Columbia River CROSSING

Meeting Agenda

MEETING TITLE: Task Force Meeting

DATE: Wednesday, June 14, 4:00 - 8:00 p.m.

LOCATION: OAME
4134 N. Vancouver Avenue in Portland

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	May 17 Meeting Summary	Approval
4:20 – 5:50	Environmental Justice Presentation John Ridgway Washington Department of Ecology	Discussion
5:50 – 6:05	Break	
6:05 – 6:20	Public Comment	Receive public comment
6:20 – 6:55	Components Proposed to Not Carry Forward	Discussion/Action
6:55 – 7:55	Introduction of Alternative Packaging	Discussion
7:55 – 8:00	Wrap Up and Next Steps **Next Meeting:** July 12, 2006, 4:00pm-8:00pm WSDOT, Southwest Region Office, 11018 NE 51st Circle, Vancouver, WA	

TriMet Route to the Task Force meeting from Portland:

From Downtown Portland (SW Salmon Street and 6th Avenue) take **TriMet Bus #40** (Mocks Crest to St. Johns) northbound to N Williams and Skidmore. OAME is 1 block west of this bus stop. For route information contact TriMet at 503-238-RIDE or www.trimet.org.

C-TRAN Route to the Task Force meeting from Vancouver:

From Downtown Vancouver (7th Street Transit Center) take **C-Tran Bus #105** (I-5 Express) southbound to Downtown Portland (SW Salmon Street and 6th Avenue). Transfer from Downtown Portland (SW Salmon Street and 6th Avenue) to **TriMet Bus #40** (Mocks Crest to St. Johns) northbound to N Williams and Skidmore. OAME is 1 block west of this bus stop. For route information contact C-TRAN at 360-695-0123 or www.c-tran.com and TriMet at 503-238-RIDE or www.trimet.org.

Columbia River CROSSING

Meeting Summary

Meeting: Columbia River Crossing Task Force

Meeting Date: May 17, 2006, 4:00–6:30 p.m.

Location: WSDOT SW Region Headquarters, 11018 NE 51st Circle, Vancouver, WA

Members Present:

Tom Miller for Sam Adams, City of Portland
Dr. Wayne Branch, Clark College
Rich Brown, Bank of America
Richard Brandman for Rex Burkholder, Metro
Bob Byrd, Identity Clark County
Lora Caine, Friends of Clark County
Serena Cruz, Multnomah County
Hal Dengerink, Washington State University Vancouver (Task Force Co-chair)
Elliot Eki, Oregon/Idaho AAA
Dave Frei, Arnada Neighborhood Association
Jill Fuglister, Coalition for a Livable Future
Jerry Grossnickle, Columbia River Tugboat Association
Brad Halverson, Overlook Neighborhood Association
Fred Hansen, TriMet
Henry Hewitt, Stoel Rives (Task Force Co-chair)
Adrienne DeDona for Eric Holmes, City of Battle Ground
Dean Lookingbill, Regional Transportation Council
Ed Lynch, Vancouver National Historic Reserve Trust
Betty Sue Morris, C-TRAN
John Ostrowski, C-TRAN
Katy Brooks for Larry Paulson, Port of Vancouver, USA
Bart Phillips, Columbia River Economic Development Council
Royce Pollard, City of Vancouver
Bob Russel, Oregon Trucking Association
Jonathan Schlueter, Westside Economic Alliance
Steve Stuart, Clark County
Walter Valenta, Bridgeton Neighborhood Association
Tom Zelenka, Oregon Freight Advisory Committee

Absent Members:

Charles Becker, City of Gresham
Brett Hinsley, Columbia Pacific Building Trades
Monica Isbell, Portland Business Alliance
Dick Malin, Central Park Neighborhood Association
Mark McCloud, Greater Vancouver Chamber of Commerce
Steve Petersen, Portland Business Alliance
Janet Ray, Washington AAA
Karen Schmidt, Washington Freight Mobility Strategic Investment Board
Jeri Sundvall-Williams, Environmental Justice Action Group
Scot Walstra, Greater Vancouver Chamber of Commerce
Bill Wyatt, Port of Portland

Project Team Members Present:

Ron Anderson	John Osborn	Lynn Rust
Doug Ficco	Peter Ovington	Gregg Snyder
Jeff Heilman	David Parisi	Rex Wong
Jay Lyman	Anne Pressentin	
Linda Mullen	Laura Reilly	

Announcements

The purpose of the meeting was announced by Co-chair Hal Dengerink:

- to finish the discussion and selection of components to move forward for further study;
- to consider transit and replacement bridge ideas begun at April 26 meeting;
- to discuss how the Task Force wants project staff to combine these components into packages.

Peak Oil and Demand Modeling: Staff is working to arrange for a speaker on these topics and will schedule this for an upcoming meeting.

Regional Transportation Council resolution:

Reminder that Task Force alternates may not participate in voting.

Action: Motion passed:
Motion to support the Regional Transportation Council board's *Policy Statement on Guidance for the Transportation Corridors Visioning Process and Context for Addressing New Columbia River Crossings* (see meeting materials, attachment from RTC).

All approved except Jill Fuglister, who abstained.

Walter Valenta noted that there is also some interest in including Bi-State Coordination Committee as a forum for discussing this issue. Steve Stuart said it could be brought up at that meeting the next morning.

Other materials: A handout was given to Task Force members titled *Appendix A: Attachments to Public Comments, April 12-13, 2005 Open Houses* in response to Dave Frei's request for attachments referred to in the *Database of Public Comments Received through April Open Houses*.

Environmental Justice Update

- An environmental justice training has been scheduled for the June Task Force meeting. The trainer will be John Ridgeway of the Washington State Department of Ecology, who will lead this full discussion of the federal Environmental Justice rules and how they apply to the CRC project. Note: June meeting will be extended to four hours to accommodate this (4pm to 8pm).

- In addition, a more extensive training for community members will take place in July – a four hour session led by national Environmental Justice leader, Running Grass, who works with the federal Environmental Protection Agency. Task Force members will receive an email with the invitation and must RSVP if they want to attend.
- A summary of the Environmental Justice Program is in the meeting materials, also posted on Web site at www.columbiarivercrossing.org/materials/meetingMaterials.aspx (under Task Force Meeting Materials, May 17, 2006).

Meeting Minutes

Action: The April 26, 2006, meeting minutes were approved with the correction that Bart Phillips was present, not absent, at that meeting.

Public Comment Period One

Opportunity for those who wish to address the topic of component selection and did not speak at the April 26 meeting. One commenter spoke:

Travis Huennekens expressed disappointment that the I-605 proposal was eliminated and that further study was not done on it. He went to a WSDOT open house attended by Columbia River Crossing staff and asked for data on seismic issues and the information he received didn't contain that information. He said it is not the engineering way to make a decision before having all the data and facts.

--(Co-chair Dengerink responded that the Task Force did consider data at its March and April meetings before disqualifying other alternatives and that the Regional Transportation Council will be looking at other such alternatives.)

Continue Discussion and Selection of Components

Co-chair Henry Hewitt resumed the role of chairperson for this portion of the agenda to pick up where left off after April meeting. Task Force will address which River Crossing and Transit components to advance for further study.

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

River Crossing Components

- *Asked if it matters if you double-decked or single-decked a new bridge? Did height come into consideration?*
  -- (Yes, we considered that and looked at the minimum possible elevation.)

- *Commented that Pearson Airport is an important asset for the region.*

Action: Voted to remove from further consideration River Crossing (RC) components 5, 6, 10, 11, 12, and 20 (passed unanimously).

Action: RC components recommended to advance: 1, 2, 3, 4, 7, 8, 9, 13, 23

Discussion:

- *Commented in favor of removing movable bridge options entirely (RC-1 and RC-2).*
  --(We've heard that in our outreach. But regarding differences in height of the bridge, until we can fully understand impacts to downtown Vancouver, Hayden Island, and marine navigation, it is premature to make that decision.)

- *Commented in favor of removing other RC components sooner, but is willing to let it go for now.*

- *Commented that it may be possible to live with a movable bridge if lift frequency is nearly zero.*

- *Commented that the tunnel option should be taken off the table.*
  --(We couldn't find reasons to fail it under first six tests, but frankly it is unlikely to progress very far given potential impacts on endangered salmon and Fort Vancouver.)

- *Commented that you have to show that a tunnel wouldn't cut off a big portion of downtown Vancouver.*

- *Asked how far in the studies we'll go until we can cull more components.*

  --(We're trying to be faithful to six screening questions, but we're working on a memo for June meeting that would take tunnel off the table.)

Action: Vote to keep RC-1 under consideration (passed by majority).

Vote to keep RC-2 under consideration (pass unanimously).

Vote to keep RC-3, 4, 7, 8, 9 under consideration (passed; one opposed).

Vote to keep RC-13 under consideration (passed; four opposed).

Transit Components

TR 1-6 ● Transit Components 1 through 6 are recommended by staff to advance.

Discussion:

- *Asked if there is enough of a distinction between TR-1/TR-2 and TR-3/TR-4 to make them separate.*
  --(TR 1 and 2 are primarily peak, point to point service. In TR 3 and 4, it is all-day service and there are stations spaced every mile or two.

- *Asked if staff has a sense of what combination of transit components would produce the highest transit ridership.*
  --(Today, transit carries five percent of all trips over bridge. We believe based on past work that transit can be a viable option.)

- *Asked if any of the components have a projected limitation on number of riders they can handle. For instance, what's envisioned with streetcar, which may have capacity limitations?*
  --(Yes, streetcar has capacity limitations compared to light rail. We envisioned streetcar operating along Interstate MAX line between Portland and Clark County, but that may pose real technical problems and we may find very soon that it's not a viable option, which we would outline in a memorandum. We looked at streetcar as part of the NEPA scoping process.)

- *Asked what would give us the most flexibility to carry the most people and be able to have the system change over time?*
  --(A good light rail system will carry more riders than the other options on the table.)

- *Asked if there are projections re: who would pay for operations of bridge structure as well as transit components?*
  --(The bridge structure will be party a highway bridge, partly a transit bridge. We're working on how we would pay for it. Traditionally it has been a 50/50 split between Oregon/Washington. If you're asking about operating costs, though, we haven't done those analyses yet.)

- *Commented that we should keep options on the table as long as we can until memos come forward. We agreed to a process and this is it.*

Action: Vote passed to leave TR-1 through TR 6 on for further consideration.

TR 7-14 ● Transit components 7 through 14 are recommended by staff *not* to advance:

Discussion:

--(TR 7, 8, 10, 13 have operational characteristics problems)
--(TR 9, 11, 12, 14 have system integration problems)

Commented that high speed rail, heavy rail, and commuter rail are important for this region. It needs to be taken into someone's agenda.

Asked if staff looked at what would happen if you built a commuter rail track, too.
--(Studies found that rail lines are already so congested with freight traffic and intercity Amtrak service. Would only work with separate rail network, which I-5 Partnership study deemed in the billions and expensive. But it wasn't just cost; it was that commuters wouldn't be well-served by a system that goes quite a bit west and then comes back around.)

Commented that freight rail is already so congested. You can't use the existing system for commuter rail.

Commented that rail options shouldn't be cut out yet because they could mitigate congestion.

Commented that RTC did a study on commuter rail and asked Dean Lookingbill to make available to task force members.

Commented that much of this discussion is tangential to why TR-11 failed.

Commented that there should be some way to capture in the history of this document that these rail options are important, even if not fully possible.

Commented that Metro found that existing rail tracks don't serve areas with higher numbers of potential users. Commuter rail doesn't serve non-peak travelers.

Co-chair Hewitt commented that regardless of the outcome of this vote, we'll find a way to memorialize the rail options (freight, high-speed, and commuter rail) to be further considered with respect to future transportation issues in the corridor.

Action: Vote passed to drop from further consideration: TR-7, 8, 9, 10.
Several opposed to dropping TR-11 (commuter rail).

Discussion of TR-11…

Action: Vote to advance for further consideration TR-11 (commuter rail, but *not* on BNSF freight rail alignment): 9 votes for vs. 9 votes opposed, 2 abstentions
TR-11 stays on the table for now.

--(For the next meeting, staff will provide Task Force members with a summary of two prior studies.)

Action: Vote to eliminate TR-12 (heavy rail) – passed unanimously.

Action: Vote to eliminate TR-13 and TR-14 passed.

Packaging Components – Issues and Approaches

***Action*:** Discussion. No action required.

Staff led a discussion exercise seeking Task Force members' comments and suggestions about the bundling of individual components into alternative packages. This was intended to guide staff as they come back in June with recommendations for packages**.**

Jay Lyman presented Packaging Goals, followed by Draft Packaging Principles, and led a discussion around "themes" or general organizing principles, e.g. how do we minimize our highway investment while we accomplish our mobility goals? He said the Task Force should package complementary components together.

Concerned that we're going to get policy themes chosen by staff without us having had a chance to weigh in.

--(We're not coming back with a cooked meal but rather the start of a conversation at the next two meetings. It's a starting point to begin conversation, not a finalized step.)

Discussion of themes is summarized in the following notes from the flip chart:

Packaging Components – Issues and Approaches

Issues

- Capital financing
- Operational financing
- Financing Approaches – between OR and WA
- Freight
- Connections

- Community impacts
- Environmental Justice
- Timing/Phasing

Approaches

- Avoid including components likely to be eliminated (i.e.- RC-13)
- Maximize through traffic
- Emphasize transit
- Express Aspiration and Pragmatism to:
    - Goals : 50% HOV
    - Targets :
- Use Vision and Values

Public Comment Two

David Rowe cited Calgary, Canada, as a good example of transportation planning that utilizes light rail and buses. He said they had the same problem as the Portland-Vancouver region and now have no traffic jams. He included a handout showing Calgary's transit system and said that the solution to traffic congestion is rail transportation with more than two railcars.

Ray Whitford thanked co-chair Hewitt for what he said about the importance of rail. Mr. Whitford expressed disappointment that high-speed rail was taken off, but glad Hewitt appreciates its importance to our region. Mr. Whitford said it's important to have roads because we like our individuality, but it's going to be important to have rail options. We're going to have to follow Europe and find the best examples around the world. He reminded the Task Force that everyone around the country is looking at them as they decide this question.

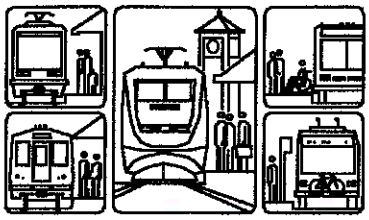
Next Meeting

NOTE: Longer, four-hour meeting next time to allow time for environmental justice training.
Wednesday, June 14, 2006
4pm – 8pm

Appendices
to Task Force Meeting Summary

Handouts from Public Commenters

Association of Oregon Rail and Transit Advocates
AORTA • P. O. Box 2772 • Portland, Oregon 97208-2772
Also known as OreARP • Oregon Association of Railway Passengers
Phone & Fax: 503-241-7185 • OregonRail@netscape.com • www.aortarail.org



MEMORANDUM

May 4, 2006

To: Columbia River Crossing Task Force
From: Jim Howell, ___ Board Member
Subject: MAX Across the River

Buses are no substitute for light rail. The MAX Yellow Line now extends within one mile of the Washington border and it would be totally irresponsible not to extend it into Clark County, even if it were only to the 7th Street C-Tran Transit Center.

Express buses on the freeway or in bus lanes do not provide the critical connectivity to north and northeast Portland transit service.

The current transit service provided by TriMet and C-Tran is uncoordinated, unreliable and very expensive to operate.

TriMet provides 154 slow local trips a weekday on the #6 MLK Route to Hayden Island and Vancouver while providing 166, lightly used trips, to and from the Expo Center, only 1.5 miles and 5 minutes from the heart of downtown Vancouver.

In addition, C-Tran provides 112 trips on 5 bus routes on I-5 to downtown Portland, Lloyd Center and OHSU with no interface with any TriMet routes along the way.

If the Yellow line were extended to downtown Vancouver, its running time to downtown Portland would be about the same as the C-Tran express buses but would be far more reliable. Unlike freeway running the Yellow Line interfaces with eastside bus and MAX routes providing direct access to and from many more destinations. In addition, it would be much cheaper to operate.

If C-Tran wants to run express buses on the freeway in addition to this service, they should operate on the existing six-lane facility. Their desire to operate BRT should not be a ruse to add lanes to the freeway.

There should be no compromise on the public transportation mode for the Columbia River Crossing. **It must be an extension of the Yellow Light Rail line.**

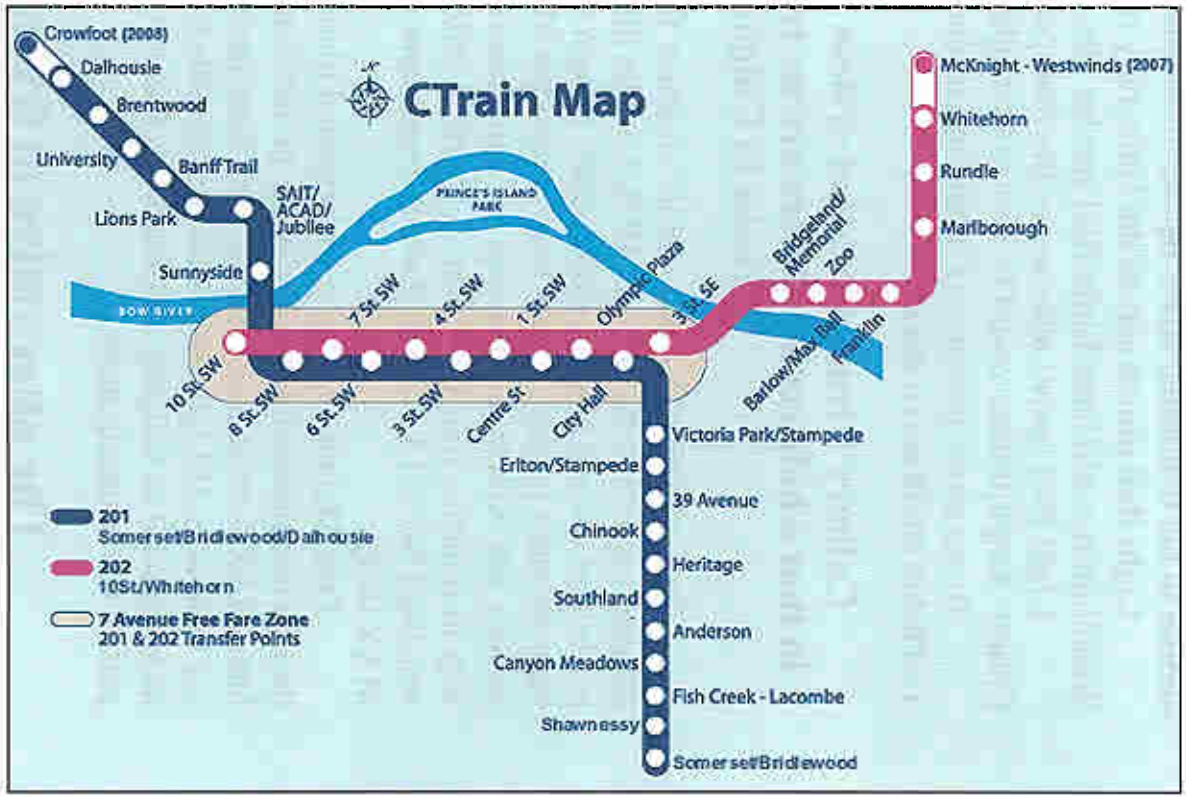
Trip Planning
Schedules
Stop Lookup
Next Bus
Location Lookup
Schedules
Routes
Fares
Fares - Purchase Online
Customer Service
About CT

SITE CONTENT

About CT
Access Calgary
Advertising
Awards & Recognition
Bikes On CT
BRT
Bylaw
Cash Fare
Community Events
CT & Environment
CT Jobs
Customer Feedback
Customer Service
Employment (CT)
Express Service
Fares

Calgary's Light Rail Transit Line

Calgary Transit operates a fleet of 115 Seimens-Duwag built LRVs that operate on 35.7 kilometres of track and 34 stations. Operations began in 1981 with one line starting at Anderson Road and ending at 8 ST. S.W.



My name is David L. Rowe, I live in Battle Ground.

Calgary, Alberta, Canada is an example of good transportation planning:

Calgary Light Rail transit crosses the Bow River in two places. This is similar to the Columbia River between Portland and Vancouver.

Light Rail transit serves the University of Calgary. The University of Washington could have Light Rail service also.

Light Rail transit also serves the Stampede Park in Calgary. The Clark County Amphitheater could be served by Light Rail Transit as well.

Buses move passengers in and out of the train stations in Calgary. C-TRAN could serve the same duty.

Calgary's transportation system was designed for growth in that whole region. There are no traffic jams for cars and trucks in Calgary.

Don McDonald was the chief engineer for building the Edmonton, Alberta Light Rail System. In 1978 Tri-Met hired Don McDonald as a consultant to help lead the preliminary design of the Banfield Freeway improvement project. It was later named the MAX Light Rail Transit system. Mr. McDonald showed the auto freeway designers there was a better way to improve transportation. A fourteen mile system of Light Rail Transit was built for $214 million. Twenty years later close to 116,000 riders use MAX daily.

Don McDonald also recommended planning for a future subway though downtown Portland in order to use four-car consists. Twenty years later MAX is at capacity during rush hour because MAX is limited to two car train-sets. If Light Rail is built across the Columbia River it will be just as successful as Calgary and Portland. Plans for four-car consists should be part of the planning now.

