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## Environmental Review and Locally Preferred Alternative

### **1. What was the process and who selected the Locally Preferred Alternative?**

The boards and councils of all six local partner agencies (Metro, RTC, Portland, Vancouver, TriMet, C-Tran) unanimously passed resolutions supporting a replacement bridge with light rail as the locally preferred alternative (LPA) in 2008. This led to its formal selection by the project owners, WSDOT and ODOT. The same agencies reaffirmed the LPA when they signed the Final Environmental Impact Statement (EIS) in 2011. The LPA selection occurred after a multi-year process that began in 2005 with local stakeholders, elected officials, and federal, state, and local agencies. The steps in the process included alternatives development, evaluation in the draft and final EIS, and publication of the Record of Decision. Approximately 1,600 public and agency comments were submitted on the draft EIS.

### **2. Beyond the partner agencies, which groups and individuals were involved in the LPA selection process and when were they involved?**

The CRC project team engaged five citizen advisory groups with nearly 100 collective members before selecting the LPA. The general public was also engaged through 525 open houses, community presentations, and information booths from 2005 to 2008. This resulted in more than 15,000 individual contacts with members of the public and the receipt of 4,380 written and verbal comments. Of the people who expressed a preference for an alternative under consideration, more people supported a replacement bridge over a supplemental bridge and more people supported light rail compared to bus rapid transit. (See attachment for names of advisory groups and their members.)

### **3. Was there a group called the Project Sponsors Council before 2008?**

A group called the Project Sponsors Council met eight times from 2005 to 2007 to reach consensus on project development. Members included elected officials and regional leaders of the project’s sponsoring agencies. This group was formed by WSDOT and ODOT to advise the agencies and made no

formal recommendations while it existed. A second group, also known as the Project Sponsors Council, was appointed by the Washington and Oregon Governors in 2008 to advise on completion of the Final EIS, project design, project timeline, sustainable construction methods, compliance with greenhouse gas emission reduction goals and the financial plan. Their meetings resulted in recommendations to the governors, WSDOT and ODOT, which were implemented.

**4. What is the process to amend the selected alternative and what are the implications to the project in terms of time, cost, and New Starts funding availability?**

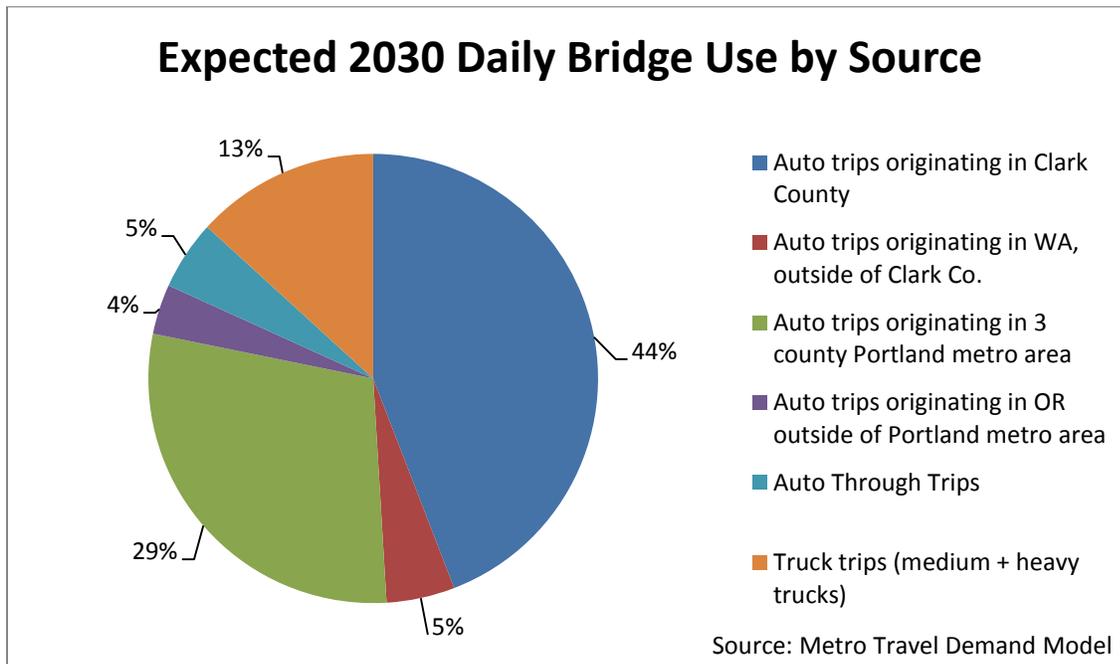
Amending the LPA requires describing the design changes and the associated environmental impacts in a NEPA re-evaluation document. FTA and FHWA would review the document and decide a course of action. If FTA and FHWA determine the re-evaluation finds no new significant impacts, they will amend the Record of Decision and the project proceeds. 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 New Starts Full Funding Grant Agreement would be delayed until completion of the supplemental EIS because it cannot be awarded without a current Record of Decision. With a 12 to 24 month schedule delay, FTA funding is uncertain.

