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September 13, 2010

Governor Christine Gregoire  
Office of the Governor  
PO Box 40002  
Olympia, WA 98504-0002

Governor Theodore Kulongoski  
Office of the Governor  
160 State Capitol  
900 Court Street  
Salem, OR 97301-4047

Subject: CRC Project Sponsors Council recommendations

Dear Governor Gregoire and Governor Kulongoski:

The Columbia River Crossing Project Sponsors Council (PSC) is pleased to deliver a set of recommendations that reflect the unanimous consensus of the local project partners, the CRC staff and the Transportation Departments of both Oregon and Washington. Members of the PSC are:

Matthew Garrett, Director, Oregon Department of Transportation  
Paula Hammond, Secretary, Washington Department of Transportation  
Sam Adams, Mayor, City of Portland  
Jeanne Harris, Council member, City of Vancouver  
David Bragdon, Council President, Metro  
Steve Stuart, Southwest Washington Regional Transportation Council Board of Directors  
Neil McFarlane, General Manager, TriMet  
Tim Leavitt, C-TRAN Board of Directors

The recommendations provide the framework for further refinements to the Locally Preferred Alternative that will move the project toward submission of a Final Environmental Impact Statement (EIS). The PSC recommendations are the result of a successful collaboration between state Departments of Transportation and local partners to resolve difficult project issues. Concurrent with the conclusions reached by the PSC, the CRC Independent Review Panel provided its assessment of the project and submitted a list of recommendations for further consideration.

In your letter dated Feb. 16, 2010, you responded to local leaders with assurances that the state Departments of Transportation would continue to work collaboratively with project partners to resolve issues of concern to the local partners. At their March 12 meeting, PSC members decided that a timely, credible, and collaborative process was needed to discuss and resolve these issues. Each PSC member, and the ports of Portland and Vancouver, appointed a staff delegate to meet

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on a regular basis to produce findings and recommendations regarding certain previously made decisions as well as the issues that had been raised as concerns by PSC members.


Over a four month period the Integrated Project Sponsors Council Staff (IPS) group met twelve times and formed a number of subgroups to further define, analyze and resolve difficult and complex issues. Subgroups composed of IPS members, other project and partner agency staff and interested citizens met separately to conduct research and prepare their findings and recommendations for presentation to the IPS. IPS members participated in five public workshops with PSC members to discuss their preliminary findings and receive further direction to complete their tasks. This work was also shared with the public at a series of meetings, particularly around the exploration of alternative interchange concepts for Hayden Island.

At the Aug. 9 PSC meeting, there was unanimous consensus among the PSC members on a package of items that will move the project closer to construction by solidifying elements of the Locally Preferred Alternative for presentation in the Final EIS.

The attached report describes the recommendations of the PSC. They strengthen the CRC project design and will significantly enhance the benefits of the Columbia River Crossing project to the surrounding transportation system and to the region as a whole. As a result of the work of the PSC and the recommendations offered by the CRC Independent Review Panel, the PSC has identified several topics that may require additional study and future consideration. These topics are described in the report.

We look forward to hearing your assessment of the recommendations and are available to answer any questions you may have about the report.

Sincerely,



Henry Hewitt  
Project Sponsors Council Co-Chair



Steve Horenstein  
Project Sponsors Council Co-Chair

Enclosure

cc: Document Control  
PSC members

# PROJECT SPONSORS COUNCIL RECOMMENDATIONS

Final Report

September 13, 2010

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## **Title VI**

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Appendix C: Metroscope Work Group Materials

Appendix D: Hayden Island Access Work Group Materials

Appendix E: Alternative 10-lane Bridge Work Group Materials

Appendix F: Performance Measures Work Group Materials

Appendix G: Post-Construction Transportation Demand Management Work Group Materials

