

NOTEBOOK 2

TAB I: LOCALLY PREFERRED ALTERNATIVE REFINEMENT PROCESS AND RECOMMENDATION (2009 – 2010)

PROJECT DESIGN AND COST REFINEMENT PROCESS

CRC staff reviewed project plans and designs and had conversations with agency staff and stakeholders during the last half of 2009. Their goal was to find ways to reduce project costs while still delivering a project that meets the Purpose and Need statement. The following guiding principles were used for developing refinements:

- Maintain project benefits
- Protect functionality
- Review considered impacts on system as a whole
- Review included substructure, construction and design elements

The project team, working with stakeholder groups, identified several elements of the project design that could be modified or postponed to reduce construction costs. Discussions are ongoing with PSC about many of these options. More information about current conversations can be found in Tab K of this notebook.

COST REDUCTION MEASURES

Retain the existing North Portland Harbor bridge: This would utilize the existing North Portland Harbor bridge for mainline I-5 traffic. The structure would be widened to accommodate standard width lanes and shoulders. By reusing the existing bridge, the freeway across Hayden Island would be shifted slightly east from the designs evaluated in the Draft EIS. This shift changes some impacts on the island.

Lower the Hayden Island interchange onto fill and retaining walls: The Draft EIS alternatives assumed the Hayden Island interchange ramps and freeway mainline would be supported on structures. Changing this assumption to include most of the interchange on fill material and retaining walls would reduce construction costs.

Use narrower decks on each of the Columbia River bridges: Narrowing the deck width of the Columbia River bridges from 99 feet to 91 feet would reduce the cost of these structures. The bridges would be initially striped for five lanes each, rather than six. Later, as the region monitors the performance of the I-5 corridor, there would be the option to re-stripe the bridges for six lanes (with narrowed shoulders) if additional demand and regional policy warrant this.

Reduce a northbound add/drop lane on I-5 from SR 14 to SR 500: The connection from SR 14 to the I-5 northbound collector distributor would be reduced to a single lane, rather than two lanes. This slightly reduces cost, actually provides for a smoother transition on the collector distributor by reducing the number of merging movements, and provides preference to the I-5 traffic. The result is one less add/drop lane on northbound I-5 between the SR 14 and the SR 500 interchanges.

Defer northern improvements to the SR 500 interchange: This would defer the northernmost I-5 improvements so that they would not be constructed as part of the CRC project but could be constructed at some unknown date in the future. This would improve the existing freeway-to-freeway connection at the I-5/SR 500 Interchange (I-5 northbound to SR 500 westbound, and SR 500 westbound to I-5 southbound).

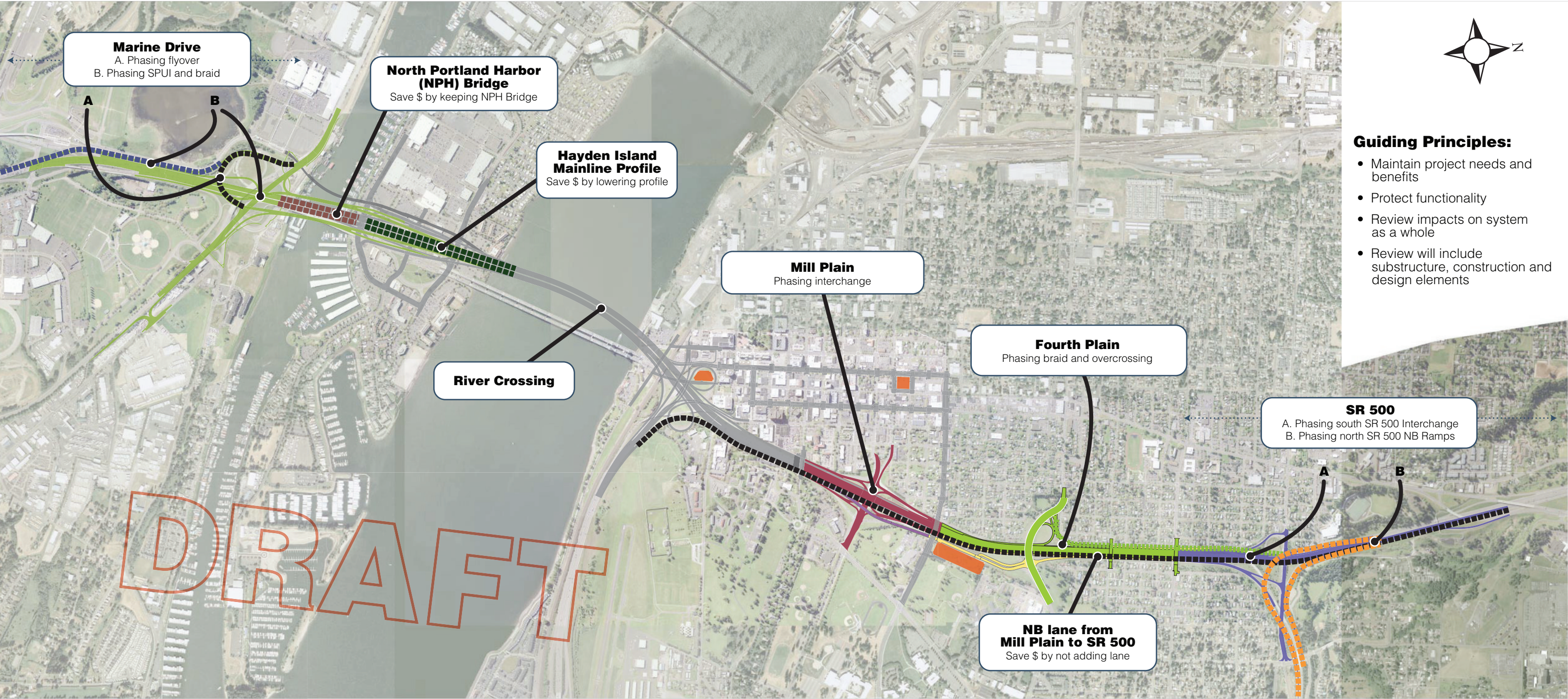
Defer I-5 to Victory Boulevard braided ramp: This would retain the existing connections between I-5 southbound and Victory Boulevard. The braided ramp connection could be constructed separately in the future as funding becomes available.