**Transportation**

**5. What are the traffic volumes on I-5?**

About 127,000 vehicles crossed the I-5 bridge each weekday in 2010.

**6. Who will use the I-5 and adjacent interchanges?**



## **7. Will CRC worsen congestion at the Rose Quarter?**

No. The southbound traffic congestion that currently exists near the I-5/I-405 split (Rose Quarter) will not be improved or worsened by the CRC project. Just north of the Rose Quarter (three miles south of the project's southern boundary), the forecasted morning traffic volumes for both the build and no-build scenarios are the same. About 35 percent of the southbound traffic from Washington in the morning exits I-5 within two miles of the bridge. Traffic volumes do increase as traffic enters I-5 from north Portland toward the Rose Quarter. The Oregon Department of Transportation and the City of Portland are currently working on a project related to Rose Quarter congestion.

## **8. Do the improvements result in any real time savings for commuters?**

Drivers heading north on I-5 from I-84 in Portland to 179th Street in Vancouver will save 20 minutes compared with the No Build Alternative. Drivers using the short segment of I-5 from Columbia Boulevard to SR 500 in Vancouver will save eight minutes compared to the No Build Alternative. The duration of congestion on the bridge is reduced from a predicted 15 hours a day in 2030 under the no-build scenario, to 5.5 hours when the locally preferred alternative is constructed.

## **Transit**

### **9. Why was light rail transit selected over bus rapid transit and by whom?**

Light rail was selected over bus rapid transit by the Vancouver City Council, C-TRAN Board, Southwest Washington Regional Transportation Council, Portland City Council, TriMet Board, Metro Council, and the bi-state CRC Task Force for the following reasons:

- Light rail will travel faster than bus rapid transit within the project area (averaging 17 mph versus 14.5 mph, including stops) because it will have signal priority, shorter wait times at stations, and quicker acceleration. Bus rapid transit would travel in exclusive lanes, but would be mixed with general traffic outside the project area, and would be delayed due to congestion in those areas.
- Light rail has more capacity and will carry 6,100 people over the I-5 crossing northbound during the peak period, while the alternatives with bus rapid transit would only carry 5,150 to 5,350 people.
- Integration with the existing system will allow transit users to travel between Vancouver and Portland without a transfer. Transfers add travel time and decrease trip reliability and convenience.
- Operation and maintenance costs are 25 percent lower per rider compared to bus rapid transit.

WSDOT and ODOT selected the locally preferred alternative, which was endorsed by FHWA and FTA in the Record of Decision.

### **10. What percentage of traffic in the project area will be served by light rail?**

Adding light rail to the I-5 corridor will double the number of river crossings made on transit in 2030, compared to the No Build Alternative. This means 16 percent of all trips will be made on transit. Of those transit passengers, 91 percent (over six million annual trips) would travel on light rail and nine percent on buses. This amount of transit ridership equates to about one highway lane of traffic.

**11. Describe and compare a light rail, bus rapid transit, bus and auto trip from downtown Vancouver and downtown Portland (Pioneer Square).**

The following tables are from the Final EIS Transit Technical Report :

Average Weekday A.M. Peak Hour Transit Travel Time <sup>1</sup> between Select Locations – Year 2030 (minutes)			
	LPA (LRT)	2030 No Build Alternative <sup>2</sup> (Bus)	BRT <sup>3</sup>
Northern Terminus to Pioneer Square	38	50	43
Downtown Vancouver (7 <sup>th</sup> St. and Washington St.) to Pioneer Square	32	47	35

<sup>1</sup> Transit travel time in this table includes in-vehicle and wait time for transfers.  
<sup>2</sup> The definition of the No-Build Alternative (Alternative 1 in the DEIS) was updated since the DEIS was published to reflect most current information.  
<sup>3</sup> BRT was Alternative 2 (Replacement Bridge with BRT) in the DEIS.