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# ACRONYMS

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ADA	Americans with Disabilities Act
AASHTO	American Association of State Highway and Transportation Officials
CEVP	Cost Estimation and Validation Process
CRC	Columbia River Crossing
EIS	Environmental Impact Statement
IPS	Integrated Project Sponsors Staff
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GHG	Greenhouse gas emissions
HOV	High occupancy vehicles
LPA	Locally Preferred Alternative
ODOT	Oregon Department of Transportation
PSC	Project Sponsors Council
SOV	Single occupancy vehicle
TDM	Transportation demand management
WSDOT	Washington State Department of Transportation

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# 1. Background

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The purpose of this report is to present a comprehensive package of Project Sponsors Council (PSC) recommendations that address several areas of interrelated work performed between April and August, 2010. These recommendations are the result of a collaborative approach that considered combined effects and benefits to the Columbia River Crossing (CRC) project, the surrounding transportation system and to the region as a whole. The PSC has the following members:

Henry Hewitt, Co-Chair  
Steve Horenstein, Co-Chair  
Matthew Garrett, Director, Oregon Department of Transportation  
Paula Hammond, Secretary, Washington Department of Transportation  
Sam Adams, Mayor, City of Portland  
Jeanne Harris, Council member, City of Vancouver  
David Bragdon, Council President, Metro  
Steve Stuart, Southwest Washington Regional Transportation Council Board of Directors  
Neil McFarlane, General Manager, TriMet  
Tim Leavitt, C-TRAN Board of Directors

Governor Chris Gregoire and Governor Ted Kulongoski responded to local officials in a letter dated Feb. 16, 2010, with assurances that the Oregon and Washington Departments of Transportation and the CRC project staff would continue to work collaboratively with project partners to resolve issues of concern to the local partners. At their March 12 meeting, PSC members decided that a timely, credible and collaborative process was needed to discuss and resolve outstanding issues. Each PSC member and the ports of Portland and Vancouver appointed a staff delegate to meet on a regular basis and to produce findings and recommendations regarding certain previously made decisions, as well as the issues that had been raised as concerns by PSC members. The staff organization was given the title of the Integrated Project Staff (IPS). The IPS members were the following individuals:

Henry Hewitt, Co-Chair	Alan Lehto, TriMet
Steve Horenstein, Co-Chair	Jeff Hamm, C-TRAN
Susie Lahsene, Port of Portland	Paul Smith, City of Portland
Katy Brooks, Port of Vancouver	Thayer Rorabaugh, City of Vancouver
Andy Cotugno, Metro	Richard Brandman, ODOT
Dean Lookingbill, SW Washington Regional Transportation Council	Don Wagner, WSDOT

IPS work groups were established around the following topics<sup>1</sup>:

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<sup>1</sup> Adjustments were made to the list as the work evolved. The item for "Remove Vancouver City Center Access" was reported on at an April 23 workshop between PSC and IPS and subsequently dropped from consideration after PSC members agreed that findings warranted no further discussion of the concept. The presentation provided to PSC is included in Appendix B. In addition, the Managed Lanes item was merged with the Transportation Demand Management work group after it was determined there was sufficient overlap between topics for a combined effort.

- Remove Hayden Island Interchange
- Alternative Access/Redesign Hayden Island Interchange
- Remove Vancouver City Center Access
- Alternative Lane Configurations on the Bridge
- Post-Completion Transportation Demand Management
- Managed Lanes
- Performance Measures
- Metroscope Modeling

The IPS met twelve times to establish a work plan, assign elements of the work plan to IPS work groups and discuss progress made by the work groups. IPS members met jointly in public workshops with PSC members on April 23, May 14, June 11, June 25, and July 16 to report and discuss their preliminary findings. A copy of the *IPS Work Plan* is attached in *Appendix A*.

The public was involved at several points in discussion of the elements of the IPS work plan PSC meetings were open to the public and recorded for broadcast on cable television and on-demand internet streaming. Meeting summaries and materials were made available online at the CRC website for public viewing. In addition, three open house/public testimony opportunities were held on Hayden Island during process and attended by nearly 400 people.

