Columbia River CROSSING

DRAFT STEP A COMPONENT FACT SHEETS

April 19, 2006

DRAFT COMPONENTS STEP A SCREENING REPORT

April 19, 2006

Columbia River CROSSING

TABLE OF CONTENTS

List of Figures

Transit Fact Sheets

River Crossing Fact Sheets

List of Tables

ACRONYMS

AA	Alternatives Analysis
ADA	Americans with Disabilities Act
AGT	Automated Guideway Transit
BNSF	Burlington Northern Santa Fe Railroad
BRT	Bus Rapid Transit
CRC	Columbia River Crossing
CRD	Columbia River Datum
DEIS	Draft Environmental Impact Statement
EIS	Environmental Impact Statement
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
HOV	High Occupancy Vehicle
I-5	Interstate 5
LRT	Light Rail Transit
NEPA	National Environmental Policy Act
ODOT	Oregon Department of Transportation
PDX	Portland International Airport
PRT	Personal Rapid Transit
RTC	Regional Transportation Council
RC	River Crossing
SOV	Single Occupant Vehicle
TR	Transit
TSM/TDM	Traffic System Management/Traffic Demand Management
WSDOT	Washington State Department of Transportation

This page intentionally left blank.

1. What's Inside

On March 22, 2006, the project team presented a *Components Step A Screening Report* to members of the I-5 CRC Task Force. The report described how a broad range of potential transportation improvements (also known as "components") was initially evaluated and screened, and presented the results of that screening.

This companion *Component Step A Fact Sheets* provides fact sheets for each of the 14 Transit and 23 River Crossing components taken through Step A screening. It was prepared to address questions posed by the Task Force and to more fully document the rationale underlying staff's recommendations to advance or drop from further consideration certain Transit and River Crossing components.

As described in more detail below, the Step A screening process applies the six "pass/fail" questions derived from the project's *Problem Definition* as adopted by the Task Force in November 2005. A "fail" response to any of the relevant questions represents a "fatal flaw" that is inconsistent with the project Purpose and Need. Staff recommended dropping from further consideration all components receiving one or more "fail" responses. Only those components free of any "fail" responses were recommended for further consideration.

The fact sheets present the "pass/fail" responses and supporting information for each of the Transit and River Crossing components.

1.1 Step A Screening Overview

In February 2006, the CRC Task Force adopted a six-step evaluation framework that defines the process for screening the large number of transportation components and subsequently, a limited set of multi-modal alternative packages. In general, the framework establishes screening criteria and performance measures to evaluate the effectiveness of the transportation components in addressing:

- The project Purpose and Need,
- Problems identified in the project's Problem Definition, and
- Values identified in the Task Force's Vision and Values Statement.

Component screening is the first stage in the complete evaluation framework and is itself a two-step process.

In Step A, transportation components were screened against up to six pass/fail questions *derived directly from the Problem Definition*. To determine if each component offers an improvement, they were compared to the No Build condition, which includes transportation improvements adopted in the regional transportation plans, but no additional improvements at the Columbia River crossing.

In Step A only the transit and river crossing components were screened. Components in the Pedestrian, Bike, Freight, Roadways, and TSM/TDM categories were not evaluated because their performance would critically depend upon how they were integrated with promising transit and/or river crossing improvements. As mentioned earlier, components in these categories (e.g., Ramp Queue Jump Lanes) could be implemented in a wide variety of ways. These components will be paired with complementary transit and river crossing components during alternatives packaging. Table 1-1 shows the six Step A questions and what questions pertain to the transit and river crossing components.

Table 1-1. Component Categories and Relevant Step A Questions

Question: Does the Component	Transit Components	River Crossing Components
1. Increase vehicular capacity or decrease vehicular demand within the bridge influence area?	♦	♦
2. Improve transit performance within the bridge influence area?	♦	♦
3. Improve freight mobility within the bridge influence area?		♦
4. Improve safety and decrease vulnerability to incidents within the bridge influence area?	♦	♦
5. Improve bicycle and pedestrian mobility within the bridge influence area?		♦
6. Reduce seismic risk of the I-5 Columbia River crossing?		♦

Note: Components were only screened against questions indicated by ♦

2. Transit Component Fact Sheets

In summary, six transit components are recommended to pass through Step A component screening and advance for further consideration and screening, while eight components are recommended to be dropped from further consideration via Step A screening.

This section presents fact sheets for each of the 14 transit components (TR-1 through TR-14) taken through Step A screening. Each fact sheet provides reasoning behind staff's responses to the six "pass/fail" questions and ultimately the recommendation to either advance the component or drop it from further consideration for this project. Table 2-1 summarizes the transit component responses.

Table 2-1. Transit Components Step A Results

COMPONENTS		COMPONENT SCREENING RESULTS						
ID	NAME	Q.1	Q.2	Q.3	Q.4	Q.5	Q.6	Overall
TR-1	Express Bus in General Purpose (GP) lanes	P	P	NA	U	NA	NA	P
TR-2	Express Bus in Managed Lanes	P	P	NA	U	NA	NA	P
TR-3	Bus Rapid Transit (BRT)-Lite	P	P	NA	U	NA	NA	P
TR-4	Bus Rapid Transit (BRT)- Full	P	P	NA	U	NA	NA	P
TR-5	Light Rail Transit (LRT)	P	P	NA	U	NA	NA	P
TR-6	Streetcar	P	P	NA	U	NA	NA	P
TR-7	High Speed Rail	F	F	NA	U	NA	NA	F
TR-8	Ferry Service	F	F	NA	U	NA	NA	F
TR-9	Monorail System	P	F	NA	U	NA	NA	F
TR-10	Magnetic Levitation Railway	F	F	NA	U	NA	NA	F
TR-11	Commuter Rail in BNSF Trackage	P	F	NA	U	NA	NA	F
TR-12	Heavy Rail	P	F	NA	U	NA	NA	F
TR-13	Personal Rapid Transit	F	F	NA	U	NA	NA	F
TR-14	People Mover/Automated Guideway Transit (AGT)	P	F	NA	U	NA	NA	F

P = Pass F = Fail NA = Not Applicable U = Unknown

Each transit component was screened against two of the six questions in Step A. These questions are, does the component:

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

Q2. Improve transit performance within the Bridge Influence Area?

The transit components were also expected to be screened against Question #4, which is, does the component:

Q4. Improve safety and decrease vulnerability to incidents within the Bridge Influence Area?

To satisfy Question #4, a transit component would need to attract ridership sufficient to improve general traffic conditions for all vehicles (see Section 3.4.10). Answering this question, however, depends on knowing *with a fair degree of accuracy* how much future traffic volumes would be reduced by the transit component, and if the transit component would be complemented by new river crossing highway capacity. As promising components have not yet been combined, and detailed traffic modeling has not been completed, it is not yet possible to answer this question for the transit components. Therefore, all of the transit components received a rating of "unknown" for Question #4. In comparison, Question #1, asks *more generally* if a component is likely to reduce vehicle demand, and thus is possible to answer.