The alternative to freeway traffic jams is Rail Transportation

David L. Rowe
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Battle Ground, WA 98604
Phone 360-687-9178
E-mail: dlrowe3162@aol.com

Columbia River CROSSING

Public Comment Period

Task Force

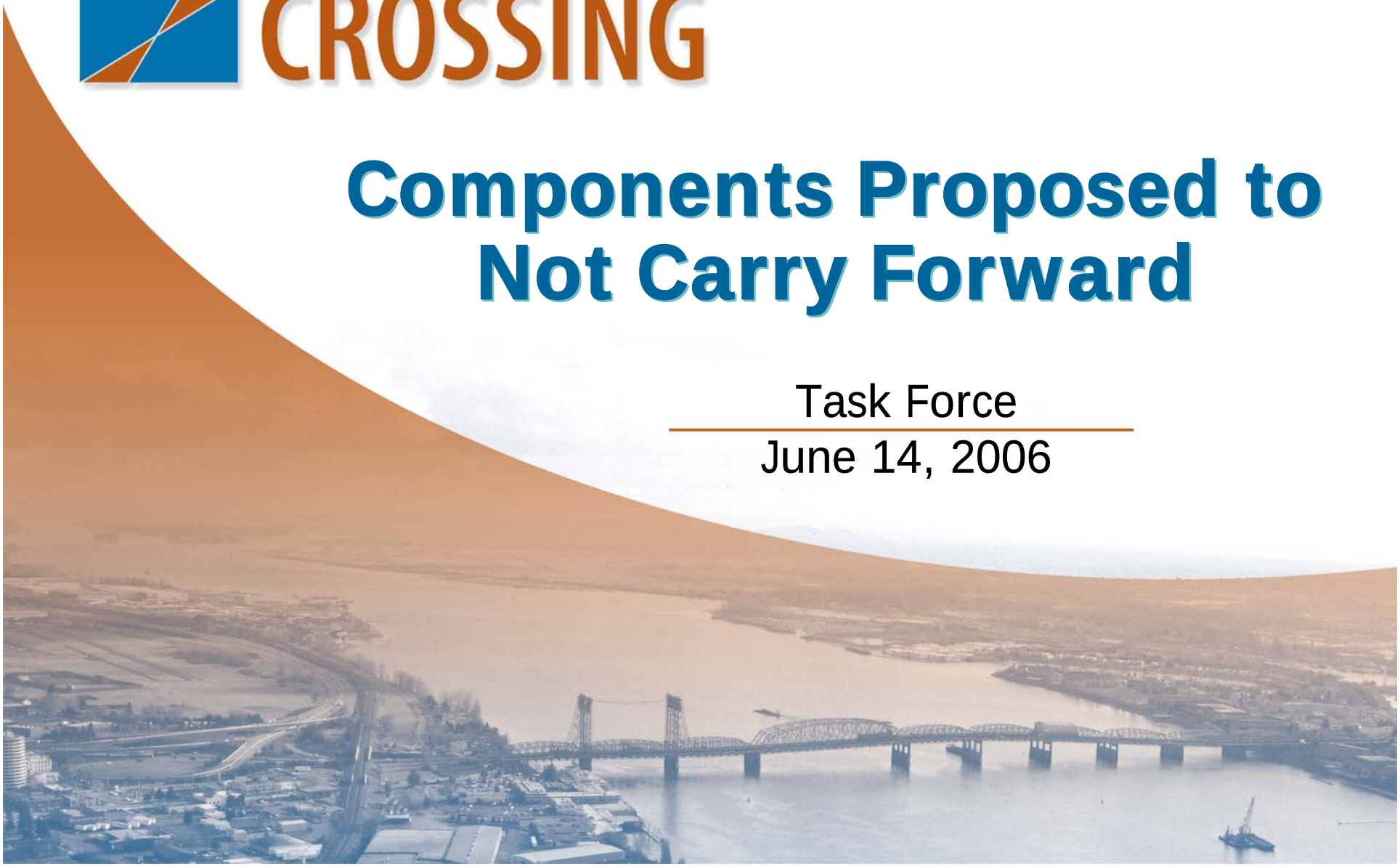
June 14, 2006

Columbia River CROSSING

Components Proposed to Not Carry Forward

Task Force

June 14, 2006



Components Proposed to Not Carry Forward

1. F-3 Time of Day Freight Restrictions
2. F4 Increase Truck Size
3. B/P-3 Bicycle/Pedestrian Path-Only Bridge
4. RC-1, RC-2, RC-7, and RC-8 Movable Span Options
5. RC-13 Supplemental Tunnel
6. TR-6 Streetcar
7. TR-11 Commuter Rail

Columbia River CROSSING

Columbia River CROSSING

Approach to Packaging Alternatives

Task Force

June 14, 2006

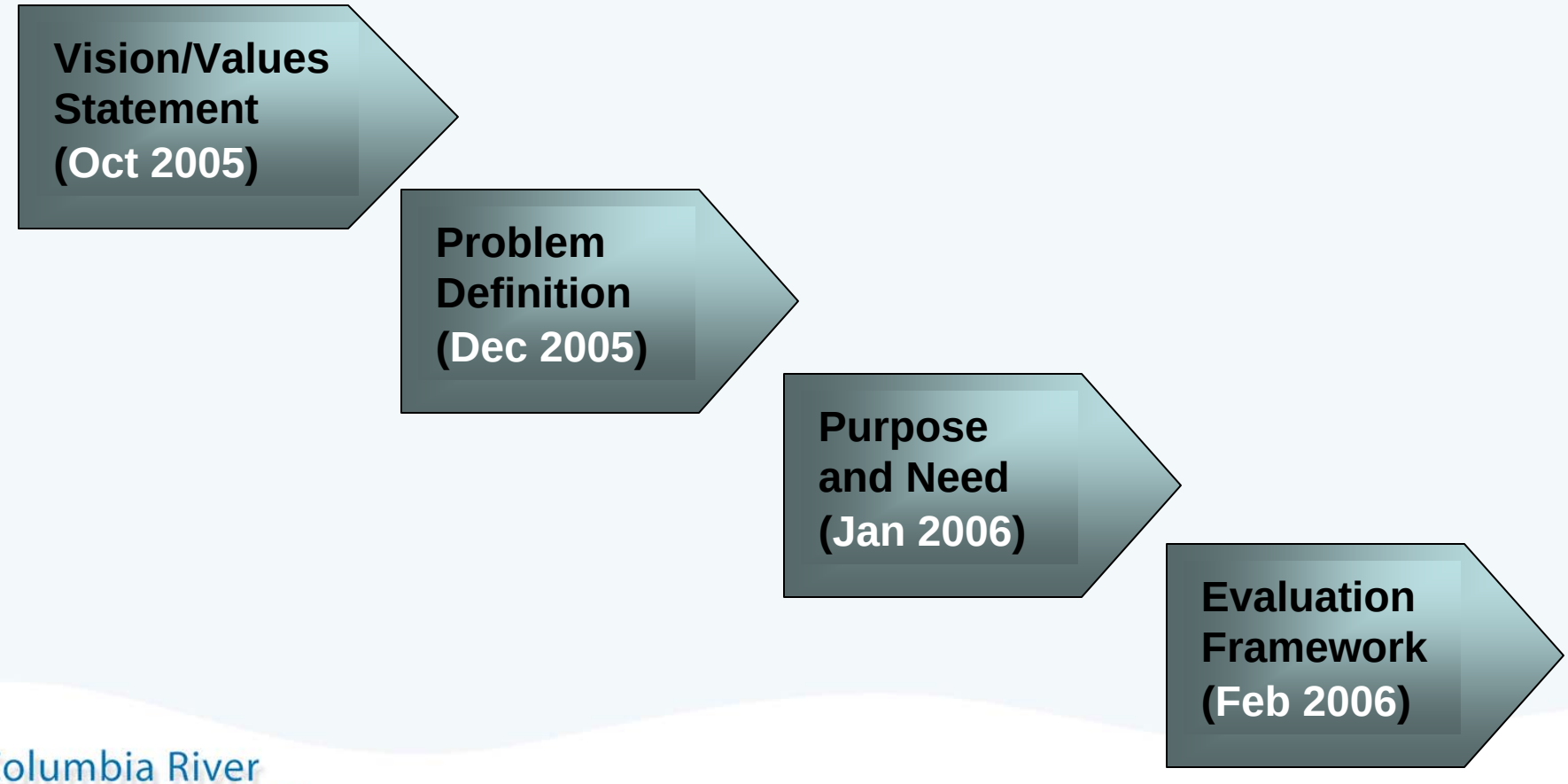
Agenda

1. Steps to Alternatives Packaging- a recap
2. Why Alternative Packages?
3. Context for Developing Alternative Packages
4. Staff-Recommended Alternative Packages
5. Evaluating Alternative Packages
6. What follows Alternative Packaging?
7. Q&A

Columbia River CROSSING

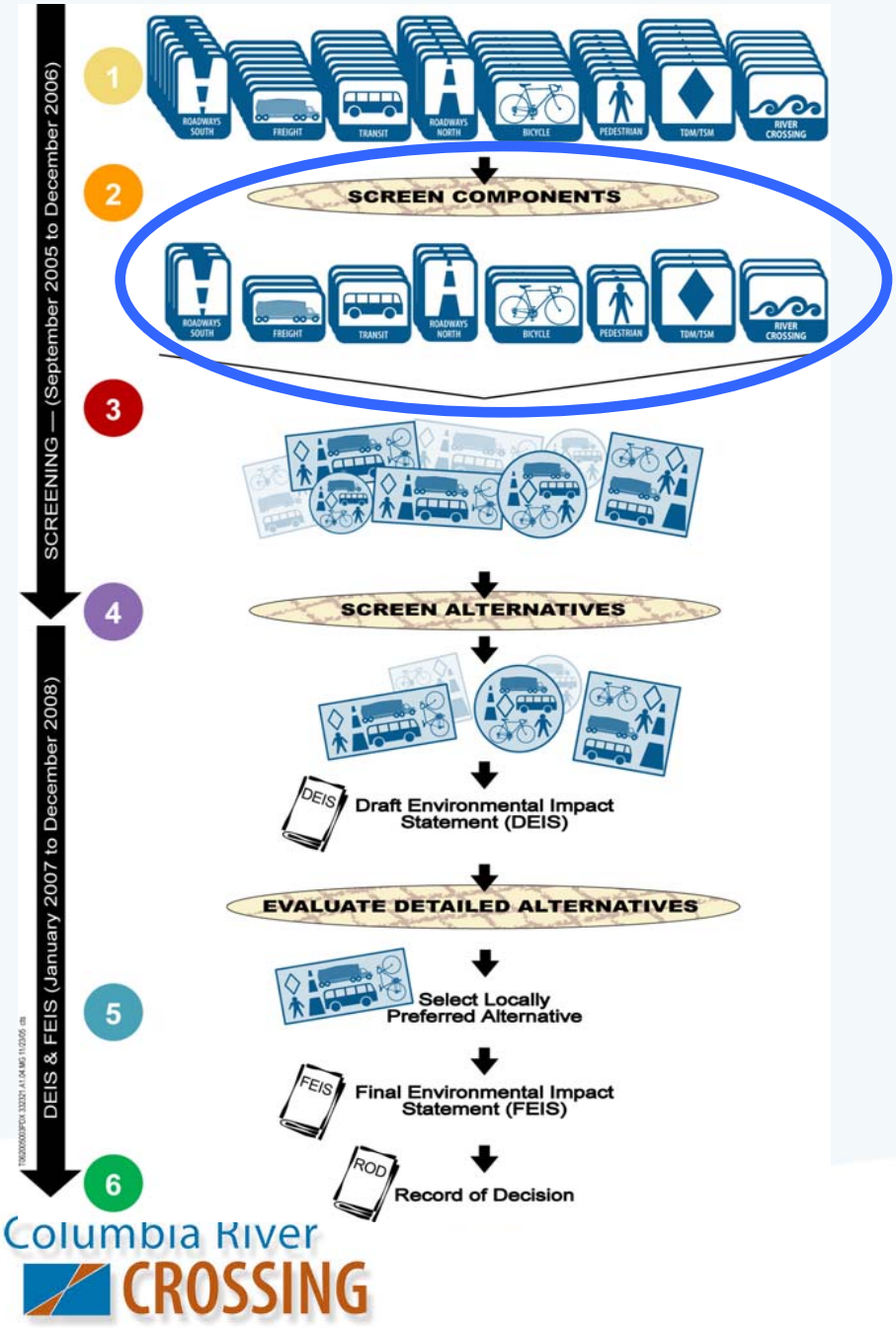
1. Road to Alternative Packages

- During project scoping, the Task Force adopted a set of framework documents to guide project development:



Columbia River CROSSING

2. Why Alternative Packages

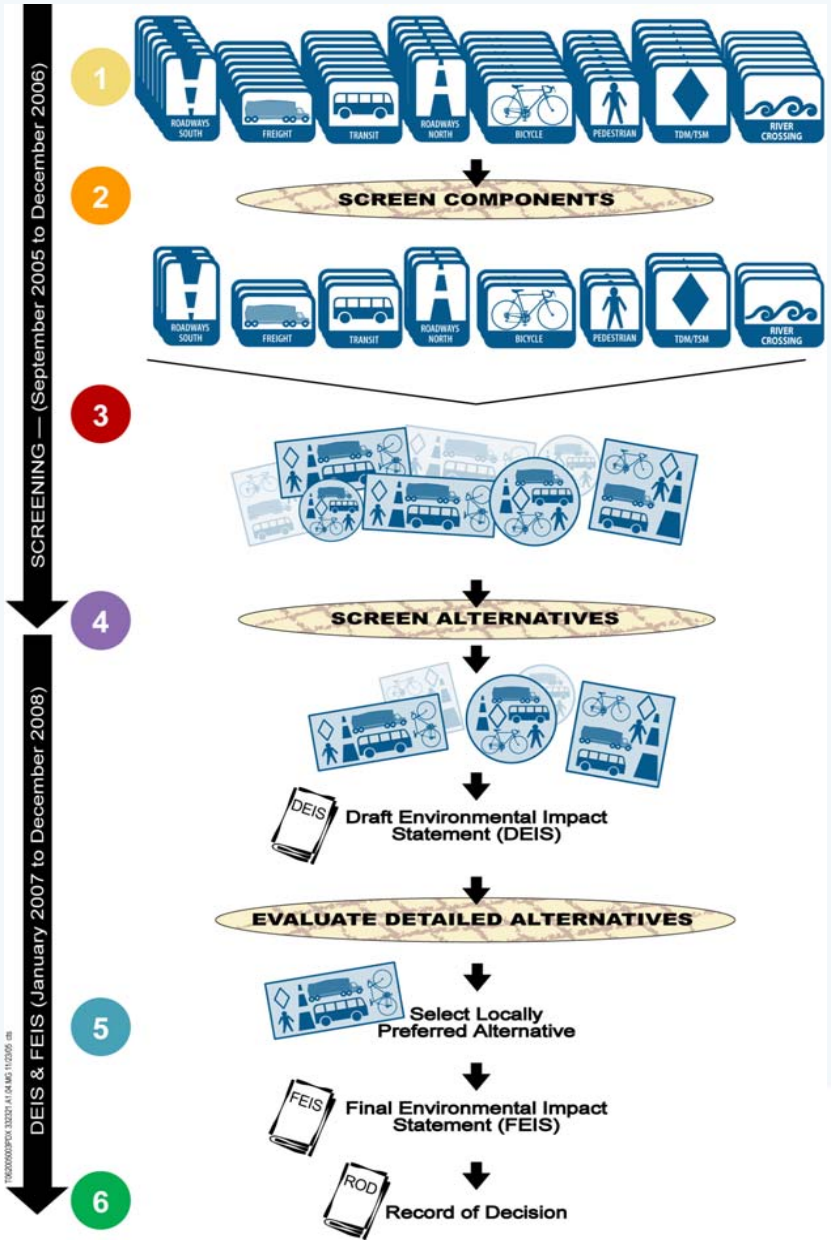


Columbia River CROSSING

2 Component Screening:

1. Step A Pass/Fail screening applied to River Crossing (RC) and Transit components only
2. Task Force recommendation at 4/06 and 5/06 meetings to narrow components:
   - 23 RC components to 9
   - 14 Transit to 7 (deferred action on comm. rail)
3. Per new information, staff recommending tonight to screen additional RC and transit components under Step A

Road to Alternative Packages



Major Steps in 2006:

1 **Oct '05**

2 **May '06**

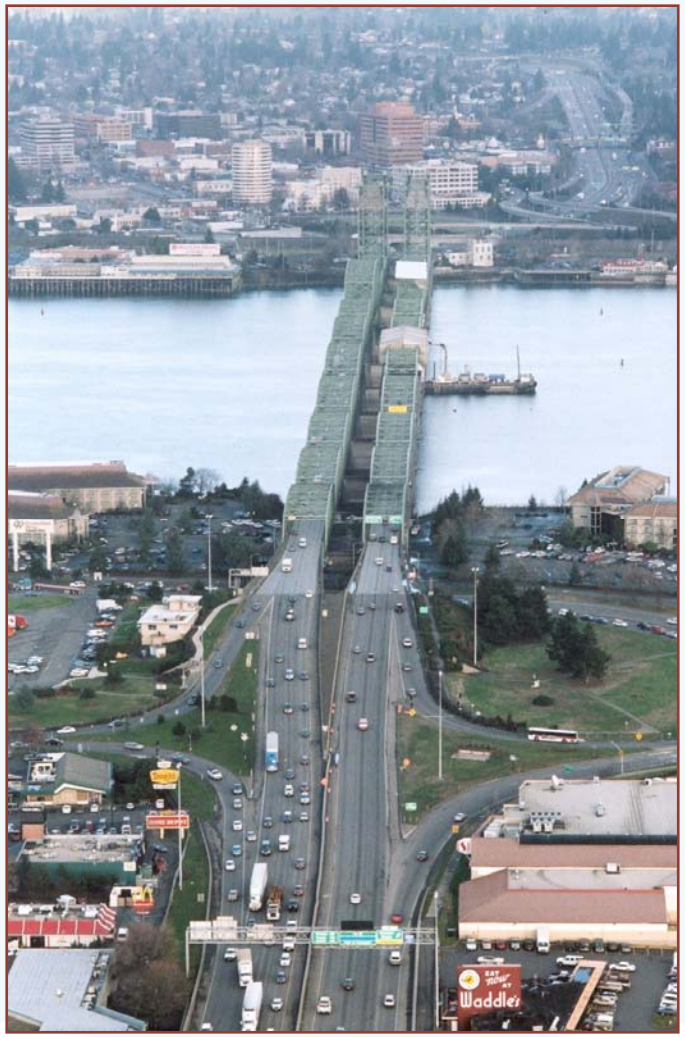
We are here!

3 Assemble Packages May–July, 2006

4 Screen Packages fall/winter, 2006

2. Why alternative Packages?

- Identify promising combinations of highway and transit improvements
- Understand how components perform together within BIA
- Inform major decisions, such as:
  - Transit mode (narrow to one or two modes for DEIS)
  - Supplemental or replacement bridge
  - Arterial lanes
  - Managed lanes
- Further narrow and shape the range of alternatives to be considered in the DEIS



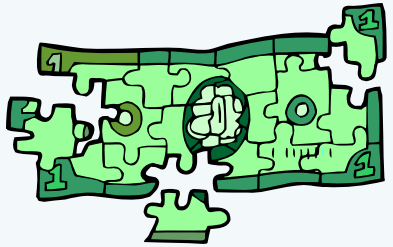
Columbia River CROSSING

3. Context for Developing Alternative Packages

- Present the approach used by staff team
- Show how underlying principles are applied in the alternatives
- Describe the basic elements featured in the alternatives

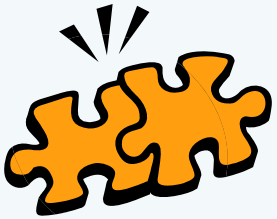
Draft Packaging Principles

- Consider all components that pass Step A



- Organized by theme around key features

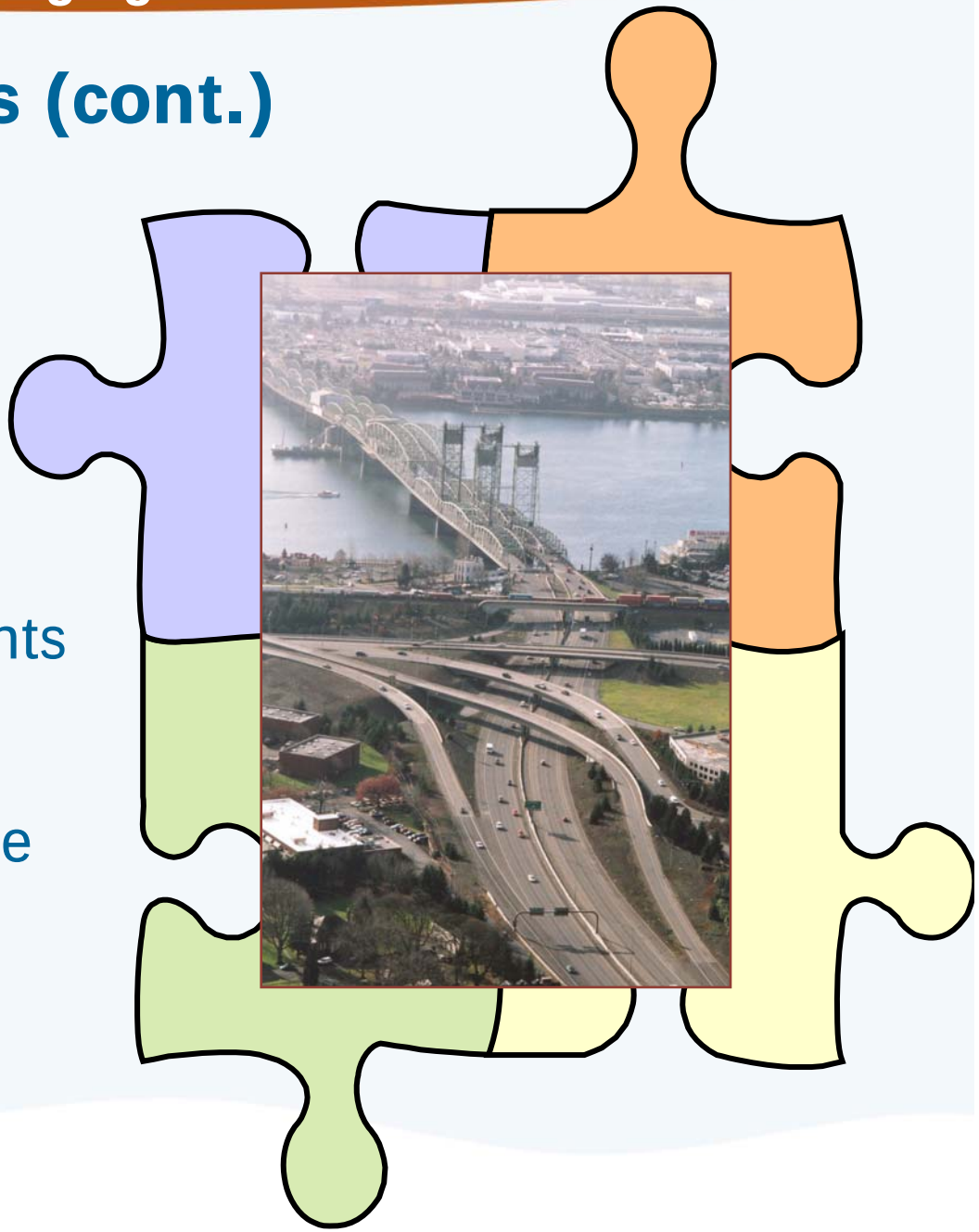
- Represent a full range of potential transportation solutions (within the limits of components that have passed Step A)



- Package complementary components together

Packaging Principles (cont.)

- Use alternative packages to identify strengths and weaknesses of individual components.
- High-performing components may be refined and/or re-packaged with other alternative packages for the DEIS.



