

## Project Costs

**1. What is the cost of construction for the Oregon roadway work? What amount of risk and escalation is included in the cost?**

The CRC project uses the same cost estimating methodology as all other WSDOT projects, known as the Cost Estimating Validation Process or CEVP. The cost range is determined through a risk-based analysis that estimates the probability that actual construction costs will fall somewhere within a range. The ultimate cost and time to complete a project is subject to many variables including inflation, cost for materials or labor and the availability of funding. The cost of Oregon roadway work is estimated at \$595 million, including interchange replacements at Marine Drive and Hayden Island, and highway and local road network improvements. This cost estimate, at the 60 percent confidence level, accounts for escalation, risk and uncertainty.

**2. What is the cost to include a bicycle and pedestrian bridge to Hayden Island and ramp to the Vancouver waterfront and why are they included in the CRC project cost estimate?**

Ramps are required to allow bicycle and pedestrian traffic on the northbound main river crossing to access Hayden Island and the Oregon and Washington mainland. Without these ramps, a connection across the Columbia River for these modes of transportation does not function. The multi-use path elements and bike lanes and sidewalks in Washington and Oregon total about \$40 million. CRC has prepared concepts to reduce upfront construction costs for the Marine Drive and Hayden Island interchanges to respond to Oregon Governor Kitzhaber's request for the project design to reflect current economic realities while maintaining essential project benefits. Under this phased option, portions of the bicycle/pedestrian pathway on the Oregon mainland and Hayden Island would be postponed until additional funds were available.

## Funding

**3. Will the CRC project compete against other Washington projects (e.g. SR 520 or North-South freeway in Spokane) for federal discretionary highway funds? Will CRC be successful in getting funds?**

The CRC project is unique among the example projects because it is part of the interstate system, is an integrated multi-modal project and provides key access to two international ports. While it is impossible to know at this time whether CRC will be successful in receiving funds through competitive programs, these unique qualities and positive feedback received from federal agency and elected leadership suggest that the CRC project will be competitive against projects across the country. At this time, it is not known whether the CRC project may be in competition with other WSDOT projects for funding from a federal source.

## Transit

**4. What are the project elements to be paid for by the FTA New Starts grant? What park and rides will be paid for? How many light rail vehicles? Will the New Starts grant pay for improvements to Ruby Junction, Steel Bridge and TriMet operations center?**

The FTA New Starts grant will pay for the following transit-related costs:

- Final design and procurement
- 2.9 miles of light rail system and five stations (four in Vancouver)
- Three park and ride facilities in Vancouver located south of Fifth Street and east of Columbia Street (570 vehicle spaces); between 15<sup>th</sup> and 16<sup>th</sup> streets and Washington and Main streets (420 vehicle spaces); and just east of I-5 between the Veteran Affairs building and E. McLoughlin Boulevard (1,910 vehicle spaces)
- 19 Light rail vehicles plus expansion of the Ruby Junction maintenance facility to accommodate these vehicles
- Modification of the Steel Bridge across the Willamette River to accommodate vehicles from Vancouver
- Relocation of the Tri-Met operations center rather than construction of new facility

**5. What are the costs for modifications to the Steel Bridge, expansion of the Ruby Junction maintenance facility, and relocation of the existing Tri-Met operations center and why are they included in the CRC project cost estimate?**

Trains that travel from Vancouver to downtown Portland must cross the Steel Bridge across the Willamette River. Modifications to the Steel Bridge would improve the existing light rail transit track and electrical system allowing the Yellow Line trains to and from Vancouver, as well as all other MAX line trains that use these tracks, to increase their travel speed and avoid system delays. This provides more reliability for travelers from Clark County and North Portland. Specific improvements include grinding the transit rails within the track bed to remove the lift joint bumps, rail corrugation, and any rough field welds; installation of a vibration pad under the signal case to dissipate vibration; and stiffening of the overhead catenary system brackets to allow for greater impact as the catenary transfers from the fixed to movable span. The estimated Steel Bridge improvement cost is about \$300,000.

Expansion of the existing Ruby Junction Maintenance Facility in Gresham, Oregon is necessary to accommodate the additional light rail vehicles associated with the operations of the CRC project. Storage of train cars will be necessary during off-peak travel times and to conduct regular maintenance, cleaning and repair. Expanding an existing light rail facility rather than building a duplicate facility in Clark County with duplicate maintenance personnel provides a more cost effective solution. The preliminary estimate from 2011 to expand the existing Ruby Junction maintenance facility in Gresham to accommodate the 19 light rail vehicles needed for CRC is about \$50 million. This estimate is in addition to a recent estimate of about \$36 million to expand the Ruby Junction facility for the Portland to Milwaukie light rail project to accommodate a similar number of vehicles. Additional refinements of the CRC cost estimate related to Ruby Junction are in process and will reflect advancements and additional certainty in design.