TR-1: Express Bus in General Purpose Lanes

Staff Recommendation: Advance

Step A Question	Pass/ Fail	Reasons
Q1. Traffic	Pass	Could increase vehicular capacity to serve transit and reduce auto demand within the Bridge Influence Area.
Q2. Transit	Pass	Could increase the speed of transit in the Bridge Influence Area, provided enough new general purpose capacity is added to reduce congestion levels. Transit reliability could also be improved if congestion were sufficiently reduced.
Q3. Freight	NA	
Q4. Safety	U	
Q5. Bike/Ped	NA	
Q6. Seismic	NA	

P = Pass F = Fail NA = Not Applicable U = Unknown

TR-2: Express Bus in Managed Lanes

Staff Recommendation: Advance

Step A Question	Pass/ Fail	Reasons
Q1. Traffic	Pass	Could decrease vehicular demand through shift to transit within the Bridge Influence Area by giving preference and a speed advantage to transit.
Q2. Transit	Pass	Could improve transit performance by managing congestion and reducing the potential for collisions, thereby improving transit reliability.
Q3. Freight	NA	
Q4. Safety	U	
Q5. Bike/Ped	NA	
Q6. Seismic	NA	

P = Pass F = Fail NA = Not Applicable U = Unknown

TR-3: Bus Rapid Transit (BRT)- Lite

Staff Recommendation: Advance

Step A Question	Pass/ Fail	Reasons
Q1. Traffic	Pass	Could decrease vehicular demand through shift to transit within the Bridge Influence Area by substantially increasing transit capacity and providing a travel preference and speed advantage to transit.
Q2. Transit	Pass	Could improve transit performance by managing congestion and thereby improving transit reliability.
Q3. Freight	NA	
Q4. Safety	U	
Q5. Bike/Ped	NA	
Q6. Seismic	NA	

P = Pass F = Fail NA = Not Applicable U = Unknown

TR-4: Bus Rapid Transit (BRT) - Full

Staff Recommendation: Advance

Step A Question	Pass/ Fail	Reasons
Q1. Traffic	Pass	Could decrease vehicular demand through shift to transit within the Bridge Influence Area by substantially increasing transit capacity and providing a dedicated transit lane that would relieve congestion and improve reliability for transit.
Q2. Transit	Pass	Could improve transit reliability and travel speed by completely separating bus rapid transit vehicles from other traffic and giving them a substantial travel time savings.
Q3. Freight	NA	
Q4. Safety	U	
Q5. Bike/Ped	NA	
Q6. Seismic	NA	

P = Pass F = Fail NA = Not Applicable U = Unknown

TR-5: Light Rail Transit (LRT)

Staff Recommendation: Advance

Step A Question	Pass/ Fail	Reasons
Q1. Traffic	Pass	Could decrease vehicular demand through shift to transit within the Bridge Influence Area by substantially increasing transit capacity and providing an exclusive guideway that would not be used by automobiles. Its operating characteristics allow it to serve both short and long distance trips.
Q2. Transit	Pass	Could improve transit travel time and reliability by completely separating LRT trains from automobile traffic.
Q3. Freight	NA	
Q4. Safety	U	
Q5. Bike/Ped	NA	
Q6. Seismic	NA	

P = Pass F = Fail NA = Not Applicable U = Unknown

TR-6: Streetcar

Staff Recommendation: Advance

Step A Question	Pass/ Fail	Reasons
Q1. Traffic	Pass	Could decrease vehicular demand through shift to transit within the Bridge Influence Area by increasing transit capacity and providing an exclusive guideway that would not be used by automobiles.
Q2. Transit	Pass	Could improve transit travel time and reliability by completely separating streetcars from automobile traffic. This critically assumes that it is possible to interline streetcar and LRT- meaning they each use the same guideway (tracks) such as the Interstate MAX corridor. While a determination on this issue has not yet been made, the idea includes significant challenges affecting its viability.
Q3. Freight	NA	
Q4. Safety	U	
Q5. Bike/Ped	NA	
Q6. Seismic	NA	

P = Pass F = Fail NA = Not Applicable U = Unknown

TRANSIT

TR-7: High Speed Rail

Staff Recommendation: Not Advance

Step A Question	Pass/ Fail	Reasons
Q1. Traffic	Fail	Operating speeds of 175+ mph are most compatible with long distance inter-city and inter-state service with at most one transit station in the greater Portland/Vancouver metropolitan area. This one transit station would only serve transit trips arriving from or destined to locations outside the region, and thus would not attract the ridership necessary to notably reduce vehicular demand within the I-5 Bridge Influence Area.
Q2. Transit	Fail	It is not feasible to integrate this transit mode with the existing regional transit system while both 1) taking advantage of the operational features of high speed rail, and 2) providing service to identified transit markets within the I-5 Bridge Influence Area. Thus, it would not appreciably improve transit performance within the I-5 Bridge Influence Area.
Q3. Freight	NA	
Q4. Safety	U	
Q5. Bike/Ped	NA	
Q6. Seismic	NA	

P = Pass F = Fail NA = Not Applicable U = Unknown

TR-8: Ferry Service

Staff Recommendation: Not Advance

Step A Question	Pass/ Fail	Reasons
Q1. Traffic	Fail	Lacks the capacity and operational characteristics to generate significant ridership needed to appreciably reduce vehicular demand within the Bridge Influence Area. Provides for long, out of direction travel times with limited access to I-5 travel markets.
Q2. Transit	Fail	Ferry service is most appropriate for longer distance travel with no intermediate stops. Service to I-5 travel markets would require more stops than could be achieved with ferry service. The travel time for a ferry service connecting downtown Vancouver to downtown Portland, for example, would likely be slower than the slowest land-based transit bus, even in the congested I-5 corridor, since the service would have to travel many miles out of direction to access the Willamette River. The service would have little or no connectivity to smaller markets and connecting transit services, and likely would not even serve intermediate but significant transit markets such as North Portland. Due to slow travel times and few docking stations, the service would carry relatively few passengers. Users would incur a time delay associated with embarking and debarking a ferry that makes ferry service less attractive. Significant issues would exist with siting ferry terminals.
Q3. Freight	NA	
Q4. Safety	U	
Q5. Bike/Ped	NA	
Q6. Seismic	NA	

P = Pass F = Fail NA = Not Applicable U = Unknown

TR-9: Monorail System

Staff Recommendation: Not Advance

Step A Question	Pass/ Fail	Reasons
Q1. Traffic	Pass	Could decrease vehicular demand through shift to transit within the Bridge Influence Area by increasing transit capacity and providing an exclusive guideway that would not be used by automobiles.
Q2. Transit	Fail	A monorail service could conceivably be designed to serve multiple destinations within the Bridge Influence Area and I-5 corridor, since the technology is not uniquely suited to long-distance or short-distance travel. In order to improve existing transit service in the Bridge Influence Area, however, it would have to be integrated with the existing bus and rail network, which is infeasible; the technology would require a completely grade separated right-of-way. For these reasons, monorail is not an appropriate public transportation component for the Bridge Influence Area.
Q3. Freight	NA	
Q4. Safety	U	
Q5. Bike/Ped	NA	
Q6. Seismic	NA	

P = Pass F = Fail NA = Not Applicable U = Unknown

TR-10: Magnetic Levitation (MagLev) Railway

Staff Recommendation: Not Advance

Step A Question	Pass/ Fail	Reasons
Q1. Traffic	Fail	Similar to high speed rail (TR-7), the high travel speeds (175+ mph) and acceleration characteristics associated with Maglev railways are most compatible with long distance inter-city and inter-state service with at most one transit station in the greater Portland/Vancouver metropolitan area. This one transit station would only serve transit trips arriving from or destined to locations outside the region, and thus would not attract the ridership necessary to notably reduce vehicular demand within the I-5 Bridge Influence Area.
Q2. Transit	Fail	It is not feasible to integrate this transit mode with the existing regional transit system while both, 1) taking advantage of the operational features of Maglev rail, and 2) providing service to identified transit markets within the I-5 Bridge Influence Area. Thus, it would not appreciably improve transit performance within the I-5 Bridge Influence Area.
Q3. Freight	NA	
Q4. Safety	U	
Q5. Bike/Ped	NA	
Q6. Seismic	NA	

P = Pass F = Fail NA = Not Applicable U = Unknown

TR-11: Commuter Rail Transit

Staff Recommendation: Not Advance

Step A Question	Pass/ Fail	Reasons
Q1. Traffic	Pass	Could decrease vehicular demand within the Bridge Influence Area through a shift to transit.
Q2. Transit	Fail	To improve existing transit service in the Bridge Influence Area, it would have to be integrated with the existing bus and rail network, which is infeasible, as the technology would operate in a completely grade separated right-of-way. Additionally, the existing railroad right-of-way misses some key I-5 transit markets. In addition, during the I-5 Partnership Study, an in-depth study of commuter rail options determined that due to projected congestion in the existing freight rail system in the next 20 years, commuter rail could only be implemented on a separate passenger rail-only network; it could not be implemented on existing regional freight rail trackage.
Q3. Freight	NA	
Q4. Safety	U	
Q5. Bike/Ped	NA	
Q6. Seismic	NA	