## 2. Executive Summary

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### 2.1 Collaborative Process

PSC members decided at their March 12, 2010, meeting that a timely, credible, and collaborative process was needed to discuss and resolve outstanding issues. Each PSC member and the ports of Portland and Vancouver appointed a staff delegate to meet on a regular basis to produce findings and recommendations regarding certain previously made decisions as well as the issues that had been raised as concerns by PSC members. Over four months, the IPS group met twelve times and formed a number of subgroups to research and report on several issues. The IPS work group topics and key findings are summarized below:

#### **Remove or Redesign the Hayden Island Interchange**

Seventeen concepts for the Hayden Island Interchange were proposed, developed and evaluated by the local partners, the CRC Project Staff and island stakeholders. There is now a broad consensus for the design, known as “Concept D.”

#### **Remove Vancouver City Center Access**

The IPS was asked to investigate the effects of removal of interchanges in downtown Vancouver to/from I-5 and to determine whether these interchanges had any influence on the ability of the project to reconfigure the number of lanes on the bridge over the Columbia River. It was found that removal of City Center access would not affect the number of lanes on the bridge because auxiliary lanes originating further upstream were carried through the downtown segment of I-5. In addition, removal of these interchanges would create operational problems at a number of downtown Vancouver intersections.

#### **Consider Alternative Lane Configurations on the Bridge**

Operational analysis completed by URS found that 10- and 12-lane bridge facilities perform similarly and that a 10-lane facility could result in modest project savings.

#### **Consider Post-Completion Transportation Demand Management (TDM)**

Additional TDM market opportunities do exist for the project, particularly with respect to individualized marketing efforts and use of toll strategies to create incentives for use of multi-occupancy vehicles.

#### **Develop Performance Measures**

Selected performance measures found significant benefits with the project over both existing and future no-build conditions. The performance measures were informative for the decisions made by the PSC and reinforced the conclusions made around a 10-lane bridge configuration. Performance measures were found to have potential application for ongoing review of facility and related program performance after project completion.

#### **Update Metroscope Modeling**

The model run showed that the project, even as a 12-lane facility, has no significant effect on regional land use, especially with respect to “sprawl” at the fringes of the urban area.

## 2.2 Project Sponsors Council Recommendations

At the Aug. 9 meeting of the PSC, there was unanimous consensus among the PSC members regarding items that will move the project closer to construction by solidifying elements of the Locally Preferred Alternative for presentation in the Final EIS. More detailed discussion of each item can be found in the *Findings and Recommendations* section.

### **Refine the Hayden Island Interchange to narrow the footprint and improve community connectivity**

A new Hayden Island interchange design incorporates elements of the LPA design while improving local access and reducing the overhead footprint on the island. After participation in the IPS process, consensus exists among residents, island business owners and local project sponsors on an interchange design that accommodates the complex movements of the area, minimizes community and environmental impacts and matches the longer-term visions for the island. “Concept D” includes access to the island from I-5 in a similar manner to the LPA. Arterial access via the Marine Drive interchange has been removed, resulting in fewer overhead ramp structures over the island and raises the elevation of the community connector street, Tomahawk Island Drive. Local access to/from the island will now be accommodated by a local bridge to the west of I-5, adjacent to the structure carrying light rail. This design also allows the Marine Drive interchange to serve freight better by accommodating a portion of the auto traffic on the local bridge.

### **Construct a permanent 10-lane bridge over the Columbia River with full shoulders**

A 10-lane bridge performs similarly to a 12-lane configuration and meets the needs of the region today and in the future. Performance measures indicate there are very slight differences between lane configurations with respect to travel times, safety, greenhouse gas emissions and benefit-cost ratio that support a 10-lane permanent bridge design. In addition, Metroscope land use modeling shows that the project will not induce travel demand at the fringes of the region, confirming that the project’s added lanes will not exacerbate existing downstream bottlenecks in Portland. The 10-lane design will utilize the 10-lane lane configuration proposed for the Phase I LPA in the northbound and southbound directions, as well as 12-foot safety shoulders on the bridge.

### **Expand CRC’s long-term regional travel demand management program**

A regional collaboration on both employer demand and corridor travel demand efforts could lead to a national model for reducing peak hour congestion and extending the lifespan of infrastructure investments. For CRC, it is anticipated that up to an additional 11 percent of peak period trips could be shifted from single-occupancy vehicles, beyond the numbers expected from transit and other proposed TDM measures published in the Draft EIS.