Similar to WSDOT's traffic management centers, TriMet's existing Operations Command and Control Center at Ruby Junction is the 24/7 command center for the entire MAX and bus system.

The current center in Gresham cannot accommodate the addition of the Portland to Milwaukie and CRC project components without expansion that would consume valuable maintenance facility area and could constrain future rail expansion options. Instead, the center will be relocated to existing facilities at TriMet's Center St. location, which is significantly less expensive than constructing a new facility at Ruby Junction. A reduced back-up operations command center will be retained at Ruby Junction. Both projects will share in the cost of relocating the center to Center St.

**6. What protections are in place for Washington toll payers and tax payers to make sure they don't bail out TriMet?**

Operating costs for the light rail extension will be the subject of an agreement between TriMet and C-TRAN that will outline roles, responsibilities and cost sharing. Approval by the Washington State Legislature would be required before toll revenue could be used for any non-highway or non-tolling activity in Washington. See attached for information from TriMet on pension and long-term debt liabilities.

**7. Is it possible to add light rail to project at a later point? Please explain how this is redesign would impact schedule and budget based on current project assumptions.**

The approved project design anticipates a significant mode shift from single-occupancy vehicles to transit. A delay in adding light rail would require additional modeling to understand the resulting effects on traffic. Building the project without light rail would likely not meet the project's stated purpose and need, as documented in the analysis performed under the National Environmental Policy Act (NEPA) and approved in the federal Record of Decision. Federal lead agencies would evaluate changes before making a determination about additional environmental review.

If a change to the preferred alternative results in new and significant impacts, a supplemental EIS is required. A supplemental EIS would likely require 12 to 24 months to complete. The cost of conducting a supplemental EIS would depend on the scope of analysis and the length of delay. Costs incurred would include technical analyses, documentation and public outreach and comment.

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

**8. What happens if light rail ridership projections aren't met? Will express bus service be cut?**

Light rail ridership projections were developed as part of the travel market analyses conducted for the draft and final Environmental Impact Statements. Estimates from these analyses found that transit use increases substantially by 2030 for both the No-Build Alternative and the locally preferred alternative, over the current transit ridership.

Transit system operators regularly review ridership projections and utilize a variety of tools to adjust operations, as needed, to balance the needs of their transit riders and agency budgets. Decisions to adjust system operations may include transit fares, route service and schedules, and other aspects of operations. Specific agency responses to a scenario of lower-than-expected ridership on light rail are contingent upon many factors. However, with respect to cuts to express bus service, models show that opening day express bus service serves a different transit market than light rail (north of the project area) and therefore would be unlikely to bolster light rail ridership.

**9. Will C-Tran be responsible for paying for Tri-Met debt?**

The following is an excerpt from the agreement between C-Tran and Tri-Met that is currently under development: "The Parties acknowledge that TriMet has unfunded pension and medical benefits legacy costs that it will have to fund in the future. Any payments of such legacy costs shall be excluded from any calculation of Mutual O & M costs as they relate to C-TRAN's cost sharing obligations."

**Project Management and Delivery**

**10. Why have David Evans and Associates and its subconsultants been paid \$131 million for a contract that was originally valued at \$50 million?**

When the project was initiated, the DOTs estimated that \$50 million was a reasonable budget for the initial level of effort to be conducted under this contract. The original budget amount was not intended to represent the total cost of the entire environmental and planning work effort leading to permitting and construction. The contract was established and managed on a task order basis.

The CRC project team carefully managed the work effort to move through the federally mandated environmental process. As the environmental impact statement was developed, WSDOT and ODOT added work tasks and increased levels of technical analysis as the project evolved based on public input from more than 1,000 meetings and events, the guidance of 10 different project advisory committees, and recommendations from five expert review panels. Design refinements and analyses defined the level of work elements necessary and contract estimates were updated accordingly. The level of expenditures is well within national norms for projects of this size and complexity.

Given the inherent variability (and uncertainty) of the project work effort, WSDOT and ODOT have utilized the appropriate contract approach to help closely manage the consultant team's scope of work and level of effort. This contract approach involves a master agreement that establishes the broad range of contract services, timelines and levels of effort, which is then supplemented with individual task orders for specific work efforts and deliverables. These task orders are closely monitored through the contract and invoice payment process. The contracting process included oversight by the project directors, WSDOT and ODOT headquarters, and legal counsel.