Columbia River CROSSING

Understanding the Pieces of the Packaging Puzzle

A. Bridge options to cross the river

B. Alternative packaging themes expressed by Task Force

C. High capacity transit mode(s) across river

D. Function of existing and new bridges

E. Location and use of I-5 managed lanes

F. Arterial crossing options

G. Other components (bike, ped, freight, roadways, TDM/TSM)

Organization Tool- Alternative Package Matrix

Columbia River CROSSING

Table 3-1. Draft Alternative Packaging Matrix

Revision date; June 7, 2006

	Alternative Packages											
	Existing Bridges Only		Supplemental Bridge with Existing Bridges					Replacement Bridge				
	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12
Alternative Package Themes	No Action	Minimum Investment: TDM/ TSM Emphasis	Maximum Transit Ridership, Minimum I-5 improvements	Balanced Transit/Highway Improvements with LRT	Balanced Transit/Highway Improvements with BRT-Full	Balanced Transit/Highway Improvements with BRT-Lite	Maximum Vehicle Capacity	Balanced Transit/Highway Improvements with LRT	Balanced Transit/Highway Improvements with LRT	Balanced Transit/Highway Improvements with BRT-Full	Balanced Transit/Highway Improvements with BRT-Lite	Maximum Vehicle Capacity
High Capacity Transit Mode across Col. River	None	None	LRT	LRT	BRT-full	None	None	LRT	LRT	BRT-full	None	None
Other Transit Mode(s) across bridge	Express bus, local bus	Express bus, local bus	Express bus, local bus	Local bus	Local bus	BRT-Lite	Express bus	Express bus, local bus	Local bus	Local bus	BRT-Lite	Express Bus, local bus
Function of Existing Bridges	I-5 (GP lanes)	I-5 (GP lanes)	I-5 (GP lanes)	Arterial+LRT	Arterial+BRT	Arterial + BRT	Arterial	N/A	N/A	N/A	N/A	N/A
Function of New Bridge	N/A	N/A	Arterial + LRT	I-5 NB &SB (w/ ML)	I-5 NB &SB (w/ ML)	I-5 NB &SB (w/ ML)	I-5 NB & SB (all GP)	I-5 NB &SB (w/ ML) & LRT	I-5 NB &SB (w/ ML) & LRT	I-5 NB &SB (w/ ML) & BRT	I-5 NB &SB (w/ ML) & BRT	I-5 w GP lanes & Express Bus

Columbia River CROSSING

A. Bridge Options to Cross the River

Existing Bridges Only

Replacement Bridge

Columbia River CROSSING

Table 3-1. Draft Alternative Packaging Matrix

Revision date; June 7, 2006

	Alternative Packages		
	Existing Bridges Only	Supplemental Bridge with Existing Bridges	Replacement Bridge
Alternative Package Themes			

Supplemental Bridge w/ Existing Bridges

Alternative Package Themes

Packaged River Crossing Components

- RC-1: Replacement Bridge/Downstream/Low-Level/Movable
- RC-2: Replacement Bridge/Upstream/Low-Level/Movable
- RC-3: Replacement Bridge/Downstream/Mid-Level
- RC-4: Replacement Bridge/Upstream/Mid-Level

- RC-7: Supplemental Bridge/Downstream/Low-Level/Movable
- RC-8: Supplemental Bridge/Upstream/Low-Level/Movable
- RC-9: Supplemental Bridge/Downstream/Mid-Level
- RC-13: Tunnel to Supplement I-5
- RC-23: Arterial Crossing with I-5 Improvements

B. Packaging Themes Expressed by Task Force

What we heard at the May 22, 2006 Task Force Meeting as themes to build packages around:

1. Minimize project investment
2. Maximize transit ridership
3. Maximize vehicle capacity
4. Balance transit/highway investment (provide for phased implementation)
5. Remove short-distance trips from I-5

B. Packaging Themes

Minimize Investment
#1. Planned future improvements only
#2. TDM/TSM emphasis
#3. Min. I-5 investment

#8-11. Balance Hwy and transit
#12. Maximum vehicle capacity

	Existing Bridges Only		Supplemental Bridge with Existing Bridges					Replacement Bridge				
	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12
Alternative Package Themes	No Action	Minimum Investment TDM/ TSM Emphasis	Maximum Transit Ridership, Minimum I-5 improvements	Balanced Transit/Highway Improvements with LRT	Balanced Transit/Highway Improvements with BRT-Full	Balanced Transit/Highway Improvements with BRT-Lite	Maximum Vehicle Capacity	Balanced Transit/Highway Improvements with LRT	Balanced Transit/Highway Improvements with LRT	Balanced Transit/Highway Improvements with BRT-Full	Balanced Transit/Highway Improvements with BRT-Lite	Maximum Vehicle Capacity

#3. Maximum transit ridership
#7. Maximum vehicle capacity
#4-6. Balance Hwy and transit

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C. High Capacity Transit Modes Across River

Transit modes advanced through Step A Screening:

- TR-1: Express Bus in General Purpose (GP) Lanes
- TR-2: Express Bus in Managed Lanes
- TR-3: Bus Rapid Transit (BRT)- Lite
- TR-4: Bus Rapid Transit (BRT)- Full
- TR-5: Light Rail Transit (LRT)

Transit modes recommended to screen from further review

- TR-6: Streetcar
- TR-11: Commuter Rail on BNSF Track (staff recommending to screen this component)

C. High Capacity Transit Modes Across River

- Service characteristics associated with High Capacity Transit are provided by LRT and BRT-Full

	Alternative Packages											
	Existing Bridges Only		Supplemental Bridge with Existing Bridges					Replacement Bridge				
	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12
Alternative Package Themes	No Action	Minimum Investment TDM/ TSM Emphasis	Maximum Transit Ridership, Minimum I-5 improvements	Balanced Transit/Highway Improvements with LRT	Balanced Transit/Highway Improvements with BRT-Full	Balanced Transit/Highway Improvements with BRT-Lite	Maximum Vehicle Capacity	Balanced Transit/Highway Improvements with LRT	Balanced Transit/Highway Improvements with LRT	Balanced Transit/Highway Improvements with BRT-Full	Balanced Transit/Highway Improvements with BRT-Lite	Maximum Vehicle Capacity
High Capacity Transit Mode across Col. River	None	None	LRT	LRT	BRT-full	None	None	LRT	LRT	BRT-full	None	None

#3. LRT

#4. LRT

#5. BRT-Full

#8. LRT

#9. LRT

#10. BRT-Full

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C. Other Transit Modes Across River cont.

- BRT-Lite, express buses in GP or managed lanes, and local buses

	Alternative Packages											
	Existing Bridges Only		Supplemental Bridge with Existing Bridges					Replacement Bridge				
	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12
Alternative Package Themes	No Action	Minimum Investment: TDM/ TSM Emphasis	Maximum Transit Ridership, Minimum I-5 improvements	Balanced Transit/Highway Improvements with LRT	Balanced Transit/Highway Improvements with BRT-Full	Balanced Transit/Highway Improvements with BRT-Lite	Maximum Vehicle Capacity	Balanced Transit/Highway Improvements with LRT	Balanced Transit/Highway Improvements with LRT	Balanced Transit/Highway Improvements with BRT-Full	Balanced Transit/Highway Improvements with BRT-Lite	Maximum Vehicle Capacity
High Capacity Transit Mode across Col. River	None	None	LRT	LRT	BRT-full	None	None	LRT	LRT	BRT-full	None	None
Other Transit Mode(s) across bridge	Express bus, local bus	Express bus, local bus	Express bus, local bus	Local bus	Local bus	BRT-Lite	Express bus	Express bus, local bus	Local bus	Local bus	BRT-Lite	Express Bus, local bus

D. Function of existing and new bridges

- Previously, focus has been on ways to cross the river (e.g., up/downstream, etc.)
- For operational and safety reasons, staff believes I-5 traffic should be carried on a new supplemental or replacement bridge wherever provided.
- Existing I-5 bridges suitable for:
  - local arterial general purpose auto/bus travel lanes
  - bike/pedestrian use
  - LRT?
- Alternative #3 created to assess a minimal I-5 investment solution while providing a transit corridor. Serious feasibility concerns persist (e.g., design/safety issues).

E. Location and use of I-5 managed lanes

- Gives preference to some users (freight, HOV, transit, etc.);
- Provided only with supplemental or replacement I-5 bridge;
- Managed lanes would be created as follows:
  - A single I-5 managed lane in each direction within project area;
  - Re-stripe I-5 wherever possible between 139th Street in Clark County and approximately Alberta Street;
  - No current I-5 general lanes converted for managed use;
  - Freight, HOV, and/or transit vehicles can bypass ramp meters.

F. Arterial Crossing Options

- Interest exists in exploring arterial connections between Vancouver and Portland;
  - Removes some short-distance trips from I-5
  - Arterial extending south of Hayden Island allows potential removal of the I-5 interchange at Hayden Island.
- Arterial crossing options exist only when a supplemental bridge is provided (alternatives#3 through #7);
- Project staff believes I-5 traffic should be carried on a new supplemental or replacement bridge wherever provided.
  - So, arterial function provided by existing I-5 bridges only as shown in alternatives #4 - #7.

G. Other components (bike, ped, freight, roadways, TDM/TSM)

- Alternatives are primarily formed with consideration to linking river crossing and transit components.
- Other components are predicated on the river crossing/transit combination and chosen to be complimentary to the different alternatives.

4. Recommended Alternative Packages

- Project team believes these 12 alternatives allow appropriate and sufficient performance testing of the components.

5. Evaluating Alternative Packages

- Alternative packages to undergo the following study during summer 2006:
  - Travel demand forecast modeling;
  - Conceptual design refinement;
  - Staff evaluation among design, traffic, transit, and environmental teams using adopted screening criteria
  - For criteria previously deferred to the packaging step, performance measures will be developed. Other previously qualitative measures will become as quantitative as possible.
  - Staff will begin to report study results in fall 2006.

6. What follows Alternative Packaging

- Selection of range of alternatives
- New round of modeling and evaluation during EIS
- Task Force opportunities during summer 2006 to participate in review/comment of roadway and transit designs being presented to the public

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Q&A

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Full Matrix- zoomable pdf

Note: The 12 staff-recommended alternative packages represented in this matrix sufficiently represent, and support technical work to test, the range of component combinations. As needed, results can be used to assess other possible component combinations not expressly represented in the list of 12. Best performing elements of each alternative package will be available for repackaging and/or refining within the range of alternatives advanced into the Draft EIS.

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Table 3-1. Draft Alternative Packaging Matrix

Revision date: June 7, 2006

			Alternative Packages											
			Existing Bridges Only		Supplemental Bridge with Existing Bridges					Replacement Bridge				
			#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12
Alternative Package Themes			No Action	Minimum Investment: TDM/ TSM Emphasis	Maximum Transit Ridership, Minimum I-5 Improvements	Balanced Transit/Highway Improvements with LRT	Balanced Transit/Highway Improvements with BRT-Full	Balanced Transit/Highway Improvements with BRT-Lite	Maximum Vehicle Capacity	Balanced Transit/Highway Improvements with LRT	Balanced Transit/Highway Improvements with LRT	Balanced Transit/Highway Improvements with BRT-Full	Balanced Transit/Highway Improvements with BRT-Lite	Maximum Vehicle Capacity
High Capacity Transit Mode across Col. River			None	None	LRT	LRT	BRT-full	None	None	LRT	LRT	BRT-full	None	None
Other Transit Mode(s) across bridge			Express bus, local bus	Express bus, local bus	Express bus, local bus	Local bus	Local bus	BRT-Lite	Express bus	Express bus, local bus	Local bus	Local bus	BRT-Lite	Express Bus, local bus
Function of Existing Bridges			I-5 (GP lanes)	I-5 (GP lanes)	I-5 (GP lanes)	Arterial+LRT	Arterial+BRT	Arterial + BRT	Arterial	N/A	N/A	N/A	N/A	N/A
Function of New Bridge			N/A	N/A	Arterial + LRT	I-5 NB &SB (w/ ML)	I-5 NB &SB (w/ ML)	I-5 NB &SB (w/ ML)	I-5 NB & SB (all GP)	I-5 NB &SB (w/ ML) & LRT	I-5 NB &SB (w/ ML) & LRT	I-5 NB &SB (w/ ML) & BRT	I-5 NB &SB (w/ ML) & BRT	I-5 w GP lanes & Express Bus
RC Components	RC-1	Repl/Down/Low/Mov												
	RC-2	Repl/Up/Low/Mov												
	RC-3	Repl/Down/Mid								✓	✓		✓	
	RC-4	Repl/Up/Mid										✓		✓
	RC-7	Supl/Down/Low/Mov												
	RC-8	Supl/Up/Low/Mov												
	RC-9	Supl/Down/Mid				✓	✓	✓	✓					
	RC-13	Tunnel												
	RC-23	Arterial (New Bridge)			✓									
Roadways North/South	RNS-1	Interchange Improvements				✓	✓	✓	✓	✓	✓	✓	✓	✓
	RNS-2	Arterial Improvements			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	RNS-3	I-5 Safety Improvements		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Transit Components	TR-1	Express Bus in GP [2]	✓	✓	✓				✓					✓
	TR-2	Express Bus in Managed Lanes						✓		✓			✓	
	TR-3	BRT-Lite						✓					✓	
	TR-4	BRT-Full					✓					✓		
	TR-5	LRT			✓	✓				✓	✓			
	TR-6	Streetcar												
	TR-11	Commuter Rail												
Bicycle/ Pedestrian Components	B/P-1	Enhance Existing		✓		✓	✓				✓			
	B/P-2	Path on New Bridge			✓			✓	✓	✓		✓	✓	✓
	B/P-3	Path-only Bridge												
	B/P-4	Vanc. Connectivity		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	B/P-5	Hayden Is. Conn.		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	B/P-6	N. Portland Pathway		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Freight Components	F-1	Freight in Managed Lanes				✓	✓				✓	✓		
	F-2	Fr. Bypass Lanes			✓	✓	✓				✓	✓		
	F-3	Freight Restrictions												
	F-4	Inc. Truck Size												
	F-5	Fr. DA Ramps										✓		
TSM/TDM Components	T-B	Basic							✓					✓
	T-M	Moderate		✓				✓					✓	
	T-A	Aggressive			✓[1]	✓	✓			✓	✓	✓		

1. Assumes no managed lane beyond the existing northbound I-5 HOV lane in Portland.
2. Includes use of existing northbound HOV lane in Portland.

Components that may be screened out by analyses during or after the packaging process.

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Next Steps

Task Force

June 14, 2006

Upcoming Task Force Meetings

- July: Recommendations on Packaging
- August/September: Introduce Package Design Concepts
- October/November/December: Review evaluation results; adopt recommendations for DEIS alternatives

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Memorandum

June 7, 2006

TO: Task Force

FROM: Doug Ficco, John Osborn

SUBJECT: Additional Component Screening

COPY:

Background

In the Step A screening process, the Task Force reviewed 14 transit components and 23 river crossing components for narrowing to those that will become part of the alternative packages for further evaluation. Seven transit components and nine river crossing components survived the initial Step A screening.

Several of these components, although they initially passed the Step A screening, are now being recommended for removal from further consideration. In addition, there are additional components that did not undergo Step A screening that are recommended for removal. The bases for removal of additional components are for the following reasons:

1. Based on further analysis and packaging of alternatives, it was evident that the component either should have failed Step A screening or performs so poorly against the Step A screening compared to other components that it should no longer be evaluated as part of an alternative package.
2. Special conditions exist that result in the likelihood that the component could not be implemented.

The CRC Project Team proposes the following components be considered by the Task Force for removal from further evaluation:

- RC-1, RC-2, RC-7, and RC-8 Movable Span Options
- RC-13 Supplemental Tunnel
- TR-6 Streetcar
- TR-11 Commuter Rail
- B/P-3 Bicycle/Pedestrian Path-Only Bridge
- F-3 Time of Day Freight Truck Restrictions
- F-4 Increase Truck Size

Attached are memoranda for each of the above components, including an analysis and recommendation for removal of the component from consideration as part of an alternative package.

Columbia River CROSSING

Memorandum

June 7, 2006

TO: Doug Ficco, John Osborn

FROM: CRC Engineering Team

SUBJECT: Screening of RC-1, RC-2, RC-7, and RC-8 Moveable Span Components

Overview

In the process of developing the River Crossing (RC) components and packaging them with the Roadway components, it has become apparent that those RC components that include a low-level moveable span should be removed from further consideration and not be included in alternative packaging. Issues relating to bridge openings and high maintenance and operations costs that exist with the current bridges would be perpetuated with a new low-level moveable span. Although the number of lifts would likely be reduced when compared to the existing number of openings, they would still occur and therefore would still impede interstate traffic. Moveable spans are more costly in both initial cost and maintenance and operations when compared to a fixed span.

In addition, there do not appear to be any significant advantages to constructing a moveable span bridge. A moveable span would permit a lower profile for the bridge, and thus could potentially result in different (potentially fewer) landside impacts. However, engineering studies to date indicate that the areas of potential impact would be virtually the same for the low-level, moveable span options as compared to the fixed-span (non-moveable) mid-level bridge options.

Component Description

Currently there are four low-level moveable bridge RC components that passed Step A screening as described below. A low-level RC component is defined as a bridge that provides 80 feet of vertical design clearance at the base river stage. By comparison, the mid-level fixed-span bridge design concepts will provide about 95 feet of vertical design clearance at the base river stage. Because the 80-foot clearance does not pass 100 percent of the marine vessels operating on the river, a moveable span would be needed to pass tall vessels. The moveable span could be accomplished by the use of a lift span, swing span, or draw bridge.

- RC-1 Replacement Bridge Downstream/Low-Level/Moveable: This river crossing component represents a new bridge that would be located immediately west (downstream) of the existing I-5 bridges. The existing I-5 bridges would be removed.
- RC-2 Replacement Bridge Upstream/Low-Level/Moveable: This river crossing component represents a bridge that would be located immediately east (upstream) of the existing I-5 bridges. The existing I-5 bridges would be removed.
- RC-7 Supplemental Bridge Downstream/Low-Level/Moveable: This river crossing component represents a new bridge which would be located immediately west (downstream) of the existing I-5 bridges. Either one or both of the existing I-5 bridges would remain in place as they are today. Additionally, because the existing I-5 bridges have lift spans, the opening of the new bridge would have to line up with the lift spans on the existing bridges.

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- RC-8 Supplemental Bridge Upstream/Low-Level/Moveable: This river crossing component represents a new bridge which would be located immediately east (upstream) of the existing I-5 bridges. The only difference between RC-7 and RC-8 is that RC-8 is located upstream.

Analysis

A new fixed-span bridge can be expected to be less expensive to construct, maintain, and operate, and would provide improved traffic flow and safety compared to a moveable span bridge. The higher mid-level fixed-span bridge would allow for uninterrupted passage for both the users of the bridge and marine vessels passing underneath.

A moveable span is typically only considered when the vertical clearance requirements cannot practically be met, if there are height restrictions that prohibit a higher fixed span, or if a lower profile bridge results in fewer undesirable impacts to onshore or in-water resources. Our analyses to date indicate that none of those three circumstances apply to this crossing.

The analyses are summarized in accordance with the project Purpose and Need Statement as defined in the Step A screening questions adopted as part of the Screening and Evaluation Framework.

For this analysis, the low-level moveable span bridge components were contrasted to mid-level bridges in the same location. Although the moveable span bridge components do not fail any of the Step A screening questions, the need for accommodating marine traffic through bridge openings results in poor performance for five of the six Step A screening questions when compared to higher fixed-span components.

Q1. Does the component increase vehicular capacity or decrease vehicular demand within the Bridge Influence Area?

Moveable spans require continued I-5 closures during bridge openings or continued marine restrictions when the bridge must remain closed. Bridge openings have a negative impact on increasing vehicular capacity within the Bridge Influence Area.

Q2. Does the component improve transit performance within the Bridge Influence Area?

Bridge openings have a negative impact for maintaining speed and reliability for transit that uses I-5 within the Bridge Influence Area.

Q3. Does the component improve freight mobility within the Bridge Influence Area?

Bridge openings have a negative impact for maintaining speed and reliability for freight mobility within the Bridge Influence Area. Even though bridge openings may be restricted to off-peak periods, freight traffic also relies on off-peak periods for maximum efficiency.

Q4. Does the component improve safety and decrease vulnerability within the Bridge Influence Area?

Roadway

Analysis of crash data has shown that there is a direct correlation between bridge openings and a substantially higher accident incidence. Although the number of openings may potentially be reduced compared to the existing condition, a fixed span would still provide a safer highway. An analysis was conducted to determine if the potential for a collision increases during bridge lifts and/or traffic stops. Logs obtained from ODOT's Maintenance Unit, which maintains and operates the bridge, include information on bridge lift/traffic stop dates, times, and duration.

Using the 5-year collision database, a comparison was made between collisions that were reported to have occurred within a one-hour window of logged bridge lifts/traffic stops on weekdays between 9 a.m. and 2:30 p.m. The analysis only considered collisions that would involve vehicles approaching the bridge (i.e., northbound traffic approaching the bridge and southbound traffic approaching the

bridge) as bridge lifts/traffic stops directly impact approaching traffic and may not have an effect on departing traffic.

Based on the analysis, it was determined that there is at least a three-times higher likelihood of a northbound collision when a bridge lift/traffic stop occurs than when it does not. There is over a four-times higher likelihood of a southbound collision when a bridge lift/traffic stop occurs than when it does not.

Some of these crashes may be a result of design deficiencies in the roadways north and south of the bridge, and would be eliminated if freeway improvements are constructed in conjunction with a new moveable span bridge. However, some of the crashes can be attributed to the queuing that occurs following each bridge lift, and those crashes would continue with a new moveable span bridge. By contrast, the problem can be eliminated entirely by the construction of a fixed-span bridge, thus eliminating bridge lifts.

Marine

The need for marine traffic to rely on bridge openings also increases risk to marine navigation. In meetings with barge operators, it was stated that one of the major concerns and frustrations with navigating through the Columbia River I-5 bridge channel is that of the captain's need to coordinate a lift clearance for the Interstate Bridge that is coincidental with the opening of the westerly downstream RR bridge. The required coordination between the I-5 and railroad bridges creates a potentially dangerous situation.

Aviation

Although a low-level moveable span initially appears to be a better option for aviation clearances, this is not necessarily the case. The moveable span could either be a swing span, a vertical lift, or a bascule-type span. The best case for aviation would be a swing span, but this may be impractical to construct given the potential width of the new bridge. For a vertical lift, the lift towers would encroach into Pearson's airspace. For a bascule-type span, there would be intermittent encroachments into Pearson's airspace during bridge openings. This would be the case for all four low-level moveable spans. In contrast, a fixed-span at a minimum would maintain the existing airspace encroachment condition with a supplemental bridge (one that kept the existing bridges), and with a replacement bridge it would actually serve to enhance the safety by eliminating the existing airspace encroachment.

Q5. Does the component improve bicycle and pedestrian mobility within the Bridge Influence Area?

A fixed span would provide better connectivity for bike and pedestrian facilities as it eliminates the potential for interrupted travel associated with low-level moveable bridges.

Other considerations

Although cost is not a Step A screening criteria, the construction cost for a moveable span is in the range of $100 million more than a fixed span with a higher vertical clearance. In addition, the maintenance cost for a moveable span versus a fixed span is much higher. The operations and maintenance for the moveable span is in the range of $400,000 more per year than a fixed span.

One of the potential concerns when comparing river crossing options is that the higher elevation options could potentially have more significant impacts at the onshore bridge approaches in Vancouver and on Hayden Island when compared to lower elevation, moveable span options. However, the design development of the low- and mid-level options has resulted in a relatively minor difference of elevation of about 15 feet at mid-span (as noted above, the low-level bridge would be at about 80 ft above the water, and the mid-level span would be at about a 95 ft. elevation). The difference in elevation would generally be progressively less as you move away from the river, resulting in relatively minor differences in elevation at the Vancouver and Hayden Island approaches.

As a result, the potential on-shore impacts can be viewed as approximately equivalent for the low- and mid-level options.

Conclusions and Recommendations

Moveable spans are warranted only when vertical clearance requirements cannot practically be met, if there are height restrictions that prohibit a higher fixed span, or if a lower profile bridge results in fewer undesirable impacts to onshore or in-water resources. In the case for the I-5 Columbia River Crossing, none of the three conditions are met. As demonstrated, the low-level moveable spans carry significant costs to mobility, safety, freight economy, and financial resources with no benefits over a fixed span. A higher mid-level fixed span can perform the same function as a low-level moveable span at lower cost and with no significant differences in impacts to the surrounding communities. For these reasons, RC-1, RC-2, RC-7, and RC-8 are not recommended for continued development.

Columbia River CROSSING

Memorandum

June 7, 2006

TO: Doug Ficco and John Osborn

FROM: CRC Engineering Team

SUBJECT: Screening of RC-13 Supplemental I-5 Tunnel

Overview

In the process of developing the River Crossing (RC) components and packaging them with the Roadway components, it has become apparent that the RC-13 component which includes a supplemental I-5 tunnel crossing should be removed from consideration. Additional traffic analysis completed after the initial Step A screening indicates continued marginal performance in several of the criteria.

Additionally, since the existing I-5 bridges would still be needed to carry non-tunnel traffic (six lanes worth), continued safety issues remain related to the existing Interstate Bridge lift spans, alignments, vertical profiles, and shoulder widths. Also, although cost was not a specific Step A screening criteria, it is clear that RC-13 is likely to cost significantly more than any bridge River Crossing component without offering any significant performance benefit compared to the lower cost alternatives.

Other RC options would avoid some of the more severe environmental impacts associated with RC-13 tunnel construction. Development of tunnel designs has revealed unique and potentially severe impacts to aquatic habitat, archaeological and other historic resources, in addition to commercial property impacts adjacent to the portal areas on Hayden Island and downtown Vancouver.

Component Description

RC-13 Tunnel to Supplement I-5

This component would supplement the existing I-5 bridges with a multi-lane tunnel, with the existing I-5 bridges remaining in place. Several factors limit the possible alignment and design of a supplemental tunnel to a very narrow range of placement alternatives. In order to maintain the current bridges, match existing vertical grades of the land on each side of the River and meet freeway design standards, the tunnel would have to be configured as follows. On the Oregon side, the tunnel would surface and tie back into existing I-5 on the south end of Hayden Island. In Washington, the tunnel would connect north of SR 14 (just south of Mill Plain Boulevard). No connections would be available from the tunnel to the interchanges at Marine Drive (ramps from Marine Drive are too close to the south tunnel entrance), Hayden Island, SR 14, Mill Plain Boulevard, and SB 4th Plain Boulevard. Connections to these interchanges would be provided via existing I-5. Additionally, portions of I-5 where the tunnel resurfaces would require major reconstruction to tie back into the existing alignment.