Defer the fly-over connection at the Marine Drive interchange: This would defer the direct connection provided by a fly-over ramp between eastbound Marine Drive and I-5 northbound. The CRC project improvements to the interchange would instead provide connection through a signal-controlled intersection.

It is important to note that the three cost-reduction measures that defer certain elements of the project may or may not be funded with construction of the CRC project. These elements would be included if funding is available, but this will be known closer to the time of construction when financing for the project is secured. This Final EIS compares the likely effects of the project both with and without these potentially deferred elements.

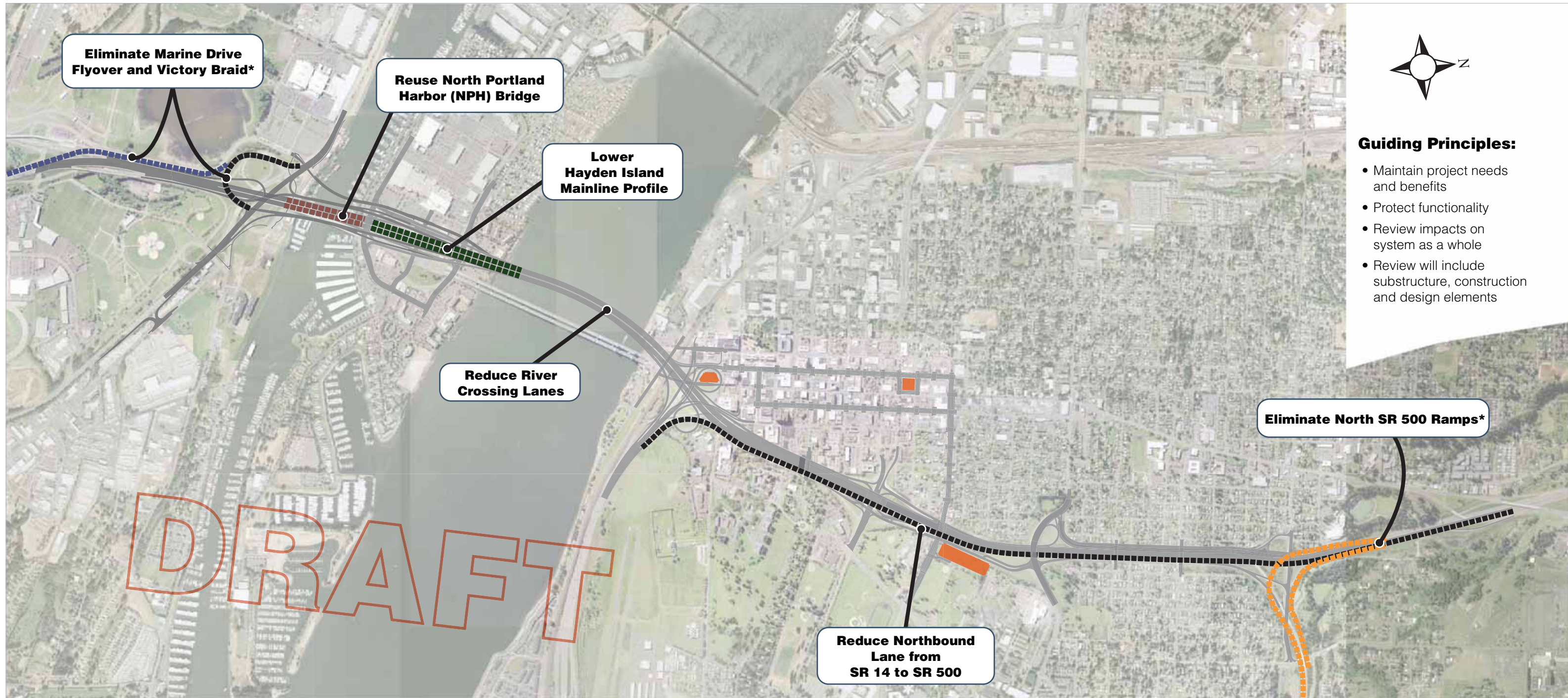
Maps of the refinement recommendation and related cost information are included in this section of the notebook.