**Tolling**

**11. What happens if expected toll revenues are not met to cover costs of debt service, toll collections, operations and maintenance? Are we going to raise toll rates?**

Toll rates will be set to sufficiently cover operations and maintenance, debt service and required reserves. Traffic and revenue analysis work will support initial toll rate setting and annual (or as needed) review to ensure rates are producing sufficient revenue to address bond covenants. Initial funding capacity estimates inform decisions around total toll-backed borrowing and will be based on conservative assumptions to ensure repayment. The state transportation commissions anticipate an annual evaluation of rates. Tolls may need to be adjusted to address revenue shortfalls, however, analysis demonstrates that every corridor has revenue maximization point. As toll rates rise above this point, there are diminishing returns and total revenue declines while traffic effects associated with diversion increase. Washington state seeks to establish borrowing levels to provide sufficient project funding while maintaining a sufficient distance from forecasted revenue maximization to

ensure there is the ability to adjust toll rates without exceeding this point. Toll rates cannot be adjusted upward without considering the effects to revenue generation and traffic diversion.

**12. Why does the Final EIS provide costs in 2006 dollars?**

Final EIS toll rates are expressed in 2006 dollars to be consistent with previous studies, including the Draft EIS from 2008. The Final EIS provides full toll rate schedules in 2006 dollars and provides some rates in 2010 and 2018 dollars to demonstrate the effect of assumed increases at completion of construction. The project anticipates transitioning to “year of collection” dollars as the traffic and revenue analysis work progresses.

## **Final EIS and Environmental Mitigation**

**13. Why does the Final EIS not provide information on the economic impact to the community? Is the economic impact known?**

Economic impacts are one of several effects analyzed and considered during the environmental planning process. The analysis shows the CRC project will provide a large economic benefit to the states of Washington and Oregon. Several types of effects or impacts (these terms are used interchangeably) are included in the CRC environmental analyses presented in the Draft and Final EIS, and include direct, indirect, and cumulative effects. In all three areas, economic or associated benefits and impacts were included, as required by the National Environmental Policy Act. For example, long-term direct effects would include displacement of residents or businesses to accommodate a project’s footprint. Indirect effects include those caused by an action at a later time or further removed in distance, such as changes in the pattern of land use. Cumulative effects can include minor effects with cumulative significance, such as contributions to local and regional greenhouse gas emissions.

In 2012, CRC conducted a broader economic analysis than was required under NEPA which considered project-related benefits of landside traveler savings, marine navigation savings, and the economic effects of improved market access and connectivity. The analysis found that estimated traveler benefits and economic growth were well in excess of project costs.

**14. Why is it necessary to include Hood River channel restoration and a contribution to a Fort Vancouver in the CRC project cost estimate? How much will these elements cost?**

Replacing the I-5 Bridge over the Columbia River and installing two new ramps associated with I-5 and a local light rail/arterial bridge over North Portland Harbor requires several federal, state, and local permits and approvals that call for compensatory mitigation for unavoidable impacts to aquatic resources. Relevant permits include:

- Clean Water Act (CWA) Section 404 permit from the US Army Corps of Engineers
- Removal-fill permit from the Oregon Department of State Lands
- Hydraulic Project Approval (HPA) from Washington Department of Fish and Wildlife (WDFW).
- Clean Water Act Section (CWA) 401 certification from Oregon Department of Environmental Quality (DEQ) and Washington Department of Ecology (DOE)
- Environmental Zone (E-Zone) Overlay within the City of Portland, and Shoreline Management Areas and Critical Area Overlays within the City of Vancouver

State law requires compensatory mitigation sites for project impacts be located both in Oregon and Washington. Mitigation site selection was finalized in coordination with federal, state, and local

agencies to meet all regulatory requirements. The Columbia River has ESA-listed salmon species that pass through the project area. The resource agencies directed the CRC project team to select mitigation sites that would benefit the salmon runs most affected by the CRC project. The compensatory mitigation site identified for Washington is at the confluence of the Lewis River and the Columbia River and is budgeted at \$10 million. The compensatory mitigation sites identified for Oregon are on the Sandy River and the Hood River and are budgeted at \$1.75 million and \$5 million, respectively. The ecosystem benefits provided by restoration activities at these sites are immediately available and are greater than could be reasonably achieved at sites near the project footprint because the potential to improve juvenile rearing habitat is greater in a less urban environment.