### **Use performance measures to inform future recommendations**

Performance measures used to support the PSC recommendations emphasize the importance of making decisions based on data. Indicators for mobility, safety, greenhouse gas emissions and benefit-cost ratio will help guide future recommendations through remaining project development, construction and eventual traffic management in the corridor.

## **2.3 Issues Identified Needing Further Study**

PSC members raised additional questions about aspects of project delivery and management. These identified issues are consistent with recommendations recently provided by the CRC Independent Review Panel. The CRC work plan from this point forward should build on the work of the IPS and PSC, while addressing the Panel's recommendations. Specific issues raised by the PSC for additional study and future consideration include the following:

- Governance (project delivery and post construction operations management)
- Projected cost, finance plan and tolling
- Environmental review and documentation
- Project phasing
- Bridge type and engineering design
- Other recommendations of the IRP

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## 3. Findings and Recommendations

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The PSC has reached agreement on the following package of recommendations related to the several tasks outlined in the IPS work plan. Future work for each of the work plan items is outlined in the *Next Steps* section, below. In addition, several policy issues were identified by the PSC. Many of these additional items align with recommendations submitted to the Governors from the CRC Independent Review Panel and are discussed in the *Issues Identified Needing Further Study* section of this report.

### 3.1. Metroscope

***PSC recommendation: Use Metroscope results to support the overall set of recommendations.***

The purpose of using the Metroscope model was to expand the analysis completed by the CRC project on the potential for the project having an unintended consequence of inducing growth and determine whether the CRC project will affect the ability of the region to meet land use goals. The Metroscope land use allocation model for the seven-county region maintained by Metro provides a basis for forecasting where market trends would tend to drive household and employment growth taking into account changing demographic and economic profiles, local zoning and investment decisions, changes over time in accessibility based upon implementing long range transportation plans and the market feasibility of different types of commercial and residential development. This framework provides a platform upon which to test several scenarios relating to the CRC project to better understand the potential for growth inducing effects. The results will be used only to compare alternative Metroscope scenarios. They cannot be used to compare to previous Environmental Impact Statement (EIS) runs, as Metroscope is used primarily to inform land use impacts. The approach that holds constant all other variables around the region provides the ability to understand the effects of the change that the CRC project would produce.

PSC members agreed on a comparison of 12-lane configurations for Metroscope scenarios including no build, 12-lane full build with light rail transit and tolls and 12-lane full build with light rail transit and without tolls. Members decided that results of travel time analysis by the Performance Measures work group comparing 10- and 12-lane configurations would help inform whether a fourth scenario (10-lane without tolls) should be run. The similar nature of these results, discussed in the *Performance Measures* section below, indicated that a 10-lane scenario was unnecessary.

Metro found that the project would have negligible impact on population and employment growth in Clark County when comparing the projected growth that would occur with the project compared to no change to the existing bridge and highway. The project's most significant land use effect would be to boost North Portland employment by about 1.5 percent. This analysis takes into account the effect of tolls and light rail in reducing vehicle trips across the bridge compared with the no build scenario.



The results of the Metroscope model support other recommendations of the IPS and will also help inform a conversation between local decision makers about issues of a bi-state nature that are outside of the scope of this project.

Further discussion of the Metroscope results are included in *Appendix C*.

### **3.2. Hayden Island Access**

***PSC recommendation: Further refine Concept D as an alternative to the Hayden Island interchange design.***

The original charge to IPS was to develop concepts for a refined “on-island” Hayden Island interchange and an alternative access or “off-island” interchange that would reduce impacts on Hayden Island (particularly the overhead structure and elevation at Tomahawk Island Drive) while retaining all basic traffic movements and operations presented in the Locally Preferred Alternative (LPA).

Work commenced on these items in a single IPS work group. The City of Portland retained URS to develop concepts for an off-island interchange that fed into the work group. A Hayden Island Design Group (HIDG) was also convened to incorporate the perspectives of island residents and business owners; the HIDG met up to twice weekly to discuss evolving design concepts. Feedback from the HIDG was provided to the work group and IPS to inform ongoing discussions.

