Columbia River CROSSING

DRAFT Screening and Evaluation Framework

This framework establishes a logical process for narrowing (or screening) the large number of transportation components that will be generated at the outset of the project. The framework also establishes criteria and related performance measures to:

- Measure the effectiveness of components and subsequent alternative packages in addressing the problems identified in the *Problem Definition*, and
- relate the degree to which community values as identified in the CRC Task Force's V*ision and Values Statement* are achieved.

The project will use the same criteria throughout the process. However, measures for gauging the performance of alternatives against the criteria will become successively more specific and may be modified as more detailed data becomes available.

Through successive screening, the most promising components are packaged into viable alternatives. These are then narrowed further to provide alternatives to be considered in the Draft Environmental Impact Statement (DEIS). Components and alternatives that do not pass from one screening level to the next will be dropped from further consideration. Ultimately, the evaluation criteria will be used to support selection of a preferred alternative.

Generation of Components

The I-5 Transportation and Trade Partnership *Final Strategic Plan* provided recommendations to shape transportation improvements on I-5 between Columbia Boulevard in Portland and State Route (SR) 500 in Vancouver, an area referred to as the "bridge influence area." However, many of the recommendations were not specific, leaving many ways to package and implement solutions. In addition, new ideas requiring further evaluation may surface through the National Environmental Policy Act (NEPA) scoping process.

Schedule

The project team will follow this screening schedule:

- Feb/April 2006 — Component screening and packaging of remaining components into alternatives to be evaluated further
- Late fall 2006 — Screening of alternatives and deciding which alternatives will be evaluated in the Draft Environmental Impact Statement (Draft EIS)
- Early 2008 — Selection of a preferred alternative

The evaluation framework is comprised of three elements, which are attached:

Contents

The following materials comprise the remainder of this framework:

- **Glossary of terms**
- **Overall Steps in the Screening and Evaluation Process**
- **Component Screening Step A**
- **Component Screening Step B**

(Criteria from Step B are also used during the alternative package screening and selection of a preferred alternative)

Glossary of Terms

Component- A specific idea proposed to address one or more of the identified needs in the I-5 bridge influence area. For example, each of several viable river crossing ideas is a separate component under the "river crossing" category.

Transportation Category- Components are organized and screened among eight (8) transportation categories based on the nature of the component. For example, all transit components (bus, light rail, other) are organized within the "transit" category and all river crossing components within the "river crossing" category. Due to their common reliance on highway and bridge facilities, bicycle, pedestrian, and freight components will be screened jointly with roadway and river crossing categories.

Screening- The process of assessing and narrowing the range of components and alternative packages relative to established screening criteria and documentation of the screening process and resulting outcomes. Screening represents the body of work completed in forming the range of alternatives to advance into the EIS. Component screening occurs within and not across transportation categories. Alternative packages are screened relative to one another.