P = Pass F = Fail NA = Not Applicable U = Unknown

TR-12: Heavy Rail Transit

Staff Recommendation: Not Advance

Step A Question	Pass/ Fail	Reasons
Q1. Traffic	Pass	Could decrease vehicular demand within the Bridge Influence Area through a shift to transit.
Q2. Transit	Fail	To improve existing transit service in the Bridge Influence Area, it would have to be integrated with the existing bus and rail network, which is infeasible, as the technology would operate in a completely grade separated right-of-way. The Portland-Vancouver region is not projected to realize the population and density levels by 2030 on a par with the world's largest and most congested cities: New York, Washington D.C., London, Tokyo, etc. that can generate the necessary passenger demands that make an investment in heavy rail viable.
Q3. Freight	NA	
Q4. Safety	U	
Q5. Bike/Ped	NA	
Q6. Seismic	NA	

P = Pass F = Fail NA = Not Applicable U = Unknown

TR-13: Personal Rapid Transit (PRT)

Staff Recommendation: Not Advance

Step A Question	Pass/ Fail	Reasons
Q1. Traffic	Fail	PRT's conceptual advantage critically depends on building a comprehensive regional system that serves virtually every place that patrons want to go. PRT within the Bridge Influence Area would not attract significant demand because it simply would not go to many of the final I-5 corridor and regional destinations that patrons want to go. How a PRT system would "grow" from a river crossing to a local, or even a regional network, is unclear. It's inconceivable that a PRT system within the Bridge Influence Area could attract the ridership necessary to appreciably reduce vehicular demand.
Q2. Transit	Fail	Capacity is one of the primary limitations of PRT, and incompatibility with the existing regional transit systems. Unless a very large number of vehicles were used, the system would not have enough capacity to serve the large trip demands in the Bridge Influence Area and to significant destinations like downtown Portland. Using such a large number of vehicles, however, would be impractical and inefficient.
Q3. Freight	NA	
Q4. Safety	U	
Q5. Bike/Ped	NA	
Q6. Seismic	NA	

P = Pass F = Fail NA = Not Applicable U = Unknown

Note: A variation of this component referred to as "SkyTran" was introduced at the 3-22-06 Task Force meeting. Staff believes the "SkyTran" idea is substantially similar to TR-13 and would fail Step A screening questions 1 and 2 for similar reasons as cited above.

TR-14: People Mover/Automated Guideway Transit

Staff Recommendation: Not Advance

Step A Question	Pass/ Fail	Reasons
Q1. Traffic	Pass	Could decrease vehicular demand within the Bridge Influence Area through a shift to transit.
Q2. Transit	Fail	To improve existing transit service in the Bridge Influence Area, it would have to be integrated with the existing bus and rail network, which is infeasible, as the technology would operate in a completely grade separated right-of-way. AGT is a proven technology suitable for short-distance trips, and its limited application in North America has been to provide local circulator service (e.g. at airports). LRT and AGT share some of the same capacity and operating characteristics, but unlike LRT, AGT requires a completely grade separated right-of-way and either underground or aerial stations. For these reasons, AGT lines are not an appropriate public transportation component for the Bridge Influence Area.
Q3. Freight	NA	
Q4. Safety	U	
Q5. Bike/Ped	NA	
Q6. Seismic	NA	

P = Pass F = Fail NA = Not Applicable U = Unknown

3. River Crossing Component Fact Sheets

In summary, nine (9) river crossing components are recommended to pass through Step A component screening and advance for further consideration and screening, while 14 components are recommended to be dropped from further consideration via Step A screening.

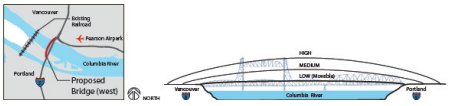
This section presents fact sheets for each of the 23 river crossing components (RC-1 through RC-23) taken through Step A screening. Fact sheets provide rationale for staff's responses to the six "pass/fail" questions and ultimately the recommendation to either advance the component or drop it from further consideration for this project. Table 3-1 summarizes the river crossing results. **Note-** Where components perform similarly across the six questions, they are grouped for reporting (e.g., RC 1-4, RC 5/6, RC 7-9).

Table 3-1. River Crossing Components Step A results

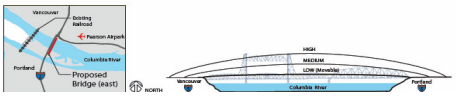
COMPONENTS		COMPONENT SCREENING RESULTS						
ID	NAME	Q.1	Q.2	Q.3	Q.4	Q.5	Q.6	Overall
RC-1	Replacement Bridge-Downstream/Low-level/Movable	P	P	P	P	P	P	P
RC-2	Replacement Bridge-Upstream/Low-level/Movable	P	P	P	P	P	P	P
RC-3	Replacement Bridge-Downstream/Mid-level	P	P	P	P	P	P	P
RC-4	Replacement Bridge-Upstream/Mid-level	P	P	P	P	P	P	P
RC-5	Replacement Bridge-Downstream/High-level	P	P	P	F	P	P	F
RC-6	Replacement Bridge-Upstream/High-level	P	P	P	F	P	P	F
RC-7	Supplemental Bridge-Downstream/Low-level/Movable	P	P	P	U	P	U	P
RC-8	Supplemental Bridge-Upstream/Low-level/Movable	P	P	P	U	P	U	P
RC-9	Supplemental Bridge-Downstream/Mid-level	P	P	P	U	P	U	P
RC-10	Supplemental Bridge-Upstream/Mid-level	P	P	P	F	P	U	F
RC-11	Supplemental Bridge-Downstream/High-level	P	P	P	F	P	U	F
RC-12	Supplemental Bridge-Upstream/High-level	P	P	P	F	P	U	F
RC-13	Tunnel to supplement I-5	P	P	P	P	P	U	P
RC-14	New Corridor Crossing	Note1	F	P	F	F	F	F
RC-15	New Corridor Crossing plus Widen Existing I-5 Bridges	Note1	F	P	F	F	F	F
RC-16	New Western Highway (I-605)	Note1	F	F	F	F	F	F
RC-17	New Eastern Columbia River Crossing	F	F	F	F	F	F	F
RC-18	I-205 Improvements	F	F	F	F	F	F	F
RC-19	Arterial Crossing without I-5 Improvements	Note1	P	U	F	P	F	F
RC-20	Replacement Tunnel	F	F	F	P	F	P	F
RC-21	33rd Avenue Crossing	F	F	F	F	F	F	F
RC-22	Non-Freeway Multi-Modal Columbia River Crossing	Note1	P	U	F	P	F	F
RC-23	Arterial Crossing with I-5 Improvements	Note1	P	U	P	P	U	P

[1] May provide some potential benefit in congestion management relative to 2030 No Build conditions.
P = Pass F = Fail NA = Not Applicable U = Unknown New since 3-22-06 TF mtg

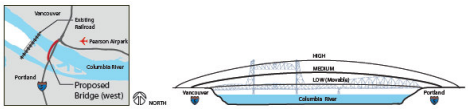
RC-1: Replacement Bridge Downstream/ Low Level/Moveable



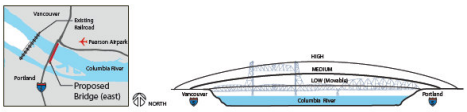
RC-2: Replacement Bridge Upstream/ Low Level/Moveable



RC-3: Replacement Bridge Downstream/Mid-level



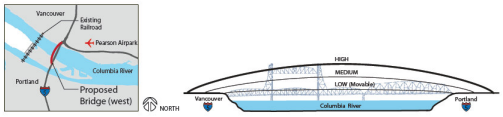
RC-4: Replacement Bridge Upstream/Mid-level



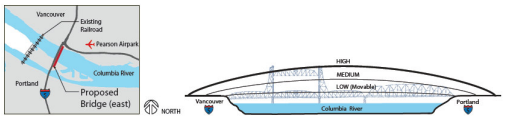
Staff Recommendation: Advance RC-1 through RC-4