Off- and on-island interchange concepts (Concepts 1 and 2, respectively) were presented to PSC members at their June 11 workshop with IPS. An evaluation of these options revealed operational issues and other community impacts. A public meeting held on Hayden Island on June 14 confirmed significant community concerns with these design concepts.

The IPS work group explored several “hybrid” designs, incorporating elements of Concepts 1 and 2 and other alternatives suggested by the City of Portland, Hayden Island residents and other interested parties. The hybrid designs (Concepts A, B, C, and D) each represents a combination of access from I-5 as well as local arterial access. Concepts A and B were shared at a public meeting on June 29 where further feedback was gathered from the community. Concepts C and D also emerged as distinct designs that could address many of the concerns expressed around the other concepts. Concept D was shared with the community at a public meeting on August 5.

Concept D includes access to the island from I-5 in a similar manner to the LPA. Arterial access via the Marine Drive interchange has been removed, resulting in fewer overhead ramp structures over the island and raises the elevation of the community connector street, Tomahawk Island Drive. Local access to/from the island will instead be accommodated by a local bridge to the west of I-5, adjacent to the structure carrying light rail. This design also allows the Marine Drive interchange to serve freight better by accommodating a portion of the auto traffic on the local bridge.

An evaluation comparing these interchange concepts found that Concept D provides the best balance of access to Hayden Island, freight mobility, environmental and community benefits and project costs. Concept D carries a consensus recommendation from project partners, Hayden Island residents and other stakeholders involved throughout the process.

Design concept maps and concept evaluations are included in *Appendix D*.

### 3.3. Alternative Lane Configurations on the Bridge

***PSC recommendation: Further refine the LPA to include a 10-lane permanent bridge with 12 foot shoulders, with northbound and southbound lane configurations according to the Phase I LPA design.***

The City of Portland retained URS to conduct an evaluation of the potential to reduce the number of lanes on the I-5 bridge. CRC assisted URS in providing project traffic analyses for review and conducted additional analyses to support work on this task.

URS evaluated several scenarios relating to the number of lanes on the bridge in both the southbound and northbound directions. They found similar performance characteristics at the bridge between a 12-lane main span (Full Build) and a 10-lane main span (LPA Phase 1) if improvement elements included in the Full Build alternative, separate from the main span configuration, were added to a 10-lane main span bridge. The URS report addressing reduction in lanes is included in *Appendix E*.

URS offered methods for developing a 10-lane bridge for both northbound and southbound directions. For the northbound direction, the work group reviewed operational data and suggested that the lane configuration follow the 10-lane LPA Phase I design. A similar in-depth evaluation of traffic operations was completed for lane configuration concepts for the southbound direction.

Two 10-lane configurations for I-5 on the Washington side of the Columbia River were evaluated, including the LPA Phase I configuration and the URS “10-lane Full Build” configuration. The primary difference between the two 10-lane alternatives is the elimination of lane number four (4) in the vicinity of the Mill Plain interchange. The results of this evaluation found similar performance between the two configurations in terms of vehicle throughput and travel times within the Bridge Influence Area. However, the 10-lane Full Build configuration was found to create a slowdown and turbulence in the merging area where the number of lanes is reduced from four to three. The City of Vancouver evaluated the alternatives in terms of traffic volumes, lane capacities, add/drop/merge and weaves, truck movements, distance between interchanges and traffic safety. Their findings (also included in *Appendix E*) support the LPA Phase I 10-lane option due to its ability to minimize turbulence and permit through lanes to function as designed to accommodate upstream merging and benefit traffic flow and safety.

The URS concepts for a permanent 10-lane river crossing include 12-foot wide inside and outside shoulders in accordance with American Association of State Highway and Transportation Officials (AASHTO) standards for highways with six or more lanes carrying 250

more trucks per hour. I-5 meets this criterion and 12-foot wide shoulders may also accommodate future use by bus transit under certain conditions, an option that has been of continued interest by PSC members.