Refinements Under Study



FOR DISCUSSION PURPOSES ONLY. THIS IS NOT A RECOMMENDATION. Items identified are not additive.

November 2009 Draft Recommendation



FOR DISCUSSION PURPOSES ONLY.

*These elements will be included in the FEIS but are not intended to be part of the initial capital construction project.

November 2009 Refinement Recommendation

	10% Probability	60% Probability	90% Probability
2007 Cost Estimates	\$3,100 Million	\$3,770 Million	\$4,200 Million
2009 Cost Estimates	\$2,585 Million	\$3,175 Million	\$3,550 Million
NET SAVINGS	\$515 Million	\$595 Million	\$650 Million

November 12, 2009

Additions to Cost

	10% Probability	60% Probability	90% Probability
ADDITIONS TO COST	\$160 Million	\$230 Million	\$265 Million

Savings

	10% Probability	60% Probability	90% Probability
Design Engineering			
River Crossing Substructure	\$240M	\$265M	\$275M
Other (Unit Prices, Quantities, Etc.)	\$70M	\$85M	\$95M
Highway Refinements			
Eliminate Victory Braid*	\$50M	\$60M	\$70M
Eliminate Marine Drive Flyover*	\$35M	\$45M	\$50M
Re-Use Existing North Portland Harbor Bridge	\$70M	\$95M	\$110M
Lower Profile across Hayden Island	\$80M	\$105M	\$125M
12-10 Lane River Crossing	\$20M	\$25M	\$30M
Reduce NB Lane from SR 14 to SR 500	\$40M	\$55M	\$60M
Eliminate SR 500 North Ramps*	\$70M	\$90M	\$100M
SAVINGS	\$675 Million	\$825 Million	\$915 Million

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	No Build	10 Lanes	12 Lanes
Locations of Poor Service Levels on I-5	<p>Northbound I-5:</p> <ol style="list-style-type: none"> 1. Denver/Victory Boulevard on-ramp merge area 2. Marine Drive on-ramp merge area 3. Hayden Island on-ramp merge area 4. SR 14 off-ramp diverge area <p>Southbound I-5:</p> <ol style="list-style-type: none"> 5. SR 500 on-ramp merge area 6. 4th Plain on-ramp merge area 7. Mill Plain on-ramp merge area 8. SR 14 on-ramp merge area 9. Hayden Island off-ramp diverge area 	<p>Northbound I-5:</p> <ol style="list-style-type: none"> 1. Hayden Island on-ramp to SR 14 off-ramp <p>Southbound I-5:</p> <ol style="list-style-type: none"> 2. SR 14 on-ramp 3. Off-ramp north of Hayden Island 	None
Local Streets Impacted by I-5 Backups	<p>Due to northbound I-5 impacts:</p> <ol style="list-style-type: none"> 1. Denver/Victory 2. Marine Drive 3. Hayden Island <p>Due to southbound I-5 impacts:</p> <ol style="list-style-type: none"> 1. SR 500 and Main Street 2. 4th Plain 3. Mill Plain 4. SR 14 and City center 5. Hayden Island 	<p>Due to northbound I-5 impacts:</p> <ol style="list-style-type: none"> 1. Hayden Island <p>Due to southbound I-5 impacts:</p> <ol style="list-style-type: none"> 1. SR 14 and Vancouver City center 	None
I-5 AM and PM Hours of Congestion	15 hours	4.5 to 6.5 hours	3.5 to 5.5 hours
Annual Collisions	750	220 to 240	200
I-5 Traffic	184,000 vehicles (No tolls)	175,500 vehicles (Includes tolling I-5)	178,000 vehicles (Includes tolling I-5)
I-205 Traffic	210,000 vehicles	213,500 vehicles	213,000 vehicles
Total River Crossing Traffic	394,000 vehicles	389,000 vehicles	391,000 vehicles
Diversion to I-205 from No Build	—	3,500 vehicles	3,000 vehicles
Regional Vehicle Miles Travelled (VMT)	56.658 million regional VMT	56.750 million regional VMT 0.16% increase over No Build	56.746 million regional VMT 0.15% increase over No Build
I-5 Transit Riders	8,800	18,500* (16,000 on light rail)	18,200* (15,800 on light rail)
HOV Lane Potential	Very unlikely based on current history in corridor	Some potential for future lane conversion	Highest potential for future lane conversion

