
(Alt. 10)

Balanced Transit/Highway Improvements with Bus Rapid Transit



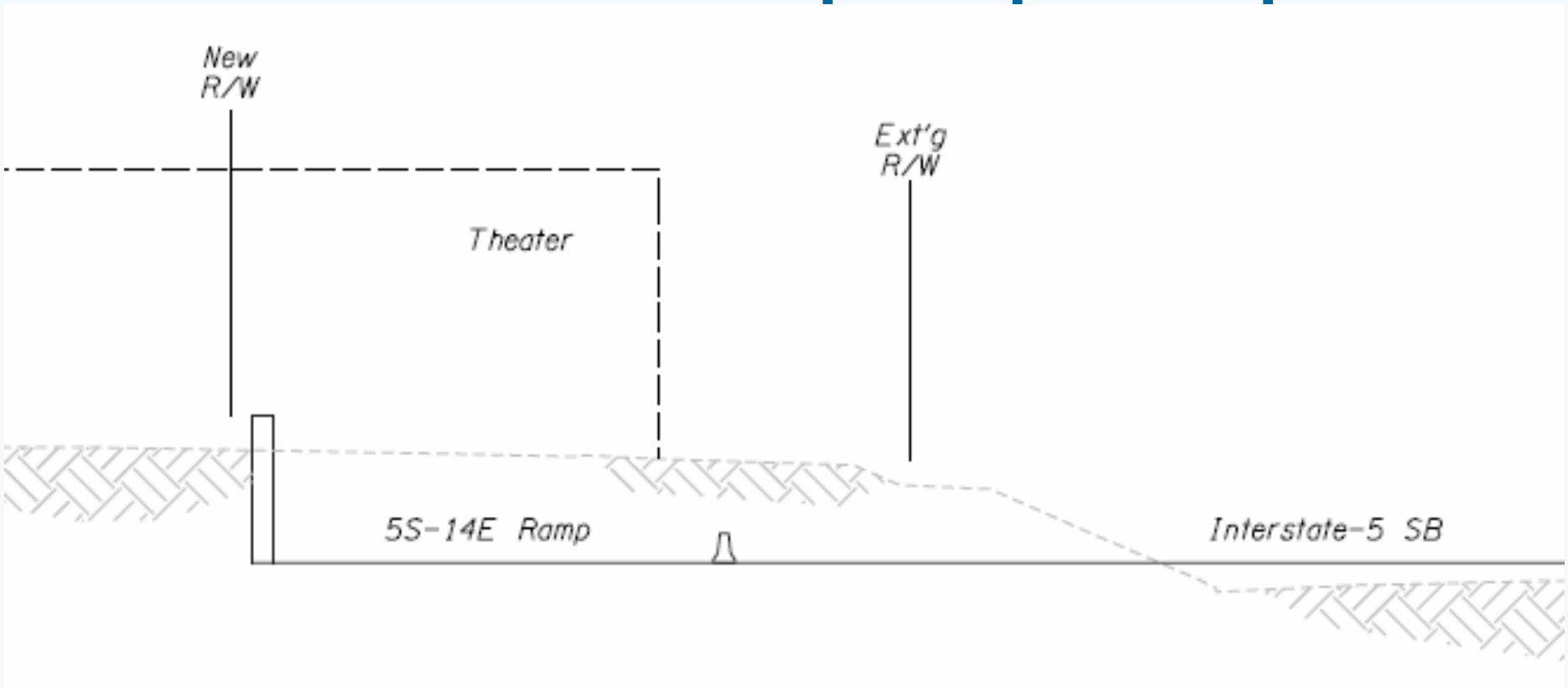
Columbia River CROSSING

Downtown Vancouver “pinch point” option



Columbia River CROSSING

Downtown Vancouver “pinch point” option

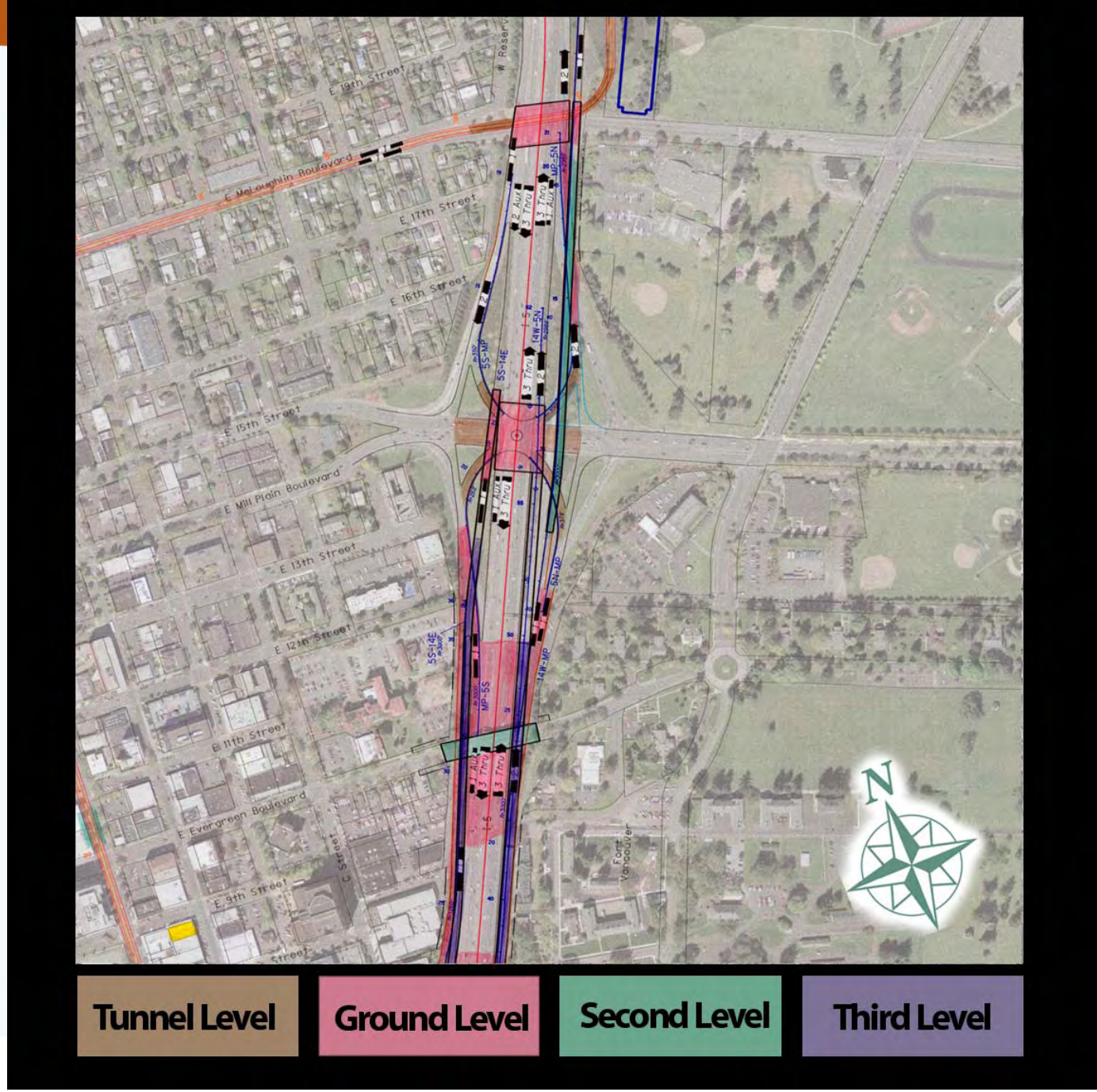


Columbia River CROSSING

Mill Plain Interchange, Vancouver

(Alt. 4)