Analysis

The analyses are summarized in accordance with the Step A criteria adopted as part of the Screening and Evaluation Framework. Also, it is worth noting that an upstream alignment was chosen for analysis so that river excavation volumes and impacts directly to downtown Vancouver could be minimized and/or avoided.

Q1. Does the component increase vehicular capacity or decrease vehicular demand within the Bridge Influence Area?

Although the tunnel will carry about 45 percent of the future I-5 traffic volume, the other 55 percent will continue to use the existing I-5 bridges. Since the lift span will still be in place, congestion and

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safety issues will still exist during lift periods. Also, in the areas where the tunnel surfaces and the realigned I-5 alignments tie back in, significant traffic turbulence is anticipated. Although not specifically analyzed, experience shows that merging 12 lanes into 6 is a challenging traffic scenario, with a high potential for driver confusion and numerous weaving movements.

Q3. Does the component increase freight mobility within the Bridge Influence Area?

Most of the existing interchanges within the Bridge Influence Area will not have access to the supplemental tunnel which will benefit through freight trips but restrict access to the new capacity provided by the tunnel. And, since the existing lift spans would remain in place, bridge openings will continue and be limited to off-peak hours. This would disproportionately impact freight movements, which tend to occur outside the peak periods.

Q4. Does the component improve safety and decrease vulnerability to incidents within the Bridge Influence Area?

Unless there is a complete reconstruction of the existing I-5 bridges to handle the 55 percent of traffic needing to use it, significant and continued safety concerns remain. These include seismic vulnerability, inadequate and unsafe shoulder and bike/pedestrian path widths, substandard vertical and horizontal alignments, and the remaining lift span still in place. If this reconstruction is envisioned to correct these deficiencies, than it is impractical to also build a parallel tunnel for cost reasons.

Other factors not included in Step A screening that are special conditions to consider for tunnel options:

Historic, Prehistoric, and Cultural Resources

RC-13 would likely result in severe impacts to significant archaeological and historic resources. The tunnel option would require cut-and-cover trenching up to 200 feet wide and up to 40 feet deep from the Washington shore of the Columbia River to about Evergreen Boulevard. This alignment is located in and around the Fort Vancouver Historic Preserve, which has known and undiscovered archaeological resources. Coordination to date with tribes, the National Park Service, and others suggests that there is a very high likelihood that numerous Indian burials occurred and are present in this area. Specific locations are unknown at this time. In addition, there are significant historic resources in the alignment of the proposed tunnel. Based on the existing available information and the current designs of river crossing components, the tunnel would result in the greatest amount of ground disturbance and would have the highest risk of resulting in the greatest potential impact to archaeological resources, in addition to impacts to known 4(f) resources.

Impacts to Threatened or Endangered Fish or Wildlife Habitat

This option would require dredging a trench approximately 200 feet wide and approximately 40 feet deep across the Columbia River. The in-water dredging would occur over multiple seasons and would produce over 1 million cubic yards (over 2 million for the entire tunnel) of dredge spoils. The impacts to water quality from a dredging project of this scale and duration could be significant. The potential impacts to threatened and endangered species is likely to be a significant concern to the National Marine Fisheries Service, greater than associated with the bridge options.

Cost of Construction

Although cost is not a consideration for this screening, on an order-of-magnitude comparison, the construction cost for a tunnel crossing could be in the range of twice that of a major bridge crossing. In addition, there would also be significant costs in rebuilding significant parts of I-5 in the portal areas so that the tunnel can resurface and tie back in to the existing alignment. In addition, much higher right-of-way costs on Hayden Island and downtown Vancouver would be necessary. Considering the uncertainty of project funding at this time, the magnitude of the higher costs could jeopardize funding.

Ongoing Maintenance and Operations Costs

The annual operations and maintenance costs for a tunnel of this length (5700 feet) would exceed $2 million, which is significantly more than for a major bridge crossing.

Conclusions and Recommendations

Although the tunnel provides some traffic operations benefit by splitting I-5 traffic, the tunnel option does not perform well against Step A screening criteria, especially compared to bridge options. In addition, the tunnel option would have potentially more severe impacts to some environmental resources without any unique and significant environmental advantages. It would also have greater right-of-way acquisition impacts, and overall much higher costs. For these reasons, RC-13 is not recommended for continued development.

Columbia River CROSSING

Memorandum

June 7, 2006

TO: Doug Ficco and John Osborn

FROM: CRC Transit Team

SUBJECT: Assessment of Operating Streetcars (TR-6) on Interstate MAX Tracks
Recommendation to Eliminate Streetcars from Further Consideration

COPY: Distribution

Overview

This memorandum describes the results of a separate study to determine the feasibility of operating streetcars (transit component TR-6) on the Interstate MAX tracks within and south of the Bridge Influence Area.

During the February 2006 NEPA scoping process, a comment was received by the CRC project team to evaluate streetcars as a transit modal option within the Bridge Influence Area. The general concept suggested for the streetcar was a north-south alignment from downtown Vancouver to downtown Portland. The alignment would generally run from downtown Vancouver southbound over a new river crossing, through Hayden Island, and connect to the existing Interstate MAX tracks. The streetcar would then go southbound on the existing LRT tracks to downtown Portland.

Although the TR-6 Streetcar component passed Step A screening, subsequent analysis shows that interlining a streetcar system on the Interstate MAX right-of-way has safety, travel time, and capacity problems, and is technically infeasible. Prior to this analysis, it had been determined that streetcars operating on light rail tracks have the potential to 1) increase vehicular capacity or decrease vehicular demand within the Bridge Influence Area and 2) improve transit performance within the Bridge Influence Area. This finding was predicated on the ability of streetcars to operate on the Interstate MAX tracks all the way to downtown Portland, and thus serve all of the identified 2020 transit markets. On this assumption, streetcars were recommended to advance through the Step A and B screening processes.

The results of the subsequent analysis showed that streetcars could not use the existing Interstate MAX tracks, and thus would require all passengers to transfer to the Interstate MAX line. Since no other transit mode would require a transfer onto the Interstate MAX line, streetcars would have a distinct travel speed and travel time disadvantage vis-a-vis other transit modes and would have difficulty attracting enough passengers to decrease travel demand within the Bridge Influence Area. As a result, streetcars (TR-6) fail question #1 of Step A screening. The CRC Transit Team therefore recommends that streetcars (TR-6) be eliminated from future consideration.

Streetcar Description

Streetcar transit is similar to LRT and can operate in shared vehicle lanes in city streets, in separated lanes on urban arterials, or on its own exclusive track. It uses electrically powered rail cars, and has been implemented in San Francisco, Portland, Tampa, Tacoma, and other U.S. cities. Cities with streetcars typically range in population size from one to three million people, although some smaller cities have developed short streetcar segments as historic tourist attractions. On a per-mile basis, streetcar transit typically costs between $25 million to $50 million per mile. The cost of streetcar transit typically depends on station geometrics, whether existing right-of-way is already owned by the constructing agency, and how many utilities are relocated out of the streetcar's path. Compared to light rail, streetcar transit typically has the following major differences:

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Streetcars have significantly lower top operating speeds, primarily because they generally operate in shared right-of-way. Thus, streetcars are not typically used for long distance commuting, as other rail modes are better able to capitalize on long sections of track with no stops. Streetcar is typically an intra-urban mode with two- to three-block station spacing, whereas light rail is typically used as an inter-urban mode with half-mile or greater station spacing. The average vehicle speed of the Portland Streetcar is 6 MPH, while the Interstate MAX line operates at an average of 16 MPH.

Streetcars typically operate in general purpose traffic lanes, while light rail typically operates in its own exclusive right-of-way.

Figure 1: Typical Streetcar

Streetcars usually have less passenger capacity than light rail vehicles. In Portland, each streetcar carries a maximum load of 92 passengers, compared to 133 for a loaded LRT vehicle. LRT service is usually provided by two-vehicle trains (carrying up to 266 passengers), whereas streetcars usually operate as single trains to complete tight turns in urban areas and to minimize parking reductions.

Analysis of Interlining Streetcars and the Interstate MAX

Although light rail and streetcar are both rail modes that run on tracks with the same track gauge, they are designed to serve different purposes. The light rail system is designed to serve regional trips at relatively high speeds and high passenger capacities. The streetcar system is designed to serve local trips at relatively low speeds and moderate passenger capacities. Vehicle manufacturers such as Skoda-Inekon and Siemens design their LRT and streetcar vehicles differently to optimize vehicle performance in each environment. Manufacturers also have different vehicle specifications that make them incompatible with each other. Examples of this include:

1. LRT vehicles are designed to operate up to 55 mph. Portland's Skoda-Inekon streetcar can operate only up to 31 mph.
2. Streetcars do not have the same signal and communication equipment as light rail vehicles.
3. Streetcars lack a more crash-resistant body structure with anti-climbers at the proper height to prevent one train from telescoping into the body of the other train in a crash.
4. Streetcars are narrower than light rail trains and their platforms are a half-inch higher and more than four inches wider that light rail platforms.
5. Streetcars lack couplers and train-line connectors and cannot be run in two-car trains.
6. Streetcars have 1/3 the capacity of the typical two-car LRT train but about the same operating cost per mile.

While some vehicle specifications could be modified to address some of these concerns, the cost of building such a vehicle would be significant and would not significantly address safety, travel speed, and capacity issues.

Operating streetcars on light rail tracks would also introduce significant safety hazards that could not be avoided. Streetcar chassis are more fragile and less crash-resistant than light rail vehicles, and no streetcar design is currently equipped with anti-climbers. Thus, in a collision with a light rail vehicle, the

light rail vehicle would ride over the chassis of the streetcar vehicle, owing to the different vehicle types. This is an unacceptable safety risk and a fatal flaw of interlined service.

Analysis of Requiring Transfers

The analysis above found that since streetcars do not have a viable connection to downtown Portland south of the Bridge Influence Area, all passengers would be required to transfer at the Exposition LRT Station to the Interstate MAX line to reach downtown Portland. Numerous technical studies conducted in the U.S. over the last three decades have concluded that requiring a transfer between transit vehicles decreases the number and frequency of passengers that would otherwise utilize the service.

All other transit modes considered as part of the CRC project would not require a transfer to the Interstate MAX line. For example, express buses and bus rapid transit modes from Clark County would not by necessity have to terminate their operations at the Interstate MAX line and require their passengers to transfer to reach downtown Portland. Express buses and bus rapid transit modes have the option to continue to downtown Portland either on I-5 in general purpose lanes or on the City of Portland's arterial street system. They do not by necessity require building a new transit right-of-way south of the bridge influence area. The express bus, bus rapid transit, and light rail transit modes all can provide a one-seat ride from downtown Vancouver to downtown Portland.

Requiring a transfer for all passengers within the bridge influence area significantly limits a streetcar's ability to improve transit travel time performance and serve the identified 2020 transit markets. As a result, streetcars would have difficulty attracting passengers and would not decrease travel demand within the Bridge Influence Area. Streetcars (TR-6) fail question #1 of Step A screening and the CRC Transit Team recommends that streetcars (TR-6) be eliminated from future consideration.

Conclusions and Recommendations

As a result of these findings, streetcars cannot operate on the Interstate MAX tracks and therefore fails Question #1 of Step A screening: "Does the component increase vehicle capacity or decrease travel demand within the Bridge Influence Area?" The findings indicate that without a connection to downtown Portland south of the Bridge Influence Area and requiring all passengers to transfer to the Interstate MAX line, streetcars would not serve the identified 2020 transit markets, would have difficulty attracting passengers, and would not decrease travel demand within the Bridge Influence Area. As a result, streetcars (TR-6) fail question #1 of Step A screening and the CRC Transit Team recommends that streetcars (TR-6) be eliminated from future consideration.

Columbia River CROSSING

Memorandum

June 7, 2006

TO: Doug Ficco and John Osborn

FROM: CRC Transit Team

SUBJECT: **Screening of TR-11 Commuter Rail**

Overview

During NEPA scoping earlier this year, it was suggested that commuter rail operating on the existing Burlington Northern Sante Fe (BNSF) tracks could be a potential transit mode for the CRC project. This suggestion was evaluated in the Step A Screening process. The analysis concluded that, due to significant freight rail congestion, there is no excess rail capacity on the existing BNSF tracks. Commuter rail operating on the existing BNSF tracks is infeasible given this condition and would not improve transit performance within the bridge influence area. As a result, commuter rail failed question two of the Step A screening process and staff recommended that it not be advanced for further consideration.

At the May 17th CRC Task Force meeting the CRC Project team was asked to evaluate commuter rail under three operating conditions: 1) on the existing BNSF tracks; 2) on a new dual-track commuter rail alignment within the BNSF right-of-way; or, 3) on a new dual-track commuter rail alignment within the I-5 corridor. The analysis is summarized below for each of the three commuter rail operating conditions:

- **Commuter rail operating on the existing BNSF tracks is infeasible**. The project team reviewed its original Step A screening results and two previous commuter rail studies for the Portland/Vancouver area: the 1999 *RTC Commuter Rail Feasibility Study* and the 2003 *I-5 Transportation and Trade Partnership Rail Study*. These studies confirm that operating commuter rail on the existing BNSF tracks is infeasible because of insufficient capacity required to accommodate the frequency and timing of trains necessary for this type of service.

- **Commuter rail operating on a new dual-track alignment within the BNSF right-of-way is infeasible.** A new dual-track commuter rail alignment within the BNSF right-of-way to bypass the existing freight rail congestion would have significant environmental and cost impacts in comparison to the projected ridership. The CRC Transit Team has concluded that even under these assumptions a new commuter rail alignment would not serve the current and future 2030 transit markets. The BNSF right-of-way is west of the main transit markets, is dotted with freight rail crossings, threads its way through two large rail yards, and would have slower travel times due to out-of-direction travel. Based on this analysis, commuter rail operating on a new dual-track commuter rail alignment within the BNSF right-of-way is infeasible and would not improve transit performance within the bridge influence area.

- **Commuter rail operating on a new dual-track alignment within the I-5 corridor is infeasible.** A new analysis shows that building a new dual-track commuter rail alignment within the I-5 corridor would be a challenging and expensive undertaking. The analysis concludes that:
    - To serve the current and future 2030 transit markets a new 40-foot dual-track commuter rail right of way within the I-5 corridor would need to be assembled and constructed. The new right of way would need to be more than 15 miles long and connect Union Station in downtown Portland to Salmon Creek in Clark County.
    - The physical requirements of assembling and building a new 15 mile grade separated alignment within the already densely populated and urbanized I-5 corridor, could result in a large number of property acquisitions or easements, and would have significant environmental and cost impacts.

- Commuter rail requires vertical alignment grades less than 2%. The river crossing would need to be at a low level with a lift span to accommodate navigation needs, further impacting safety for river navigation.

Based on this analysis, commuter rail under its original and the two new operating conditions have been found to be infeasible and would fail question two of the Step A screening. Commuter rail is therefore recommended not to be advanced for further consideration as part of the Columbia River Crossing project. However, given that investments are anticipated to be needed in the future to serve projected growth In freight rail activity, as well as growth in inter-city passenger rail (i.e., Amtrak), it may be appropriate to re-consider the viability of commuter rail at the same time as when planning for other investments in the regional rail system.

Definition of Commuter Rail

Commuter rail train service is typically used for long distance travel between a central city, adjacent suburban areas, and other cities within a region. Commuter rail systems generally use diesel-powered locomotives with passenger rail cars and operate in existing railroad rights-of-way where excess rail capacity exists.

Commuter rail service is typically provided during morning and evening peak commuting periods. Stations are located close to major activity centers and/or served by park-and-ride lots to assure maximum ridership.

Figure 1: Typical Commuter Rail Train

Historically, commuter rail is often less expensive than other passenger rail modes because it operates on existing railroad rights-of-way where excess train capacity exists and shares tracks with freight operations. Since commuter rail typically operates in freight rail corridors, there are usually extensive negotiations with the active railroad for the privilege of sharing the right-of-way and an annual track fee is paid. **Figure 1** shows a typical commuter rail train.

Analysis

The analysis presented below describes how commuter rail under its original and the two new operating conditions were screened using the Step A process. The commuter rail options were screened against two of the six questions, which are:

Q1. Increase vehicular capacity or decrease vehicular demand within the Bridge Influence Area?

Q2. Improve transit performance within the Bridge Influence Area?

Commuter rail passed Question #1, but failed Question #2. Following is a more detailed analysis of the three operating conditions that were evaluated.

Operating Condition 1 – Commuter Rail operating on the Existing BNSF Tracks

During the Step A screening process transit component TR-11, Commuter Rail on Existing BNSF Tracks, was screened and failed question #2. To improve existing transit service in the Bridge Influence Area, commuter rail would have to be integrated with the existing bus and rail network, which is infeasible, as the technology would operate in a completely grade separated right-of-way well west of the current and future 2030 transit markets. In addition, while new commuter rail service along regional freight rail tracks

could conceivably serve some transit markets in the Bridge Influence Area (e.g., North Portland), it would provide poor, out-of-direction service to some key activity centers (e.g., downtown Portland).

In 2003 there were 10 intercity Amtrak Cascades passenger trains that cross the BNSF Columbia River railroad bridge per day operating from Seattle to Portland. This compares to over 150 train movements made by BNSF and Union Pacific (UP) trains per day. In 20 years service plans anticipate 26 Amtrak Cascades passenger train crossings per day, effectively using any remaining rail capacity that exists, even without allowances for future growth in freight train activity.

The 1999 *RTC Commuter Rail Feasibility Study* evaluated new commuter rail service between Portland's Union Station and Vancouver's Amtrak Depot. From Vancouver two routes split off: one traveling north and east to Rye and one traveling east to Fisher's Landing. The need for three new stations was identified and three levels of peak-only service were selected: low, medium, and high. Under 2003 freight and intercity passenger rail conditions, the low and medium service alternatives were feasible with rail capacity improvements ranging from $36.6 million to $53.1 million (in 1998 dollars). By 2018, no commuter rail service alternatives could be mitigated to feasible delay levels.

The 2003 *I-5 Transportation and Trade Partnership Rail Study* found that there is insufficient capacity on the existing BNSF line to accommodate the frequency and timing of trains for commuter rail service. Nonetheless, the study evaluated a proposed commuter rail service on an improved freight rail system where 10 incremental projects were considered, at a cost of $170 million dollars (in 2002 dollars), to help relieve freight rail congestion. Assuming that the projects could be funded and constructed, the study still concluded that there was not enough rail capacity for a commuter rail operation. Interestingly, the study also found that even with the $170M in improvements, the average Amtrak Cascades passenger train speed would increase by only 2%.

Lastly, the 2003 *I-5 Transportation and Trade Partnership Rail Study* found that commuter rail service could only be instituted on a separated passenger rail-only network. In strongly worded policy statements it concluded that commuter rail operating on the existing tracks is an unacceptable outcome to the BNSF and the UP railroads. The previous work confirms that commuter rail operating on the existing BNSF tracks is infeasible and would not improve transit performance within the bridge influence area.

Operating Condition 2 – Commuter rail operating on a new dual-track alignment within the BNSF right-of-way

The second option for operating a commuter rail system within the Portland/Vancouver area is to add two new tracks within the BNSF right-of-way. A new track within the BNSF right-of-way would require a substantial capital investment in equipment and would require leasing the right-of-way from BNSF under a carefully crafted joint operating agreement.

The 1999 *RTC Commuter Rail Feasibility Study* found that a dedicated commuter rail alignment within the BNSF right-of-way was estimated to cost $450 to $750 million (in 1998 dollars), including property acquisition, environmental mitigation, main line reconfiguration and equipment. The *I-5 Transportation and Trade Partnership Study* estimated the cost of a separated passenger rail network within the BNSF right-of-way to be $1.5-1.7 billion dollars (in 2002 dollars), with uncertainty due to geologic and structural issues. The new tracks would require an acquisition of 35 residences, 7-12 industrial properties, and local street closures up and down the corridor. New tracks also increased the mainline footprint from 2 tracks to 4, filling in some wetlands along the way and triggering an unknown quantity of environmental restoration.

As noted in the previous section, the RTC Commuter Rail Feasibility Study found that, in 2003, the high commuter rail service alternative would require a dedicated alignment. In 2018 any level of commuter rail would need a dedicated alignment:

- **Dedicated Alignment Costs**: To increase capacity to make commuter rail feasible, the study considered a freight rail bypass above and below points of conflict with freight service between Vancouver and North Portland. Even under this scenario the dedicated alignment was estimated

to cost $450 to $750 million (in 1998 dollars), including property acquisition, environmental mitigation, main line reconfiguration and equipment.

- **Operating Costs**: Approximate operating costs per train mile by service level were estimated as follows: Low - $90; Medium - $75; High - $55. This assumed a new agency would manage the commuter rail system. Cost recovery from fares and concessions would be less than 20% of operating costs; substantially less than most comparable services.

- **Columbia River BNSF Bridge**: Adding a third mainline to the Columbia River and Oregon Slough bridges would likely only push the chokepoints to where trains would merge into two tracks.

Both of the commuter rail studies concluded that commuter rail operating on a new dual-track alignment within the BNSF right of way is infeasible. Since freight rail capacity conditions have not significantly changed since the 1999 and 2002 studies, commuter rail operating on a new dual-track alignment within the BNSF right of way is infeasible and would not improve transit performance within the bridge influence area.

Operating Condition 3 – Commuter Rail on New Track within the I-5 Corridor

A third option for operating a commuter rail system to serve the transit market within the I-5 Corridor is to construct a new dual-track alignment along I-5. To construct a new track within the I-5 corridor would require a substantial commitment from both Washington and Oregon state legislatures and would surpass the Columbia River Crossing project in scope and magnitude. A successful commuter rail system would require a new 15 mile long corridor that is 40 feet wide, grade separated, with stations located every 4-5 miles. Such a system would serve the current and future 2030 transit market and provide frequent peak hour service of 30 minutes or less, and regular all day service.

Other significant findings are:

- To be consistent with City of Portland plans commuter rail service to downtown Portland would be required to go to Union Station. As such, a new dual track system to Union Station via the I-5 corridor would require two bridge crossings; one at the Columbia River and one at the Willamette River.
- A new dual-track commuter rail alignment within the I-5 corridor would need to serve the current and future 2030 transit markets, and would thus require building a new 40 foot grade separated right-of-way more than 15 miles long from Union Station in downtown Portland to Salmon Creek in Clark County.
- The physical requirements of assembling and building a new 15 mile long grade separated alignment within the already densely populated and urbanized I-5 corridor could result in a large number of property acquisitions or easements, and would have significant environmental impacts.
- Commuter rail would require an at-grade river crossing or one with a slope of 2% or less. All CRC river crossing options that had these lower slopes have been eliminated from further consideration due to unacceptable marine navigation impacts. A river crossing option that could feasibly carry commuter rail would likely result in a permanent negative impact to marine navigation.

A peer review was conducted as part of this analysis to determine how this potential commuter rail project would compare with other successful commuter rail projects around the U.S. The review included interviews with key project managers and research into four different commuter rail projects in Portland, Oregon; Nashville, Tennessee; Salt Lake City, Utah; and Seattle, Washington. Their feedback indicated that a commuter rail project built within the I-5 corridor, outside an existing rail corridor would be totally unique. These experts noted that other successful commuter rail projects have relied on three keys factors: utilizing excess rail capacity and resources, building stations that could attract thousands of passengers, and having a willing and helpful track owner.

A new commuter rail track within the I-5 corridor would also likely require other operational elements such as protected crossings, grade separated tracks; local street closures; compliance with safety regulations, regulations by the Federal Railroad Administration (FRA); compliance with existing railroad work rules and union agreements. A new track within the I-5 corridor would also require a substantial capital investment. Equipment capable of reaching speeds over 80 mph would be expensive and would require Class 1 railroad track with an in-cab signaling system.

Based on this analysis, assembling and building a new commuter rail railroad within the I-5 corridor is infeasible and would not improve transit performance within the bridge influence area.