Step A Question	Pass/ Fail	Reasons: *RC-1 through RC-4 each:*
Q1. Traffic	Pass	Increases vehicular capacity along I-5 in the Bridge Influence Area by adding new travel lanes. Serves projected year 2020 traffic levels, which is expected to increase by at least 40% (over 50,000 daily vehicles) over 2005 levels, at similar or fewer hours of congestion compared to 2005 conditions (i.e., 4 hours during the afternoon/evening peak along I-5 within the Bridge Influence Area).
Q2. Transit	Pass	Provides increased travel capacity to accommodate transit within the I-5 Bridge Influence Area serving the identified travel markets.
Q3. Freight	Pass	Provides increased travel capacity for truck-hauled freight along I-5. Would be compatible with improvements to interchanges within the Bridge Influence Area that would support improved truck operations.
Q4. Safety	Pass	Provides I-5 crossing that addresses many non-standard design features and would be compatible with substantially upgrading I-5 within the Bridge Influence Area to current standards. Would not encroach into Pearson Airpark airspace and would satisfy U.S. Coast Guard navigational interests.
Q5. Bike/Ped	Pass	Provides new Columbia River crossing with modern bike/ped pathway(s).
Q6. Seismic	Pass	Provides new I-5 crossing built to current seismic standards.

RC-5: Replacement Bridge Downstream High Level



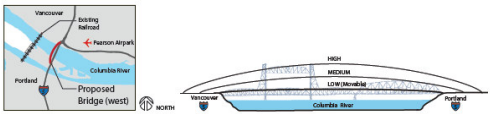
RC-6: Replacement Bridge Upstream High level



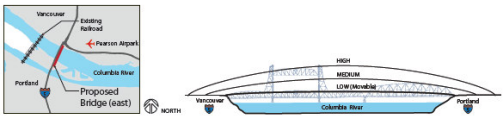
Staff Recommendation: Not Advance RC-5 and RC-6

Step A Question	Pass/ Fail	Reasons: *RC-5 and RC-6 each:*
Q1. Traffic	Pass	Increases vehicular capacity along I-5 in the Bridge Influence Area by adding new travel lanes. Serves projected year 2020 traffic levels, which is expected to increase by at least 40% (over 50,000 daily vehicles) over 2005 levels, at similar or fewer hours of congestion compared to 2005 conditions (i.e., 4 hours during the afternoon/evening peak along I-5 within the Bridge Influence Area).
Q2. Transit	Pass	Provides increased travel capacity to accommodate transit within the I-5 Bridge Influence Area serving the identified travel markets.
Q3. Freight	Pass	Provides increased travel capacity for truck-hauled freight along I-5. Would be compatible with improvements to interchanges within the Bridge Influence Area that would support improved truck operations.
Q4. Safety	Fail	Provides I-5 crossing that, while addressing many non-standard design features and substantially upgrading I-5 within the Bridge Influence Area to current standards, would be built at a height that unacceptably encroaches into Pearson Airpark airspace- presenting a critical safety flaw.
Q5. Bike/Ped	Pass	Provides new Columbia River crossing with modern bike/ped pathway(s).
Q6. Seismic	Pass	Provides new I-5 crossing built to current seismic standards.

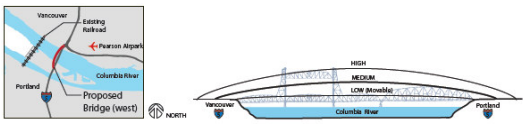
RC-7: Supplemental Bridge Downstream/Low Level/Moveable



RC-8: Supplemental Bridge Upstream Low Level/Moveable

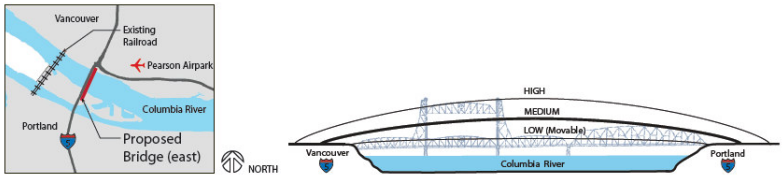


RC-9: Supplemental Bridge Downstream Mid-level



Staff Recommendation: Advance RC-7 through RC-9

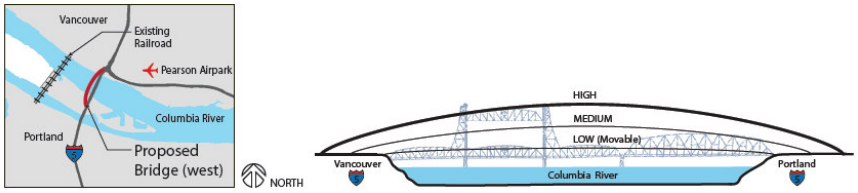
Step A Question	Pass/ Fail	Reasons: *RC-7 through RC-9 each:*
Q1. Traffic	Pass	Increases vehicular capacity along I-5 in the Bridge Influence Area by adding new travel lanes. Serves projected year 2020 traffic levels, which is expected to increase by at least 40% (over 50,000 daily vehicles) over 2005 levels, at similar or fewer hours of congestion compared to 2005 conditions (i.e., 4 hours during the afternoon/evening peak along I-5 within the Bridge Influence Area).
Q2. Transit	Pass	Provides increased travel capacity to accommodate transit within the I-5 Bridge Influence Area serving the identified travel markets.
Q3. Freight	Pass	Provides increased travel capacity for truck-hauled freight along I-5. Would be compatible with improvements to interchanges within the Bridge Influence Area that would support improved truck operations.
Q4. Safety	Unknown	Provides I-5 crossing that addresses many non-standard design features and would be compatible with substantially upgrading I-5 within the Bridge Influence Area to current standards. Would not encroach into Pearson Airpark airspace. Presents challenges to align piers of new and existing bridges to maintain, and make no worse, existing marine navigation.
Q5. Bike/Ped	Pass	Provides new Columbia River crossing with modern bike/ped pathway(s).
Q6. Seismic	Unknown	Provides new I-5 crossing built to current seismic standards. However, depending on the use of the existing I-5 bridges, they may need to be seismically upgraded to meet the new seismic criteria. It is not known at this point whether the existing bridges can be retrofitted to meet current seismic design standards.



RC-10: Supplemental Bridge Upstream/Mid-level

Staff Recommendation: Not Advance

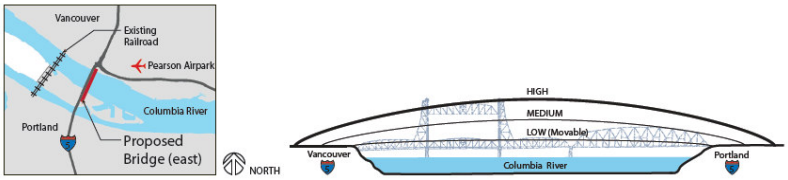
Step A Question	Pass/ Fail	Reasons
Q1. Traffic	Pass	Increases vehicular capacity along I-5 in the Bridge Influence Area by adding new travel lanes. Serves projected year 2020 traffic levels, which is expected to increase by at least 40% (over 50,000 daily vehicles) over 2005 levels, at similar or fewer hours of congestion compared to 2005 conditions (i.e., 4 hours during the afternoon/evening peak along I-5 within the Bridge Influence Area).
Q2. Transit	Pass	Provides increased travel capacity to accommodate transit within the I-5 Bridge Influence Area serving the identified travel markets.
Q3. Freight	Pass	Provides increased travel capacity for truck-hauled freight along I-5. Would be compatible with improvements to interchanges within the Bridge Influence Area that would support improved truck operations.
Q4. Safety	Fail	Retains the existing I-5 bridges, and therefore the opening for the supplemental bridge would need to line up with the existing lift span opening. This places the high point of the new bridge on the north side of the Columbia River channel. In addition, the new bridge's upstream location places it closer to Pearson Airpark. Due to the upstream and high point locations for the new bridge, this crossing unacceptably encroaches into the Pearson Airpark airspace.
Q5. Bike/Ped	Pass	Provides new Columbia River crossing with modern bike/ped pathway(s).
Q6. Seismic	Unknown	Provides new I-5 crossing built to current seismic standards. However, depending on the use of the existing I-5 bridges, they may need to be seismically upgraded to meet the new seismic criteria. It is not known at this point whether the existing bridges can be retrofitted to meet current seismic design standards.