Balanced Transit/Highway Improvements with Light Rail Transit

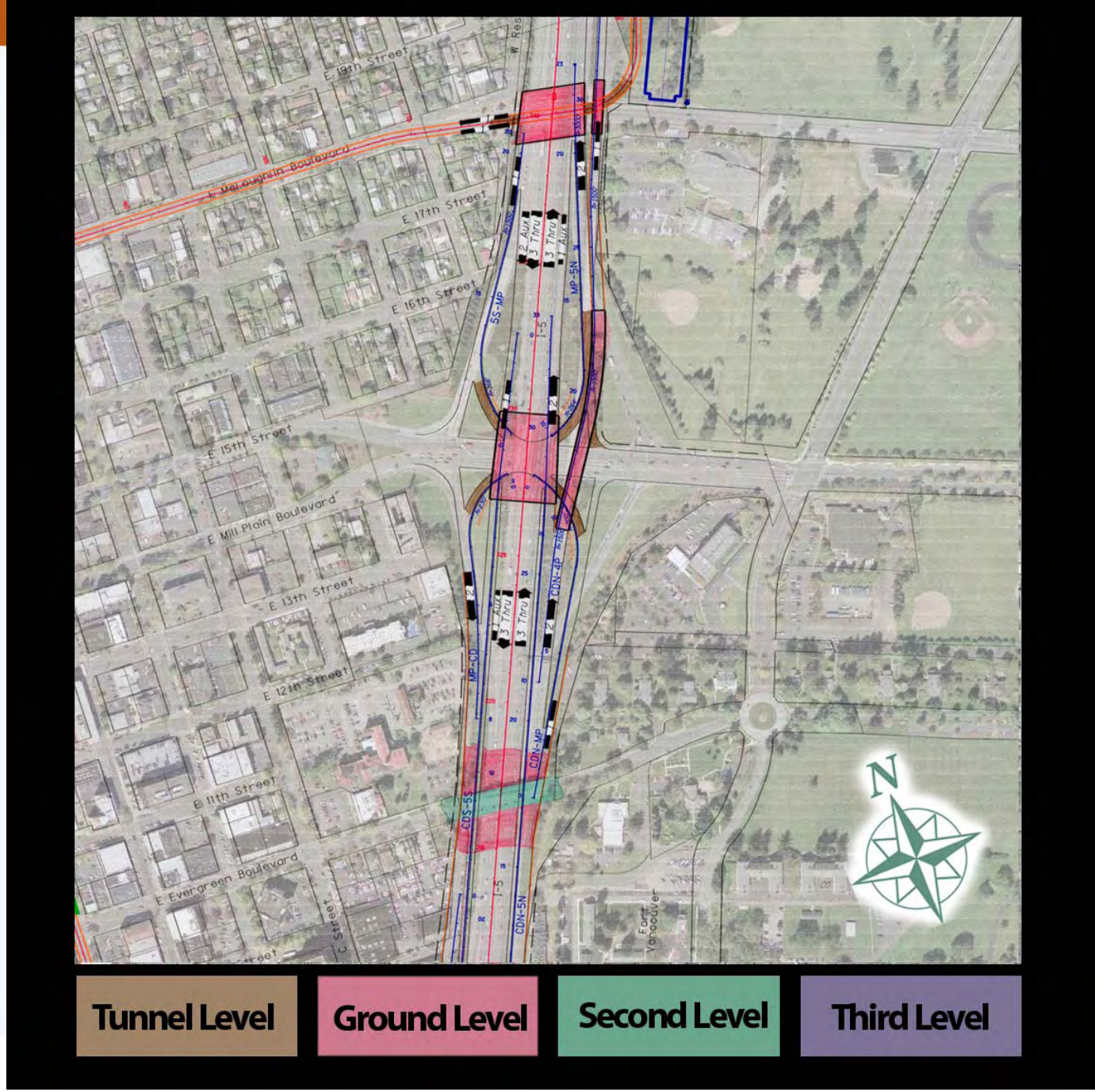


Columbia River CROSSING

Mill Plain Interchange, Vancouver

(Alt. 10)

Balanced Transit/Highway Improvements with Bus Rapid Transit

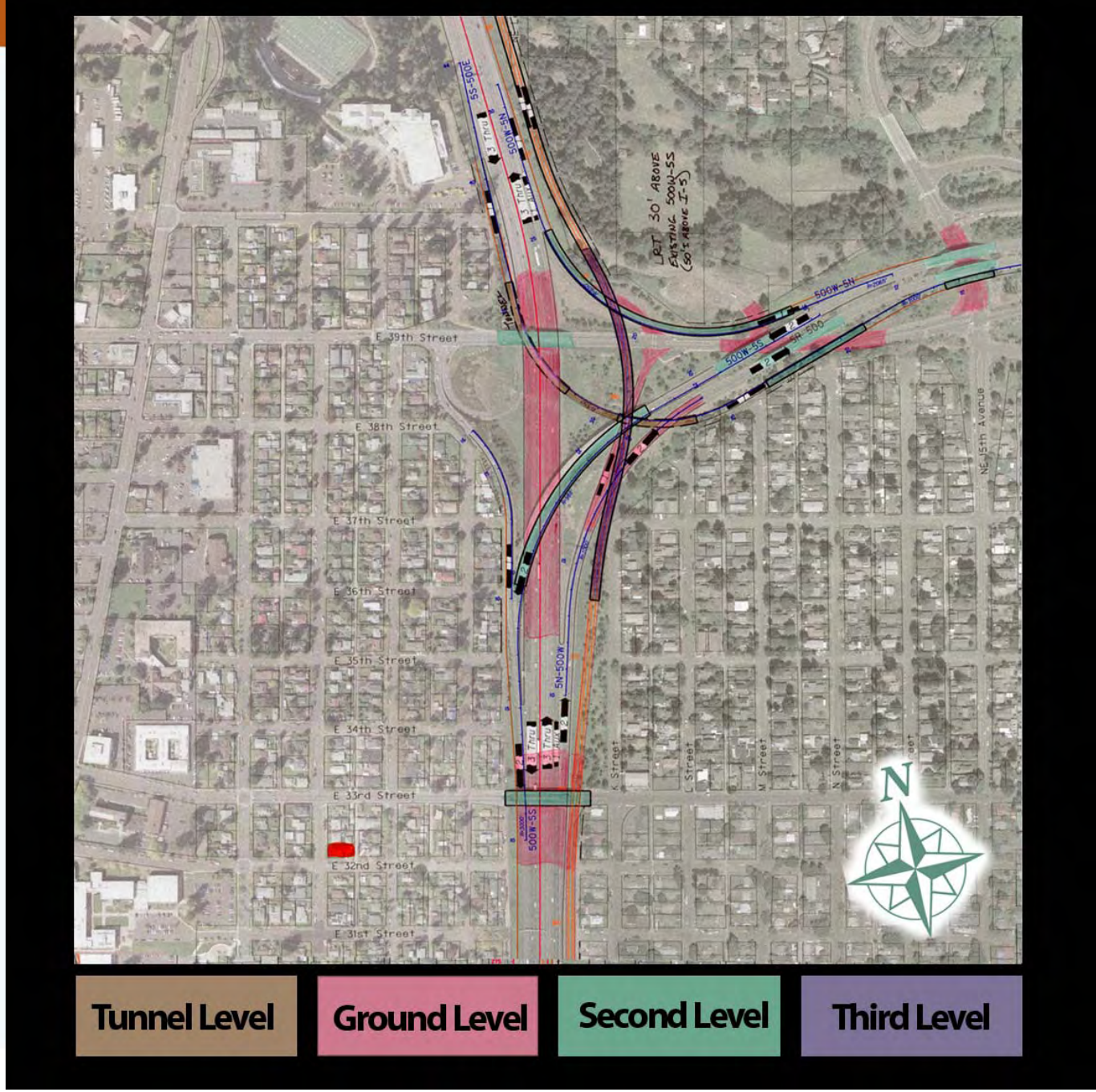


Columbia River CROSSING

SR-500 Interchange, Vancouver

(Alt. 4)