Conclusions and Recommendations

The Step A screening process concluded, and the RTC and I-5 Transportation and Trade Partnership studies confirm, that commuter rail operating: 1) on the existing BNSF tracks; 2) on a new dual-track commuter rail alignment within the BNSF right-of-way; or, 3) on a new dual-track commuter rail alignment within the I-5 corridor fails question #2 of the Step A screening process because they are infeasible and would not improve transit performance within the Bridge Influence Area. Therefore, the CRC Transit Team recommends that commuter rail not be advanced for future consideration as part of the Columbia River Crossing project.

However, given that investments are anticipated to be needed in the future to serve projected growth In freight rail activity, as well as growth in inter-city passenger rail (i.e., Amtrak), it may be appropriate to re-consider the viability of commuter rail at the same time as when planning for other investments in the regional rail system.

Columbia River CROSSING

Memorandum

June 7, 2006

TO: Doug Ficco and John Osborn

FROM: CRC Transportation Planning Team

SUBJECT: Screening of B/P-3 Bicycle/Pedestrian Path-Only Bridge

Overview

In the process of integrating bicycle/pedestrian components into alternative packages, it has become apparent that the concept of a stand-alone bicycle/pedestrian bridge adjacent to I-5 and spanning the Columbia River should be removed from further consideration.

Component Description

Component B/P-3 is the construction of a new bridge across the Columbia River that would only provide a multi-use pathway for use by bicyclists and pedestrians. This new bridge, if constructed, would not be usable by other modes, including passenger vehicles, truck-freight, or transit.

Analysis

A stand-alone bicyclist and pedestrian bridge, without provision of added capacity on I-5 across the Columbia River for passenger vehicles, truck-freight, or transit, would not meet many of the project's Step A criteria as adopted as part of the Screening and Evaluation Framework.

All I-5 river crossing components, with the exception of tunnel options, would include a new or improved multi-use pathway as a part of their design. The proposed pathway for each of these components would meet or exceed current multi-use design standards. Thus, a stand-alone multi-use pathway would not be necessary.

For the river crossing tunnel options, a multi-use pathway would not be provided as a part of the tunnel, but could be provided on the existing Interstate Bridge under the Supplemental Tunnel component. For the Replacement Tunnel component, a stand-alone multi-use bicyclist and pedestrian bridge could provide a multi-modal connection, but such a structure may interfere with marine safety.

A stand-alone bicycle/pedestrian bridge was evaluated against some of the Step A criteria, as discussed below:

Q1. Does the component increase vehicular capacity or decrease vehicular demand within the Bridge Influence Area?

A stand-alone bicycle/pedestrian bridge, without providing added vehicular capacity or vehicular demand, will have little impact in reducing travel times and delay for passenger vehicles. There would be no discernable reduction in the number of hours of daily highway congestion in the I-5 corridor.

Q2. Does the component increase transit performance within the Bridge Influence Area?

A stand-alone bicycle/pedestrian bridge, without providing added transit capacity to I-5 within the Bridge Influence Area, would not reduce travel times and delay for transit modes.

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Q4. Does the component improve safety and decrease vulnerability to incidents within the Bridge Influence Area?

A stand-alone bicycle/pedestrian bridge, without improving key existing non-standard geometric and safety features on I-5 within the Bridge Influence Area, would not enhance vehicle or freight safety on I-5. A separate bridge will negatively impact navigation channel geometrics to accommodate ship movements considering necessary tug and barge turning maneuvers.

Q5. Does the component improve bicycle and pedestrian mobility within the Bridge Influence Area?

A stand-alone bicycle/pedestrian bridge across the Columbia River located in close proximity to touch-down existing facilities will perform well to improve bicycle and pedestrian mobility within the Bridge Influence Area.

Other Considerations

While cost is not part of the screening criteria at this time, it must be noted that a stand-alone bicycle/pedestrian bridge would be substantially more costly than integrating a bicycle/pedestrian path into a bridge constructed to also serve other purpose (e.g., highway or transit use). Also, the provision of a bicycle/pedestrian path on a multi-purpose structure would create fewer environmental impacts than would constructing a new highway/transit bridge and a separate bicycle/pedestrian bridge.

Conclusions and Recommendations

Component B/P-3, a stand-alone bicyclist and pedestrian bridge, would not meet many of the project's Step A criteria as adopted as part of the Screening and Evaluation Framework and is not recommended for continued development.

All I-5 river crossing components, with the exception of tunnel options, include a new or improved multi-use pathway as a part of their design. The proposed pathway for each of these components would meet or exceed current multi-use design standards. Thus, a stand-alone multi-use pathway would not be necessary.

For the river crossing tunnel options, a multi-use pathway would not be provided as a part of the tunnel, but could be provided on the existing Interstate Bridge under the Supplemental Tunnel component. For the Replacement Tunnel component, a stand-alone multi-use bicyclist and pedestrian bridge could provide a multi-modal connection, but such a structure may interfere with marine safety.

Columbia River CROSSING

Memorandum

June 7, 2006

TO: Doug Ficco and John Osborn

FROM: CRC Transportation Planning Team

SUBJECT: Screening of F-3 Time of Day Freight Truck Restrictions on I-5

Overview

Freight components were not included in the initial Step A screening that focused only on River Crossing and Transit components, because the list of components was short and it was not expected that screening would significantly reduce the options that needed to be analyzed. However, in the process of integrating freight components into alternative packages, it has become apparent that the concept prohibiting truck-freight use on I-5 during peak commuting periods within the I-5 Bridge Influence Area should be removed from further consideration. It does not meet Step A criteria for improving freight mobility within the Bridge Influence Area.

Component Description

Component F-3 proposes to prohibit truck-freight use of I-5 (within the Bridge Influence Area) during peak commuting periods.

Analysis

Prohibiting truck-freight use along I-5 within the Bridge Influence Area would not meet the project's Step A criteria as adopted as part of the Screening and Evaluation Framework.

Q3. Does the component improve freight mobility within the Bridge Influence Area?

Such a restriction would significantly impact freight mobility, affect freight access to key origins and destinations, and would divert vehicle-moved freight to other routes, including other highways and arterial roadways. The prohibition of truck-freight use on I-5 within the Bridge Influence Area during peak commuting periods would result in truck trips being diverted along other highways and arterial roadways, resulting in increased travel times and added delays for vehicle-moved freight in the I-5 corridor. Peak prohibition of truck-freight would also restrict access to port, freight, and industrial facilities, many of which are located within the Bridge Influence Area.

Other factors not included in Step A screening criteria that are special conditions to consider.

The restriction of truck traffic on I-5 would be contrary to federal and state policy.

The prohibition of truck-freight use on I-5 within the Bridge Influence Area during peak commuting periods would result in truck trips along other highways and arterial roadways, thereby likely increasing the magnitude of residential properties affected by increased noise levels and potentially diminished air quality.

Conclusions and Recommendations

Component F-3, the proposal to prohibit truck-freight use of I-5 (within the Bridge Influence Area) during peak commuting periods, would not meet the project's Step A criteria as adopted as part of the Screening and Evaluation Framework and is not recommended for continued development.

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Such a restriction would significantly hinder freight mobility, affect freight access to key origins and destinations, and would divert vehicle-moved freight to other routes, including other highways and arterial roadways.

Columbia River CROSSING

Memorandum

June 7, 2006

TO: Doug Ficco and John Osborn

FROM: CRC Transportation Planning Team

SUBJECT: Screening of F-4 Increased Freight Truck Size on I-5

Overview

In the initial process of considering the integration of freight components with river crossing components, it has become apparent that the concept of allowing increased freight truck size along the I-5 corridor, including within the Bridge Influence Area, should be removed from further consideration.

Component Description

Component F-4 proposes the use of increased freight truck size along the I-5 corridor, including within the Bridge Influence Area. Component F-4 proposes the development of a policy to enable use of larger trucks on I-5.

Analysis

Allowing the use of larger semi-trailers than are currently legally allowed on I-5 in both Washington and in Oregon is beyond the scope of the Columbia River Crossing project study and would require action by both states. Enabling larger truck use on I-5, or any other highways, could result in freight mobility, safety, traffic, operational, and environmental implications that affect more than just the project study area.

Conclusions and Recommendations

Component F-4, the proposal to allow the use of increased freight truck size along the I-5 corridor, including within the Bridge Influence Area, would require policy actions by both Washington and Oregon and could result in implications that affect more than just the Columbia River Crossing study area. It is therefore recommended that this component not be developed further for this study.

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Columbia River CROSSING

DRAFT ALTERNATIVE PACKAGING REPORT

June 7, 2006

DRAFT ALTERNATIVE PACKAGING REPORT

June 7, 2006

Columbia River CROSSING

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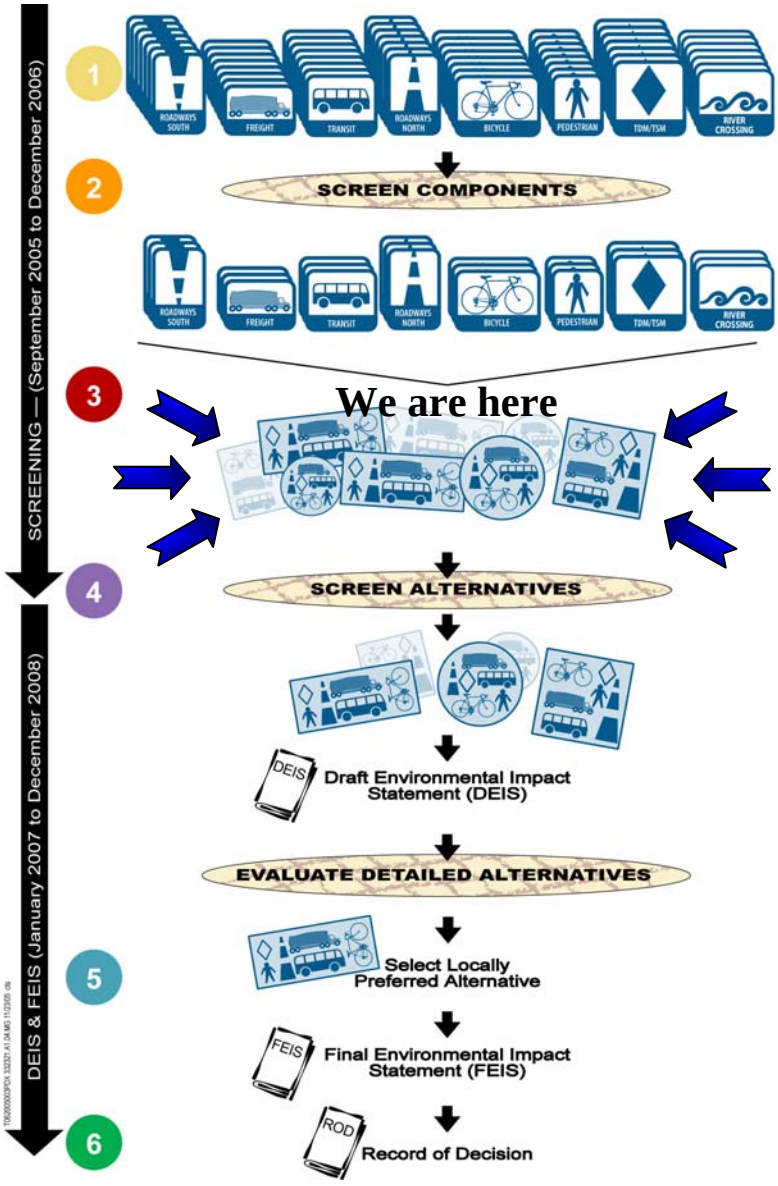
1. Overview of Alternative Packaging

Following the adopted I-5 CRC evaluation framework depicted in **Figure 1-1**, the project team and Task Force identified the initial universe of project ideas ("components") through a public scoping process (1) during fall 2005 and completed a two-step (Steps A and B) component screening process (2) in spring 2006 to narrow the list of river crossing and transit components to those most promising and consistent with the project's adopted Purpose and Need. The project team is now in the process of packaging promising components from the eight (8) transportation categories shown at the top of Figure 1-1 into fully formed Alternative Packages (3) for further study, screening, and refinement during the remainder of 2006.

Figure 1-1. Evaluation Process



This *Draft Alternative Packaging Report* describes the considerations and process undertaken by the project team to formulate the resulting 12 alternative packages being recommended to the Task Force for further study.

Purpose of Packaging

The purpose of alternative packaging is to test how various alternative packages, and features of those packages, perform and relate to one another given the adopted screening/evaluation criteria for this project.

Combining the remaining and most promising components into fully formed alternative packages will allow the project team to assess the inter-relationship of river crossing, transit, and other components for the first time.

What is learned will support further narrowing and refinement of ideas and ultimately set the range of alternatives that launch the draft Environmental Impact Statement (DEIS) process (4).

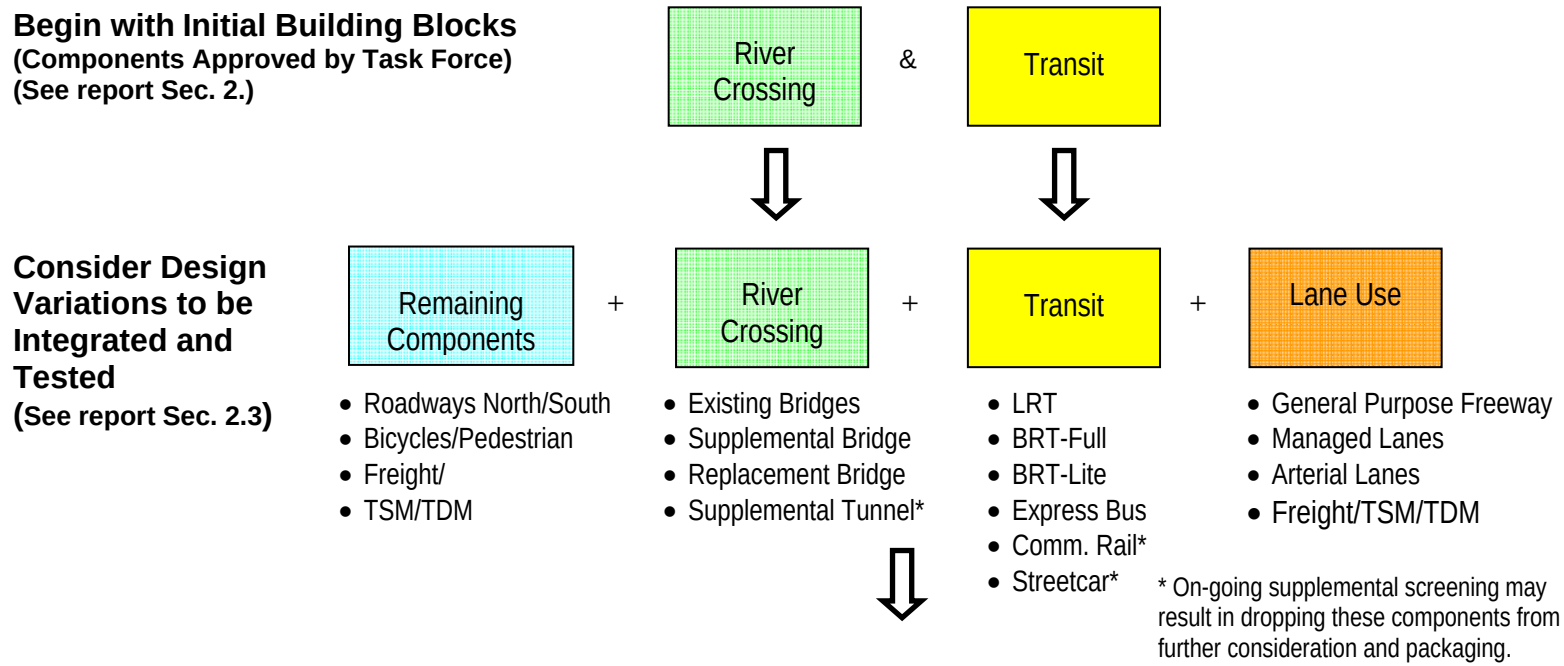
What's Inside this Report?

Sections of this report describe the following:

- **Building Blocks** - A summary of the principal roadway and transit elements to be tested among the various alternative packages. Includes definitions of the roadway and transit elements.
- **Variations** - A graphical representation of the key variations among component categories that are being tracked for testing purposes. For example, three principal variations of river crossings include the following: (1) those that make use of the existing bridges only, (2) those that supplement one or more of the existing bridges, and (3) those that replace the existing bridges. Use of the river crossing's lanes also forms variations such as: (1) general purpose use, (2) arterial use, and (3) managed lane use.
- **Developing the Alternative Packages** - Describes the organizing principals and overall approach to packaging.
- **Alternative Packages Matrix** - A matrix summarizing the 12 staff-recommended alternative packages and the key elements of each from among the eight (8) component categories.
- **Alternative Package Descriptions** - Brief descriptions of each alternative package consisting of an overview and assumed element(s) from each of the following eight (8) transportation component categories: roadways north, roadways south, river crossing, transit, bicycle, pedestrian, freight, and transportation demand/system management (TDM/TSM).

Figure 1-2 depicts the overall packaging process /summarized in this report.

Figure 1-2. Alternatives Packaging Process



Note: The 12 staff-recommended alternative packages sufficiently represent and support technical work to test the range of component combinations. As needed, results can be used to assess other possible component combinations not expressly represented in the list of 12. Best performing elements of each alternative package will be available for repackaging and/or refining within the range of alternatives advanced into the Draft EIS.

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2. Alternative Package Building Blocks

The evaluation framework for this project identified eight (8) transportation categories used to organize the components identified during scoping. To date, only the transit and river crossing components have undergone screening. Components in the Pedestrian, Bike, Freight, Roadways north, Roadways south, and Transportation Demand Management/Transportation System Management (TSM/TDM) categories were not screened as components because their performance is dependant upon how they integrate with promising transit and/or river crossing improvements.

Principal building blocks for each alternative package include selection of a primary transit mode and roadway investment in I-5 for highway lanes only or for a combination of highway plus arterial lanes. All other components integrate after these selections are paired. **Table 2-1** summarizes the principal transit and roadway building blocks which will be tested within the range of alternative packages recommended by staff.

Table 2-1
Alternative Package Building Blocks

Transit Mode \ Roadway	Highway plus Arterial	Highway Only
Express Bus	●	●
BRT – Lite	●	●
BRT – Full	●	●
LRT	●	●
LRT plus Express Bus	●	●
Commuter Rail	These transit components are undergoing supplemental screening and staff recommendation to be dropped from further consideration and packaging.	
Streetcar		

2.1 Transit Mode Descriptions

Express Bus- Point-to-point peak period express bus service operating along I-5 in either general purpose or managed lanes. The suburban Clark County-based express bus service would connect Salmon Creek and downtown Portland and would have upgraded park-and-rides.

BRT Lite - Limited stop all-day bus rapid transit (BRT) service operating along I-5 in managed lanes and/or local arterial lanes. The suburban Clark County-based BRT service would connect Salmon Creek, downtown Vancouver, and downtown Portland. The BRT Lite system would have upgraded buses, passenger stops, and park-and-rides.

BRT Full - All-day BRT system similar to the Interstate Max Yellow line connecting Vancouver to the Exposition Center LRT station and downtown Portland. Within the Bridge Influence Area the BRT Full system would operate along an exclusive running way with light-rail type stations and performance.

LRT - An extension of the Interstate Max Yellow line from the Exposition Center LRT Station north to Vancouver with the same service characteristics as TriMet's 44-mile regional LRT system.

LRT/Exp. Bus- A combination of LRT and express bus as described above.

Note: Each of the public transportation modes described above include as a baseline a substantial increase in local or feeder bus service, additional park-and-ride facilities, expansion of key existing park-and-ride facilities, and additional transit passenger facilities both outside and within the Bridge Influence Area. It is possible that one or more public transportation modes above may ultimately be combined into a single composite alternative to serve multiple transit markets simultaneously.

2.2 Roadway Descriptions

Highway plus Arterial- New and/or existing lanes within the Bridge Influence Area between SR 500 and Columbia Boulevard, plus arterial connections between Vancouver, Hayden Island, and potentially Marine Drive.

Highway only– Increased capacity of existing I-5 within the Bridge Influence Area between SR 500 and Columbia Boulevard.

2.3 Design Variations

A series of high level design variations exist that will need to be tested during the alternative packaging screening process. The variations exist within the following categories:

- **Remaining components -** Components within the six transportation categories other than river crossing and transit.
- **River crossings -** Three principal variations of river crossings include the following: (1) those that make use of the existing bridges only, (2) those that supplement one or more of the existing bridges, and (3) those that replace the existing bridges.
- **Transit -** Four primary transit modes need to be tested consisting of light rail transit (LRT), BRT-Full, BRT-Lite, and express bus.

- **River Crossing Lane use -** Use of the river crossing's lanes also forms variations such as: (1) general purpose use, (2) arterial use, and (3) managed lane use.
- **TDM/TSM -** The TSM/TDM components have been bundled into three categories for the purpose of developing and packaging alternatives. The categories are titled "basic," "moderate," and "aggressive" to reflect the varying levels of potential transportation system and demand management affects. For example, the "aggressive" category includes congestion pricing to manage demand while the "basic" category uses a package of incentives to manage demand. It should be noted that the "basic" package includes multiple actions currently not within either Metro's Regional Transportation Plan or the Regional Transportation Council's Metropolitan Transportation Plan. As a result, the "basic" package represents a stronger TSM/TDM approach than the region currently has. **Tables 2-2** through **2-4** summarize the elements of the three TSM/TDM bundles with "TM-XX" referring to the TDM/TSM component number from the original component list.

Initial evaluation of TSM/TDM impacts will be based on the bundled components. Later, in selecting the alternatives that will be evaluated in the DEIS, specific TSM/TDM strategies that can be unbundled are re-sorted to assure the best performing elements match the selected alternatives.

Table 2-2
Basic TDM/TSM Package

Major Strategy	Individual Strategy	Description	TSM Strategy	TDM Strategy	Option Package
2030 No-Build Projects		The 2030 No-Build includes all planned projects in the region as per the RTC and METRO and serves as the building block of the 2030 TSM Alternative	X	X	Basic
TM-12: Improve the Package of Employer and Governmental TDM Policy Measures	Public Education and Promotion	Transportation agencies, professionals, and the public consider and understand TDM		X	Basic
	Rideshare programs	Rideshare promotion and matching and vanpools		X	Basic
	Bikes/Pedestrian System Support	Improve bicycle/pedestrian planning and facilities across the river	X		Basic
	Carsharing	Encourage carsharing (Flexcar)		X	Basic
	Parking Cash Out	Provide employees who don't drive the cash equivalent of parking subsidies		X	Basic
	Alternative Work Schedules	i.e., compressed work-week		X	Basic
	Telecommuting	Allow employees to work from home to reduce commute trips		X	Basic

Table 2-2
Basic TDM/TSM Package cont.