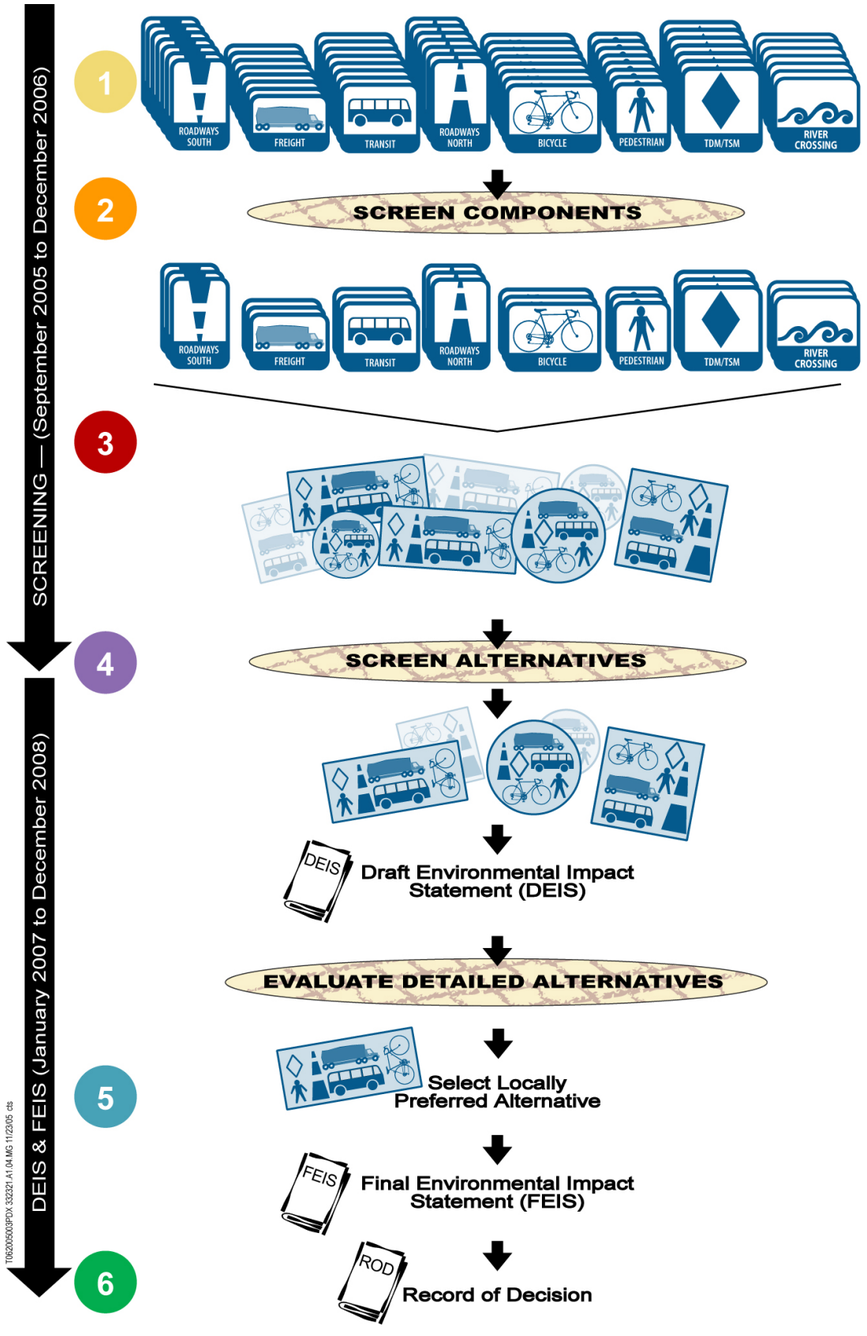
Criteria- Principles reflecting the CRC Task force adopted *Vision and Values Statements* by which components and alternative packages will be considered.

Performance Measure- Used to assess the degree to which the established criteria are satisfied. Measures are mostly qualitative during component screening given limited available data and become more quantitative during alternative package screening and selection of a preferred alternative as detailed data is generated.

Alternative- The end result of the screening process, each alternative is a carefully matched and fully formed assembly of components intended to address the project purpose and need and allow for comparison of performance relative to established evaluation criteria.

Evaluation- Different and distinct from screening, evaluation is the process of comparing and contrasting the adopted range of alternatives during the EIS, leading to selection of a preferred alternative. Performance measures at this stage are the most quantifiable.

Scoping Process- A process for early identification of potentially significant environmental issues and suggestions for potential improvements. This process begins with a project/process introduction to the environmental review agencies and the public, initiating coordination and involvement activities that will span the life of the project.



Steps in the Screening and Evaluation Process

1 Identify Transportation Components

To begin, a wide range of improvement ideas (or components) will be generated from two sources: (1) recommendations in the 2002 I-5 Transportation and Trade Partnership Final Strategic Plan; and (2) additional suggestions from the public and affected agencies received during the National Environmental Policy Act (NEPA) scoping process. The project team will organize these components into transportation categories to make the process of screening the components more clear: Roadways North, River Crossing, Roadways South, Freight, Transit, Bicycle/Pedestrian, and Transportation Demand Management (TDM)/Transportation System Management (TSM).

2 Screen Components

Component screening occurs using a two-step process (Steps A and B) for each component within the above categories to successively narrow the number of possible solutions. **Step A** is a pass/fail process in which transportation components are screened against questions derived from the *Problem Definition* (See attachment *Step A: Component Screening*). To determine if each component offers an improvement, they will be compared to the No Build condition. Components that pass in Step A will be evaluated further against **Step B** criteria that were developed to reflect values identified in the CRC Task Force's V*ision and Values Statement* (See attachment *Step B: Component Screening*). Project staff will rate each of the remaining components numerically on an established scale (for example 1-5) using data drawn mostly from previous studies. They will identify components that perform better than others in each category and recommend which components to advance for inclusion in alternative packages. Results will be presented in a Component Screening Report. Although many of the components may have benefits that extend beyond the bridge influence area, for this component screening, measures will focus on changes within the bridge influence area.