Balanced Transit/Highway Improvements with Light Rail Transit

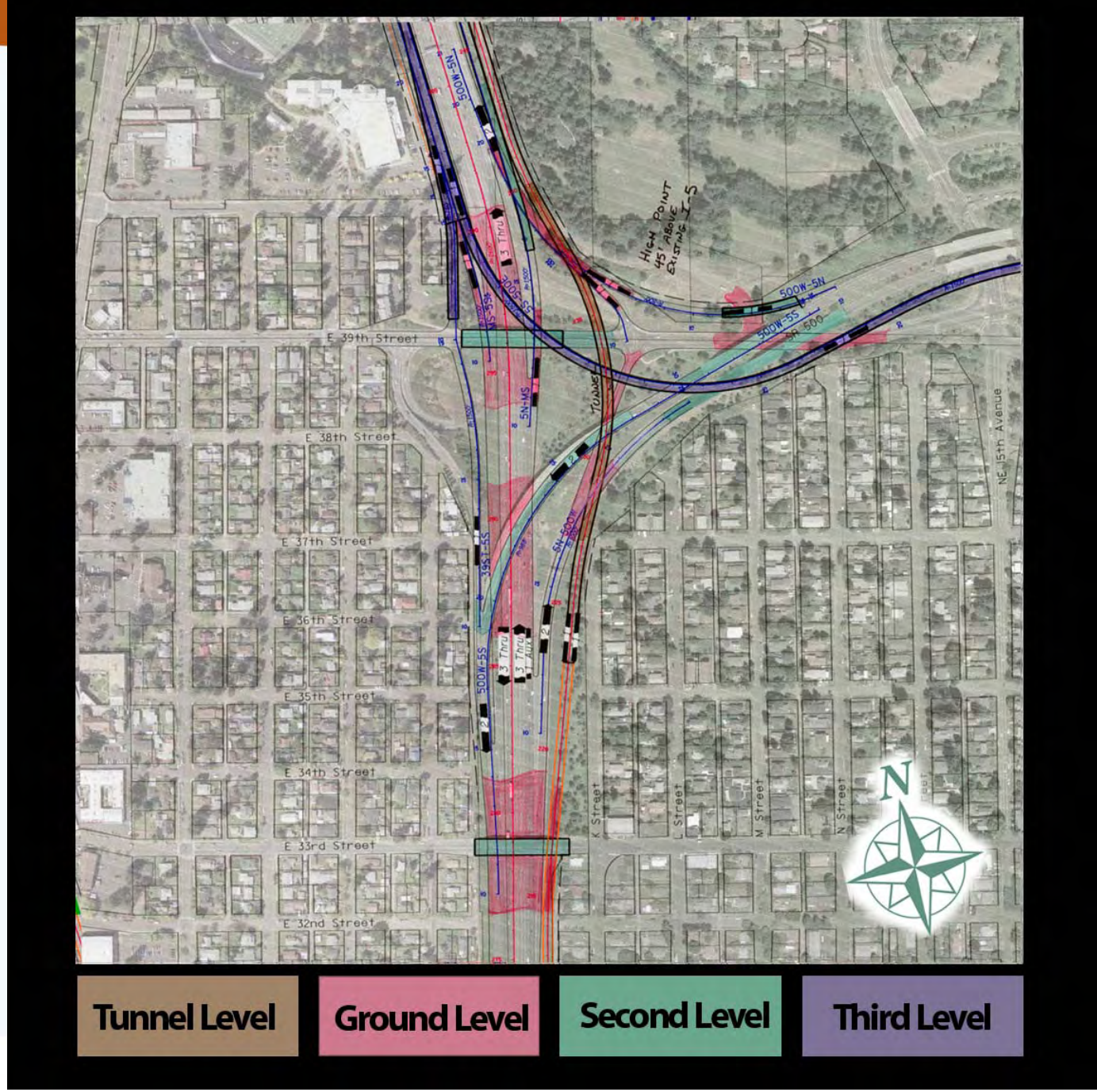


Columbia River CROSSING

SR-500 Interchange, Vancouver

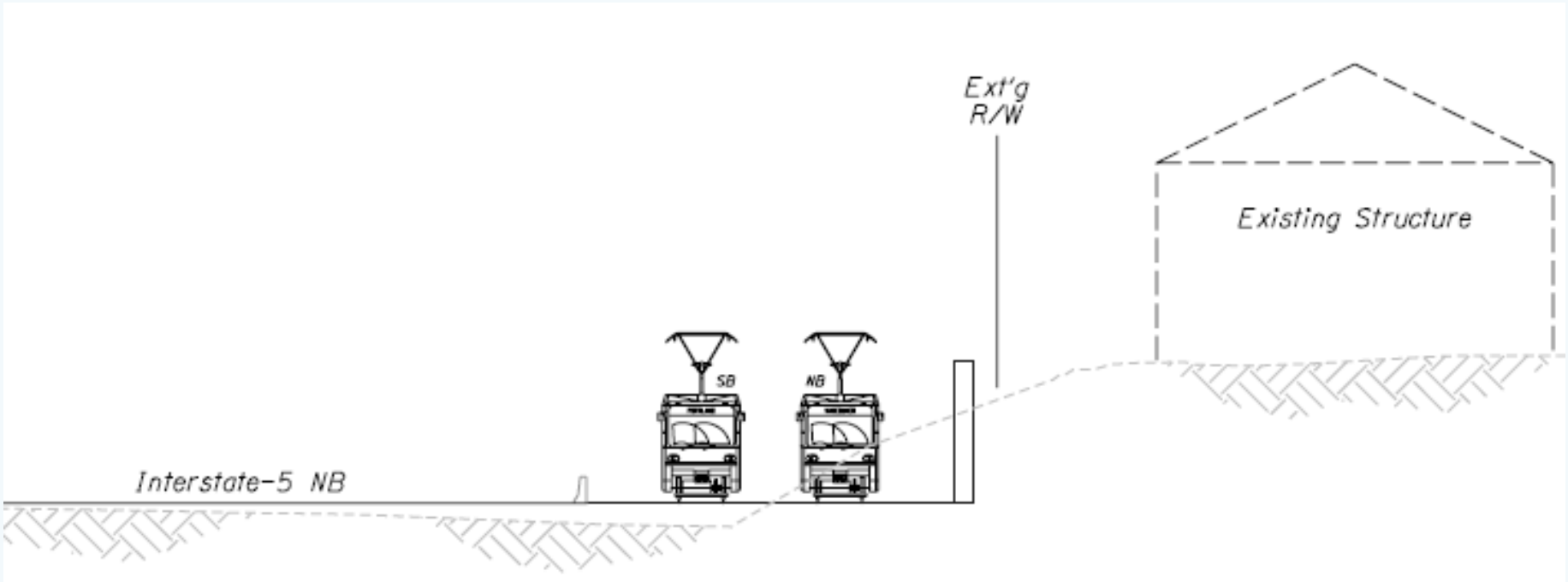
(Alt. 10)

Balanced Transit/Highway Improvements with Bus Rapid Transit



Columbia River CROSSING

LRT/BRT Alignment Between Fourth Plain and SR-500



Next Steps for Transit and Roadway

- For DEIS Alternatives
  - Decision on River Crossing
  - Decision on Transit Modes

Columbia River CROSSING

Transit Alternatives

Gregg Snyder

Transit Overview

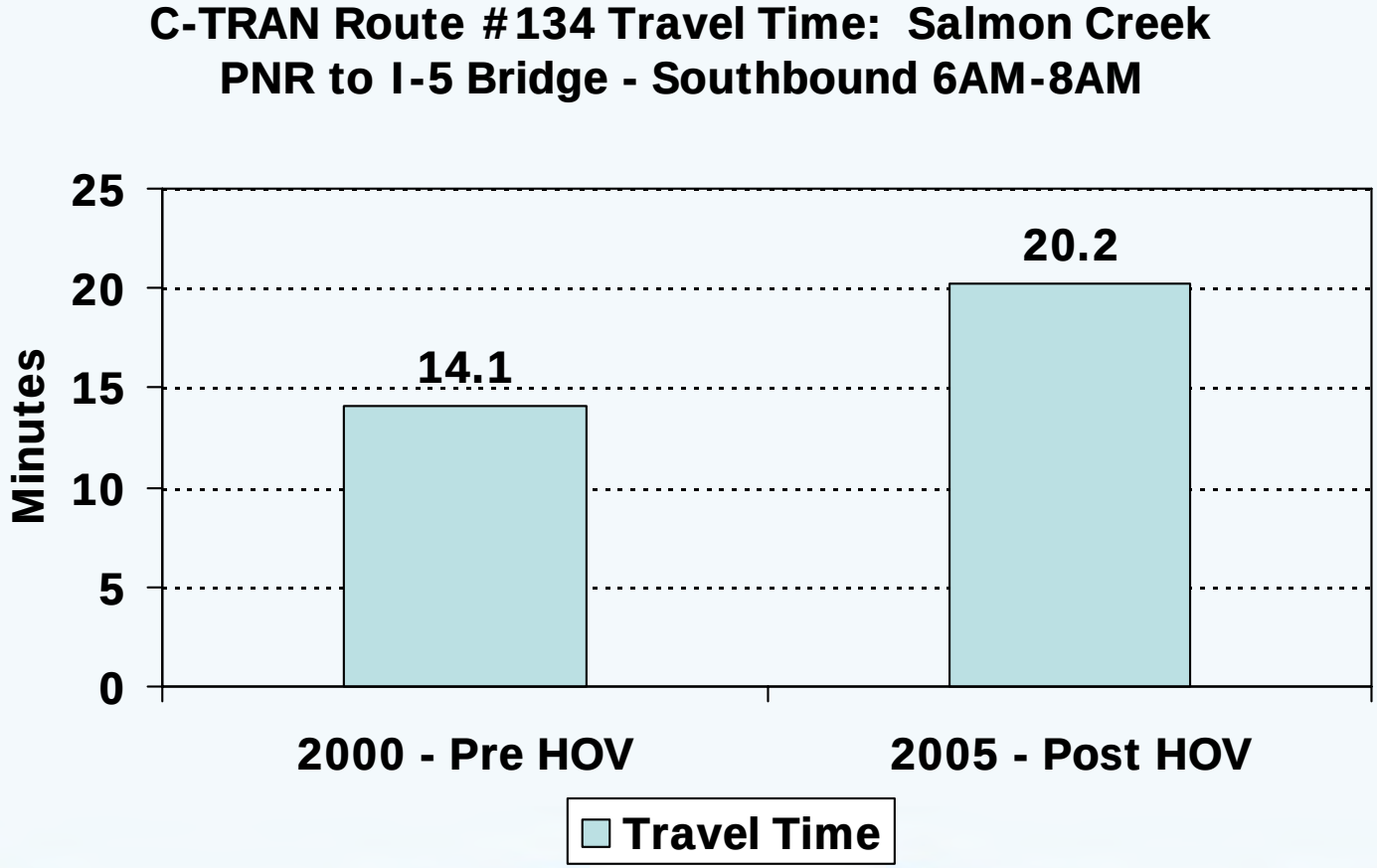
- Existing Conditions
- Transit Modes Remaining
- Analysis Methods and the Representative Alignment