Transit Average Weekday and Annual Transit Passenger Trips Crossing the I-5 Bridge – Year 2030			
	LPA (LRT)	2030 No Build Alternative <sup>1</sup> (Bus)	BRT <sup>2</sup>
C-TRAN Express and Local Bus	1,900	10,200	11,300
High-Capacity Transit	18,700	0	5,400
Total	20,600	10,200	16,800

<sup>1</sup> The definition of the 2030 No Build Alternative (Alternative 1 in the DEIS) was updated since the DEIS was published to reflect most current information.  
<sup>2</sup> Alternatives 2 (BRT) and 3 (LRT) were the Replacement Bridge with BRT and LRT in the DEIS, respectively.

**12. Did the analysis of bus rapid transit assume it would operate in a dedicated lane?**

The analysis assumed bus rapid transit operating in a dedicated lane from Clark College to Portland’s Expo Center. Bus rapid transit riders would then transfer to the existing light rail line at the Expo Center and continue south.

**13. Describe bus rapid transit versus light rail costs in terms of short-term and long-term capital and operating expenses.**

The capital cost to construct bus rapid transit is between \$600 and 750 million. Light rail is estimated to cost \$850 million to build. Bus rapid transit operating costs for the corridor were estimated in the draft EIS to be about \$2 million a year greater than light rail due to the greater number of drivers and buses needed compared to light rail operators and vehicles to meet the ridership demand. (\$5.15 million for BRT compared to \$2.96 million for light rail in 2030, represented in 2007 dollars.)

**14. Are ridership forecasts for light rail and bus rapid transit the same as the ridership time-value-of-money considerations used in the tolling models? If not, why are they different?**

Yes, the value of time is a model input for all travel modes (e.g. transit, personal vehicle).

### **15. How do ridership projections on bus rapid transit compare to light rail?**

In the Draft EIS, the total number of annual transit riders crossing the I-5 bridge in 2030 with bus rapid transit was estimated to be 4.8 million compared to 6.1 million with light rail.

### **16. Describe congestion impacts, short-term and long-term, of bus rapid transit vs. light rail.**

Light rail will reduce congestion by carrying six million passengers annually or 16 percent of all trips crossing the river, which is the equivalent of one lane of traffic. Because bus rapid transit carries fewer passengers per vehicle, it would contribute to less congestion reduction on local city streets and on the highway compared to light rail. Short-term construction congestion has the potential to be less with BRT because the track infrastructure is not required.

### **17. If we switched to BRT, what would be the impacts on the project?**

Changing the LPA requires describing the design changes and the associated environmental impacts in a NEPA re-evaluation document. FTA and FHWA would review the document and decide a course of action. If the re-evaluation finds no new significant impacts, FTA and FHWA amend the Record of Decision and the project proceeds. 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 New Starts Full Funding Grant Agreement would be delayed until completion of the supplemental EIS because it cannot be awarded without a current Record of Decision. A new grant application would be submitted, which FTA would re-rank. With a 12 to 24 month schedule delay, FTA has stated that federal funds may not be available for the CRC Project.

### **18. Both Portland and Vancouver, have or plan to have, both bus rapid transit and light rail. Why does bus rapid transit make sense in some locations, but not across the bridge?**

The best mode for a particular corridor hinges on the characteristics of the corridor. In this case, the “single seat ride” connectivity between Vancouver and Portland with the existing light rail line is the most effective. The high ridership on light rail better handles the demand, and light rail will provide continuous service throughout the corridor, cost-effective operations in the long-term on a per passenger basis, and supports the City of Vancouver’s vision for the development of downtown.

### **19. How much is TriMet’s current debt obligation?**

TriMet does bond for defined capital costs, including but not limited to new buses and TriMet’s share of light rail projects. The TriMet Board has set a policy that TriMet’s senior lien (or payroll tax backed debt) will not go beyond a sustainable level of 7.5 percent of net continuing revenue. Current levels of senior lien debt for Fiscal Year 2013 are approximately 5.4 percent. TriMet’s most recent bond rating is AAA (Standard & Poor’s highest) and Aa1 (Moody’s second highest). TriMet has sold capital grant receipt bonds as well, but these are being paid off by outside resources, such as federal funds from regional flexible funds or from the FTA through a Full Funding Grant Agreement for a light rail project, so these bonds do not have an effect on TriMet financial resources.