3 Assemble Alternative Packages

Project staff will assemble a representative set of alternative packages spanning the bridge influence area from the components that pass the first screening. Alternative packages will include components from each transportation category that blend together in a logical manner considering, for example, alignment and operational requirements. In some instances, one alternative package may sufficiently represent several other possible component combinations for analysis purposes. Assembling alternative packages allows project staff to model and analyze the integrated transportation system performance of I-5 within the bridge influence area, as well as other impacts and benefits, that cannot be assessed at the component level. Agreement on the range of alternatives to be considered is a major decision point in the project development process.

4 Narrow Range of Alternatives

Further screening will reduce the set of alternative packages to a reasonable range of Build Alternatives for comparison with the No-Build Alternative in the Draft Environmental Impact Statement (EIS). Performance measures will be modified to take advantage of new data available at this point in the project. Project staff will rate the performance of each alternative against these measures and will summarize results in an Alternatives Analysis Report. The most effective packages will advance into the Draft EIS either "as is" or after being modified based on screening results. Agreement on the alternatives to be evaluated in the Draft EIS is a major decision point in the project development process.

5 Select a Locally Preferred Alternative

Following preparation of the Draft EIS, project staff will again compare alternatives against the evaluation criteria using more detailed data compiled during preparation of the Draft EIS. This evaluation will be presented in a report to support selection of a preferred alternative. Agreement on the preferred alternative is a major decision point in the project development process.

6 Secure Federal Approval

The project team will document the locally preferred alternative in the Final EIS and submit it to the Federal Highway Administration and the Federal Transit Administration for approval. If all requirements have been met, these agencies will issue a Record of Decision to document final selection of the alternative to be built.

Step A: Pass/Fail Transportation Component Screening

Component:_____ Screening Questions Does the component achieve the following?	Roadway North/ Freight/ Bicycle/ Pedestrian	River Crossing/ Freight/ Bicycle/ Pedestrian	Roadway South/ Freight/ Bicycle/ Pedestrian	Transit	TSM/ TDM	Pass	Fail	Not Applicable	Unknown	Reason(s) to Drop
Increase vehicular capacity or decrease vehicular demand within the bridge influence area? For example, will the component provide additional travel lanes, remove a constraining bottleneck, or provide other modes of travel that can reduce the demand to travel by vehicle in the I-5 bridge influence area?	♦	♦	♦	♦	♦					
Improve transit performance within the bridge influence area? For example, will the component provide an exclusive high-capacity transitway, transit preferential lanes or other bus-specific improvements enough to improve transit capacity and performance in the bridge influence area?				♦	♦					
Improve freight mobility within the bridge influence area? For example, will the component provide truck freight priority or increase vehicular capacity or reduce vehicular demand enough to improve truck-hauled freight movements and reduce truck congestion in the bridge influence area? Will it improve or maintain access to existing freight facilities?	♦	♦	♦		♦					
Improve safety and decrease vulnerability to incidents within the bridge influence area? For example, will the component eliminate or minimize features that may be attributable to incidents within the bridge influence area such as a key bottleneck, closely spaced on and off ramps, or narrow shoulders?	♦	♦	♦	♦	♦					
Improve bicycle and pedestrian mobility within the bridge influence area? For example, will the component provide a continuous, connected and functional bicycle and pedestrian facility across the Columbia River?	♦	♦	♦							
Reduce seismic risk of the I-5 Columbia River crossing? For example, will the component seismically retrofit the existing Columbia River crossing and/or provide a new crossing that meets seismic standards?		♦								

Notes:

- Components will be screened only against the questions relevant to their categories (indicated by ♦)
- Components that fail the relevant questions will be screened out, and the only way components will be prevented from proceeding to Step B component screening is if they receive a "fail" rating.
- Bicycle, pedestrian, and freight components will be evaluated with the roadway and river crossing categories given their inter-relationship.
- All components will be compared to the No Build, which includes transportation improvements adopted in the regional transportation plans but no improvements at the Columbia River crossing.

Step B: Component Screening (3-14-06)