Existing Transit Services

- One local bus route serving Portland and Vancouver downtowns (TriMet #6)
- Five commuter express routes serving Clark County and downtown Portland (105, 114, 134, 157, 190)
- Interstate MAX to Expo
- Average daily ridership across the I-5 bridge is 3,475 passengers (5.9% mode split in PM 4-hour peak)
- Transit services constrained by limited roadway capacity and congestion

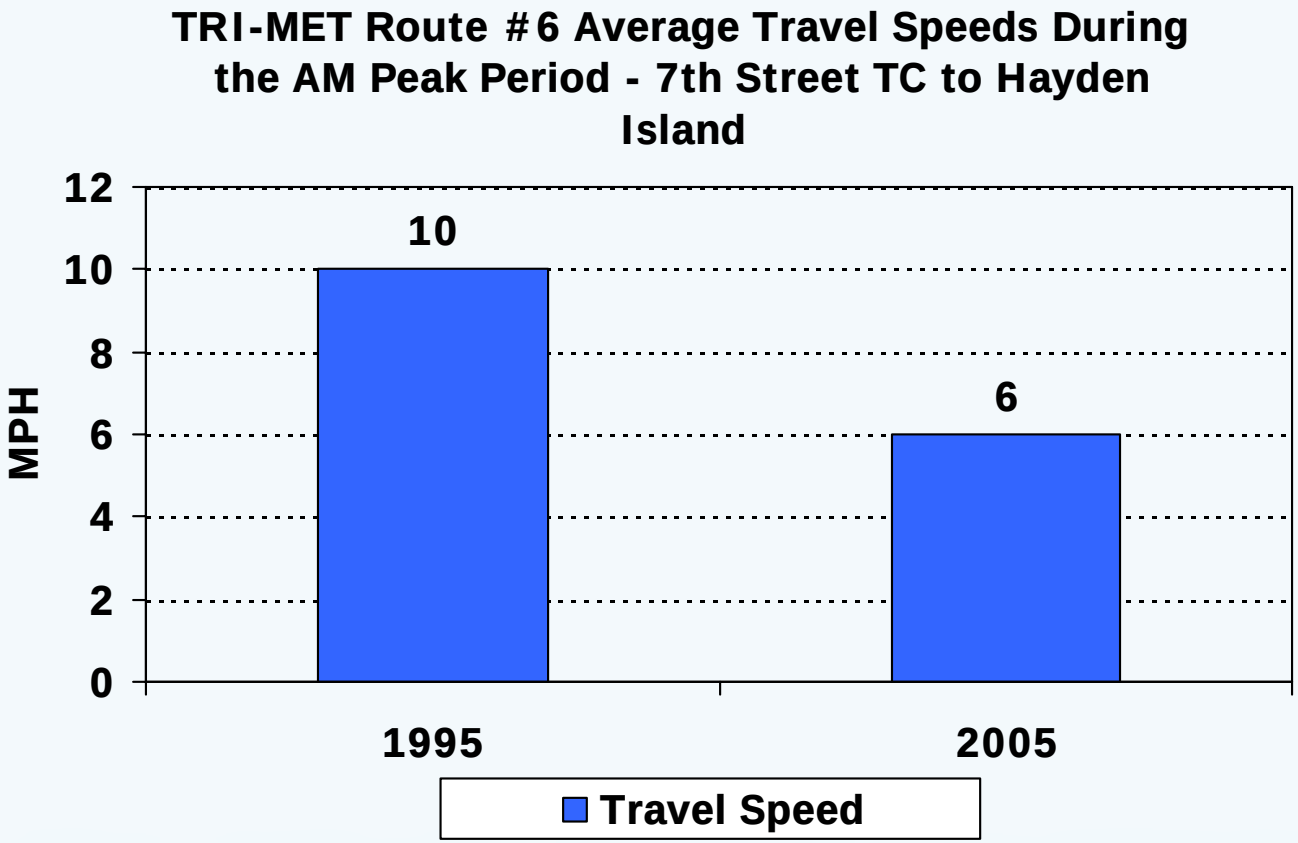
Columbia River CROSSING

Transit Travel Times are Increasing



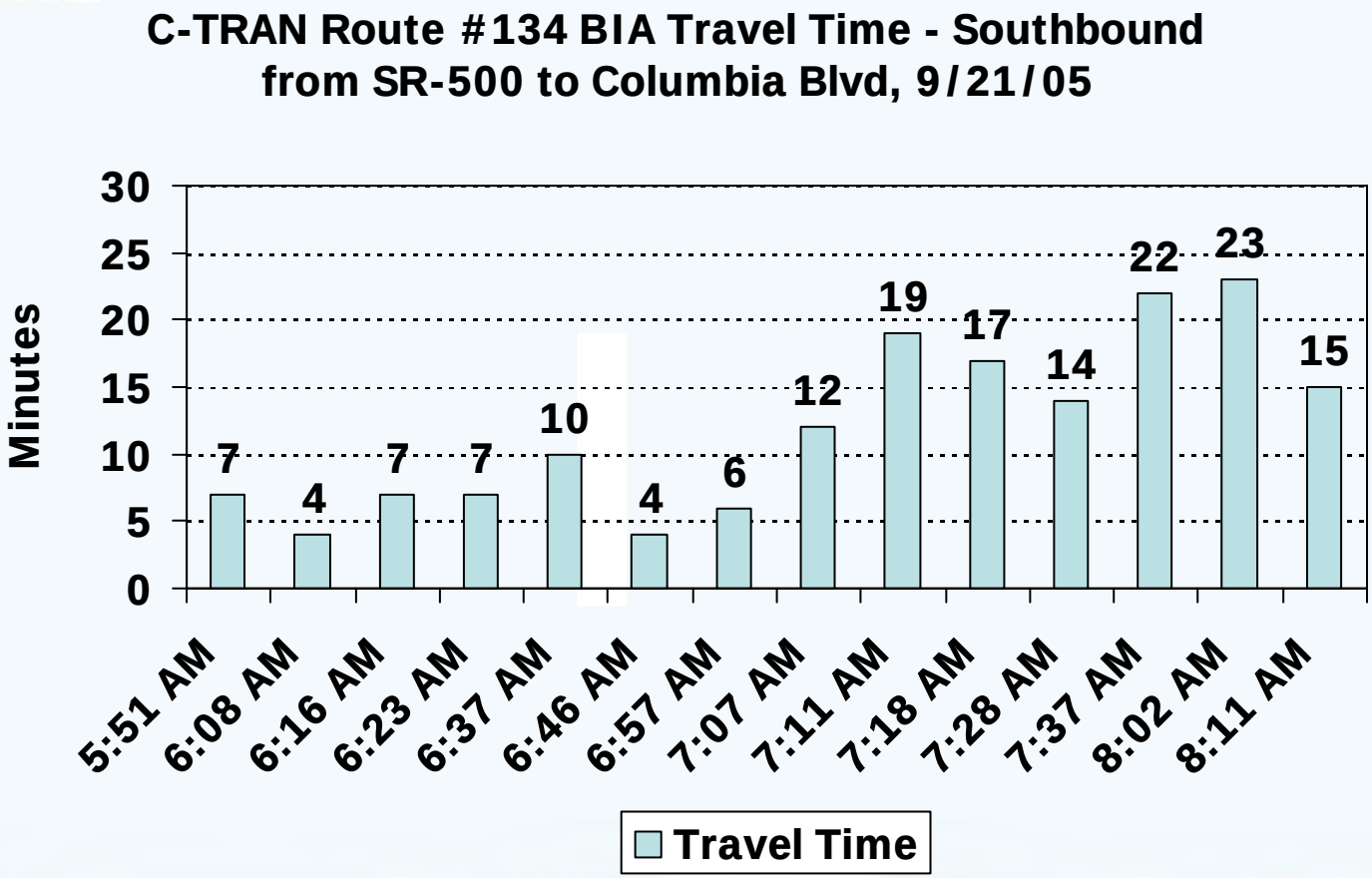
Source: Vancouver HOV Lane Pilot Project Final Evaluation Report, 2006