Major Strategy	Individual Strategy	Description	TSM Strategy	TDM Strategy	Option Package
	Transportation Management Associations	TMAs provide trip reduction services in a commercial or employment center		X	Basic
	Transit/Pedestrian Friendly Urban Design	Develop neighborhoods that encourage walking, bicycling, and transit use	X		Basic
	Trip Reduction Ordinances	Employee commute reduction programs/ services	X	X	Basic
	Transit and Vanpool Fare Subsidies	Employer subsidies		X	Basic
TM-8: Ramp Queue Jump Lanes		Provide a bypass lane at all I-5 on-ramps within the Bridge Influence Area	X		Basic
TM-9: Increased Bus Service		Increased bus service in the I-5 corridor within identified future funding constraints		X	Basic
TM-10: Enhanced Park-and-Ride Capacity		Expand existing P&R capacity or build new P&R capacity	X	X	Basic
TM-11: Enhanced ITS Technology and Management Systems		Enhance Intelligent Transportation Systems within the I-5 corridor	X		Basic
TM-13: Reduced Passenger Travel Time on Interstate MAX		Reduce overall travel-times on Interstate MAX through operational changes		X	Basic
TM-14: Transit Priority Signal System		Preferential signal priority for transit in and serving the I-5 corridor	X		Basic
TM-16: Highway On-Ramp Metering		Meter I-5 on-ramps within the I-5 corridor	X		Basic
TM-18: Ramp Terminal Improvements		Improve capacity at all ramp terminal intersections	X		Basic

Table 2-3
Moderate TDM/TSM Package

Major Strategy	Individual Strategy	Description	TSM Strategy	TDM Strategy	Option Package
Includes all Basic level TDM/TSM strategies plus those identified below					
TM-9: Increased Bus Service	Improve TriMet service levels in the I-5 corridor	Increase Bi-State, North and Northeast Portland service hours to approximately 100,000 annually*		**X**	Moderate
	Improve C-TRAN service levels in the I-5 corridor	Increase local and Bi-State commuter service hours to approximately 500,000 annually-systemwide**		**X**	Moderate
TM-1: Create Northern I-5 Managed Lane through re-striping		Re-stripe I-5 ROW to designate one highway lane per direction for a High Occupancy Vehicle (HOV) or Toll (HOT) lane; buses are not tolled but able to use this lane	**X**		Moderate
TM-3: Create I-5 Managed Lane within the Bridge Influence Area		Manage one existing I-5 lane as a High Occupancy Vehicle (HOV) or Toll (HOT) lane; buses are not tolled but able to use this lane	**X**		Moderate
TM-6: Direct Access Ramps		Provide interchange direct connection between I-5 Managed Lane(s) and other facilities for transit and/or other users	**X**		Moderate
TM-7: Preferential Managed Lane Merge(s)		Give priority to Managed Lanes at general purpose lane merge points within the Bridge Influence Area	**X**		Moderate
TM-17: Arterial Managed Lanes		Build new arterial lanes for transit and/or managed lane use	**X**		Moderate

*Current TriMet service hours for bi-State, north & northeast Portland are…

** Current C-Tran local and bi-State commuter service hours are approximately 375,000 annually.

Table 2-4
Aggressive TDM/TSM Package

Major Strategy	Individual Strategy	Description	TSM Strategy	TDM Strategy	Option Package
Includes all Basic and Moderate level TDM/TSM strategies plus those identified below					
TM-9: Increased Bus Service	Improve TriMet service levels in the I-5 corridor	Increase Bi-State, North, and Northeast Portland service hours to approximately 250,000 annually		**X**	Aggressive
	Improve C-TRAN service levels in the I-5 corridor	Support additional funding opportunities to increase local/bi-State commuter service to approximately 750,000 hours annually		**X**	Aggressive
	Free or Reduced Bus Fares	Implement free or reduced bus fares on all bi-state transit routes		**X**	Aggressive
TM-15: Congestion Pricing on I-5		Congestion pricing of all I-5 lanes	**X**		Aggressive
Congestion Pricing on I-205		Congestion pricing of all I-205 lanes	**X**		Aggressive

3. Developing Alternative Packages

The building blocks and variations are combined to form preliminary project alternative packages that will be further developed and tested against the adopted evaluation criteria. The results of the evaluation will be used to guide the selection of the best alternative packages (or elements of those alternative packages) to be considered in the DEIS.

3.1 Packaging Principles

Ideas from each of the eight component categories are combined to form project alternative packages. The principles used to form the alternative packages include:

1. All components that pass Step A screening are considered for inclusion in one or more alternative packages.

2. Alternative packages should be organized by theme – what is (are) the key feature(s)?

3. Alternative packages should represent a full range of potential transportation solutions within the limits of the components that have passed Step A screening (those that have been determined to address the Purpose and Need).

4. Complementary components should be packaged together where feasible.

5. Alternative packages should be structured to identify strengths and weaknesses of individual components.

6. Well-performing components may be re-packaged with other alternatives for the DEIS.

This packaging step provides the first real opportunity in the process to incorporate potential goals or aspirations into the discussion of specific project alternative packages. Prior steps, such as the adoption of project Vision and Values, the Problem Definition, and Evaluation Criteria set the stage broadly for what the project should accomplish and how the potential alternative packages should be evaluated. At this stage we can start to test how to structure the alternative packages to identify strengths and weaknesses of project components when combined as alternative packages, and the relative benefits, impacts, and costs of the alternative packages.

Alternative packages must illustrate the full range of potential choices. To do that, it is helpful to organize them around a variety of perspectives (or themes). At the May 17, 2006 Task Force meeting, some of the themes that were expressed include:

- Use Vision and Values
- Consider financing requirements for construction and operations
- Provide flexibility to address future needs
- Maximize transit ridership

- Maximize vehicle capacity
- Minimize investment
- Provide for a phased implementation
- Remove short-distance trips from I-5

The project Vision and Values led directly to the development of the Evaluation Criteria, which will be the principal tool for comparing and contrasting the alternative packages. The Evaluation Criteria includes criteria that address financial feasibility (under category 8 – Cost Effectiveness and Financial Resources) and flexibility to adapt to future needs (criteria 10.3 Provide flexibility to accommodate future transportation system improvements).

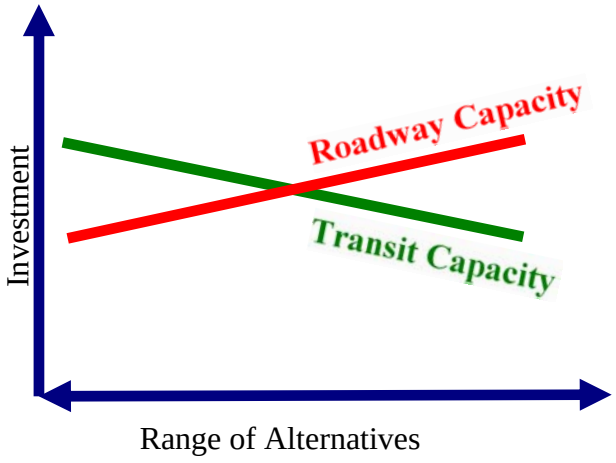
3.2 Range of Alternative Packages

Under the National Environmental Policy Act (NEPA), one of the alternatives considered must be a **no-action** alternative. Although this does not meet the project Purpose and Need, it establishes a baseline for comparison with other alternatives. It will include only existing facilities and services, as well as projects that can be reasonably anticipated for construction in the Metro and Southwest Washington regional transportation plans. Another "baseline" alternative required under NEPA is the TSM Alternative, and it represents a Minimum Investment strategy that focuses on strengthening regional TDM and TSM policies and actions without major capital investments for either roadway or transit capacity (although this would include some additional bus service).

Beyond those initial two alternative packages, others will focus on a mix of investments in transit, roadway capacity, and components from each of the other groups (river crossing, freight, etc.). As an organizing principle, the alternative packages will represent a range of investment scenarios – from those with a transit-intensive focus, to a more balanced approach, to a roadway capacity focus – as shown in the illustration below.

Each of the other perspectives noted above were used to guide the development of the range of alternative packages shown in **Table 3-1**. The remaining alternative packages (#3-12) include the construction of a new bridge and a major investment in transit improvements. The range of alternative packages can be represented by **Figure 3-1**.

Figure 3-1. Packaging Considerations



A couple of points to note: First, all alternatives (other than No-Build and TSM, as noted above) will include a mix of transit and roadway capacity improvements. Second, the range of scenarios is structured to inform the decision process rather than to produce specific DEIS alternatives. Thus, the goal will be to identify the benefits of varying investments in transit as well as varying levels of roadway capacity.

Note: The 12 staff-recommended alternative packages represented in this matrix sufficiently represent, and support technical work to test, the range of component combinations. As needed, results can be used to assess other possible component combinations not expressly represented in the list of 12. Best performing elements of each alternative package will be available for repackaging and/or refining within the range of alternatives advanced into the Draft EIS.

Columbia River CROSSING

Table 3-1. Draft Alternative Packaging Matrix

Revision date; June 7, 2006

			Alternative Packages											
			Existing Bridges Only		Supplemental Bridge with Existing Bridges					Replacement Bridge				
			#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12
Alternative Package Themes			No Action	Minimum Investment: TDM/ TSM Emphasis	Maximum Transit Ridership, Minimum I-5 improvements	Balanced Transit/Highway Improvements with LRT	Balanced Transit/Highway Improvements with BRT-Full	Balanced Transit/Highway Improvements with BRT-Lite	Maximum Vehicle Capacity	Balanced Transit/Highway Improvements with LRT	Balanced Transit/Highway Improvements with LRT	Balanced Transit/Highway Improvements with BRT-Full	Balanced Transit/Highway Improvements with BRT-Lite	Maximum Vehicle Capacity
High Capacity Transit Mode across Col. River			None	None	LRT	LRT	BRT-full	None	None	LRT	LRT	BRT-full	None	None
Other Transit Mode(s) across bridge			Express bus, local bus	Express bus, local bus	Express bus, local bus	Local bus	Local bus	BRT-Lite	Express bus	Express bus, local bus	Local bus	Local bus	BRT-Lite	Express Bus, local bus
Function of Existing Bridges			I-5 (GP lanes)	I-5 (GP lanes)	I-5 (GP lanes)	Arterial+LRT	Arterial+BRT	Arterial + BRT	Arterial	N/A	N/A	N/A	N/A	N/A
Function of New Bridge			N/A	N/A	Arterial + LRT	I-5 NB &SB (w/ ML)	I-5 NB &SB (w/ ML)	I-5 NB &SB (w/ ML)	I-5 NB & SB (all GP)	I-5 NB &SB (w/ ML) & LRT	I-5 NB &SB (w/ ML) & LRT	I-5 NB &SB (w/ ML) & BRT	I-5 NB &SB (w/ ML) & BRT	I-5 w GP lanes & Express Bus
RC Components	RC-1	Repl/Down/Low/Mov												
	RC-2	Repl/Up/Low/Mov												
	RC-3	Repl/Down/Mid								✓	✓		✓	
	RC-4	Repl/Up/Mid										✓		✓
	RC-7	Supl/Down/Low/Mov												
	RC-8	Supl/Up/Low/Mov												
	RC-9	Supl/Down/Mid				✓	✓	✓	✓					
	RC-13	Tunnel												
	RC-23	Arterial (New Bridge)			✓									
Roadways North/South	RNS-1	Interchange Improvements				✓	✓	✓	✓	✓	✓	✓	✓	✓
	RNS-2	Arterial improvements			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	RNS-3	I-5 Safety Improvements		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Transit Components	TR-1	Express Bus in GP [2]	✓	✓	✓				✓					✓
	TR-2	Express Bus in Managed Lanes						✓		✓			✓	
	TR-3	BRT-Lite						✓					✓	
	TR-4	BRT-Full					✓					✓		
	TR-5	LRT			✓	✓				✓	✓			
	TR-6	Streetcar												
	TR-11	Commuter Rail												
Bicycle/ Pedestrian Components	B/P-1	Enhance Existing		✓		✓	✓				✓			
	B/P-2	Path on New Bridge			✓			✓	✓	✓		✓	✓	✓
	B/P-3	Path-only Bridge												
	B/P-4	Vanc. Connectivity		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	B/P-5	Hayden Is. Conn.		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	B/P-6	N. Portland Pathway		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Freight Components	F-1	Freight in Managed Lanes				✓	✓				✓	✓		
	F-2	Fr. Bypass Lanes			✓	✓	✓				✓	✓		
	F-3	Freight Restrictions												
	F-4	Inc. Truck Size												
	F-5	Fr. DA Ramps										✓		
TSM/TDM Components	T-B	Basic							✓					✓
	T-M	Moderate		✓				✓					✓	
	T-A	Aggressive			✓[1]	✓	✓			✓	✓	✓		

1. Assumes no managed lane beyond the existing northbound I-5 HOV lane in Portland.
2. Includes use of existing northbound HOV lane in Portland.

Components that may be screened out by analyses during or after the packaging process.

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4. Alternative Package Descriptions

This section briefly describes each of the 12 alternative packages, including an overview of what the alternative package consists of and the primary components from each of the eight (8) transportation categories.

Alternatives were packaged using the principles described in Section 3.1 of this report. The project team built the alternative packages from work completed to date and incorporated values expressed by the Task Force at their May 22, 2006 meeting.

The project team believes the range of alternative packages sufficiently represents and supports technical work to test the range of component combinations. As needed, results can be used to assess other possible component combinations not expressly represented in the list of 12 alternative packages. Best performing elements of each alternative package will be available for repackaging and/or refining within the range of alternatives advanced into the Draft EIS.

4.1 Alternative Package #1: 2030 No Action

Overview

This alternative package includes planned improvements to the regional transportation system through the year 2030 for which the need, commitment, and financing are identified and are reasonably expected to be implemented. All transportation improvements included in the No-Action alternative package are included in either Metro's 2025 Regional Transportation Plan (including amendments) or the Southwest Washington Regional Transportation Council's (RTC) 2030 Metropolitan Transportation Plan (MTP).

River Crossing

Under this alternative package, the existing I-5 bridges would be retained, with three general-purpose traffic lanes in each direction.

Roadways North and South

With the exception of widening I-5 to six lanes from Lombard Street to Victory Boulevard, the No-Action alternative package does not assume any major capacity projects on I-5 through the Bridge Influence Area. Outside the Bridge Influence Area, there are some minor I-5 capacity enhancements and several major maintenance projects, specifically identified in the Portland Metro and Southwest Washington RTC financially constrained regional transportation plans.

Transit

Bi-state transit service would consist of C-TRAN express buses and TriMet local service. Transit service growth and/or reductions to the year 2030 will be allocated system-wide among both transit agencies, unless specifically identified in either regional plan. In addition, neither the RTP nor the MTP anticipate significant new funding for new bi-state transit services.

Bicycle/Pedestrian

No significant projects are currently planned, nor has funding been secured for either bicycle or pedestrian improvements in the I-5 Bridge Influence Area.

Freight

No freight-specific improvements are included in this alternative package.

Transportation System/Transportation Demand Management (TSM/TDM)

The alternative package consists of several TDM/TSM policies and actions that collectively represent a less robust TDM/TSM package than the defined "Basic" level. The measures included in the 2030 No-Action alternative are:

- Additional park-and-ride lots and capacity;
- Enhanced Intelligent Transportation Systems (ITS);
- A package of TSM/TDM policy measures; and
- Additional ramp meters in Washington.

A package of TSM/TDM policy measures, included in both Metro's 2025 Regional Transportation Plan (including amendments) or the RTC's 2030 MTP, will reduce travel demand and improve transportation system performance.

4.2 Alternative Package #2: 2030 TSM/TDM Alternative Package

Overview

This alternative package represents the "best that can be done" to manage overall transportation demand and improve the performance of the I-5 transportation system without building a new Columbia River crossing. The TSM alternative package does not make major capital investments in the Bridge Influence Area beyond levels needed to support the identified moderate TSM/TDM bundle for this alternative package.

River Crossing

Under this alternative package, the existing I-5 bridges would be retained, with three general-purpose traffic lanes in each direction.

Roadways North and South

With the exception of widening I-5 to six lanes from Lombard Street to Victory Boulevard, the TSM/TDM alternative package does not assume any major capacity projects on I-5 through the Bridge Influence Area beyond levels needed to support the identified moderate TSM/TDM bundle for this alternative package. Some specific I-5 safety projects would be undertaken within the Bridge Influence Area to address roadway design deficiencies and reduce crash potential. Outside the Bridge Influence Area, there are some minor I-5 safety improvements and several major maintenance projects, which are specifically identified in the Portland Metro and Southwest Washington RTC financially constrained regional transportation plans. This alternative package assumes that the existing I-5 northbound HOV lane would be retained and that I-5 would be re-striped wherever possible to provide an additional lane for managed use.

Transit

Bi-state transit services will consist of C-TRAN express buses, C-TRAN local buses, and TriMet local service. Existing transit services would grow substantially to the year 2030 in order to better manage demand. Park-and-ride facilities would be improved along the I-5 corridor, and other transit passenger facilities would be constructed to make transit accessible to more residents.

Bicycle/Pedestrian

Bicycle and pedestrian improvements would be made on the existing I-5 bridge(s) where possible in an effort to enhance the current bike/pedestrian area. There would also be increased connections into downtown Vancouver, Hayden Island, and Metro's 40-mile loop pathway.

Freight

Freight vehicles would benefit from enhanced ITS in the corridor, TDM measures, and arterial street improvements. However, no freight specific improvements are included in this alternative package.

Transportation System/Transportation Demand Management (TSM/TDM)

The alternative package consists of a moderate TSM/TDM bundle as described in Table 2-3 of this report. The managed lane system would include a re-striping of I-5 in both directions between approximately Fourth Plain Boulevard and 139th Street in Clark County to provide an additional lane and resulting extension of the managed lane system north of the river. The managed lane system would include preferential managed lane merges at both ends. In addition, this alternative package would include selected ramp queue jumps for transit vehicles.

4.3 Alternative Package #3: New Supplemental Arterial Bridge with LRT and an Aggressive TDM/TSM Strategy

Overview

This alternative package includes construction of a new downstream arterial bridge which would carry arterial and transit traffic between Oregon and Washington, coupled with an LRT double-track extension from the Expo Center to Vancouver. Interstate traffic would remain on the existing I-5 bridges in general purpose lanes. The alternative package includes congestion pricing to maintain a consistent level of service for the new facilities and an aggressive set of TSM/TDM measures to manage travel demand.

River Crossing

The new supplemental arterial bridge would be located downstream of the existing I-5 bridges and is assumed to be a mid-level fixed-span structure. The exact location and height would depend on favorable highway geometry and ramp locations. The Hayden Island interchange on the existing I-5 bridge would be removed, with I-5 access to Hayden Island from the new arterial crossing and/or from the Marine Drive interchange.

Roadways North and South

The alternative package includes improvements both north and south of the river required to make the arterial connections to the new river crossing. The improvements would include arterial street and I-5 safety improvements, with limited interchange improvements serving the supplemental bridge. Outside the Bridge Influence Area, there are some minor I-5 safety improvements and several major maintenance projects, which are specifically identified in the Portland Metro and Southwest Washington RTC financially constrained regional transportation plans. This alternative package assumes only the continuation of the northbound HOV lane Portland between Alberta Street and Marine Drive.

Transit

LRT would be extended from the Expo Center to Vancouver on the new arterial bridge and would serve local and regional transit travel. Local bus connections to LRT stations would also be increased. Express buses carrying passengers from existing and/or new Clark County park-and-rides to downtown Portland would operate in general-purpose lanes on the existing I-5 bridge beyond the existing northbound HOV lane in Portland. Additional bi-state transit services will consist of C-TRAN express and shuttle services and TriMet local service. Existing transit services would grow substantially to the year 2030 in order to better manage demand-requiring additional new revenue sources. Park-and-ride facilities would be improved along the I-5 corridor, and other transit passenger facilities would be constructed to make transit accessible to more residents.

Bicycle/Pedestrian

A new bicycle and pedestrian path would be provided on the new arterial bridge, and connections would be improved to North Portland, Hayden Island, and downtown Vancouver.

Freight

Freight vehicles may benefit from potentially increased mobility on I-5 and arterial street improvements. In addition, this alternative package would include freight bypass lanes in congested locations where trucks have difficulty merging on and off I-5.

Transportation System/Transportation Demand Management (TSM/TDM)

The alternative package consists of an aggressive TSM/TDM bundle as described in Table 2-4 of this report except that it does not include I-5 managed lanes beyond what exists today. This alternative package would include ramp queue jumps for transit vehicles where ramp meters operate, managed lanes on arterial streets for transit use, and transit priority signal systems. Congestion pricing would be implemented for all travel lanes on the new arterial bridge and existing I-5 bridge to maintain an appropriate and consistent level of service.

4.4 Alternative Package #4: New I-5 Supplemental Downstream Bridge with LRT and I-5 Managed Lanes

Overview

This alternative package includes construction of a new I-5 supplemental, downstream bridge which would carry I-5 traffic with both general purpose and managed lanes. The existing I-5 bridges would be retained, with the western bridge carrying an LRT double-track extension to downtown Vancouver and the eastern bridge carrying arterial traffic between Oregon and Washington. All I-5 traffic would be carried on the supplemental new bridge. The alternative package includes congestion pricing to maintain a consistent level of service for the new facilities.

River Crossing

The new supplemental downstream I-5 bridge is assumed to be a mid-level fixed-span structure. The exact location and height would depend on favorable highway geometry and interchange ramp locations.

Roadways North and South

The alternative package includes improvements both north and south of the river. Improvements would include interchange reconfigurations, arterial street improvements, and I-5 safety improvements.

Transit

LRT would be extended from the Exposition LRT Station in Portland to a terminal station north of downtown Vancouver on the existing western I-5 bridge. LRT would have the same service characteristics as TriMet's 44-mile regional LRT system. LRT would serve both local and regional travel and significant new local bus service would connect and support the new LRT service. Additional bi-state transit service would include C-TRAN and TriMet local buses serving primarily local travel needs.

Bicycle/Pedestrian

Bicycle and pedestrian improvements would be made on the existing I-5 bridge(s) in conjunction with the adaptive reuse of the structure for light rail and arterial traffic. Connections would be improved to North Portland, Hayden Island, and downtown Vancouver.

Freight

This alternative package would include freight-only lanes on the new supplemental highway bridge, and would include freight bypass lanes in congested locations where trucks have difficulty merging on and off I-5. Arterial street improvements would also improve truck access to and from I-5.

Transportation System/Transportation Demand Management (TSM/TDM)

The alternative package consists of an aggressive TSM/TDM bundle as described in Table 2-4 of this report.

A single managed lane in each direction would be provided on the new I-5 supplemental bridge and within the Bridge Influence Area. The managed lane system assumes that I-5 would be re-striped wherever possible to provide an additional lane for managed use between 139th Street in Clark County and approximately Alberta Street (for northbound I-5) or Victory boulevard (for southbound I-5). The managed lane system would include preferential managed lane merges at each end. In addition, this alternative package would include selected ramp queue jumps for transit vehicles where ramp meters operate.

Congestion pricing would be implemented for all travel lanes on the supplemental new I-5 bridge and existing I-5 bridge to maintain an appropriate and consistent level of service.

4.5 Alternative Package #5: New I-5 Supplemental Downstream Bridge with BRT Full in Exclusive Lanes and I-5 Managed Lanes

Overview

This alternative package includes construction of a new I-5 supplemental, downstream bridge which would carry I-5 traffic in both general purpose and managed lanes. The existing I-5 bridges would be retained, with the western bridge carrying BRT Full in exclusive lanes and the eastern bridge carrying arterial traffic between Oregon and Washington. The alternative package includes congestion pricing to maintain a consistent level of service for the new facilities.

River Crossing

The new supplemental downstream I-5 bridge is assumed to be a mid-level fixed-span structure. The exact location and height would depend on favorable highway geometry and interchange ramp locations. The new highway bridge would include a managed lane.

Roadways North and South

The alternative package includes improvements both north and south of the river. Improvements would include interchange reconfigurations, arterial street improvements, and I-5 safety improvements.

Transit

BRT Full would serve local and regional travel needs, and would operate from a terminal station north of downtown Vancouver to downtown Portland in a mixture of exclusive and general purpose lanes. Within the bridge influence area BRT Full would operate in an exclusive running way and would connect downtown Vancouver to the Exposition Center LRT station south of Hayden Island. Over the Columbia River, BRT Full would operate in an exclusive running way on the existing western I-5 bridge. South of the Exposition Center LRT Station, BRT Full would continue to downtown Portland along I-5 in general purpose travel lanes. Within the bridge influence area the BRT Full system would have light-rail type stations and performance. Significant local bus service would connect and support the new BRT Full service. Additional bi-state transit service would include C-TRAN and TriMet local buses serving primarily local travel needs.

Bicycle/Pedestrian

Bicycle and pedestrian improvements would be made on the existing I-5 bridge(s) in conjunction with the adaptive reuse of the structure for BRT Full and arterial traffic. Connections would be improved to North Portland, Hayden Island, and downtown Vancouver.

Freight

This alternative package would include freight-only lanes on the new supplemental highway bridge, and would include freight bypass lanes in congested locations where trucks have difficulty merging on and off I-5. Arterial street improvements would also improve truck access to and from I-5.