More aggressive post-construction traffic demand management (TDM) measures would improve the performance of the I-5 system with a 10-lane river crossing design and are addressed in the *Post-construction Travel Demand Management* section, below.

### 3.4. Performance Measures

***PSC recommendation: Performance indicators for commuter, freight, and transit mobility; safety; greenhouse gas emissions; and overall benefit/cost ratio support the overall package of recommendations. The application of these measures was successful, indicating that a package of indicators to be refined over time should also be used to inform Mobility Council recommendations in the future.***

The Performance Measures work group focused on travel times, safety, greenhouse gas emissions and overall benefit/cost. Several project scenarios were used in this analysis including existing conditions, a “No Build” condition, Locally Preferred Alternative and Locally Preferred Alternative Phase 1.

#### **Travel times**

Travel times were summarized for each mode along I-5 including auto/commuter, freight, transit and auto/commuter on I-205 for the most highly used routes for each specific mode. The work group found that both the LPA Full Build and LPA Phase 1 scenarios provide significant improvements over existing conditions and the No Build scenarios. General findings include the following:

- *Peak a.m. southbound* travel times on I-5 are significantly improved. Southbound traffic from connecting east/west facilities benefit from dramatically improved travel times in Washington due to reduced delays and queues on SR 500 and SR 14 entering southbound I-5. Southbound a.m. travel times are limited by downstream bottlenecks at Going Street/I-405 and the Rose Quarter.
- *Peak p.m. northbound* travel times on I-5 are dramatically improved. The LPA Full Build is slightly faster than the LPA Phase 1 alternative due to increased operations near the I-5 Bridge.
- *Both Build scenarios* provide significant benefit to freight compared to the No Build scenario considering freight typically travels off peak and the number of hours of uncongested times increases from 9 hours under the No Build scenario to 22 hours under the Build scenarios.
- *I-205 northbound and southbound* travel times are improved with both CRC Build scenarios because the combination of improved transit, lane capacity and the DEIS level of toll keeps traffic in the I-5 corridor compared to the No Build which diverts significant I-5 traffic to I-205 because excessive I-5 No Build congestion levels.

- *Transit rider travel times benefit significantly in both CRC Build scenarios for riders whose trips would include light rail and those who would take express buses from elsewhere in Clark County.*
- *Full LPA and LPA Phase I benefits vary little between them. Most travel times for all modes were effectively the same whether only Phase I were construction or the Full LPA as previously defined were constructed.*

### **Safety**

Project scenarios were compared with respect to the total number of accidents expected on an annual basis in the project area. Both the Full Build and LPA Phase 1 scenarios reduced the number of accidents compared with the No Build scenario. Most of the reductions in accidents were realized in the reduction of substandard merges, diverges and weaving sections and reduced congestion throughout the project area, particularly areas where heavy volumes of trucks are entering and exiting I-5.

- Existing accidents – 400/year
- 2030 No Build accidents – 750/year
- 2030 Full Build accidents – 200/year
- 2030 LPA Phase 1 accidents – 210-240/year

### **Greenhouse Gas Emissions**

Project scenarios were compared for their contributions of greenhouse gas emissions (GHG). The methodology for calculating GHG follows the same analysis peer-reviewed by the CRC Greenhouse Gas Emissions Expert Review Panel in late 2008. This methodology calculates GHG emissions based on energy consumed during construction and operation of the CRC project. Findings show the most GHG benefits for the build scenarios when compared to the No Build scenario.

GHG emissions are estimated both in the project area itself and for the region accounting for diversion to I-205 and other arterials. According to these estimates, the Full Build LPA has 0.5 percent fewer emissions region-wide and 4.4 percent fewer emissions in the project area compared to the No Build scenario. The LPA Phase 1 has the same regional emissions as the Full Build LPA. In the project area, emissions are 1.1 percent reduced from the Full Build LPA.