Transit Vehicle Speeds are Decreasing



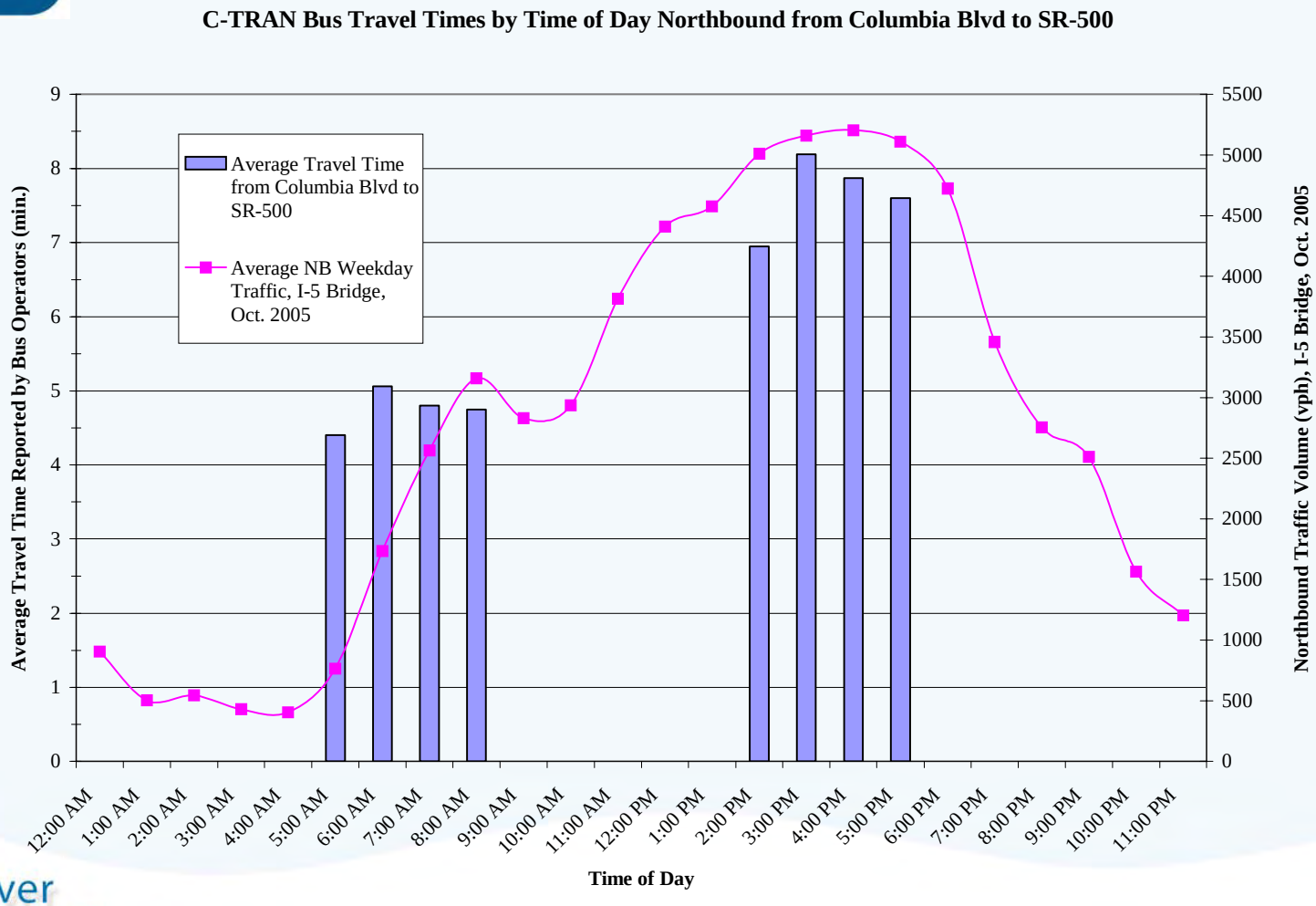
Source: TriMet Schedule and Performance Data, 2005