Transportation System/Transportation Demand Management (TSM/TDM)

The alternative package consists of an aggressive TSM/TDM bundle as described in Table 2-4 of this report.

A single managed lane in each direction would be provided on the new I-5 supplemental bridge and within the Bridge Influence Area. The managed lane system assumes that I-5 would be re-striped wherever possible to provide for managed lanes between 139th Street in Clark County and approximately Alberta Street (for northbound I-5) or Victory boulevard (for southbound I-5). The managed lane system would include preferential managed lane merges north and south. In addition, this alternative package would include selected ramp queue jumps for transit vehicles where ramp meters operate.

Congestion pricing would be implemented for all travel lanes on the supplemental new I-5 bridge and existing I-5 bridge to maintain an appropriate and consistent level of service.

4.6 Alternative Package #6: New I-5 Supplemental Downstream Bridge with BRT-LITE in Managed Lanes

Overview

This alternative package includes construction of a new supplemental, downstream bridge which would carry I-5 traffic with both general purpose lanes and a managed lane. The existing I-5 bridges would be retained and carry arterial traffic and BRT-Lite in general purpose travel lanes. BRT Lite would operate between downtown Portland and the Salmon Creek park-and-ride in both I-5 managed and general purpose lanes.

River Crossing

The new supplemental downstream I-5 bridge is assumed to be a mid-level fixed-span structure. The exact location and height of the new highway bridge would depend on favorable highway geometry and interchange ramp locations. The existing bridges would carry arterial traffic and managed lanes for BRT.

Roadways North and South

The alternative package includes improvements both north and south of the river. Improvements would include interchange reconfigurations, arterial street improvements, and I-5 safety improvements.

Transit

BRT Lite would serve local and regional travel needs, and would operate between downtown Portland and the Salmon Creek park-and-ride in both managed and general purpose lanes. The suburban Clark County-based service would operate in I-5 managed lanes from the 139th Street interchange south to downtown Vancouver. In downtown Vancouver BRT Lite would operate in general purpose arterial lanes. Over the Columbia River BRT Lite would operate in a general purpose lane on the existing I-5 bridge. South of the Victory Blvd. interchange BRT Lite would continue to downtown Portland along I-5 in general purpose lanes. The BRT Lite system would have upgraded buses, passenger stops, and park-and-rides. Some point-to-point express buses operating in I-5 managed lanes would continue to carry passengers from existing Clark County park-and-ride lots to downtown Portland, but the express bus service would not be as robust as in other alternatives due to the new BRT Lite service. Significant local bus service would connect and support the new BRT Lite service. Additional bi-state transit service would include C-TRAN and TriMet local buses serving primarily local travel needs.

Bicycle/Pedestrian

A new bicycle and pedestrian path would be provided on the new NB I-5 bridge, and connections would be improved to North Portland, Hayden Island, and downtown Vancouver.

Freight

Freight vehicles would benefit from increased mobility on I-5 and arterial street improvements. However, no freight specific improvements would be included in this alternative package.

Transportation System/Transportation Demand Management (TSM/TDM)

The alternative package consists of a moderate TSM/TDM bundle as described in Table 2-3 of this report.

A single managed lane in each direction would be provided on the new I-5 supplemental bridge and within the Bridge Influence Area. The managed lane system assumes that I-5 would be re-striped wherever possible to provide for managed lanes between 139th Street in Clark County and approximately Alberta Street (for northbound I-5) or Victory boulevard (for southbound I-5). The managed lane system would include preferential managed lane merges north and south. In addition, this alternative package would include selected ramp queue jumps for transit vehicles where ramp meters operate.

4.7 Alternative Package #7: New I-5 Supplemental Downstream Bridge with Express Buses in I-5 General Purpose Lanes

Overview

This alternative package includes construction of a new I-5 supplemental, downstream bridge which would carry I-5 traffic with general purpose lanes. The existing I-5 bridges would be retained and carry directional arterial traffic. The supplemental bridge would carry all I-5 traffic in general purpose lanes. Buses would operate in mixed traffic. The alternative package includes increased bus service and transit priority at traffic signals to provide time savings for transit riders.

River Crossing

The new, supplemental, downstream I-5 bridge is assumed to be a mid-level fixed-span structure. The exact location would depend on favorable highway geometry and interchange ramp locations.

Roadways North and South

The alternative package includes improvements both north and south of the river. Improvements would include interchange reconfigurations, arterial street improvements, and I-5 safety improvements.

Transit

Express buses carrying passengers from existing and/or new Clark County park-and-rides to downtown Portland would operate in general lanes on the new I-5 supplemental bridge and existing bridges. An increased number of express buses would travel between Vancouver and downtown Portland primarily in the peak period. Local bus connections to express bus stops would also be increased.

Bicycle/Pedestrian

Bicycle and pedestrian improvements would be made on the existing I-5 bridge(s) in conjunction with the adaptive reuse of the structure for southbound I-5 traffic. Connections would be improved to North Portland, Hayden Island, and downtown Vancouver.

Freight

Freight vehicles would benefit from increased mobility on I-5 and arterial street improvements. However, no freight specific improvements would be included in this alternative package.

Transportation System/Transportation Demand Management (TSM/TDM)

The alternative package consists of a basic TSM/TDM bundle as described in Table 2-2 of this report.

Increased bus service would serve expanded park-and-ride facilities. Ramp terminal capacity and on-ramp metering would be implemented and transit could be given priority at the meters. Buses would receive signal priority over general traffic at key intersections to gain travel time advantage. A package of TSM/TDM policy measures would be included to reduce travel demand and improve transportation system performance.

4.8 Alternative Package #8: New I-5 Replacement Downstream Bridge with LRT and I-5 Managed Lanes

Overview

This alternative package includes construction of a new I-5 replacement, downstream bridge which would carry I-5 traffic with both general purpose and managed lanes and an LRT double-track extension from from the Exposition Center LRT Station in Portland. The existing I-5 bridges would be removed. North of the bridge, the LRT line would serve downtown Vancouver and Clark College before returning to the I-5 right-of-way and terminating north of the Bridge Influence Area. Some additional express bus service would operate in managed lanes on I-5. The alternative package includes congestion pricing to maintain a consistent level of service for the new facilities.

River Crossing

The new downstream I-5 bridge would be a mid-level fixed-span structure. The exact location and height would depend on favorable highway geometry and interchange ramp locations.

Roadways North and South

The alternative package includes improvements both north and south of the river. Improvements would include interchange reconfigurations, arterial street improvements, and I-5 safety improvements.

Transit

LRT would be extended from the Exposition Center LRT station onto the west side of the new I-5 bridge to downtown Vancouver, then head east to Clark College before reentering the I-5 right-of-way and terminating north of the Bridge Influence Area. LRT would serve local and regional transit travel. Express buses carrying passengers from existing and/or new Clark County park-and-rides to downtown Portland would operate in managed lanes within the Bridge Influence Area, but express bus service would not be as robust as in other alternative packages due to the LRT service. Local bus connections to LRT stations would be also be increased. Additional bi-state transit service would include C-TRAN and TriMet local buses serving primarily local travel needs.

Bicycle/Pedestrian

A new multi-use path(s) for bicyclists and pedestrians would be provided on the new bridge. Improved connections to Hayden Island, downtown Vancouver, and North Portland would be provided.

Freight

Freight vehicles would benefit from increased mobility on I-5 and arterial street improvements. In addition, this alternative package would include freight bypass lanes in congested locations where trucks have difficulty merging on and off I-5.

Transportation System/Transportation Demand Management (TSM/TDM)

The alternative package consists of an aggressive TSM/TDM bundle as described in Table 2-4 of this report.

A single managed lane in each direction would be provided on the new I-5 replacement bridge and within the Bridge Influence Area. The managed lane system assumes that I-5 would be re-striped wherever possible to provide for managed lanes between 139th Street in Clark County and approximately Alberta Street (for northbound I-5) or Victory boulevard (for southbound I-5). The managed lane system would include preferential managed lane merges north and south. In addition, this alternative package would include selected ramp queue jumps for transit vehicles where ramp meters operate.

Congestion pricing would be implemented for all travel lanes on the new I-5 bridge to maintain an appropriate and consistent level of service.

4.9 Alternative Package #9: New I-5 Replacement Downstream Bridge with LRT and I-5 Managed Lanes

Overview

This alternative package includes construction of a new I-5 replacement, downstream bridge which would carry I-5 traffic with both general purpose and managed lanes and an LRT double-track extension from the Exposition Center LRT Station in Portland. The existing I-5 bridges would be removed. North of the bridge, the LRT line would serve downtown Vancouver and Clark College before returning to the I-5 right-of-way and terminating north of the Bridge Influence Area. The alternative package includes congestion pricing to maintain a consistent level of service for the new facilities.

River Crossing

The new downstream I-5 bridge would be a mid-level fixed-span structure. The exact location and height would depend on favorable highway geometry and interchange ramp locations.

Roadways North and South

The alternative package includes improvements both north and south of the river. Improvements would include interchange reconfigurations, arterial street improvements, and I-5 safety improvements.

Transit

LRT would be extended from the Exposition Center LRT Station in Portland to a terminal station north of downtown Vancouver on a new, downstream replacement I-5 bridge. LRT would have the same service characteristics as TriMet's 44-mile regional LRT system. LRT would serve both local and regional travel and significant new local bus service would connect and support the new LRT service. Additional bi-state transit service would include C-TRAN and TriMet local buses serving primarily local travel needs.

Bicycle/Pedestrian

A new multi-use path(s) for bicyclists and pedestrians would be provided on the new bridge. Improved connections to Hayden Island, downtown Vancouver, and North Portland would be provided.

Freight

This alternative package would include freight-only lanes on the new replacement highway bridge, and would include freight bypass lanes in congested locations where trucks have difficulty merging on and off I-5. Arterial street improvements would also improve truck access to and from I-5.

Transportation System/Transportation Demand Management (TSM/TDM)

The alternative package consists of an aggressive TSM/TDM bundle as described in Table 2-4 of this report.

A single managed lane in each direction would be provided on the new I-5 replacement bridge and within the Bridge Influence Area. The managed lane system assumes that I-5 would be re-striped wherever possible to provide for managed lanes between 139th Street in Clark County and approximately Alberta Street (for northbound I-5) or Victory boulevard (for southbound I-5). The managed lane system would include preferential managed lane merges north and south. In addition, this alternative package would include selected ramp queue jumps for transit vehicles where ramp meters operate.

Congestion pricing would be implemented for all travel lanes on the new I-5 bridge to maintain an appropriate and consistent level of service.

4.10 Alternative Package #10: New I-5 Replacement Upstream Bridge with BRT- Full and I-5 Managed Lanes

Overview

This alternative package includes construction of a new I-5 replacement, upstream bridge which would carry I-5 traffic in general purpose lanes. Within the bridge influence area BRT Full would have an exclusive running way with light rail-like stations and performance. Direct access ramps would provide for direct access by buses on and off I-5. The alternative package includes congestion pricing to maintain a consistent level of service for the new facilities.

River Crossing

The new replacement upstream I-5 bridge would be a mid-level fixed-span structure. The exact location and height would depend on favorable highway geometry and interchange ramp locations.

Roadways North and South

The alternative package includes improvements both north and south of the river. Improvements would include interchange reconfigurations, arterial street improvements, I-5 safety improvements, and a barriered transit-only lane.

Transit

BRT Full would serve local and regional travel needs, and would operate from a terminal station north of downtown Vancouver to downtown Portland in a mixture of exclusive and general purpose lanes. Within the bridge influence area, BRT Full would operate in an exclusive running way and would connect downtown Vancouver to the Exposition Center LRT station south of Hayden Island. Over the Columbia River, BRT Full would operate in an exclusive running way on a new replacement upstream I-5 bridge. South of the Exposition Center LRT Station, BRT Full would continue to downtown Portland along I-5 in general purpose travel lanes. Within the bridge influence area the BRT Full system would have light-rail type stations and performance. Significant local bus service would connect and support the new BRT Full service. Additional bi-state transit service would include C-TRAN and TriMet local buses serving primarily local travel needs.

Bicycle/Pedestrian

A new bicycle and pedestrian path would be provided on the new NB I-5 bridge, and connections would be improved to North Portland, Hayden Island, and downtown Vancouver.

Freight

This alternative package would include freight-only lanes on the new replacement highway bridge, and would include freight bypass lanes and direct freight access ramps at key interchanges in congested locations where trucks have difficulty merging on and off I-5. Arterial street improvements would also improve truck access to and from I-5.

Transportation System/Transportation Demand Management (TSM/TDM)

The alternative package consists of an aggressive TSM/TDM bundle as described in Table 2-4 of this report.

A single managed lane in each direction would be provided on the new I-5 replacement bridge and within the Bridge Influence Area. The managed lane system assumes that I-5 would be re-striped wherever possible to provide for managed lanes between 139th Street in Clark County and approximately Alberta Street (for northbound I-5) or Victory boulevard (for southbound I-5). The managed lane system would include preferential managed lane merges north and south. In addition, this alternative package would include selected ramp queue jumps for transit vehicles where ramp meters operate.

Congestion pricing would be implemented for all travel lanes on the new I-5 bridge to maintain an appropriate and consistent level of service.

4.11 Alternative Package #11: New I-5 Downstream Replacement Bridge with BRT-LITE in I-5 Managed Lanes

Overview

This alternative package includes construction of a new I-5 downstream, mid-level bridge, which would carry I-5 traffic in both general purpose and managed lanes. Under this scenario, the existing I-5 bridges would be removed. BRT Lite would operate between downtown Portland and the Salmon Creek park-and-ride in both I-5 managed and general purpose lanes.

River Crossing

The replacement downstream I-5 bridge would be a mid-level fixed-span structure. The exact location and height would depend on favorable highway geometry and interchange ramp locations.

Roadways North and South

The alternative package includes improvements both north and south of the river. Improvements would include interchange reconfigurations, arterial street improvements, and I-5 safety improvements.

Transit

BRT Lite would serve local and regional travel needs, and would operate between downtown Portland and the Salmon Creek park-and-ride in both managed and general purpose travel lanes. The suburban Clark County-based service would operate in I-5 managed lanes from the 139th Street interchange south to downtown Vancouver. In downtown Vancouver, BRT Lite would operate in general purpose arterial lanes. Over the Columbia River, BRT Lite would operate in a managed lane on a new downstream I-5 replacement bridge. South of the Victory Blvd. interchange, BRT Lite would continue to downtown Portland along I-5 in general purpose travel lanes. The BRT Lite system would have upgraded buses, passenger stops, and park-and-ride stations. Some point-to-point express buses operating in I-5 managed lanes would continue to carry passengers from existing Clark County park-and-ride lots to downtown Portland, but the express bus service would not be as robust as in other alternatives due to the new BRT Lite service. Significant local bus service would connect and support the new BRT Lite service. Additional bi-state transit service would include C-TRAN and TriMet local buses serving primarily local travel needs.

Bicycle/Pedestrian

A new bicycle and pedestrian path would be provided on the new NB I-5 bridge, and connections would be improved to North Portland, Hayden Island, and downtown Vancouver.

Freight

Freight vehicles will benefit from increased mobility on I-5 and arterial street improvements. However, no freight specific improvements would be included in this alternative package.

Transportation System/Transportation Demand Management (TSM/TDM)

The alternative package consists of a moderate TSM/TDM bundle as described in Table 2-3 of this report.

A single managed lane in each direction would be provided on the new I-5 replacement bridge and within the Bridge Influence Area. The managed lane system assumes that I-5 would be re-striped wherever possible to provide for managed lanes between 139th Street in Clark County and approximately Alberta Street (for northbound I-5) or Victory boulevard (for southbound I-5). The managed lane system would include preferential managed lane merges north and south. In addition, this alternative package would include selected ramp queue jumps for transit vehicles where ramp meters operate.

4.12 Alternative Package #12: New I-5 Upstream Replacement Bridge with Express Buses in I-5 General Purpose Lanes

Overview

This alternative package includes construction of a new I-5 upstream, mid-level bridge, which would carry I-5 traffic in general purpose lanes. Under this scenario, the existing I-5 bridges would be removed and replaced. The alternative package also includes many additional demand management measures and capital improvements to maintain a consistent level of service for the new facilities.

River Crossing

The replacement upstream I-5 bridge would be a mid-level fixed-span structure. The exact location and height would depend on favorable highway geometry and interchange ramp locations.

Roadways North and South

The alternative package includes improvements both north and south of the river. Improvements would include interchange reconfigurations, arterial street improvements, and I-5 safety improvements.

Transit

Express buses carrying passengers from existing and/or new Clark County park-and-rides to downtown Portland would operate in general purpose lanes on a new I-5 bridge. An increased number of express buses would travel between Vancouver and downtown Portland, primarily in the peak period. Local bus connections to express bus stops would also be increased.

Bicycle/Pedestrian

A new bicycle and pedestrian path would be provided on the new NB I-5 bridge, and connections would be improved to North Portland, Hayden Island, and downtown Vancouver.

Freight

Freight vehicles will benefit from increased mobility on I-5 and arterial street improvements. However, no freight specific improvements would be included in this alternative package.

Transportation System/Transportation Demand Management (TSM/TDM)

The alternative package consists of a basic TSM/TDM bundle as described in Table 2-2 of this report.

Increased bus service would serve expanded park-and-ride facilities. Ramp terminal capacity and on-ramp metering would be implemented and transit could be given priority at the meters. Buses would receive signal priority over general traffic at key intersections to gain travel time advantage. A package of TSM/TDM policy measures would be included to reduce travel demand and improve transportation system performance.

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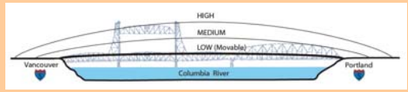
5. Next Steps – Alternative Package Study and Results

During summer/fall 2006, the project team will complete travel demand forecasting, conceptual design, and evaluation of the alternative packages. Evaluation will be conducted in accordance with the Task Force-adopted evaluation criteria established for this project. This work will be compiled in a report of alternative package performance and ranking for Task Force and public review and comment prior to initiating the draft EIS process.

Based on what is learned from study of the alternative packages and feedback from the Task Force and the public, the most promising alternative packages and features will be advanced or repackaged and refined to form the range of alternatives advanced into the DEIS.

	Alternative Packages												
	Existing Bridges Only 		Supplemental Bridge with Existing Bridges 					Replacement Bridge 				
	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	
Alternative Package Themes	No Action	Minimum Investment: TDM/ TSM Emphasis	Maximum Transit Ridership, Minimum I-5 improvements	Balanced Transit/Highway Improvements with LRT	Balanced Transit/Highway Improvements with BRT-Full	Balanced Transit/Highway Improvements with BRT-Lite	Maximum Vehicle Capacity	Balanced Transit/Highway Improvements with LRT	Balanced Transit/Highway Improvements with LRT	Balanced Transit/Highway Improvements with BRT-Full	Balanced Transit/Highway Improvements with BRT-Lite	Maximum Vehicle Capacity	
High Capacity Transit Mode across Col. River	None	None	LRT	LRT	BRT-full	None	None	LRT	LRT	BRT-full	None	None	
Other Transit Mode(s) across bridge	Express bus, local bus	Express bus, local bus	Express bus, local bus	Local bus	Local bus	BRT-Lite	Express bus	Express bus, local bus	Local bus	Local bus	BRT-Lite	Express Bus, local bus	
Function of Existing Bridges	I-5 (GP lanes)	I-5 (GP lanes)	I-5 (GP lanes)	Arterial+LRT	Arterial+BRT	Arterial + BRT	Arterial	N/A	N/A	N/A	N/A	N/A	
Function of New Bridge	N/A	N/A	Arterial + LRT	I-5 NB &SB (w/ ML)	I-5 NB &SB (w/ ML)	I-5 NB &SB (w/ ML)	I-5 NB & SB (all GP)	I-5 NB &SB (w/ ML) & LRT	I-5 NB &SB (w/ ML) & LRT	I-5 NB &SB (w/ ML) & BRT	I-5 NB &SB (w/ ML) & BRT	I-5 w GP lanes & Express Bus	

LRT- Light Rail

BRT- Bus Rapid Transit:

ML- Managed Lane
(e.g. freight use, high occupancy vehicle **(HOV)** use, high occupancy toll (**HOT)** use)

GP- General Purpose
(available to all auto users)

TDM- Transportation demand management

TSM- Transportation system management

NB- Northbound

SB- Southbound

Columbia River CROSSING

A Quick Guide to the Ideas

The Columbia River Crossing project analyzed 23 different ideas to improve or replace the I-5 Bridge and 14 different ideas to improve public transit. Nine of the "crossing" ideas and seven of the public transit ideas are recommended by the Task Force to move forward for additional evaluation. The following is a quick overview of the initial screening process and the ideas.

Initial Screening:

All the ideas were considered and assessed against several questions taken from the project's "problem definition." The ideas that passed all six questions were advanced for further study.

We looked at each **Public Transit** idea (below) and asked, "Would this idea…"

1) Increase traffic capacity or decrease traffic?
2) Improve public transit?

TRANSIT

PUBLIC TRANSIT Ideas, Screening Results, and Task Force Recommendations

COMPONENTS		COMPONENT SCREENING RESULTS							TASK FORCE RECOMMENDATIONS
ID	NAME	Q.1	Q.2	Q.3	Q.4	Q.5	Q.6	Overall	
TR-1	Express Bus in General Purpose (GP) lanes	P	P	NA	U	NA	NA	P	Advance
TR-2	Express Bus in Managed Lanes	P	P	NA	U	NA	NA	P	Advance
TR-3	Bus Rapid Transit (BRT)-Lite	P	P	NA	U	NA	NA	P	Advance
TR-4	Bus Rapid Transit (BRT)- Full	P	P	NA	U	NA	NA	P	Advance
TR-5	Light Rail Transit (LRT)	P	P	NA	U	NA	NA	P	Advance
TR-6	Streetcar	P	P	NA	U	NA	NA	P	Advance
TR-11	Commuter Rail	P	F	NA	U	NA	NA	F	Advance

P = Yes (Pass) F = No (Fail) NA = Not Applicable U = Unknown

Over →

We looked at each **River Crossing** idea (below) and asked, "Would this idea…"

1) Increase traffic capacity or decrease traffic?
2) Improve public transit?
3) Improve freight movement between two states?
4) Reduce crashes and improve safety?
5) Help bicyclists and pedestrians to cross the river safely?
6) Reduce the bridge's vulnerability to earthquakes?

RIVER CROSSING Ideas, Screening Results and Task Force Recommendations

COMPONENTS		COMPONENT SCREENING RESULTS							TASK FORCE
ID	NAME	Q.1	Q.2	Q.3	Q.4	Q.5	Q.6	Overall	RECOMMENDATIONS
RC-1	Replacement Bridge-Downstream/Low-level/Movable	P	P	P	P	P	P	P	Advance
RC-2	Replacement Bridge-Upstream/Low-level/Movable	P	P	P	P	P	P	P	Advance
RC-3	Replacement Bridge-Downstream/Mid-level	P	P	P	P	P	P	P	Advance
RC-4	Replacement Bridge-Upstream/Mid-level	P	P	P	P	P	P	P	Advance
RC-7	Supplemental Bridge-Downstream/Low-level/Movable	P	P	P	U	P	U	P	Advance
RC-8	Supplemental Bridge-Upstream/Low-level/Movable	P	P	P	U	P	U	P	Advance
RC-9	Supplemental Bridge-Downstream/Mid-level	P	P	P	U	P	U	P	Advance
RC-13	Tunnel to supplement I-5	P	P	P	P	P	U	P	Advance
RC-23	Arterial Crossing with I-5 Improvements	Note 1	P	U	P	P	U	P	Advance

[1] May provide some potential benefit in congestion management relative to 2030 No Build conditions.
P = Yes (Pass) F = No (Fail) U = Unknown (insufficient information)

Columbia River CROSSING

June 2006

Summary of Environmental Justice Outreach Activities since Fall 2005

The project team has been working to inform and involve minority and low income communities about the project. Below is a quick summary of activities to date.