Criteria	Component Screening Performance Measures
1 Community Livability and Human Resources	
1.1 Avoid, then minimize adverse impacts to, and where practicable reduce, noise levels	1.1 Magnitude (on a qualitative scale) of residential properties within approximate noise impact contour
1.2 Avoid, then minimize adverse impacts to, and where practicable enhance, neighborhood cohesion	*1.2 Criteria 1.2 to be assessed during alternative package screening*
1.3 Avoid, then minimize adverse impacts to, and where practicable enhance, air quality	*1.3 Criteria 1.3 to be assessed during alternative package screening*
1.4 Avoid or minimize residential displacements	1.4 Magnitude (on a qualitative scale) of residential properties crossed by component's conceptual footprint
1.5 Avoid or minimize business displacements	1.5 Magnitude (on a qualitative scale) of commercial/industrial properties crossed by component's conceptual footprint
1.6 Avoid or minimize adverse impacts to, and where practicable, preserve historic, prehistoric, and cultural resources	1.6 Magnitude and significance (on a qualitative scale) of historic, prehistoric, and cultural resources crossed by component's conceptual footprint
1.7 Avoid, then minimize adverse impacts to, and where practicable enhance, public park and recreation resources	1.7 Magnitude and significance (on a qualitative scale) of public park and recreation resources crossed by component's conceptual footprint
1.8 Support local comprehensive plans and jurisdiction-approved neighborhood plans including development and redevelopment opportunities, consistent with these plans.	*1.8 Criteria 1.8 to be assessed during alternative package screening*
1.9 Incorporate aesthetic values of the community in the project design	*1.9 Criteria 1.9 to be assessed during alternative package screening and/or alternative evaluation*
2 Mobility, Reliability, Accessibility, Congestion Reduction, and Efficiency	
2.1 Reduce travel times and delay in the I-5 corridor and within the bridge influence area for passenger vehicles	2.1 Potential (on a qualitative scale) for component to improve peak period passenger vehicle travel times and delay in the I-5 corridor and within the bridge influence area
2.2 Reduce travel times and delay in the I-5 corridor and within the bridge influence area for transit modes	2.2 Potential (on a qualitative scale) for component to reduce peak period travel time and delay for transit vehicles in the I-5 corridor and within the bridge influence area
2.3 Reduce the number of hours of daily highway congestion in the I-5 corridor and within the bridge influence area	2.3 Potential (on a qualitative scale) for component to reduce the number of hours of daily highway congestion in the I-5 corridor and within the bridge influence area
2.4 Enhance or maintain accessibility of jobs, housing, health care and education to travel markets served by the I-5 Columbia River crossing	2.4 *Criteria 2.4 to be assessed during alternative package screening and/or alternative evaluation*
2.5 Improve person throughput of I-5 Columbia River crossing	2.5 Potential (on a qualitative scale) for component to increase the level of persons crossing Columbia River via I-5 by mode
2.6 Improve vehicle throughput of I-5 Columbia River crossing	2.6 Potential (on a qualitative scale) for component to increase the level of vehicles by mode crossing Columbia River via I-5
3 Modal Choice	
3.1 Provide for multi-modal transportation choices in the I-5 corridor and within the bridge influence area	3.1 Potential (on a qualitative scale) for increasing transit capacity as a percentage of total daily capacity and peak period capacity across the I-5 Columbia River bridge
3.2 Improve transit service to target markets in the I-5 corridor and within the bridge influence area	3.2 Potential (on a qualitative scale) to improve transit service in the I-5 corridor to identified travel markets considering frequency, connectivity, span of hours, number of transfers, and travel time
3.3 Improve bike/pedestrian connectivity in the I-5 corridor and within the bridge influence area	3.3 Ability (on a qualitative scale) to improve connectivity of bicycle and pedestrian trips in the I-5 corridor and through the bridge influence area
3.4 Increase vehicle occupancy in the I-5 corridor and within the bridge influence area	3.4 Potential (on a qualitative scale) for component to increase vehicle occupancy in the I-5 corridor and within the bridge influence area
4 Safety	
4.1 Enhance vehicle/freight safety	4.1 Potential (on a qualitative scale) for component to improve vehicle/freight safety within the bridge influence area
4.2 Enhance bike/pedestrian facilities and safety	4.2 Quality (on a qualitative scale) of bicycle and pedestrian pathways provided within a component, considering design standards such as ADA compliance
4.3 Enhance or maintain marine safety	4.3 Quality (on a qualitative scale) of navigation channel geometrics to accommodate ship movements considering necessary tug and barge turning maneuvers and hazards of additional lift restrictions
4.4 Enhance or maintain aviation safety	4.4 Ability (on a qualitative scale) to accommodate FAA clearance zone for Pearson Airpark
4.5 Provide sustained life-line connectivity	4.5 Ability (on a qualitative scale) to accommodate life-line connections in the I-5 corridor across the Columbia River to be maintained in an earthquake
4.6 Enhance I-5 incident/emergency response access within the bridge influence area	4.6 Quality (on a qualitative scale) to accommodate incident/emergency service access to incidents on I-5 in the bridge influence area