Transit Vehicles are Affected by Congestion

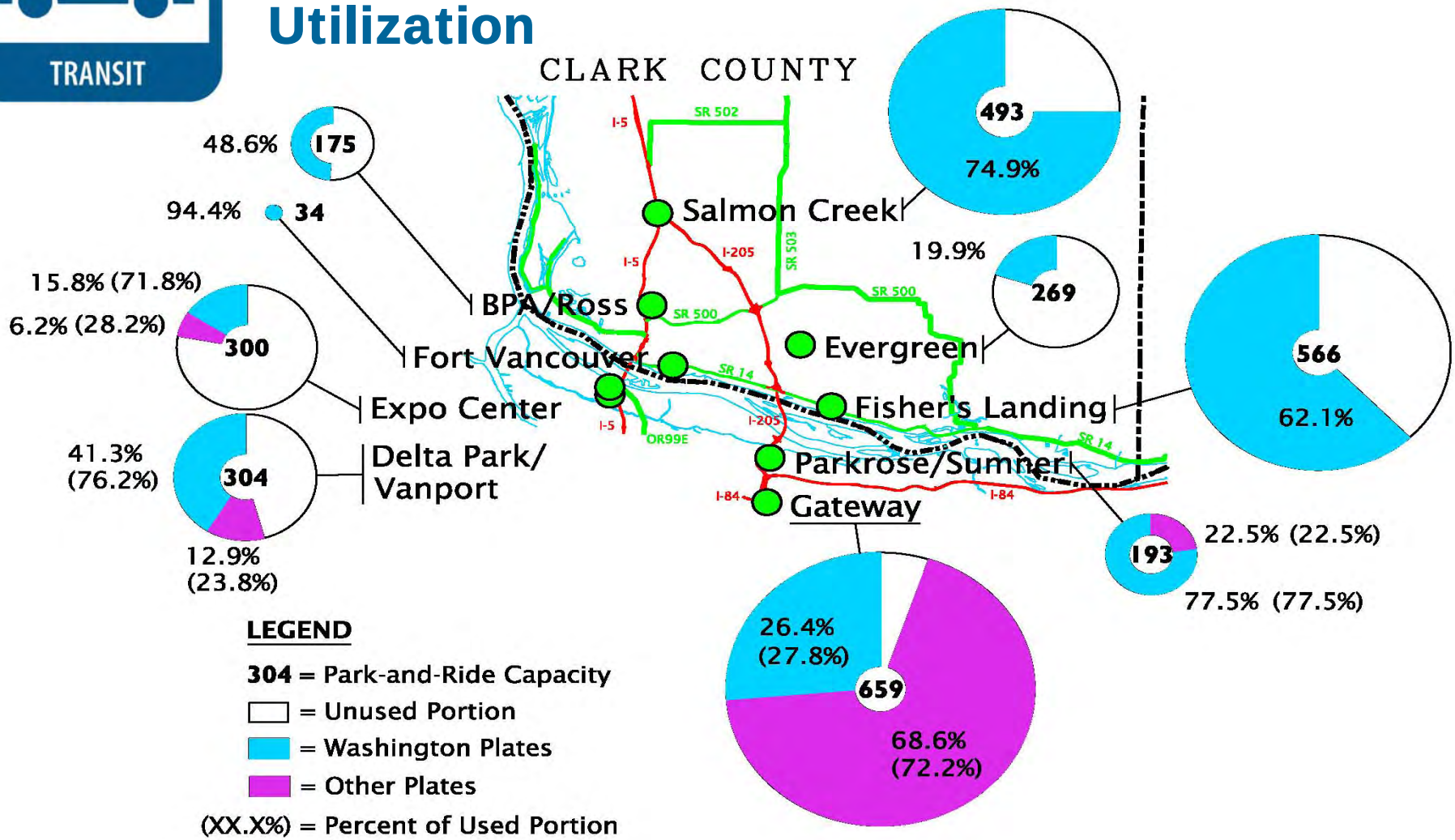


Source: C-TRAN Direct Travel Time Measurements, 2005

Transit Travel Times are Affected by Congestion

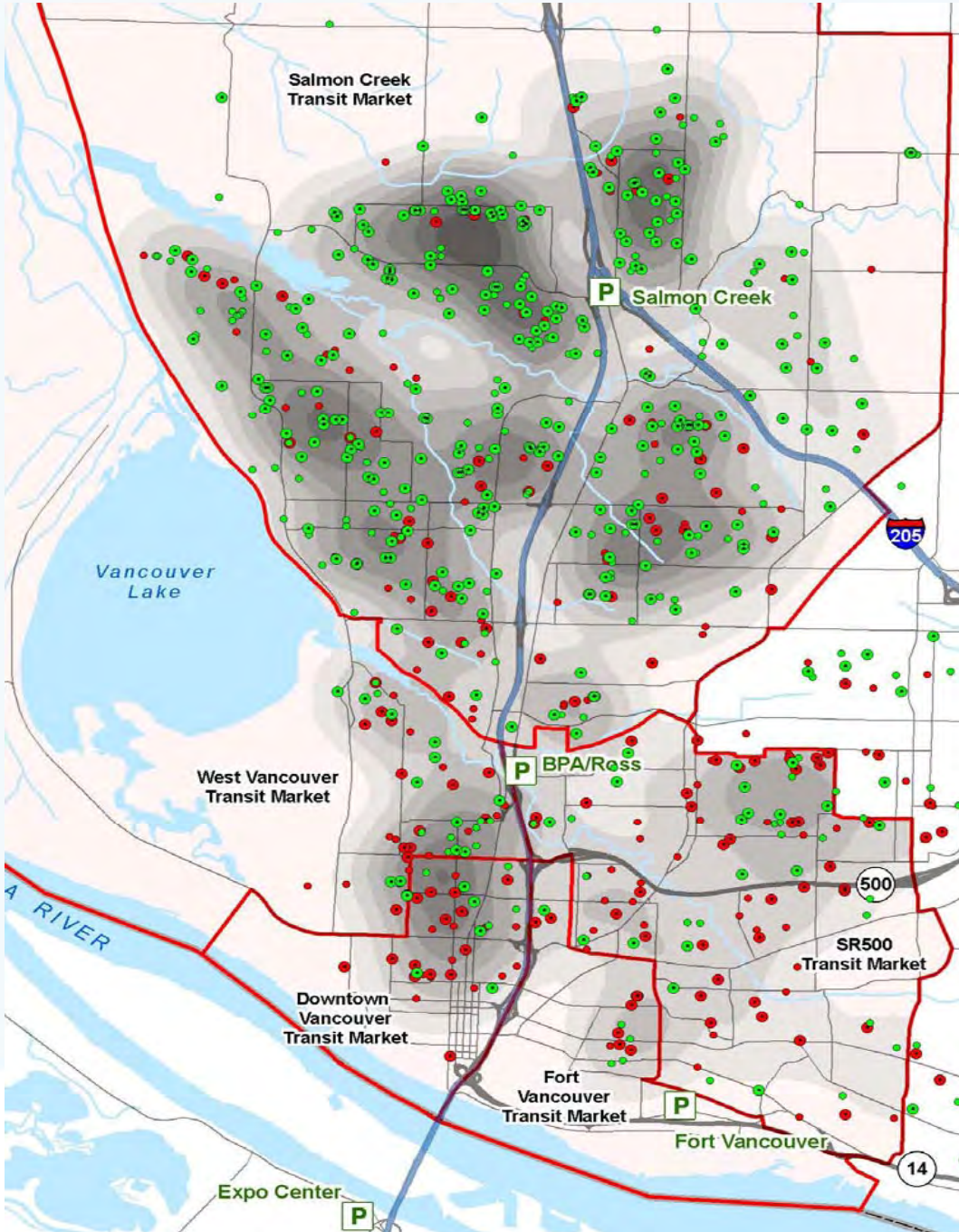


2006 Park-and-Ride Utilization



2006 Park-and-Ride Market

- 67% of users at the I-5 park-and-ride lots live within the I-5 transit market
- Clear purpose and need shown for the 99th Street park-and-ride
- An average of 500 vehicles per day cross the river to ride MAX
- Significant park-and-ride demand exists within the Bridge Influence Area



Columbia River CROSSING

2020 Transit Market

- By 2020, over 80% of northbound person trips are concentrated in 5 districts
- Transit components serving multiple markets can attract greater ridership

Columbia River CROSSING

TR-1 Express Buses in I-5 General Purpose Lanes

- Point-to-point peak-period service
- Provides service from suburban Clark County to downtown Portland
- Relies solely on new capacity (more lanes) within the Bridge Influence Area to improve transit vehicle speed and increase reliability
- Express bus service could be doubled
- I-5 corridor park-and-ride spaces could increase to 2,600

TR-2 Express Buses in I-5 Managed Lanes

- Point-to-point peak-period bus service
- Provides service from suburban Clark County to downtown Portland
- Relies on a new 17-mile managed lane system to improve transit vehicle speed and reliability
- 12 new transit-only queue jumps at I-5 interchanges
- Express bus service could be doubled
- I-5 corridor park-and-ride spaces could increase to 2,600

Columbia River CROSSING

TR-3 Bus Rapid Transit *Lite*

- A new all-day, limited-stop bus rapid transit system
- Provides service from suburban Clark County to downtown Portland
- Includes special vehicles and upgraded “mini-stations”
- Relies on a combination of I-5 managed lanes and transit-only queue jumps to improve transit vehicle speed and reliability
- Headways at 5 minutes in the peak periods, 15 minutes off-peak
- I-5 corridor park-and-ride spaces could increase to 8,880

Columbia River CROSSING

TR-4 Bus Rapid Transit

- A new all-day, limited-stop bus rapid transit system
- Provides service from Vancouver to downtown Portland, with shuttle connections to suburban Clark County
- Includes special vehicles and full LRT-like stations
- Relies on a new exclusive bus guideway to improve transit vehicle speed and reliability
- Headways at 5 minutes in the peak periods, 15 minutes off-peak
- I-5 corridor park-and-ride spaces could increase to 8,880

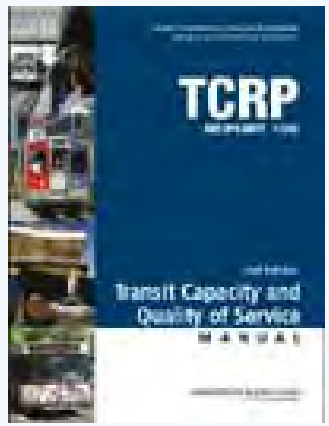
Columbia River CROSSING

TR-5 Light Rail Transit

- An extension of TriMet's Yellow Line to downtown Vancouver
- Provides service from Vancouver to downtown Portland, with shuttle connections to suburban Clark County
- Relies on a new exclusive rail guideway to improve transit vehicle speed and reliability
- Headways at 5 minutes in the peak periods, 15 minutes off-peak
- I-5 corridor park-and-ride spaces could increase to 8,880

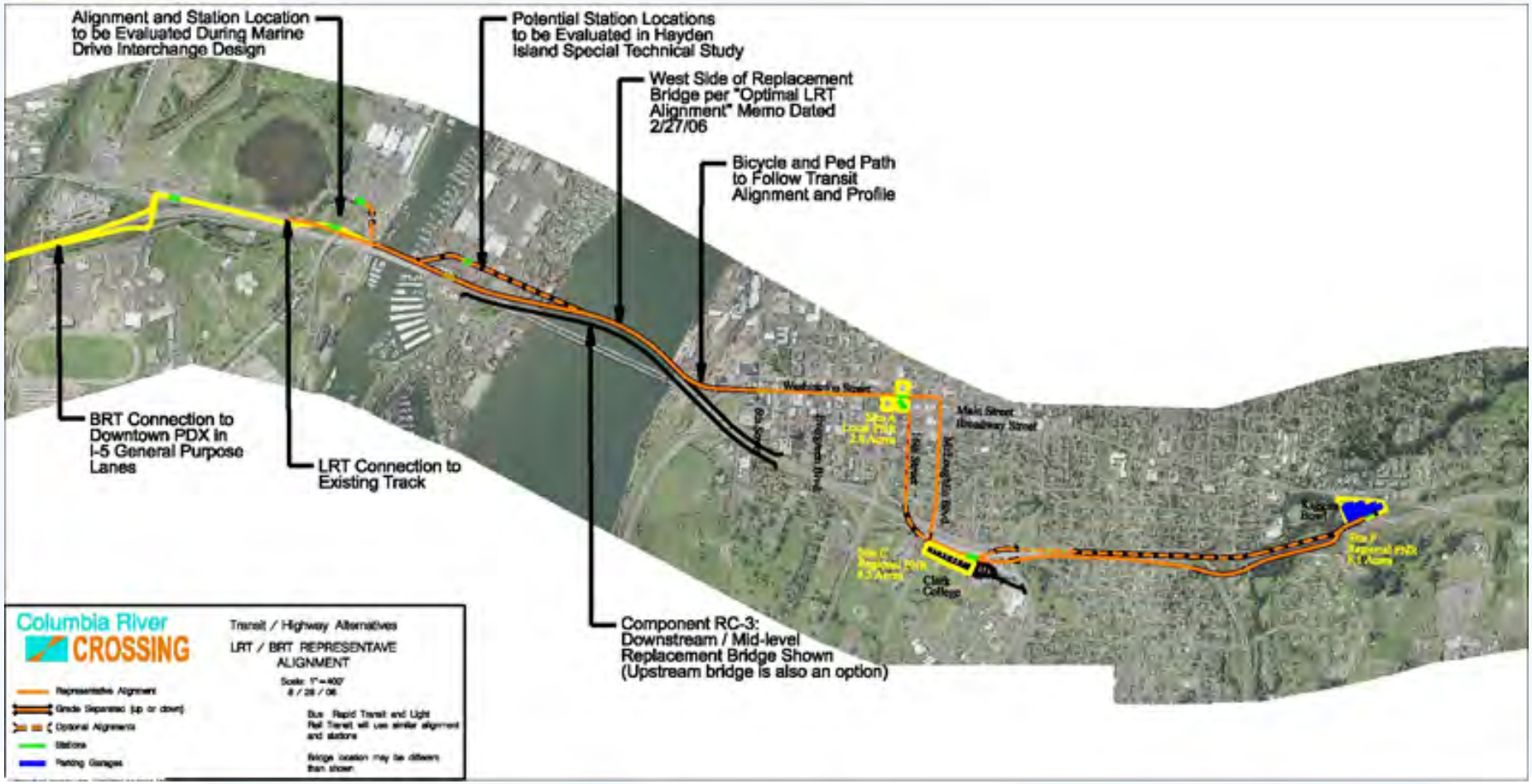
Potential Alignments and Analysis Methods