Fall 05 Open Houses

- Purchased advertisements in:
  - The Asian Reporter
  - El Hispanic News
  - Portland Observer
  - The Skanner
- Sent press releases to the above media outlets.

April 06 Open Houses

- Purchased advertisements in:
  - The Asian Reporter
  - El Hispanic News
  - The Portland Observer
  - The Skanner
- Translated press releases into Russian, Spanish and Vietnamese, distributed them to the above publications and posted them on the Web site.
- Provided Russian, Spanish and Vietnamese interpreters at the Open Houses.
- Hired a sign language interpreter for the Open House held at Jantzen Beach in response to a request for the service.

Materials

- Translated both project newsletters into Russian, Spanish and Vietnamese.
- Posted all translated items to the Web site.

Outreach

- Staffed a booth at the Vietnamese New Year Celebration in February.
- Participated in the Say Hey! Partners in Diversity event in Portland.
- Staffed a booth at the Juneteeth Festival in June.

On the schedule for this summer,

- Good in the Hood
  - June 25
- Alberta Coop Farmers Market
  - July and August
- N/NE Business Association
  - July
- Kenton Business Association
  - June
- Say Hey Partners in Diversity
  - Quarterly

Targeted events not confirmed

- African American Unity Breakfast
- Events at Holy Redeemer and Saint Andrew Churches

Community Connections

The project team is working to make contacts with Latino and Russian-speaking communities through community-based service organizations.

Elements of the CRC Environmental Justice Program

Demographic Analysis

The project team conducted a demographic analysis of the area in 2005 to determine which communities need to be included in the outreach and environmental portions of the project. The analysis showed the project team needs to target efforts to reach low income, African-American, Latino, Vietnamese and Russian-speaking populations.

Community and Environmental Justice Group

We have finalized a charter, developed a preliminary schedule and work program for the Community and Environmental Justice Group. Recruitment of members is currently underway.

The purpose of this group is to ensure that communities affected by the project have meaningful opportunities to learn about and provide input to the project as it is developed.

The group allows us a structure for receiving input and recommendations from representatives of neighborhoods and underrepresented communities.

EJ Training

The project Task Force received an overview presentation on Environmental Justice in June. In addition, the project team will host additional EJ training to be offered to members of the Task Force, the Community and Environmental Justice Group as well as neighborhood and community representatives. We are working with Running Grass, a nationally known EJ expert who works for the U.S. Environmental Protection Agency in Seattle. In addition to the training he will provide for the project, Running Grass' other EJ general training sessions are available to CRC project participants. If there is interest, we can organize transportation to sessions offered outside of the Portland-Vancouver Metropolitan area.

EJ Methods and Data Report

The project team will determine if there are disproportionate impacts to low income and minority residents within the project area and publish the results in a report. The report is part of the material collected in the draft Environmental Impact Study to determine the project's potential impacts and benefits to the natural and built environment.

June 20, 2006

Americans with Disabilities Act (ADA) Information: Materials can be provided in alternative formats: large print, Braille, cassette tape, or on computer disk for people with disabilities by calling the Office of Equal Opportunity (OEO) at (360) 705-7097. Persons who are deaf or hard of hearing may contact OEO through the Washington Relay Service at 7-1-1.

Title VI: The project ensures full compliance with Title VI of the Civil Rights Act of 1964 by prohibiting discrimination against any person on the basis of race, color, national origin or sex in the provision of benefits and services resulting from its federally assisted programs and activities. For questions regarding the project's Title VI Program, you may contact the WSDOT's Title VI Coordinator at (360) 705-7098.

Environmental Justice Checklist and Resources
for Ecology Staff and Management

Please assess the following questions and items as you conduct your work.

The purpose of this Checklist is to raise awareness of possible environmental justice (EJ) issues and dynamics when working with communities or when working with statewide policies that affect the public's health or a community's environment.

Reviewing these items will help to further identify possible issues of concern, appropriate considerations, or actions for follow-up. ***Going through them*** will benefit you and your program. ***Not going through these considerations*** could make your - and the agency's - work less effective, and possibly expose the agency to additional liabilities.

If known or suspected EJ issues are identified by going through this Checklist (or by any other means), consult your program's EJ Committee representative or **XXX** or on Ecology's Intranet (internal site) at: http://aww.ecology/programs/hwtr/Sustainability/EJ/EJ.htm

Overall, consider the "stakeholders." Who are they and who's missing?

LOCATION & IMPACT

☑ **Who lives, works, or recreates closest to the facility/site/area of concern?** This first step helps to physically define the "community" and everyone who's in it. Consider: Are all the area's residents and users aware of the work you're doing and its relationship to their environment? Are they represented? How?

☑ In general, a **one-mile radius from the area of concern should be considered for residents, including housing, tribes, schools, other institutions, etc.** *For soil contamination*, an area smaller than a mile's radius may be adequate. *For air releases*, where weather patterns can matter, a larger area may be more appropriate to consider. *For water-related issues*, down stream, down gradient, a local aquifer's area, or perhaps the entire drainage basin may be the area to consider. *In a small town*, it may be best to address the entire town. Transportation problems associated with a given project (e.g., construction or operation-related traffic on the only road through town) may also be an issue that can go far beyond a mile's radius.

☑ For **statewide effects** (rules, policies, etc.), **the goal is to actively solicit comments and participation from a full representation of the "community."** Identifying those who might ordinarily be left out is not as clear-cut. **The key: look for, invite, welcome, and assist diversity. Look to draw in those most likely to be affected by the rule, policy, or other Ecology-related activity.** This may mean going into a variety of communities, at least informally, and talking with them to better understand if there is a probable or possible effect on them. Arranging a tour with someone who knows the community will help.

☑ **Cumulative effects. What other environmental pollution or environmentally related activities are or have been taking place within a 1- to 2-mile radius of the area in question? What is the cumulative effect of those other sites?**

☑ To help make up for what is not posted in the **Facility/Site** system, the lead for the project or issue will be expected to let people in other programs within the regional office know what they're embarking upon. This can be easily done by a "send-all" e-mail within the respective office. The regional EJ subcommittee contact and/or lead Public Information Officer (PIO) will also help to identify who would be most appropriate within the office to notify. Contact Education and Outreach

Start at Ecology's **"Facility/Site"** Internet (public) site: http://www.ecy.wa.gov/services/as/iss/fsweb/fshome.html. This will show much (but likely, not all) of what Ecology is tracking in the area.

Specialists in the regions (Toxics Cleanup, Water Quality, Air Quality Programs, etc.) who are doing on-the-ground public-involvement work. They are likely already involved with some (or many) of the groups who will need to be contacted and may have already established positive relationships with them.

☑ In terms of cumulative effects, here's a basic point to consider: **if there are multiple sources of pollution in the immediate area of interest, the need increases for a public health specialist to help assess those factors.** This person should be prepared for health-related questions and concerns from the community and the news media. Help bring that expertise in early, starting with the staff from local public-health districts. Other resources are also available: see the **Public Health** reference later in this list.

☑ **Demographic Maps.** Ecology supports demographic maps that focus on **low-income, non-white, and tribal lands.** These are statewide, county, some city, and tribal demographic maps of Washington. They're built on Ecology and U.S. Census data. There are currently over 50 maps that can be accessed via (needs to be updated)

SEPA/NEPA

☑ **Should the State or National Environmental Policy Acts be considered?** SEPA may be the most appropriate and best opportunity or tool to consider important issues covered in this checklist, whether site-specific or on a statewide basis. It's possible that the applicant/business/entity that's triggering Ecology's review or involvement isn't necessarily looking for SEPA/NEPA considerations when they should be. Either way, check with Ecology's SEPA staff if you're not sure. They can help determine what needs to be considered and done in this regard.

Barbara Ritchie in the **Shorelands and Environmental Assessment Program**, (360) 407-6922, can also help with this.

TRIBES

☑ **Tribal treaty reserved rights.** Twenty-one tribes within the state have off-reservation rights guaranteed by the United States through treaties under which the tribes ceded title to most of the land within the state. These treaty-reserved rights include the right to take fish and shellfish in "usual and accustomed areas" throughout most of the state for commercial and subsistence purposes. **If the site/facility/action will affect fish or shellfish, it will likely affect one or more tribes.**

☑ **Tribal lands. If a facility/site/action will affect tribal lands,** Indian reservations in particular, **the appropriate tribal government needs to be contacted and kept informed.** Indian reservations are an available layer in our geographic information system (GIS) mapping files.

You can get assistance in understanding tribal interests, tribal reservations, potential impacts and how to best communicate with tribes by visiting http://aww.ecology.ecy.wa.gov/intergov/tribal (an intranet site), or contacting Ecology's liaison with tribal governments, **Tom Laurie, Inter-governmental Liaison,** (360) 407-7017.

CULTURE AND LANGUAGE

☑ **Subsistence and cultural users. Are any resources affected by the site/facility/action used for subsistence or for cultural purposes?** In addition to direct problems created by discharges or displacement, subsistence use may be affected by treatment options or cleanup levels. This can apply to fishing, hunting, and/or harvesting, and tribal and/or non-tribal communities. Many Southeast Asian (and other) residents in Washington have cultures and diets that use or consume local foods, plants, mushrooms, nuts, etc., that are not cultivated or protected or managed as a conventional "crop." The gathering and consumption of fish, aquatic life, herbs and plants within a local environment – and Ecology's environmental work in the same water body or area can easily be related to subsistence issues. For more information about the relationships between subsistence consumption, toxicity exposure, and public health, see the **Public Health** reference later in this list.

☑ **Communication/language barriers. Are there one or more notable non-English-speaking populations that may be part of the area or community in consideration? Regardless of the predominant language(s), is illiteracy an issue? Are your messages getting to those who need to see or hear them?** The standard requirement to post notices in the legal page of the predominant newspaper of the region is not effective communication by itself.

☑ Notices at laundry facilities, homeless shelters, employment offices, food banks, post offices, bus stops/transit stations, and local radio stations will likely reach many more low-income or migrant residents. Also, churches, playgrounds, parks, health clinics, grocery stores, and community centers are effective places to consider for printed messages. Flyer inserts in newspapers specific to the culture (i.e., Latino, Vietnamese papers, etc.) or notices sent via school district cultural programs are also very effective. Notices in these locations also inform employees as much as the general public who goes there.

☑ **Cultural barriers. What potential cultural barriers should be considered?** Local residents from other cultures often don't trust the government, including meetings in government buildings. (This is not to imply that any local resident necessarily *does* trust a government meeting in a government building.)

Ecology has an outstanding responsive, field-proven, translation resource for print, meetings and other needs. The **"Multi-lingual Interpretation and Translation Teams" (MITT)** work in Chinese, Spanish, Vietnamese and Korean. Don't hesitate to use this resource at http://aww.ecology.ecy.wa.gov/mitt/. If other languages are needed, including signing for the deaf, contact your EJ representative. And be sure to add Ecology's TDD (Telecommunication Device for the Deaf) phone numbers to your notices.

MEETINGS

☑ **Non-government buildings**. It's perfectly acceptable, and in some cases **it may be to an advantage, to conduct Ecology public meetings or events in non-governmental (or less traditional) buildings** – provided that such locations still meet Americans with Disability Act requirements. Doing this may diminish or remove some cultural barriers, thus increasing attendance and participation. Schools, churches, tribal centers, fire stations, granges, community centers (formal or otherwise) are some suggested examples. Using a community hall may be the easiest and best thing you can do to create a welcoming meeting (for Ecology as well as the community) with good participation. People are more likely to come if they know the location as "their" community center – as compared to a place of bureaucrats and regulations.

☑ **Tables partially blocking entrances with sign-in sheets can be intimidating**. It's good to have an Ecology person at the entrance to welcome folks but try to not separate yourself with a table from those coming in. Consider placing the table along a wall; you won't be tempted to sit behind it and it won't be in the way. And don't feel compelled to require a sign-in. If someone does not wish to sign in, welcome him or her anyway. Let him/her know that his/her name and address is respectfully requested so we can send follow-up information related to the meeting's topic. If someone wishes an Ecology reply to his or her comment or question, a name and mailing address would be needed, of course. We appreciate having names to help know how many people attended the meeting. A list also helps show other visitors and meeting managers how many people intend to comment. If formal comments are being taken, a list of the names of those wishing to comment may be requested before the comment period starts (not necessarily before the meeting starts) to establish the order of speakers. However, the law doesn't require one's name to be on a list in order to have the right to walk up and comment at the last minute if there's time. Typically, a speaker's name is requested (to be given verbally) at the time the comment is given. **The point is, signing an attendance sheet is not required for admittance or participation in a public meeting.**

☑ **Check with locals (church leaders, teachers, community center staff, health clinic staff, etc.) to learn more about cultural factors.** They will likely be good resources to help draw local interest and participation.

☑ **Local meetings. Are these events accessible?** For meetings/hearings/workshops/other Ecology-sponsored public events, **ensure accessibility to the greatest extent practicable. This applies not only to the Americans with Disability Act (ADA), but also to timing and geographic location**. Low-income individuals seldom work 8-5 and often don't have a car. Consider these people who depend on public transit.

State agencies have a very good resource to show which public facilities, beyond the traditional, are ADA accessible. The website **https://fortress.wa.gov/ga/inet/servlet/ADASearchFormSv** should be reviewed for any kind of public meeting that Ecology is going to conduct or sponsor. It includes county and city listings of facilities that have already been certified to meet ADA

☑ Site the meeting as close as possible to those most likely to be affected. Would a Saturday event draw a broader (more diverse/more participatory) group, including younger people? Does a bus route serve the location? If so, does it run late enough in the evening to get folks home after the meeting? Could your meeting(s) take place at an already scheduled community event (that's open to all and appropriate for ADA considerations)? This may be where locally involved interests are more likely to attend and feel welcome to participate. Are you better off going to smaller venues (churches, schools, community service centers) or individual homes and talking face to face?

☑ **Types of meetings: open houses, workshops, community forums and roundtables. Can each imply (and actually be) a less formal and more participatory event than a "meeting"?** With the exception of formal hearings required by law, these other kinds of public events may likely bring a much better representation of the general public simply because of the descriptive name. Better yet, a real "open house" (even if not in an Ecology building) will encourage people to come any time during the event without the expectation that one has to be there from the start to the finish. This may also **improve attendance, outreach, communication, and common understanding** – all of which are our goals. An open house may require additional staff, but more people will be able to talk one-on-one with Ecology experts without having to wait or risk intimidation by speaking publicly (often into a microphone).

RESOURCES TO OVERCOME BARRIERS

☑ **Local expertise. What and where are the effective networks for communicating within a community?** These will likely include several of the following: schools (principals and teachers), local newspaper reporters, local radio stations, church leaders, multi-denominational organizations, community centers (their "events" organizers), community health centers (doctors *and* nurses), local government entities, libraries, environmental groups, etc. This is important to assess because they can be very good resources for answering some of the questions above. They may also be more effective (and less traditional) resources that can help get our message out. These resources may also help get the community's message(s) back to us. They can help answer our questions, provide us with quality comments, and bring broader public participation to our work.

Grants to the community may be available through the federal or state government and possibly some private sources; look into this early. If relevant, check with your local EPA counterpart or Ecology's Solid Waste & Financial Assistance (SWFA) Program for additional information. **Dolores Mitchell within the SWFA Program,** (360) 407-6057 is a good resource on this.

☑ **Governmental barriers. Who's doing what? Do we know who are all the regulatory and governmental entities at play in the issue we're dealing with, including their representatives?** Are we coordinating with them? Does the community know who all the players are and how to contact them? Are we helping them understand what Ecology's role is in relation to the other, topic-related entities (EPA, city/county, local air authority, local public health, state public health, etc.)? Are we clearly stating what we're able to address and why? Not sure? Work to find this out as soon as possible. Invite these other governmental entities' participation, in writing as well as more personally. You don't have to do it all, but help introduce and explain their respective role(s) to all interested and affected parties.

☑ **Technical and financial barriers. Are the communities realistically prepared to understand the technical issues? Could they benefit from having technical expertise** working with and/or for them (e.g., a geohydrologist, a public health official, a toxicologist, air pollution or regulatory expertise, etc.)? Limited grant dollars may be

available to local governments or non-governmental groups for addressing specific environmental issues. The key is to determine this early enough to keep bureaucratic time constraints from getting in the way.

☑ **What cost-related issues could hamper a community's ability to participate with Ecology's activities?** These may include costs for transportation to Ecology meetings (and back home) or childcare costs to attend meetings. If you're relying on an Ecology (or any other) web site for outreach to the public, confirm that Internet access is available and free at the local library (and check the ability to print and take materials home – is printing free?). Even then, don't assume everyone will use the Internet or is computer literate.

PUBLIC HEALTH

☑ **Identify public health risk. What's the connection to the local community's (public and environmental) health? Are there highly at-risk populations nearby, such as facilities for children or seniors or migrant workers?** Are local health district officials aware of the issue(s)? What about the Washington State Department of Health (DOH)? If you're not sure, call local health districts first to find out what they know and what they may be interested in knowing. There's a good chance that the environmental health expert(s) within the local health district office will know who, if anyone, would be interested or already involved in such matters.

☑ Formally **invite public health participation** with (or at least review of) your work if there is any chance of public health concerns. At the state DOH, hopefully an appropriate person to contact will be known by the staff you contact at the local health department. Be sure to let the local and state public health contacts know (in writing – at least by e-mail) of each other and your contact with both.

☑ Don't forget that other general experts on public health include the public. The public may be the most able to provide specific and/or unique public health profiles within their community, beyond what the government is aware of. Just because they're not doctors or public health officials doesn't mean they're not acutely aware of the health-related information that could be of particular value to Ecology's work and the community.

If public health or toxicity problems are a suspected issue, there are (currently) at least five toxicologists or Ecology staff familiar with toxicity issues: **Harriet Ammann,** (360) 407-6568, is an expert on a wide variety of toxicity issues. **Cheryl Niemi,** (360) 407-6440, is an expert on statewide water-quality toxicology issues. The other toxicologists include **Craig McCormack,** (360) 407-7193, **Dave Bradley,** (360) 407-6907, and **Damon Delistraty,** (509) 329-3547. Each is a good resource to help determine if a particular Ecology activity warrants more attention from a human toxicity perspective.

SUSTAINABILITY

☑ **What are the longer-term implications (that are reasonable to assume) for the local community's sustainable health in relation to the action with which Ecology's involved?** Is Ecology taking those implications into account? What assurances, if any, do local residents have that Ecology's work (permit, cleanup plan, new rule, etc.) will not harm them (or harm them disproportionately) in the future? What is the local public health department or official's perspective on this? They are often (but not always) much better prepared than we are to address these health-related questions, but we have to help them know what's there to assess. Again, invite these public health experts into your work early (and document such invitations).

ZONING

☑ This is clearly a major factor in many of the EJ dynamics within a community, and one that Ecology has very little, if any, control over. **In the context of sustainability, it may be wise to work with local zoning/planning authorities early and often** because they may have much more capacity to take cumulative environmental information into account regarding a community's long-term environmental health. This is also true for decisions about where residents and businesses are zoned relative to one another. Is it sustainable? You may not be able to answer the question, but at least in terms of environmental impact, it's a good idea to ask it and see where it leads you. (Jan '06)

Environmental Equity Study Executive Summary

During the 1994 session, the Washington state Legislature appropriated $29,000 to conduct an environmental equity study to include information on the distribution of environmental facilities and toxic chemical releases in relation to low-income and minority communities. The study took place between July 1994 and June 1995. This report describes the study, its results and presents recommendations for follow-up action.

The study looked at the proportional distribution of nearly 900 facilities and contaminated sites around the state in relation to communities of color and low-income. Demographic information from the 1990 Census was used to evaluate block groups (communities). A block group is an area which contains approximately 400 households. Department of Ecology used several databases to evaluate the locations of the "environmental facilities" relative to the block groups. Definitions for these and other terms are located both within the report's text and the appendices.

The study results indicate that on a statewide basis, there is a disproportionately greater number of facilities located in low-income and minority block groups, and a smaller number of facilities in the non minority / non low-income block groups. When comparing data between low-income and minority block groups, low-income block groups have a higher disproportion of facilities than do minority block groups. Toxic chemical release data, as reported by the 1993 Toxic Release Inventory, also indicate some disproportionate distribution, although it is not as consistent or conclusive as the facility data. There is an even greater level of disproportionate distribution on a county-by-county perspective. This supports one of the study observations that environmental equity issues are more pronounced at local levels than statewide.

There are many factors that may contribute to the disparities identified above. These factors include the history of residential and industrial growth in the same areas, zoning ordinances, environmental regulations, property values, and proximity to freeways and other major transportation routes. However, the study did not try to determine reasons or causes for facility distribution relative to demographics.

The study did not attempt to measure potential risks in relation to the facilities or the communities in which they reside. The study did not attempt to compare the risk associated with any one type of facility in relation to another. These are important issues, and they naturally follow the subject of the study, but they were beyond the study's scope and budget.

Recommendations call for follow-up analysis, limited case studies at the local level, data enhancements, and general coordination within, and between, state agencies, the Legislature, local governments, local environmental / citizen groups, and the federal Environmental Protection Agency. These recommendations are submitted to the Legislature for consideration.

In addition to the report, the study also produced a *Supplemental Atlas* Publication Number 95-414, which contains more detailed state maps, and maps and data of the state's 39 counties. The maps show locations of the facilities and block group demographics. Tables provide comparative data on the types and locations of the facilities, and quantities of reported chemical released within the different block group categories during 1993.

Department of Ecology

Publications

Publication Summary search

Title	Environmental Equity Study In Washington State
Month-Year Published	October 1995
Online Availability	**View this publication in Acrobat PDF format** 1426 kilobytes, requires version 4.0 or later of Adobe Acrobat Reader Software *get Acrobat Reader*
Short Description	This report describes the Environmental Equity Study of 1994-1995 and its results, and presents recommendations for follow-up action.
Publication Number	95-413
Author(s)	John Ridgway
Program	Hazardous Waste & Toxics Reduction
Print Availability	Request from the program.
# of pages	68
Keywords	chemical, environmental, environmental equity, study, toxic

Related Publications	Title	Relationship
	Chemicals in Washington State Summary Report 2001	Related publication

This page last updated May 3, 2006

Publication Home
Washington State Department of Ecology homepage

June 14, 2006

To: Columbia River Crossing Citizens Advisory Committee:

The Columbia River Crossing Citizens Advisory Committee has been given a mandate to find solutions to move people and freight across the Columbia River. This panel could look at other comparable areas of North America where transportation issues are met with success. Last month I mentioned to the Committee that Calgary, Alberta has solved transportation issues similar to the Columbia River region.

Another great example of good transportation planning is Vancouver, British Columbia. In the last fifteen years Vancouver's population increased 33% to an estimated 2.5 million. Vancouver, B.C. is solving their transportation needs by approaching transportation as one problem. In 1999 **TransLink** was formed to manage public transportation, regional, suburban and urban roads. In this manner, transportation for people and freight is planned in a non-competitive everyone wins solution.

Part of the transportation solution in Vancouver BC is a subway called SkyTrain which passenger fares pay 100% of its operation.

Another part of the Vancouver transportation solution is commuter rail.

Vancouver's **TransLink** gets support from all the citizens because good transportation benefits everyone

In the present system for the Columbia River Region each mode of transportation is competing against other modes. Long range transportation planning and efficiency suffers.

I recommend Columbia River Crossing Citizens Advisory Committee consult with **TransLink** CEO Pat Jacobsen for some sound advice to save time and money.

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Interim First Phase of the Columbia River Crossing Project ??

- Extend MAX Yellow Line to Hayden Island (Elevated station at PUC site)
- Provide bike/ped lane on new MAX bridge over Portland Harbor
- TriMet provides Hayden Island feeder bus service to MAX Station
- Relocate C-Tran Transit Center to the Hayden Island MAX Station
- Allow C-Tran and emergency vehicles exclusive use of Hayden Island northbound I-5 on-ramp.
- Convert bike/ped lane on existing Portland Harbor Bridge to an additional northbound travel lane
- Discontinue #6 MLK bus service to Hayden Island and Vancouver

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Distributed: June 14, 2006