## Bridge

### **20. How was the current bridge type and configuration selected?**

A two structure bridge with two levels was selected through a public and technical process. This included consideration by the CRC Task Force, Urban Design Advisory Group, Pedestrian and Bicycle Advisory Committee, and Project Sponsors Council as a way to minimize the project footprint and environmental impacts. A Value Engineering Study in 2007 proposed reducing the number of structures across the Columbia River from three to two to reduce the footprint, environmental impacts and costs. This was confirmed by the bridge expert review panel in 2011.

With highway and transit alignments in close proximity, it is more cost effective to combine both modes onto the same set of structures. A separate transit bridge would increase in-water environmental impacts and increase hazards to maritime traffic. A stacked deck design was chosen because putting all the activity at one level would result in a bridge whose width would be at the limits of current technology. Even if proven to be technically feasible, it would increase the complexity of construction and the project cost.

### **21. Why not build a third bridge?**

A third bridge would not address transportation problems in this corridor, including crashes, congestion, and risk of failure in an earthquake nor would it get people where they want to go. Most trips using I-5 have origins and/or destinations within the project area itself. Between 68 and 75 percent of all peak hour cross-river trips enter and/or exit I-5 near I-5 because it provides the most efficient route to key destinations including the ports of Portland and Vancouver and downtown Vancouver and downtown Portland. Traffic analysis found that most I-5 trips would not be diverted to a new upstream or downstream bridge and the existing safety issues on I-5 would remain.

### **22. Has the project considered the Third Bridge Now option?**

Many options and alternatives were considered, including new arterial and highway corridors, which Third Bridge Now advocates. Only those proposals that could adequately address all six identified problems in the I-5 corridor were advanced for comprehensive analysis in the Draft EIS. The analysis prior to the draft EIS found that building a bypass option with a new river crossing, in place of making I-5 improvements, would not meet the basic elements of the project's goals of improving safety, reducing congestion, improving freight mobility, reducing seismic risk, improving transit and enhancing the bicycle and pedestrian path in the I-5 corridor.

### **23. Why was a replacement bridge chosen over a supplemental bridge next to existing I-5 bridges?**

The supplemental alternative would have retained the existing Interstate Bridge for northbound traffic and constructed a new bridge structure for southbound traffic and light rail downstream of the existing bridge. The replacement bridge was selected because it provides greater congestion relief, more traffic capacity, safer highway features, safer river navigation, greater improvements for bicyclists and pedestrians, fewer community effects on Hayden Island, and better potential for future waterfront development in the Bridge Influence Area.

## **24. Would a separate local traffic bridge for Hayden Island reduce congestion on I-5 near the Interstate Bridge?**

A separate arterial bridge between north Portland and Hayden Island is included in the project plans as part of the Hayden Island improvements. A non-highway bridge connecting Hayden Island to North Portland without replacing the Hayden Island interchange would cause longer delays and queues at the ramps associated with the Marine Drive interchange. It would not accommodate the traffic generated by development on Hayden Island planned by the City of Portland or provide enough relief to I-5 to eliminate the need to replace the Hayden Island interchange.

## **25. Are the bridges structurally stable? Can they be seismically retrofitted using low cost measures that result in a 95 percent reduction in bridge lifts?**

The Interstate Bridge is not seismically stable. The existing bridges do not comply with modern seismic standards and are vulnerable to damage or collapse in an earthquake. Both existing structures are supported by wooden pilings set in liquefiable soils. Retrofitting the Interstate Bridge to reduce seismic risk would increase the footprint of the existing piers, narrow the navigation channel, and still leave the potential for bridge lifts. Half of the bridge lifts are required for maintenance and non-commercial marine traffic. A retrofit would not address the high crash rate, duration of congestion, freight immobility, poor bicycle and pedestrian facilities or limited transit options.

## **26. How/why/when was a 95-foot bridge agreed upon?**

The project team, working with the 39-member bi-state task force, sought to avoid, minimize and mitigate any potential impacts. Different heights were discussed in relationship to impacts on river users, traffic safety, airspace, transit, downtown Vancouver, and Hayden Island and overall footprint. Local communities and the states recognized the need to balance these (at times) competing interests as potential solutions were evaluated. In 2006 the bi-state task force recommended:

- Removing the low level, movable span bridge components from consideration due to negative effects to highway mobility, highway safety, freight movement, maintenance costs and the lack of a significant difference in community impacts when compared to a higher mid-level fixed span bridge.
- Removing four high-level bridge components (greater than 130 feet) because of safety concerns with Pearson Airfield and 2004 findings that all known commercial and recreational vessels could be accommodated at 125 feet.
- Advancing the mid-range height component based on the 2004 boat survey findings that a fixed span structure about 80 feet above Columbia River Datum (CRD, a fixed, low water benchmark specific to the river) would accommodate all but six known vessels.