- For the Alternatives Analysis, modes should compete head-to-head on an apples-to-apples basis as much as possible
- The objective is to narrow the range of transit modes down to one to two for the DEIS
- FTA FY2008 New Starts Guidance is being followed



Columbia River CROSSING

Representative Alignment Selected on May 16, 2006



Alternative Packages Evaluation

Columbia River CROSSING

Value	Criteria		Performance Measures
1. Community Livability and Human Resources	1.1 Avoid, then minimize adverse impacts to, and where practicable reduce, noise levels		**1.1.1** No. of residential properties within estimated FHWA noise impact contours.
			1.1.2 No. of residential properties within estimated FTA impact screening contours.
			1.1.3 Identified constraints to providing mitigation for areas with potential impacts
	1.2 Avoid, then minimize adverse impacts to, and where practicable enhance, neighborhood cohesion.		**1.2.1** No. of neighborhoods bisected by new construction
			1.2.2 No. of significantly impacted neighborhoods (> 10% of total area required for new construction)
			1.2.3 No. of neighborhoods divided from their identified resources by new construction
	1.3 Avoid, then minimize adverse impacts to, and where practicable enhance, air quality		**1.3.1** General trade offs in air quality effects of the alternatives
	1.4 Avoid or minimize residential displacements		**1.4.1** No. of residential properties crossed by alternative's conceptual footprint
	1.5 Avoid or minimize business displacements		**1.5.1** No. of commercial/industrial properties crossed by alternative's conceptual footprint
	1.6 Avoid or minimize adverse impacts to, and where practicable, preserve historic, prehistoric, and cultural resources		**1.6.1** No. of historic, archaeological and cultural (i.e., TCP) resource properties within conceptual footprint
			1.6.2 Total acreage of historic, archeological, cultural properties within conceptual footprint
			1.6.3 No. of historic, archaeological and cultural resource properties also within potential noise impact contour
			1.6.4 Total acreage of land located in high probability areas for archeological resources
	1.7 Avoid, then minimize adverse impacts to, and where practicable enhance, public park and recreation resources		**1.7** No. of 4(f) public parks (including # of parks and area of parkland) falling within conceptual footprint
	1.8 Support local comprehensive plans and jurisdiction-approved neighborhood plans including development and redevelopment opportunities, consistent with these plans.		**1.8.1** Does alternative support/uphold principles of multi-modalism and compact growth?
			1.8.2 Is alternative consistent with relevant comprehensive plans?
			1.8.3 Is alternative consistent with project-specific policies in the Vancouver City Center Vision?
			1.8.3 Amount of developable, redevelopable land to be lost under alternative.
	1.9 Incorporate aesthetic values of the community in the project design		**1.9.1** To be measured in later phases of project when design details are available to support evaluation
2. Mobility, Reliability, Accessibility, Congestion Reduction, and Efficiency	2.1 Reduce travel times and delay in the I-5 corridor and within the bridge influence area for passenger vehicles		**2.1.1** Passenger auto travel times in minutes between selected corridor points along I-5. Morning commute (SB I-5) Salmon Creek to Portland CBD; Evening commute (NB I-5) Portland CBD to Vancouver CBD
			2.1.2 Passenger auto vehicle hours of delay (VHD) on I-5 within BIA and corridor area
	2.2 Reduce travel times and delay in the I-5 corridor and within the bridge influence area for transit modes		**2.2.1** Peak period transit vehicle travel time and aggregate VHD (transit vehicle hour delay) from selected corridor points along I-5
	2.3 Reduce the number of hours of daily highway congestion in the I-5 corridor and within the bridge influence area		**2.3.1** No. of congested lane miles and daily number of hours of congestion on I-5 in the I-5 corridor and within bridge influence area
	2.4 Enhance or maintain accessibility of jobs, housing, health care and education to travel markets served by the I-5 Columbia River crossing		**2.4.1** Employment and housing accessibility- No. of jobs and households reachable in 15, 30, 45, and 60 minute trips by auto and transit from specific I-5 travel markets
			2.4.2 Change in # of existing highways/arterials that directly access I-5 within Bridge Influence Area
	2.5 Improve person throughput of I-5 Columbia River crossing		**2.5.1 & 2.5.2** Peak period and daily persons crossing Columbia River between SOV, HOV, and transit modes
	2.6 Improve vehicle throughput of I-5 Columbia River crossing		**2.6.1 & 2.6.2** Peak period and daily SOV, HOV, Bus, and Medium/Heavy Truck volumes across I-5 Columbia River crossing.
			2.6.3 Peak period volumes on east-west and north-south adjacent I-5 corridor arterial roadways within Bridge Influence Area
3. Modal Choice	3.1 Provide for multi-modal transportation choices in the I-5 corridor and within the bridge influence area		**3.1.1** Percent of population and employment with access to transit within 1/4 mile of bus lines and 1/2 mile of HCT stations
			3.1.2 Access to employment and housing within transit travel time contour in 15, 30, 45, and 60 minutes
	3.2 Improve transit service to target markets in the I-5 corridor and within the bridge influence area		**3.2.1** Transit travel times from the 7 Clark County transit markets to the 5 major transit markets in Oregon (both in vehicle and out of vehicle for a few representative pairs) (Salmon Creek, dt Vancouver, N Portland, dt Portland)
	3.3 Improve bike/pedestrian connectivity in the I-5 corridor and within the bridge influence area		**3.3.1** Provide multi-use facility designed to at least minimum design standards; providing continuous and non-circuitous north-south pathway and convenient connections -- qualitatively evaluated
	3.4 Increase vehicle occupancy in the I-5 corridor and within the bridge influence area		**3.4.1** Peak period SOV + HOV + Bus + Medium & Heavy Truck volumes across I-5 Columbia River crossing and vehicle occupancy at I-5 Columbia River crossing
4. Safety	4.1 Enhance Vehicle/Freight Safety		**4.1.1** Highway improvements to I-5 that specifically improve vehicle/freight safety
	4.2 Enhance bike/pedestrian facilities and safety		**4.2.1** Qualitative assessment of bicycle and pedestrian pathways provided within an alternative, and their affect on bike/ped safety
	4.3 Enhance or maintain marine safety		**4.3.1** Quality of navigation channel geometrics to accommodate ship movements. Does alternative improve barge turning maneuvers
	4.4 Enhance or maintain aviation safety		**4.4.1** Ability to accommodate FAA clearance zone for Pearson Airpark
	4.5 Provide sustained life-line connectivity		**4.5.1** Ability to accommodate life-line connections in the I-5 corridor across the Columbia River to be maintained in an earthquake
	4.6 Enhance I-5 incident/emergency response access within the bridge influence area		**4.6.1** Ability to accommodate incident/emergency service access to incidents on I-5 in the bridge influence area