RC-11: Supplemental Bridge Downstream/High Level

Staff Recommendation: Not Advance

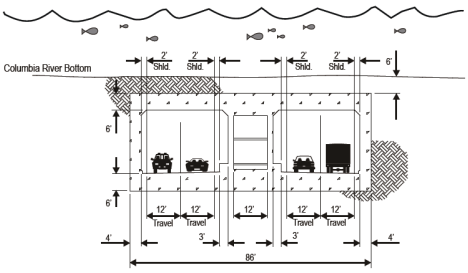
Step A Question	Pass/ Fail	Reasons
Q1. Traffic	Pass	Increases vehicular capacity along I-5 in the Bridge Influence Area by adding new travel lanes. Serves projected year 2020 traffic levels, which is expected to increase by at least 40% (over 50,000 daily vehicles) over 2005 levels, at similar or fewer hours of congestion compared to 2005 conditions (i.e., 4 hours during the afternoon/evening peak along I-5 within the Bridge Influence Area).
Q2. Transit	Pass	Provides increased travel capacity to accommodate transit within the I-5 Bridge Influence Area serving the identified travel markets.
Q3. Freight	Pass	Provides increased travel capacity for truck-hauled freight along I-5. Would be compatible with improvements to interchanges within the Bridge Influence Area that would support improved truck operations.
Q4. Safety	Fail	Provides I-5 crossing that, while addressing many non-standard design features and substantially upgrading I-5 within the Bridge Influence Area to current standards, would be built at a height that unacceptably encroaches into Pearson Airpark airspace.
Q5. Bike/Ped	Pass	Provides new Columbia River crossing with modern bike/ped pathway(s).
Q6. Seismic	Unknown	Provides new I-5 crossing built to current seismic standards. However, depending on the use of the existing I-5 bridges, they may need to be seismically upgraded to meet the new seismic criteria. It is not known at this point whether the existing bridges can be retrofitted to meet current seismic design standards.



RC-12: Supplemental Bridge Upstream/High Level

Staff Recommendation: Not Advance

Step A Question	Pass/ Fail	Reasons
Q1. Traffic	Pass	Increases vehicular capacity along I-5 in the Bridge Influence Area by adding new travel lanes. Serves projected year 2020 traffic levels, which is expected to increase by at least 40% (over 50,000 daily vehicles) over 2005 levels, at similar or fewer hours of congestion compared to 2005 conditions (i.e., 4 hours during the afternoon/evening peak along I-5 within the Bridge Influence Area).
Q2. Transit	Pass	Provides increased travel capacity to accommodate transit within the I-5 Bridge Influence Area serving the identified travel markets.
Q3. Freight	Pass	Provides increased travel capacity for truck-hauled freight along I-5. Would be compatible with improvements to interchanges within the Bridge Influence Area that would support improved truck operations.
Q4. Safety	Fail	Provides I-5 crossing that, while addressing many non-standard design features and substantially upgrading I-5 within the Bridge Influence Area to current standards, would be built at a height that unacceptably encroaches into Pearson Airpark airspace.
Q5. Bike/Ped	Pass	Provides new Columbia River crossing with modern bike/ped pathway(s).
Q6. Seismic	Unknown	Provides new I-5 crossing built to current seismic standards. However, depending on the use of the existing I-5 bridges, they may need to be seismically upgraded to meet the new seismic criteria. It is not known at this point whether the existing bridges can be retrofitted to meet current seismic design standards.



RC-13: Tunnel to Supplement I-5

Staff Recommendation: Advance

Step A Question	Pass/ Fail	Reasons
Q1. Traffic	Pass	Increases vehicular capacity along I-5 in the Bridge Influence Area by adding new travel lanes. Serves an express function within the Bridge Influence Area with Vancouver access limited to the SR 500 interchange and points north and Portland access limited to Interstate Avenue and points south. Serves projected year 2020 traffic levels, expected to increase by at least 40% (by over 50,000 daily vehicles) over 2005 levels, at similar or fewer hours of congestion compared to 2005 conditions (i.e., 4 hours during the afternoon/evening peak along I-5 within the Bridge Influence Area).
Q2. Transit	Pass	Provides increased travel capacity to accommodate transit within the I-5 Bridge Influence Area serving the identified travel markets.
Q3. Freight	Pass	Provides increased travel capacity for truck-hauled freight along I-5 within the Bridge Influence Area.
Q4. Safety	Pass	Provides a new I-5 crossing that could substantially reduce traffic levels using the existing I-5 bridges, thereby reducing the potential for collisions within the Bridge Influence Area.
Q5. Bike/Ped	Pass	Provides new Columbia River crossing with modern bike/ped pathway(s).
Q6. Seismic	Unknown	Provides new I-5 crossing built to current seismic standards. However, depending on the use of the existing I-5 bridges, they may need to be seismically upgraded to meet the new seismic criteria. It is not known at this point whether the existing bridges can be retrofitted to meet current seismic design standards.

Summary of Arterial River Crossings (RC-14, 15, 19, 21, 22, & 23)

There are six river crossing components that contain variations of an arterial roadway crossing of the Columbia River. To a degree, these six components each have strengths and weaknesses and some clearly have fatal flaws. In order for an arterial river crossing concept to pass adopted Step A screening, it must:

- provide an acceptable level of congestion relief (Q1- Traffic);
- be proximate to the I-5 corridor to both meet transit performance criteria and improve bicycle and pedestrian mobility in the I-5 corridor (Q2- Transit & Q5: Bike/pedestrian);
- address critical non-standard safety/design features in the BIA and avoid airport airspace (Q4-Safety); and
- attempt to address the seismic vulnerability of the current facility (Q6-Seismic).

The CRC project team is waiting for significant freight data that will be generated by the Regional Freight Study now underway. In the interim, limited data is available to evaluate the performance of components related to freight (Q3- Freight). For the purposes of Step A screening, the project team has considered how concepts perform regarding congestion relief as the best current surrogate for assessing a concept's freight performance.

The following table summarizes CRC project staff's assessment of how these six arterial concepts perform relative to the Step A screening questions.

Summary of Step A Screening Recommendation for Arterial River Crossing Components

	Q1 Traffic	Q2 Transit	Q3 Freight	Q4 Safety	Q5 Bike/ped	Q6 Seismic	Overall
RC-14	Note[1]	F	P	F	F	F	F
RC-15	Note[1]	F	P	F	F	F	F
RC-19	Note[1]	P	U	F	P	F	F
RC-21	F	F	F	F	F	F	F
RC-22	Note[1]	P	U	F	P	F	F
RC-23	Note[1]	P	U	P	P	U	P

[1] May provide some potential benefit in congestion management relative to 2030 No Build conditions.

P = Pass F = Fail NA = Not Applicable U = Unknown New since 3-22-06 TF meting

Question #1: Traffic and Congestion Relief

The degree of predicted traffic congestion relief for all 23 river crossing concepts ranges from lessening or maintaining current levels of afternoon/evening congestion (i.e., 4 hours or less), to worst-case scenarios where the peak period spreads substantially into the midday and evening

periods (i.e., 9 to 10 hours). All of the arterial river crossing components fall into a middle area between these extremes. Staff recommends that any arterial river crossing concept that results in:

- 8 or more hours of afternoon/evening congestion- component fails Question #1;
- 4 hrs or less of afternoon/evening congestion- component passes Question #1;
- 5 to 7 hours of afternoon/evening congestion- component is not eliminated from consideration based on this criterion because, while resulting in increased congestion and delay, it may result in other benefits.