## **27. If light rail were built on the same level as the bridge deck, how much additional clearance would be available? Are there other impacts of changing to a single-level bridge?**

If light rail was moved to the top deck and bridge type remained the same, there would be little additional vertical clearance for vessels. The clearance is being driven by engineering standards due to the bridge type, not the placement of light rail or the multi-use path on the lower deck. Some additional height could be gained with a change in bridge type or number of structures. However, there would be greater environmental impacts, a schedule delay associated with the design change, potential for

worsening navigation in the river channel and the need for additional environmental reviews and approvals, which would result in further cost associated with schedule delay.

**28. Describe the current bridge lift frequency now and for the past five years. Is the number, type and timing of the lifts the same from year to year?**

Since 2006 there has been more than one bridge lift per day on average. There have been as few as 407 (2009) bridge lifts in a year and as many as 572 (2007).

- 2011 – 429
- 2010 – 412
- 2009 – 407
- 2008 – 474
- 2007 – 572
- 2006 – 460

The number of lifts varies across years, months, and days based on water level, maintenance needs and river traffic. More bridge lifts occur during spring runoff when currents and high water require bridge lifts to avoid the difficult “S-curve” navigation. At low water, there can be as few as two to three lifts per month (July - October) and during high water as many as nine lifts can occur in one day (May 2011).

**29. High water levels will mean that the clearance may be as low as 75 feet some time of the year. When and how long do high water conditions exist?**

The highest water levels generally occur between April and June. With a 95-foot bridge, a clearance of 75 feet would equate to a high water level of 20 feet above Columbia River datum, which rarely occurs. Ordinary high water is 16 feet above the Columbia River datum. The river has exceeded that height less than 2 percent of the time between 1973 and 2012.

**30. For whom, and how tall were the loads? How many times have there been shipments of 95 feet or taller? What happens to these 365 loads with the proposed bridge? Describe the businesses and affected users who say the 95-foot clearance is unacceptable. Who are they and what clearance do they say they need? For the periods of the year when clearance would actually be as low as 75 feet, are there more users who say this is unworkable for them?**

CRC staff is preparing a navigation impact report, which will include analysis of the historical frequency of vessels transiting through the area with a clearance need of greater than 95 feet. At this point, we have identified the potentially impacted river users, including shippers and vessels, and their highest reported clearance requirements. At an Ordinary High Water condition of 16 ft. (exceeded less than 2 percent of the time), there are 50 distinct vessels and three fabricators that would potentially be impacted at a 95-foot bridge height. The 50 vessels includes: 36 construction barges owned by 12 separate firms; eight sailboats; three federal vessels (the Corps of Engineers Dredge Yaquina, the Job Corps M/V Ironwood, and the US Navy YTT 10 Battle Point); two passenger sailing ships (the Lady Washington and the Hawaii Chieftain); and the proposed transit of the USS Ranger to a permanent berth as a visitor attraction in Fairview, Oregon. The three fabricators include Thompson Metal Fab, Oregon Iron Works, and Greenberry Industrial.

**31. What are the impacts of a higher bridge?**

A preliminary analysis in 2011 found that a 125-foot bridge could have the following impacts:

- **Safety:** Potential intrusion into airspace of Pearson Airfield
- **Freight:** Steeper grades, which slow freight and could necessitate a climbing lane.
- **Landings on both sides of the river:** The bridge landing could move north, become steeper, or have longer grades and ramps. The transit station may be moved further north and result in a smaller community connector in Vancouver.
- **Costs:** Project costs could increase with any height above 95-feet.
- **Other issues:** CRC staff is recalculating substructure costs associated with a higher bridge, which may increase costs. With steeper grades, transit run time could be affected and the bicycle/pedestrian pathway would be less inviting and accessible.

### **32. What are FAA concerns with regard to the bridge height? Are those concerns the same for Pearson Airfield?**

FAA’s major concern is safety. FAA analyzes the proposed structures’ impacts to the defined airspaces and is the only agency that can issue a “hazard to aviation determination.” If this determination was made, all liability could be placed upon the owner of the structure. An additional 30 feet of bridge height (125 foot bridge) would encroach into airspace for Pearson Airfield and potentially receive a “hazard to aviation determination.” An additional 30 feet of vertical height would likely not impact airspace for Portland International Airport.