Alternative Packages Evaluation

Columbia River CROSSING

Value	Criteria		Performance Measures
5. Regional Economy/Freight Mobility	**5.1** Reduce travel times and reduce delay for vehicle-moved freight on I-5 within the bridge influence area		**5.1.1** Peak period Medium/Heavy Truck travel times in minutes on I-5 within Bridge Influence Area.
			5.1.2 Peak period Medium/Heavy Truck vehicle hours of delay (VHD) on I-5 within Bridge Influence Area
	5.2 Reduce travel times and reduce delay for vehicle-moved freight in the I-5 corridor		**5.2.1** Peak period Medium/Heavy Truck travel times in minutes within I-5 corridor.
			5.2.2 Peak period aggregate vehicle hours of delay (VHD) for Medium/Heavy Trucks within I-5 Corridor
	5.3 Enhance or maintain efficiency of marine navigation		**5.3.1** Potential for an alternative to avert extension of "no bridge lift" periods tied to I-5 congestion
	5.4 Improve freight truck throughput of the bridge influence area		**5.4.1** Peak period Medium & Heavy Truck volumes across I-5 Columbia River crossing
	5.5 Avoid or minimize adverse impacts to the parallel freight rail corridor		**5.5.1** Peak period congestion along east-west arterials within Bridge Influence Area with at-grade crossings of westerly north-south BNSF railline
	5.6 Enhance or maintain access to port, freight, and industrial facilities		**5.6.1** Peak period Medium/Heavy Truck travel times in minutes between typical freight centers
6. Stewardship of Natural Resources	**6.1** Avoid, then minimize adverse impacts to, and where practicable enhance, threatened or endangered fish and wildlife and their habitat		**6.1.1** Total area in acres of critical and native habitat for threatened and endangered (T&E) species within conceptual footprint
			6.1.2 Relative quality of the habitat identified under Measure 6.1.1
	6.2 Avoid, then minimize adverse impacts to, and where practicable enhance, other fish and wildlife and their habitat		**6.2.1** Total area in acres of fish and wildlife habitat within alternative's conceptual footprint
			6.2.2 Impacts to wildlife crossings/passage
			6.2.3 Type and relative quality of the habitat identified under Measure 6.2.2
	6.3 Avoid, then minimize adverse impacts to, and where practicable enhance, rare, threatened, or endangered plant species		**6.3.1** Total area in acres of rare plant habitat within alternative's conceptual footprint
	6.4 Avoid, then minimize adverse impacts to, and where practicable enhance and/or restore, wetlands		**6.4.1** Total area in acres of wetlands within alternative's conceptual footprint
			6.4.2 Type and relative quality of the wetlands identified under Measure 6.4.1
	6.5 Avoid, then minimize adverse impacts to, and where practicable enhance, water quality		**6.5.1** Total area in acres of additional impervious surface created under alternative. How much existing impervious surface would remain?
	6.6 Minimize total energy consumption of construction and transportation system operations		**6.6.1** Amount of energy use
	6.7 Avoid, then minimize adverse impacts to, and where practicable enhance, waterways		**6.7.1** Identified removal/fill impacts to waterways
7. Distribution of Benefits and Impacts	**7.1** Avoid or minimize disproportionate adverse impacts on, and where practicable, improve conditions for low income and minority populations		**7.1.2** Do potential acquisitions and noise impacts cluster in areas considered high minority or low income?
			7.1.3 Is traffic diverted to census tracts considered high minority or low income?
	7.2 Provide for equitable distribution of benefits to low income and minority populations		**7.2.1** Which block groups experience improved access to I-5, downtown Vancouver, downtown Portland, or other resources?
			7.2.2 Which block groups experience the greatest improvements in transit service?
8. Cost Effectiveness and Financial Resources	**8.1** Minimize the cost of construction.	Criteria 8.1, 8.2 and 8.3 are collectively addressed by measures 8.1.1 through 8.1.6	**8.1.1** Estimated Capital Construction Cost
			8.1.2 Estimated Operations and Maintenance Cost
	8.2 Ensure transportation system construction cost effectiveness.		**8.1.3** Estimated lifecycle cost
			8.1.4 Estimate of FTA Cost Effectiveness index (as an indicator of each alternative's potential eligibility for FTA New Starts funds). This will be reported in ranges given the preliminary nature of the data
	8.3 Ensure transportation system maintenance and operation cost effectiveness.		**8.1.5** Daily Time Savings (vehicle hours) per highway alternative life cycle cost
			8.1.6 Daily reduction in congested hours of operation (hrs/day) per highway alternative life cycle cost
	8.4 Ensure a reliable funding plan for the project		**8.4.1** To be measured in later phases.
			8.4.2 To be measured in later phases.
9. Growth Management, Land Use	**9.1** Support adopted regional growth management and comprehensive plans		**9.1.1** Consistency with regional plan policies (e.g., multi-modalism, compact growth) summarized in Table 1-2 of the draft land use MDR, and other regional plan policies specific to the project. Is the alternative included in the RTP and MTP?
			9.1.2 Proximity of proposed HCT stations to areas of higher density, either existing or planned (in local comprehensive plans) and with supportive parking, pedestrian and other policies in place.
10. Constructability	**10.1** Maintain transportation operations during construction		**10.1.1** Magnitude of delays to current highway, transit, and navigation use.
	10.2 Minimize adverse construction impacts		**10.2.1** Magnitude of noise, air quality, and visual impacts to environment.
	10.3 Provide flexibility to accommodate future transportation system improvements		**10.3.1** Ease by which transportation system can be improved.
	10.4 Use construction practices and materials that minimize environmental impact		**10.4.1** To be measured in later phases.

September 1, 2006

Dr. Hal Dengerink
Co-Chair
Columbia River Crossing Task Force
700 Washington Street
Vancouver, WA 98660

Mr. Henry Hewitt
Co-Chair
Columbia River Crossing Task Force
700 Washington Street
Vancouver, WA 98660

Dear Mr. Dengerink and Mr. Hewitt:

After months of engaging in the process to define and narrow components and package alternatives, the business representatives to the Columbia River Crossing Task Force would like to take this opportunity to summarize our objectives for this project.

As a point of beginning, we expect that any project will result in an improvement over current conditions. This bridge must serve the community for the next century. It is critical that transportation projects of this physical and financial scope are evaluated within a regional, and in this case national, context of economic and transportation needs and impacts. The placement and design must ensure efficient and reliable movement of people and goods well into the future.

In order to accomplish the above, and for the business community to support this project, there are three critical issues that must be addressed:

- Congestion reduction. As the recent Portland Cost of Congestion study noted, increasing congestion has substantial impacts on our region's economic competitiveness and quality of life. It is critical that we use this rare opportunity to construct a new bridge crossing that lessens the traffic congestion through this critical transportation link.

- Capacity enhancement. This is a critical part of ensuring a reduction in congestion levels on the crossing. While multi-modal solutions, including improved public transit, bike and pedestrian facilities are needed, it is critical that road capacity also be included. Economic activities, whether freight or a single occupancy vehicle used for sales, service or business, cannot readily be served by alternative modes. To ensure the region's economic competitiveness, both domestically and in the global marketplace, adding road capacity is essential.

- Maintain/improve access. Equally critical is ensuring access to the economic centers in the bridge influence area. Within that geographic boundary of the BIA exist the Ports of Portland and Vancouver, some of the region's most productive industrial districts, as well as downtown Vancouver. Access must be maintained or improved to Columbia Boulevard, Marine Drive, Victory Boulevard, Hayden Island, Mill Plain Boulevard, Fourth Plain Boulevard, Downtown Vancouver/6th St., and Highway 14.

Having identified our critical issues that must be addressed, we have a number of comments, questions and suggestions to address in the coming months.

First, it is important to identify what the measure of success is. For instance, to determine whether there is sufficient added capacity, will the measure be the number of people moving over the crossing and through the bridge influence, or is the measure focused on the number of vehicles? Obviously, these two measures could result in different outcomes. In order to critically evaluate project alternatives and their impacts on congestion, capacity and access, defining how we will measure success is essential.

Second, the previous work of the I-5 Partnership identified the need for five lanes on the bridge crossing (three through lanes and two add/merge lanes). Given updated population forecasts, which reveal a much faster influx of additional residents than previously anticipated, as well as efforts to update freight and traffic models in response to this new information, the need for three through lanes must be reconfirmed and additional evaluation should be undertaken to determine if two supplemental lanes are sufficient or whether additional lanes should be considered.

Third, information is needed regarding what is a realistic mode split between cars and the various forms of alternative transit. Is there a specific goal? Is that goal realistic and feasible to accomplish? The decision on a locally preferred alternative will be impacted by the amount of traffic we need to accommodate on roadways as well as on public transportation. By understanding this information, we can evaluate project alternatives more realistically against needs.

Finally, because of the substantial regional, national and global economic impacts of this bridge crossing, we believe it is appropriate for project staff to provide context to the task force members. Much like the Environmental Justice report, an Economic Report would provide task force members with critical information that should be considered during project alternative evaluation. A firm understanding among task force members of the economic benefits and implications of the bridge crossing will help ensure the final decision on locally preferred alternatives adequately takes into account our region's continued competitiveness and quality of life.

Again, this is a once in a lifetime opportunity to address this vital transportation link. It is critical that this project results in an improvement to the crossing in the long-term and addresses the congestion, capacity and access issues that are impacting our regional economies and quality of life. We hope that this letter clarifies our position and identifies some areas that need further attention. We look forward to continuing to work through these issues to develop a locally preferred alternative that meets the needs of our economy and our population for decades to come.

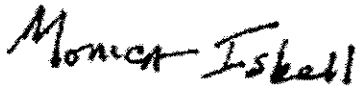
Sincerely,

Tom Zelenka
Oregon Freight Advisory Committee

Larry Paulson
Port of Vancouver

Bill Wyatt
Port of Portland

Bob Byrd
Identity Clark County



Monica Isbell
Portland Business Alliance

Bart Phillips
Columbia River Economic Development Council

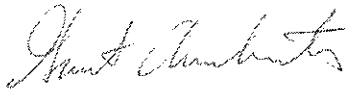
Bob Russell
Oregon Trucking Association

Ed Lynch
Vancouver National Historic Reserve Trust

Rich Brown
Portland Business Alliance

Scot Walstra
Greater Vancouver Chamber of Commerce

Jonathan Schlueter
Westside Economic Alliance



Grant Armbruster
Portland Business Alliance