### **Benefit/Cost**

A calculated benefit/cost ratio was developed for each of the scenarios to provide a basis for comparing the multiple benefits and costs associated with project performance. The analysis was conducted using methodologies and metrics recognized and championed by the US Department of Transportation, including FHWA and FTA. The principal categories of benefit considered are congestion management benefits to the area, mobility improvement benefits, economic development benefits in the region and bridge lift time savings.

CRC convened a panel of stakeholders and subject matter experts in June 2009, including practitioners and local academic experts, to scrutinize the evaluation methodology, the inputs used to conduct the evaluation and the analytic method. The stakeholder panel reviewed the calculations used in each benefit category and provided input on adjustments and refinements and suggestions on appropriate input values. The Full Build and LPA Phase 1 were assessed

using this updated methodology. Either build option demonstrates substantial benefit per cost compared to the No Build.

- Full Build benefit/cost: 1.9:1
- LPA Phase 1 benefit cost: 2.0:1
- LPA Phase 1 with Marine Dr flyover and Victory Braid: 1.9+:1

Additional materials supporting Performance Measures work group findings are attached in *Appendix F*.

### 3.5. Post-construction Travel Demand Management

***PSC recommendation: Expanded and increased TDM measures beyond those contemplated in the Draft EIS should be implemented after bridge construction is completed. This builds on a previous recommendation to implement TDM measures pre-construction and during construction. Different TDM measures may be most effective in each phase.***

The Post-construction Travel Demand Management group was charged with assessing the potential to expand TDM strategies to improve the non-single occupancy vehicle (non-SOV) mode share in the post construction period. A previous TDM group effort reported to PSC in March 2010 on the potential for use of TDM strategies in the pre-construction and construction phases of the project. PSC members were interested in the potential mode shift that could be achieved beyond project completion to further relieve congestion and extend the lifespan of the CRC facilities. The TDM work group involved local partners and transit agencies using the best information to-date to address questions about potential TDM expansion in the post-construction period.

The work group used several areas of contemporary research to estimate commute trip reduction. Specific input to the TDM predictions included the following:

- Local experience in Vancouver, Washington state (Commute Trip Reduction) and Portland (SmartTrips)
- Research related to the cost effectiveness and scalability of rideshare services
- Benchmarking comparison with Central Puget Sound and Bay Area corridors
- Research in WSDOT's SR 520 Transportation Discipline Report

Based on the opportunities researched and recognizing the differences in population and geography in the Portland-Vancouver metro area, the work group found that TDM strategies could be developed to shift an additional 11 percent of peak period person trips crossing the bridge in 2030 to non-SOV modes. This reduction is in addition to peak period mode shifts assumed in the draft EIS for pre-construction and construction TDM measures. These additional measures would also reduce 2030 vehicle bridge crossing demand by 10 percent beyond the 2030 regional travel model forecast used for the LPA.

There are several leading strategies to achieve reduced drive-alone trips. Individualized marketing would provide personalized travel option information to corridor employees and

residents. Incentives could include short-term (up to six month) financial incentives for commuters to travel by vanpool, take transit or carpool. In addition, discounted toll rates (including \$0 toll) specific to shared rides is a tool being used in other parts of the country. Benefits of a post-construction TDM program for all project designs include increased efficiency by moving more people in fewer vehicles, lengthened functional lifespan, reduced costs for Clark County commuters using travel options and reduced fuel consumption and greenhouse gas emissions.

The work group identified several additional TDM strategies that were not included in their study that have potential to further reduce drive-alone behavior. These strategies requiring further study include the following:

- Increased light rail ridership
- High occupancy vehicles (HOV) / Managed lanes and/or HOV ramps
- \$3 peak period toll (which may further reduce peak demand)
- Compact development financial incentives

The work group also identified several issues and potential implications of suggested TDM strategies, including increased number of C-TRAN buses in downtown Portland, increased demand for park and ride spaces in Clark County, the need for a regional coordinating or management structure and the impact of \$0 toll incentive on the project's financial plan.

Additional materials supporting TDM Work Group findings are included in *Appendix G*.

### **3.6. Next Steps**

Next steps are outlined for each of the PSC recommendations.