RC-21, which would result in 8 to 9 hours of afternoon/evening congestion, fails Question #1 under this recommendation. The other five arterial river crossing components do not.

Question #2: Transit

In order for an arterial river crossing to improve transit service performance within the I-5 Bridge Influence Area and serve the key I-5 transit markets, it needs to be physically proximate to the current I-5 corridor. If it is not, it imposes unacceptable out of direction travel delays on transit, compromising the viability of serving key transit markets.

RC-19, RC-22 and RC-23 are all physically proximate to the current I-5 corridor and pass Question #2. RC-14, RC-15 and RC-21 are located one mile or more east or west of the current I-5 corridor and do not satisfy Question #2.

Question #3: Freight

As explained above, the project team has limited freight specific data against which to evaluate these arterial bridge components. Because all of these arterials but one (RC-21) provides marginal congestion relief (i.e., 6 to 7 hours), staff is proposing that only RC-21 fail for freight mobility reasons since it provides inadequate congestion relief (8-9 hours) along I-5 within the Bridge Influence Area. Concepts RC-19, RC-22 and RC-23 receive an “unknown” rating because it is not clear how they will tie into the regional arterial network and whether there would be freight mobility benefits as a result of those connections.

Because RC-14 and RC-15 provide direct connections to regionally significant freight destinations (the Ports of Portland and Vancouver and the regional freight resources adjacent to them), staff proposes they receive a “pass” on Question #3, in essence “giving them the benefit of the doubt” that these unique connections, coupled with their level of congestion relief, provide freight mobility benefits sufficient to meet the criteria of Question #3.

Question #4: Safety

In order for an arterial river crossing to improve safety within the I-5 Bridge Influence Area, it must do three things: 1) not significantly encroach into Pearson Airpark or Portland International Airport airspace, 2) maintain or improve navigational safety in the vicinity of the I-5 corridor crossings, and 3) reduce future I-5 traffic demands compared to today’s levels or redesign I-5 within the Bridge Influence Area to meet current design and safety standards to the greatest extent possible.

Only RC-21 creates an unacceptable encroachment into airport airspace and therefore should be eliminated from further consideration.

RC-14, RC-15, RC-19, and RC-22 do not make an investment in I-5 to substantially address existing non-standard design and safety features and therefore do not satisfy Question #4. As mentioned earlier, the congestion relief/demand reduction they provide falls in the marginal range.

Only RC-23 substantially addresses existing non-standard design and safety features within the I-5 Bridge Influence Area and therefore satisfies Question #4.

Question #5: Bicycle/Pedestrian Mobility

As with transit improvements, in order for an arterial river crossing to improve bicycle and pedestrian mobility within the I-5 Bridge Influence Area, its bicycle and pedestrian facilities need to be physically proximate to the current I-5 corridor and provide improved connections to the bicycle and pedestrian network.

RC-19, RC-22 and RC-23 are all physically proximate to the current I-5 corridor and could improve network connectivity, thereby satisfying Question #5. RC-14, RC-15 and RC-21 are located one mile or more east or west of the current I-5 corridor, imposing out of direction travel demands on cyclists and pedestrians seeking to move between points in the Bridge Influence Area and thus, do not satisfy Question #5.

Question #6: Seismic Vulnerability

In order for an arterial river crossing to reduce the seismic risk of the Columbia River Crossing, it must be designed to nationally accepted bridge standards and the existing I-5 bridges would need to be seismically retrofit. Note, however that it is not currently known whether the existing I-5 bridges can be retrofitted.

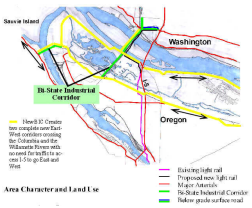
All arterial river crossing bridges would be designed to current seismic standards, however, only RC-23 proposes to seismically retrofit the existing I-5 bridges (if feasible), and therefore only RC-23 could potentially satisfy Question #6.

Summary

In summary, an arterial crossing can satisfy each of the six Step A screening questions so long as it provides:

- an acceptable level of congestion relief on I-5 to serve commuters and freight (Q1 & Q3);
- proximity to the I-5 corridor to both meet transit performance criteria and improve bike/pedestrian mobility in the I-5 corridor (Q2 & Q5);
- solutions to critical non-standard safety/design features in the BIA and avoids airport airspace (Q4);
- design upgrades to address the seismic vulnerability of the current facility (Q6).

Based on staff review of the six arterial components, RC-23 satisfies each of the Step A questions and is recommended to advance for further consideration during alternative packaging. Where appropriate, promising design features from the other five arterial components not recommended to advance could be integrated to further improve RC-23.



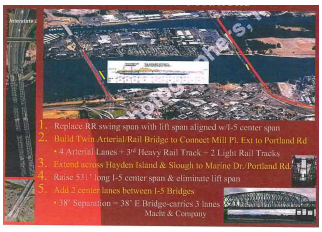
RC-14: New Corridor Crossing Near BNSF Rail Crossing

Staff Recommendation: Not Advance

Step A Question	Pass/ Fail	Reasons
Q1. Traffic	See note below[1]	Assuming construction of a new multi-lane tunnel under Mill Plain Blvd. and construction of high capacity interchange ramps between I-5 and Mill Plain Blvd., provides new Columbia River crossing that would serve up to 30,000 daily vehicles with most of these vehicles diverted from I-5. Some I-205 traffic shifts to I-5. By 2020, I-5 traffic demands still increase by at least 15% (by over 20,000 vehicles) over 2005 levels, resulting in 6-7 hours of afternoon/evening peak period congestion.
Q2. Transit	Fail	Does not improve transit service to identified I-5 corridor transit markets, nor does it improve the performance of the existing transit system within the I-5 Bridge Influence Area. Provides transit service along new corridor located approximately one mile west of I-5 to potential non-I-5 travel markets, but is out of direction for I-5 origins and destinations.
Q3. Freight	Pass	Results in 6-7 hours of afternoon/evening peak period congestion on I-5, however provides alternative route linking freight activity centers west of I-5.
Q4. Safety	Fail	Provides new Columbia River crossing located approximately one mile west of I-5 built to current safety standards, but does not address existing non-standard design features within the I-5 Bridge Influence Area. Traffic demands on I-5 within the Bridge Influence Area would increase by at least 15% by 2020 over 2005 conditions, resulting in 6-7 hours of afternoon/evening peak period congestion. Without added I-5 capacity and re-design of the Bridge Influence Area to meet standards, collisions would be expected to increase approximately 40 percent over 2005 conditions.
Q5. Bike/Ped	Fail	Provides new Columbia River crossing with modern bike/ped pathway(s). With a location approximately one mile west of I-5, it is out of direction for users with trip origins and destinations within the I-5 Bridge Influence Area.
Q6. Seismic	Fail	Provides new Columbia River crossing built to current seismic standards, but does not upgrade the existing I-5 bridges serving Interstate traffic and therefore the seismic risk of the I-5 bridges would not be reduced.

[1] May provide some potential benefit in congestion management relative to 2030 No Build conditions.

Note: A variation of this component was introduced at the 3-22-06 Task Force meeting. Staff evaluated the revised component and believes it fails for similar reasons as summarized above.



RC-15: New Corridor Crossing plus Widen Existing I-5 Bridges

Staff Recommendation: Not Advance

Note: It is not feasible to add two new travel lanes to I-5 between the existing bridges as this component calls for. This component is otherwise similar to RC-14 and would operate similarly.