### **33. Why can’t we do a lift and limit lifts to the middle of the night (2 to 5 a.m.)?**

If a lift span was put in place, it is not likely that it could be restricted to night time use only. Federal law ( [Title 33, Part 177 Draw Bridge Operations](#) ) gives marine traffic the right-of-way over vehicular traffic. The SR 520 floating bridge (with significantly less marine traffic) has recently received approval from the Coast Guard to limit bridge openings to non-peak times only during bridge construction. With a lift span, there would be continued traffic delays and operations and maintenance costs.

### **34. What would be the cost of a mid-level bridge with a movable span?**

Work completed to date shows that adding a lift span to the proposed deck truss bridge and alignment would result in a structure of unprecedented complexity with the associated technical challenges. A lift span would increase the cost of the project by at least \$250 million. The technical challenges of placing a lift span on the proposed bridge would lead to a re-evaluation of the bridge type, configuration, and alignment. This would require additional environmental reviews and approvals and increase costs due to delay.

### **35. At what point will we spend more on mitigation than we would have spent on a bridge lift?**

Conversations with the fabricators and vessel owners are underway. It is too early to estimate the cost of mitigation, however, because the bridge height has not been finalized. Our preliminary investigation has found that adding a lift span to the existing bridge type and alignment could cost at least \$250 million in construction costs.

## Funding

### **36. What funding commitments are needed and by when to ensure access to federal funding?**

The CRC's schedule takes advantage of federal financial support, especially transit funding from the FTA's New Starts program. The New Starts program is currently funded and the project is well positioned to receive support. The project's favorable rating with FTA has earned the project a favorable spot in the competitive queue for New Starts funds, about \$850 million. To apply for the New Starts transit funds in 2013, FTA requires both Oregon and Washington to have committed state funds. After 2013, however, our federal partners have made it clear that there is less certainty about federal transit funding and other projects may move into a leading spot.

### **37. What is the funding schedule? Why is there such a sense of urgency?**

The funding schedule is designed to access FTA New Starts funds, which will exist through 2013. FTA has said there is less certainty after 2013, and CRC is one of a few projects at the top of the list. State funds must be committed in 2013 to continue the process as well as potentially secure a TIFIA loan.

### **38. Can we still get federal transit funding if light rail is removed from the project?**

The project will likely 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, a supplemental EIS would likely be 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. If light rail was removed from the project, it would be virtually impossible to receive federal transit funding on the current timeline.

### **39. Is there federal funding for bus rapid transit and if so, how much would be needed and what would be the timeline to secure it?**

New Starts/Small Starts funds can be used for bus rapid transit. If a decision was made to change the transit mode from light rail to bus rapid transit, we would have to restart the New Starts application process, which would delay the project by several years and likely result in a decrease in potential funding because CRC would step out of the "queue" and would likely not rank as high in terms of cost effectiveness and ridership.

### **40. The funding plan identifies \$850 million from FTA. Would bus rapid transit, which costs less than light rail, still be eligible for \$850 million in federal funding?**

It is not possible to speculate on how much federal funding may be available for a project that included bus rapid transit. If a decision was made to select a transit mode other than light rail as identified in the Record of Decision, the Federal Transit Administration would re-evaluate the project and assess its competitiveness compared to other projects across the country.

**41. Does the \$850 million funding from FTA require a local match? If so, how much and what is the source?**

In general, FTA requires a minimum 20 percent local match. Congressional language adopted in 2010 directs FTA to consider the entire CRC project when determining the match requirements. The exact amount of the match is under discussion, but would be paid by the two states.

**42. Is a tax increase required to fund bus rapid transit? How does it compare to a light rail tax increase?**

Neither light rail transit nor bus rapid transit requires a sales tax increase to fund operations and maintenance. A sales tax increase is one option for operations and maintenance funding. Operations and maintenance costs are greater for bus rapid transit than light rail transit.

**43. Who is responsible for debt repayment of light rail operations and maintenance if light rail ridership and therefore revenue are lower than estimated in the financial plan?**

The capital construction of light rail will be funded through the FTA New Starts program. The operations and maintenance costs will be funded by the local transit agencies through local revenues and fare box recovery. There is no current plan to issue debt to pay for transit operations and maintenance.

**44. Who is responsible for debt repayment if toll revenues are less than estimated in the financial plan?**

Like other toll projects, the responsibility of debt repayment depends on the bond covenants and the types of bonds. The responsibility to repay the bonds lies with the states.