#### **3.6.1. Metroscope**

A final detailed report on the Metroscope analysis will be available by the end of August. The IPS Metroscope work group will be responsible for preparing the final report of this work and will ensure consistency of the travel networks on both sides of the river.

#### **3.6.2. Hayden Island Access**

Further due diligence on design, environmental and cost issues related to Concept D will be needed. The CRC project and its partners will work with community stakeholders to finalize aspects of the design. The CRC project will assess the new interchange design for purposes of documentation in the Final EIS. The results of further analysis and design will be input to further work on the 10-lane bridge design.

#### **3.6.3. Alternative Lane Configurations on the Bridge**

The selection of lane reduction configurations are influenced by the final highway design and will follow decisions and additional design work on the Hayden Island interchange. The CRC project will assess the new highway design for purposes of documentation in the Final EIS.

#### **3.6.4. Performance Measures**

Performance measures have been used to inform discussion of other IPS work items and will continue to be used to inform future decisions.

#### **3.6.5. Post-construction Travel Demand Management**

Pre-construction, construction and post-construction TDM measures will be documented in the Final EIS.

TDM measures are likely to reduce congestion and improve I-5 performance in all project phases. PSC and CRC project partners should discuss a plan and timeline to request federal, state and regional funding to implement pre-construction TDM in order to provide benefits to Interstate Bridge corridor users as soon as possible.

To prepare for funding requests, the CRC TDM Work Group should develop a proposal with specific mode share objectives, specific actions to achieve the objectives, a three-year budget, potential funding sources and a coordinating structure for consideration by the PSC and/or partner agencies.

### **3.7. Issues Identified Needing Further Study**

#### **Governance**

PSC members have expressed support for various approaches for management of the I-5 corridor in the future, including TDM measures and tolls. Alternatives suggested have included a Regional Mobility Council, a bi-state compact or separate authority. PSC members urge the governors to work with their legislatures and transportation departments and local partners to define the bi-state governance structure for this project and request that regional and local representation be part of the process. In discussion with PSC members at their August 9 meeting, Independent Review Panel Chair Tom Warne suggested separate management considerations for the construction phase and post construction operations management. The potential future role of PSC, beyond its original charge from the Governors to advise on completion of the EIS and associated project design and finance matters, is of interest to some members.

#### **Projected cost, finance plan and tolling**

The LPA has been refined over the past months and PSC agrees with the Independent Review Panel that it is now time to revise the project cost estimates using WSDOT's Cost Estimation and Validation Process (CEVP). Revised CEVP estimates should be presented to state legislatures and the federal delegation in 2011. State and federal funding commitments should be secured as quickly as possible.

Securing funding commitments is an important step in the toll setting process. Tolls for this project will supplement other funding sources and help manage traffic. A bi-state toll setting process should be expedited to determine the policies and rates for the project.



### **Environmental review and documentation**

Project design refinements, in particular those resulting from discussions around the Hayden Island interchange, will require additional analysis to determine the potential for environmental impacts beyond those already assessed by the project. PSC agrees that CRC staff should perform additional design and engineering of the recommended design refinements both to minimize the potential for and determine whether supplemental environmental assessment is required.

### **Project phasing**

PSC members agree that additional discussion of the potential phasing of project elements needs to be included in the final EIS. While it is not anticipated at this point that phasing of project elements will be necessary, beyond what is described in the Draft EIS, any possible future need without discussion in the final environmental documentation may require re-opening of the NEPA process.

### **Bridge type and engineering design**

PSC members agree that additional due diligence is needed on the CRC's unique open web box girder bridge design. The project should advance its planned testing of the design and consideration of design alternatives to raise the level of confidence that the final design will be the best solution for the project with respect to engineering, constructability, schedule and cost.

Some PSC members also expressed a continued interest in ensuring that the final bridge design is reflective of a gateway crossing between our two states. The project should pursue new ideas and leadership on an architectural design for the bridge that strives towards these ends, while continuing to recognize physical and cost constraints.

### **Other recommendations of the IRP**

The recommendations of the IRP not specifically addressed above should also be considered.

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