Step A Question	Pass/ Fail	Reasons
Q1. Traffic	See Note below[1]	Assuming construction of a new multi-lane tunnel under Mill Plain Blvd. and construction of high capacity interchange ramps between I-5 and Mill Plain Blvd., provides new Columbia River crossing that would serve up to 30,000 daily vehicles with most of these vehicles diverted from I-5. Some I-205 traffic shifts to I-5. By 2020, I-5 traffic demands still increase by at least 15% (by over 20,000 vehicles) over 2005 levels, resulting in 6-7 hours of afternoon/evening peak period congestion.
Q2. Transit	Fail	Does not improve transit service to identified I-5 corridor transit markets, nor does it improve the performance of the existing transit system within the I-5 Bridge Influence Area. Provides transit service along new corridor located approximately one mile west of I-5 to potential non-I-5 travel markets, but is out of direction for I-5 origins and destinations.
Q3. Freight	Pass	Results in 6-7 hours of afternoon/evening peak period congestion on I-5, however provides alternative route linking freight activity centers west of I-5.
Q4. Safety	Fail	Provides new Columbia River crossing located approximately one mile west of I-5 built to current safety standards, but does not address existing non-standard design features within the I-5 Bridge Influence Area. Traffic demands on I-5 within the Bridge Influence Area would increase by at least 15% by 2020 over 2005 conditions, resulting in 6-7 hours of afternoon/evening peak period congestion. Without added I-5 capacity and re-design of the Bridge Influence Area to meet standards, collisions would be expected to increase approximately 40 percent over 2005 conditions.
Q5. Bike/Ped	Fail	Provides new Columbia River crossing with modern bike/ped pathway(s). With a location approximately one mile west of I-5, it is out of direction for users with trip origins and destinations within the I-5 Bridge Influence Area.
Q6. Seismic	Fail	Provides new Columbia River crossing built to current seismic standards, but does not upgrade the existing I-5 bridges serving Interstate traffic and therefore the seismic risk of the I-5 bridges would not be reduced.

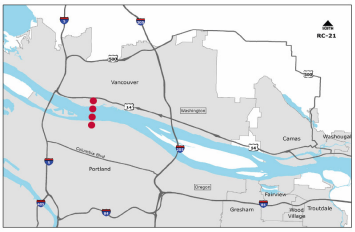
[1] May provide some potential benefit in congestion management relative to 2030 No Build conditions.

RC-19: Arterial Crossing without I-5 Improvements

Staff Recommendation: Not Advance

Step A Question	Pass/ Fail	Reasons
Q1. Traffic	See Note below[1]	Provides new Columbia River arterial crossing to supplement I-5. By 2020, I-5 traffic demands still increase by at least 15% (by over 20,000 vehicles) over 2005 levels, resulting in 6-7 hours of afternoon/evening peak period congestion.
Q2. Transit	Pass	Provides increased travel capacity to accommodate transit within the I-5 Bridge Influence Area serving the identified travel markets.
Q3. Freight	Unknown	Functionality for truck mobility would depend upon arterial roadway connections north and south of the Columbia River.
Q4. Safety	Fail	Provides new Columbia River crossing located immediately west of I-5 built to current safety standards, but does not address existing non-standard design features within the I-5 Bridge Influence Area. Traffic demands on I-5 within the Bridge Influence Area would increase by at least 15% by 2020 over 2005 conditions, resulting in 6-7 hours of afternoon/evening peak period congestion. Without added I-5 capacity and re-design of the Bridge Influence Area to meet standards, collisions would be expected to increase approximately 40 percent over 2005 conditions.
Q5. Bike/Ped	Pass	Provides new Columbia River crossing with modern bike/ped pathway(s).
Q6. Seismic	Fail	Provides new Columbia River crossing built to current seismic standards, but does not upgrade the existing I-5 bridges serving Interstate traffic and therefore the seismic risk of the I-5 bridges would not be reduced.

[1] May provide some potential benefit in congestion management relative to 2030 No Build conditions.



RC-21: 33rd Avenue Crossing

Staff Recommendation: Not Advance

Step A Question	Pass/ Fail	Reasons
Q1. Traffic	Fail	Provides new Columbia River crossing to supplement I-5 and I-205 with traffic shifting from each facility to the new corridor. By 2020, I-5 traffic demands still increase by about 25% (over 30,000 vehicles) over 2005 levels, resulting in 8-9 hours of afternoon/evening peak period congestion.
Q2. Transit	Fail	Does not improve transit service to identified I-5 corridor transit markets, nor does it improve the performance of the existing transit system within the I-5 Bridge Influence Area. Provides transit service along new corridor located approximately 2-3 miles east of I-5 to potential non-I-5 travel markets, but is out of direction for I-5 origins and destinations.
Q3. Freight	Fail	Results in 8-9 hours of afternoon/evening peak period congestion on I-5.
Q4. Safety	Fail	Provides new Columbia River crossing located approximately 2-3 miles east of I-5 built to current safety standards, but does not address existing non-standard design features within the I-5 Bridge Influence Area. Traffic demands on I-5 within the Bridge Influence Area would increase by 25% by 2020 over 2005 conditions, resulting in 8-9 hours of afternoon/evening peak period congestion. Without added I-5 capacity and re-design of the Bridge Influence Area to meet standards, collisions would be expected to increase approximately 60% percent over 2005 conditions. In addition, bridge would unacceptably encroach into PDX Airport airspace.
Q5. Bike/Ped	Fail	Provides new Columbia River crossing with modern bike/ped pathway(s). With a location approximately 2-3 miles east of I-5, it is out of direction for users with trip origins and destinations within the I-5 Bridge Influence Area.
Q6. Seismic	Fail	Provides new Columbia River crossing built to current seismic standards, but does not upgrade the existing I-5 bridges serving Interstate traffic and therefore the seismic risk of the I-5 bridges would not be reduced.

RC-22: Non-Freeway Multi-modal Columbia River Crossing

Staff Recommendation: Not Advance

Note: The proposed description for this component also included elevating the existing bridges and removing the lift spans. However, that part of the proposal was determined to not be feasible.

Step A Question	Pass/ Fail	Reasons
Q1. Traffic	See Note below[1]	Provides new Columbia River arterial crossing to supplement I-5. By 2020, northbound I-5 traffic demands still increase by about 15% (by about 20,000 vehicles) over 2005 levels, resulting in 6-7 hours of afternoon/evening peak period congestion.
Q2. Transit	Pass	Provides increased travel capacity to accommodate transit within the I-5 Bridge Influence Area serving the identified travel markets.
Q3. Freight	Unknown	Functionality for truck mobility would depend upon arterial roadway connections north and south of the Columbia River.
Q4. Safety	Fail	Provides new Columbia River crossing located immediately west of I-5 built to current safety standards, but does not address existing non-standard design features within the I-5 Bridge Influence Area. Traffic demands on I-5 within the Bridge Influence Area would increase by about 15% by 2020 over 2005 conditions, resulting in 6-7 hours of afternoon/evening peak period congestion. Without added I-5 capacity and re-design of the Bridge Influence Area to meet standards, collisions would be expected to increase approximately 40% percent over 2005 conditions.
Q5. Bike/Ped	Pass	Provides new Columbia River crossing with modern bike/ped pathway(s).
Q6. Seismic	Fail	Provides new Columbia River crossing built to current seismic standards, but does not upgrade the existing I-5 bridges serving Interstate traffic and therefore the seismic risk of the I-5 bridges would not be reduced.

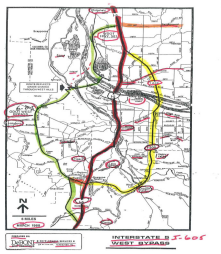
[1] May provide some potential benefit in congestion management relative to 2030 No Build conditions.

RC-23 Arterial Crossing with I-5 Improvements

Staff Recommendation: Advance

Step A Question	Pass/ Fail	Reasons
Q1. Traffic	See Note below[1]	Provides new Columbia River arterial crossing to supplement I-5. By 2020, I-5 traffic demands still increase by at least 15% (by over 20,000 vehicles) over 2005 levels, resulting in 6-7 hours of afternoon/evening peak period congestion.
Q2. Transit	Pass	Provides increased travel capacity to accommodate transit within the I-5 Bridge Influence Area serving the identified travel markets.
Q3. Freight	Unknown	Functionality for truck mobility would depend upon arterial roadway connections north and south of the Columbia River.
Q4. Safety	Pass	Provides new Columbia River crossing located immediately west of I-5 built to current safety standards. Provides safety improvements to I-5 within the Bridge Influence Area that significantly addresses critical existing non-standard design and safety features.
Q5. Bike/Ped	Pass	Provides new Columbia River crossing with modern bike/ped pathway(s).
Q6. Seismic	Unknown	Provides new Columbia River crossing built to current seismic standards for arterial roadway and upgrades the existing I-5 bridges serving Interstate traffic, if feasible.