The Vancouver National Historic Reserve includes significant cultural resources and the entire property is a cultural resource and park resource, including individual archaeological sites. These resources mean that federal regulations require mitigation of impacts to the facility. The CRC Project will adversely affect the reserve through direct and indirect effects including a direct taking of land that will remove a portion of the Fort Vancouver Village from federal control and protection, resulting in a loss of visitor access, and direct physical damage and destruction of portions of the Village, as well as the introduction of visual and audible elements associated with project improvements.

Mitigation for these impacts includes the treatment of significant archaeological resources that will be impacted through collection and documentation as well as the rehabilitation of a building for a National Park Service museum/curation facility. Interpretive elements associated with the facility will include exhibits on the historic properties that are destroyed or otherwise adversely affected and allow access to these collections by the public, consistent with federal and National Park Service guidelines and policy, particularly 36 CFR Part 79. The federal leads and WSDOT will contribute \$16.9 million to NPS for construction of this facility.

## Bridge Design

- 15. In the current design how much space is there in the area under the bridge deck between the light rail portion and the bike/ped path portion and could that accommodate a lane of traffic? Is it possible to redesign the project to allow for traffic in the area under the bridge? Please explain how this is redesign would impact schedule and budget based on current project assumptions.**

The replacement I-5 bridge consists of two deck truss structures side-by-side, each with a cell underneath the bridge deck approximately 20 feet wide. These cells are designed to accommodate light rail (on the southbound structure) and a pedestrian and bicycle pathway (on the northbound structure). Assuming these designed uses were not applied, each 20-foot space is wide enough to accommodate one lane of traffic with minimal shoulder widths that do not meet current design standards (12-foot travelled way, 2-foot inside shoulder, 6-foot outside shoulder).

The concept of placing auto traffic in the area underneath the bridge deck is one the project has considered. It presents several design challenges for ingress/egress for either local or freeway traffic because traffic would be entering and exiting I-5 from below the current road deck. If this added lane of traffic were part of the highway system, it would likely require an increase in the project's footprint to provide ramps to and from the lower deck. For local traffic, this would require a looping ramp structure that ties into the existing street network.

Either of these changes would delay the project, add cost and likely require a new environmental review. Redesign would delay the project up to two years, depending on the extent of the redesign, the need to examine impacts of new alternatives against the CRC's stated purpose and need, and additional public process. The increase in cost to the project is unknown without a firm concept to evaluate.

**16. What is the added depth on the bridge deck required because light rail is on the bridge?**

The structure dimensions are largely driven by the span length and width of the bridges. The long span lengths are necessary to provide the required width for shipping channels and to minimize the number of piers in the river. The structure depth is an additional five feet deep because light rail is on the bottom deck. See attached engineering drawings: rails for transit are depicted on the lower deck of the southbound structure; bikes and pedestrians would use the lower deck of the northbound structure.

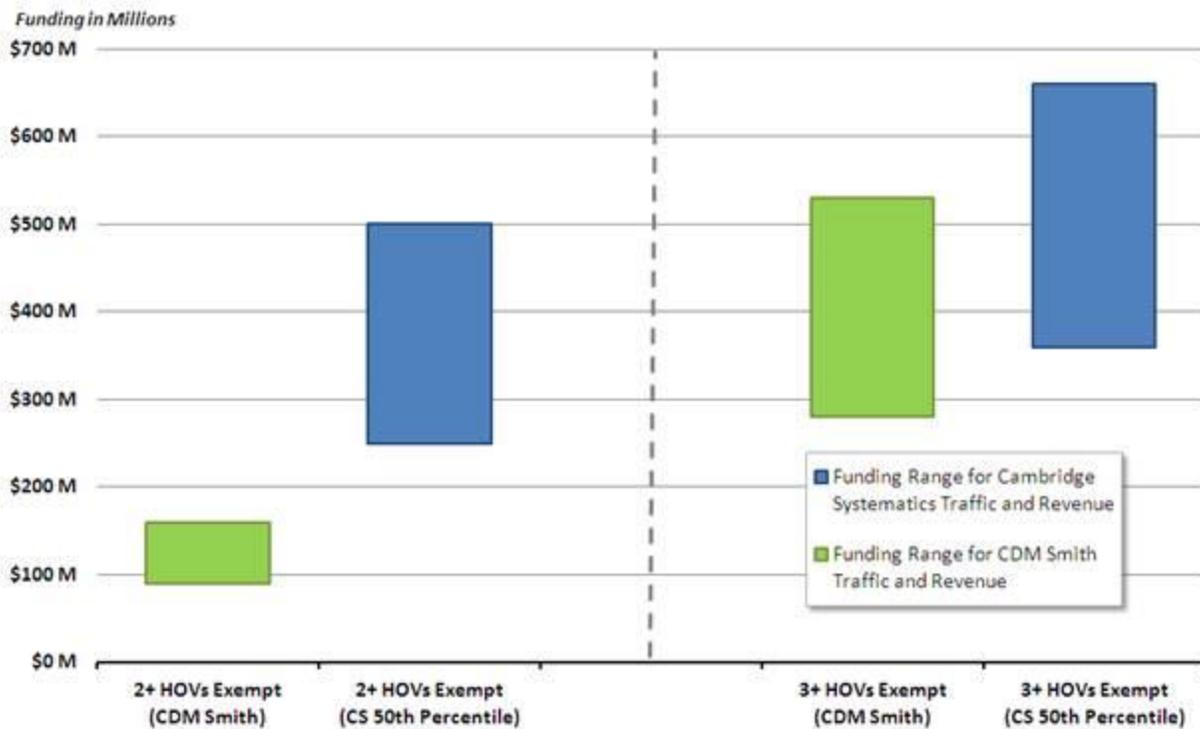
## Tolling Questions Related to Other WSDOT Projects