5 Regional Economy; Freight Mobility	
5.1 Reduce travel times and reduce delay for vehicle-moved freight on I-5 *within* the bridge influence area	5.1 Potential (on a qualitative scale) for component to reduce daily delay for trucks on I-5 within the bridge influence area
5.2 Reduce travel times and reduce delay for vehicle-moved freight in the I-5 corridor	5.2 Potential (on a qualitative scale) for component to reduce daily delay for trucks in the I-5 corridor
5.3 Enhance or maintain efficiency of marine navigation	5.3 Potential (on a qualitative scale) for component to avert extension of "no bridge lift" periods tied to I-5 congestion
5.4 Improve freight truck throughput of the bridge influence area	5.4 Potential (on a qualitative scale) for component to increase freight vehicle throughput across the Columbia River via I-5
5.5 Avoid or minimize adverse impacts to the parallel freight rail corridor	*5.5 Criteria 5.5 to be assessed during alternative package screening and/or alternative evaluation*
5.6 Enhance or maintain access to port, freight, and industrial facilities	5.6 Range of travel times (on a qualitative scale) between up to five origin/destination pairs of typical freight centers within the bridge influence area (e.g., between Port of Vancouver and Columbia Blvd. interchange)
6 Stewardship of Natural Resources	
6.1 Avoid, then minimize adverse impacts to, and where practicable enhance, threatened or endangered fish and wildlife and their habitat	6.1 Magnitude (on a qualitative scale) of direct impact on designated critical habitat and other threatened or endangered species habitat
6.2 Avoid, then minimize adverse impacts to, and where practicable enhance, other fish and wildlife and their habitat	6.2 Magnitude (on a qualitative scale) of direct impact on other fish and wildlife habitat
6.3 Avoid, then minimize adverse impacts to, and where practicable enhance, rare, threatened, or endangered plant species	6.3 Magnitude (on a qualitative scale) of direct impact on rare, threatened, or endangered plant species
6.4 Avoid, then minimize adverse impacts to, and where practicable enhance and/or restore, wetlands	6.4 Magnitude and significance (on a qualitative scale) of direct impact on wetlands
6.5 Avoid, then minimize adverse impacts to, and where practicable enhance, water quality	6.5 Magnitude (on a qualitative scale) of net increase in impervious surface area
6.6 Minimize total energy consumption of construction and transportation system operations	*6.6 Criteria 6.6 to be assessed during alternative evaluation*
6.7 Avoid, then minimize adverse impacts to, and where practicable enhance, waterways	6.7 Magnitude and significance (on a qualitative scale) of direct impact on waterways
7 Distribution of Benefits and Impacts	
7.1 Avoid or minimize disproportionate adverse impacts on, and where practicable, improve conditions for low income and minority populations	7.1 Magnitude (on a qualitative scale) of potential residential property acquisitions in blocks or block groups with high share of low income or minority populations (compare to impacts in other blocks or block groups)
7.2 Provide for equitable distribution of benefits to low income and minority populations	7.2 Potential improvements (on a qualitative scale) to vehicle and transit travel times between representative low income or minority areas and selected destinations (including employment, education and commercial areas)
8 Cost Effectiveness and Financial Resources	
8.1 Minimize the cost of construction.	*8.1 Criteria 8.1 to be assessed during alternative package screening and/or alternative evaluation*
8.2 Ensure transportation system construction cost effectiveness.	*8.2 Criteria 8.2 to be assessed during alternative package screening and/or alternative evaluation*
8.3 Ensure transportation system maintenance and operation cost effectiveness.	*8.3 Criteria 8.3 to be assessed during alternative package screening and/or alternative evaluation*
8.4 Ensure a reliable funding plan for the project	*8.4 Criteria 8.4 to be assessed during alternative package screening and/or alternative evaluation*
9 Growth Management/Land Use	
9.1 Support adopted regional growth management and comprehensive plans	*9.1 Criteria 9.1 to be assessed during alternative package screening and/or alternative evaluation*
10 Constructability	
10.1 Maintain transportation operations during construction	*10.1 Criteria 10.1 to be assessed during alternative package screening and/or alternative evaluation*
10.2 Minimize adverse construction impacts	*10.2 Criteria 10.2 to be assessed during alternative package screening and/or alternative evaluation*
10.3 Provide flexibility to accommodate future transportation system improvements	*10.3 Criteria 10.3 to be assessed during alternative package screening and/or alternative evaluation*
10.4 Use construction practices and materials that minimize environmental impact	*10.4 Criteria 10.4 to be assessed during alternative package screening and/or alternative evaluation*

Notes: 1. Bicycle, pedestrian and freight components will be evaluated with the roadway and river crossing categories given their interrelationship. 2. These criteria will be used in alternative screening and the selection of a preferred alternative, but the performance measures will change.
3. Where noted, insufficient data will exist to report on certain criteria during component screening. Data will be available during subsequent analysis of alternative packages.