[1] May provide some potential benefit in congestion management relative to 2030 No Build conditions.

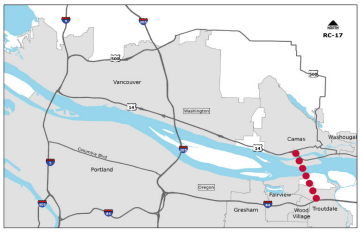


RC-16: New Western Highway

Staff Recommendation: Not Advance

Step A Question	Pass/ Fail	Reasons
Q1. Traffic	See Note below[1]	Provides new Columbia River crossing that would serve about 25,000 daily vehicles, with most of these vehicles diverted from I-5. Some I-205 traffic shifts to I-5. By 2020, I-5 traffic demands still increase by about 20% (25,000 vehicles) over 2005 levels, resulting in 7-8 hours of afternoon/evening peak period congestion.
Q2. Transit	Fail	Does not improve transit service to identified I-5 corridor transit markets, nor does it improve the performance of the existing transit system within the I-5 Bridge Influence Area. Provides transit service along new corridor located approximately 2-3 miles west of I-5 to potential non-I-5 travel markets, but is out of direction for I-5 origins and destinations.
Q3. Freight	Fail	Results in 7-8 hours of afternoon/evening peak period congestion on I-5.
Q4. Safety	Fail	Provides new Columbia River crossing located approximately 2-3 miles west of I-5 built to current safety standards, but does not address existing non-standard design features within the I-5 Bridge Influence Area. Traffic demands on I-5 within the Bridge Influence Area would increase by 20% by 2020 over 2005 conditions, resulting in 7-8 hours of afternoon/evening peak period congestion. Without added I-5 capacity and re-design of the Bridge Influence Area to meet standards, collisions would be expected to increase approximately 45% percent over 2005 conditions.
Q5. Bike/Ped	Fail	Provides new Columbia River crossing with modern bike/ped pathway(s). With a location approximately 2-3 miles west of I-5, it is out of direction for users with trip origins and destinations within the I-5 Bridge Influence Area.
Q6. Seismic	Fail	Provides new Columbia River crossing built to current seismic standards, but does not upgrade the existing I-5 bridges serving Interstate traffic and therefore the seismic risk of the I-5 bridges would not be reduced.

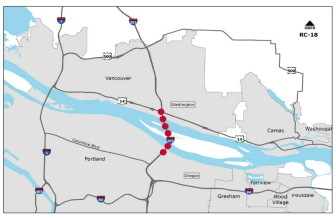
[1] May provide some potential benefit in congestion management relative to 2030 No Build conditions.



RC-17: New Eastern Columbia River Crossing

Staff Recommendation: Not Advance

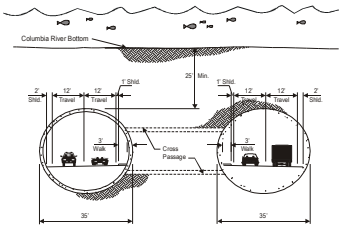
Step A Question	Pass/ Fail	Reasons
Q1. Traffic	Fail	Provides new Columbia River crossing to supplement I-205 corridor with most users shifting from I-205. By 2020, I-5 traffic demands still increase by at least 30% (over 40,000 vehicles) over 2005 levels, resulting in 9-10 hours of afternoon/evening peak period congestion.
Q2. Transit	Fail	Does not improve transit service to identified I-5 corridor transit markets, nor does it improve the performance of the existing transit system within the I-5 Bridge Influence Area. Provides transit service along new corridor located approximately 10-12 miles east of I-5 to potential non-I-5 travel markets, but is out of direction for I-5 origins and destinations.
Q3. Freight	Fail	Results in 9-10 hours of afternoon/evening peak period congestion on I-5.
Q4. Safety	Fail	Provides new Columbia River crossing located approximately 10-12 miles east of I-5 built to current safety standards, but does not address existing non-standard design features within the I-5 Bridge Influence Area. Traffic demands on I-5 within the Bridge Influence Area would increase by at least 30% by 2020 over 2005 conditions, resulting in 9-10 hours of afternoon/evening peak period congestion. Without added I-5 capacity and re-design of the Bridge Influence Area to meet standards, collisions would be expected to increase approximately 65 percent over 2005 conditions.
Q5. Bike/Ped	Fail	Provides new Columbia River crossing with modern bike/ped pathway(s). With a location approximately 10-12 miles east of I-5, it is out of direction for users with trip origins and destinations within the I-5 Bridge Influence Area.
Q6. Seismic	Fail	Provides new Columbia River crossing built to current seismic standards, but does not upgrade the existing I-5 bridges serving Interstate traffic and therefore the seismic risk of the I-5 bridges would not be reduced.



RC-18: I-205 Improvements

Staff Recommendation: Not Advance

Step A Question	Pass/ Fail	Reasons
Q1. Traffic	Fail	Upgrades I-205 corridor by adding one lane per direction between I-5 to the north and I-84 to the south. By 2020, I-5 traffic demands still increase by about 30% (over 40,000 vehicles) over 2005 levels, resulting in 9-10 hours of afternoon/evening peak period congestion.
Q2. Transit	Fail	Does not improve transit service to identified I-5 corridor transit markets, nor does it improve the performance of the existing transit system within the I-5 Bridge Influence Area. May increase transit service along I-205 located approximately 7 miles east of I-5 to potential non-I-5 travel markets, but is out of direction for I-5 origins and destinations.
Q3. Freight	Fail	Results in 9-10 hours of afternoon/evening peak period congestion on I-5.
Q4. Safety	Fail	Provides improvements to existing I-205 corridor located approximately 7 miles east of I-5, but does not address existing non-standard design features within the I-5 Bridge Influence Area. Traffic demands on I-5 within the Bridge Influence Area would increase by 30% by 2020 over 2005 conditions, resulting in 9-10 hours of afternoon/evening peak period congestion. Without added I-5 capacity and re-design of the Bridge Influence Area to meet standards, collisions would be expected to increase approximately 65 percent over 2005 conditions.
Q5. Bike/Ped	Fail	Does not improve existing I-5 bike/ped pathways. May improve I-205 bike/ped pathway(s), but with a location approximately 7 miles east of I-5, it is out of direction for users with trip origins and destinations within the I-5 Bridge Influence Area.
Q6. Seismic	Fail	Does not upgrade the existing I-5 bridges serving Interstate traffic and therefore the seismic risk of the I-5 bridges would not be reduced.



RC-20: Replacement Tunnel

Staff Recommendation: Not Advance

Step A Question	Pass/ Fail	Reasons
Q1. Traffic	Fail	Increases vehicular capacity along I-5 in the Bridge Influence Area by adding new travel lanes. Capacity is underground and would require an elaborate frontage road network to serve SR 14, Vancouver City Center and Hayden Island- resulting in substantial out of direction travel for drivers. Tunnel would connect above ground to interchanges north of SR 14 and south of Hayden Island.
Q2. Transit	Fail	Tunnel alignment results in significant out-of-direction travel for transit to serve I-5 transit markets. Would require elaborate frontage road system to link I-5 activity centers.
Q3. Freight	Fail	Tunnel alignment results in significant out-of-direction travel for freight to serve I-5 freight activity centers. Would require elaborate frontage road system to link I-5 activity centers.
Q4. Safety	Pass	Provides new Columbia River crossing built to current safety standards.
Q5. Bike/Ped	Fail	Tunnel alignment creates significant out-of-direction travel for bike/ped users to reach I-5 activity centers with the Bridge Influence Area. Not desirable to serve bicyclists and pedestrians via a tunnel.
Q6. Seismic	Pass	Provides I-5 crossing built to current seismic standards.