### 1. How have toll revenue projections for the SR 99 tunnel project changed over time? Will toll revenue adjustments affect construction of other transportation projects?

The 2009 Legislature stated the Alaskan Way Viaduct Replacement Program finance plan must include no more than \$400 million in toll funding. A report assessing various toll scenarios and potential revenue generation was provided to the Legislature in early 2010. Since then, based on lessons learned from the SR 520 toll funding process, the economic recession and guidance from the State Treasurer's office and State Finance Committee, WSDOT expects the toll funding generated will be less than \$400 million. These assumptions have also been incorporated into the Columbia River Crossing project's funding plan. WSDOT is in the process of analyzing potential toll scenarios with the 15-member Advisory Committee on Tolling and Traffic Management. The 2012 Legislature revised the program's budget to reflect \$200 million in funding from tolling, and added \$200 million in federal funds to the program.

### 2. Why did toll revenue projections on the I-405 express toll lane project change and what impact will the shortfall in revenue have on the I-405 project or other projects around the state?

As provided to the JTC in November, current revenue projections for the I-405 Express Toll Lanes from both Cambridge Systematics' Independent Eastside Corridor Tolling Study and CDM Smith's Traffic and Revenue show that the I-405 Express Toll Lanes will generate significant revenue. See chart below.



Note: Funding ranges reflect variation in financing assumptions for the expected value forecasts for each toll traffic and revenue scenario.

### **Potential Toll Funding Contribution Ranges (DRAFT – 2012)**

In 2009, WSDOT provided a range of revenues that the I-405 express toll lanes project could generate. We provided a broad range because the estimates came from a planning-level study that looked at five different options as well as toll policy decisions on how to operate the lanes. Since a preferred option was identified in 2009 (Option 4, a 40 + mile Express Toll Lane system) changes in the economy, traffic and further refinements to the alternative have occurred. As a result, WSDOT has updated its traffic and revenue projections with consultant, CDM Smith.

Cambridge Systematics has recently provided their traffic and revenue gross revenue projections. Both CDM Smith's and Cambridge Systematics' more detailed and updated 2012 results provide for a narrower range. In addition, there are key differences between the 2009 CDM Smith study and the 2012 studies (CDM Smith and Cambridge Systematics) due to the following:

- The economy has shifted since the 2009 analysis, causing the 2012 analysis to be in the lower end of the 2009 range. However, the 2009 low funding range was conservative in anticipation of a potential economic downturn (*Great Recession*). The 2012 projected gross revenue is still within the overall 2009 range.
- A new value of time survey was completed for the 2012 analysis.
- The 2012 analysis included a "ramp up" period to represent the time it takes for users to learn and understand how the new express toll lane system works.
- The 2012 analysis has a number of different tolling operation assumptions than the 2009 report. For example, the minimum toll was a \$1 in 2009 while the 2012 analysis assumed \$0.75.

The traffic and revenue results' narrower range does not impact the I-405 Project. It was always noted that other funding would likely be needed to supplement the toll revenue to fund the south end of I-405. Additionally, while traffic and revenue results are narrower, project construction costs have also been lowered due to a better bidding climate. WSDOT is currently working with our Executive Advisory Group and the Office of the State Treasurer on completing the legislatively directed funding and phasing plan (EHB 1382), which will include a financial analysis in 2013.