Alternative Packages Evaluation

Columbia River CROSSING

Value	Criteria		Performance Measures
1. Community Livability and Human Resources	1.1 Avoid, then minimize adverse impacts to, and where practicable reduce, noise levels		**1.1.1** No. of residential properties within estimated FHWA noise impact contours.
			1.1.2 No. of residential properties within estimated FTA impact screening contours.
			1.1.3 Identified constraints to providing mitigation for areas with potential impacts
	1.2 Avoid, then minimize adverse impacts to, and where practicable enhance, neighborhood cohesion.		**1.2.1** No. of neighborhoods bisected by new construction
			1.2.2 No. of significantly impacted neighborhoods (> 10% of total area required for new construction)
			1.2.3 No. of neighborhoods divided from their identified resources by new construction
	1.3 Avoid, then minimize adverse impacts to, and where practicable enhance, air quality		**1.3.1** General trade offs in air quality effects of the alternatives
	1.4 Avoid or minimize residential displacements		**1.4.1** No. of residential properties crossed by alternative's conceptual footprint
	1.5 Avoid or minimize business displacements		**1.5.1** No. of commercial/industrial properties crossed by alternative's conceptual footprint
	1.6 Avoid or minimize adverse impacts to, and where practicable, preserve historic, prehistoric, and cultural resources		**1.6.1** No. of historic, archaeological and cultural (i.e., TCP) resource properties within conceptual footprint
			1.6.2 Total acreage of historic, archeological, cultural properties within conceptual footprint
			1.6.3 No. of historic, archaeological and cultural resource properties also within potential noise impact contour
			1.6.4 Total acreage of land located in high probability areas for archeological resources
	1.7 Avoid, then minimize adverse impacts to, and where practicable enhance, public park and recreation resources		**1.7** No. of 4(f) public parks (including # of parks and area of parkland) falling within conceptual footprint
	1.8 Support local comprehensive plans and jurisdiction-approved neighborhood plans including development and redevelopment opportunities, consistent with these plans.		**1.8.1** Does alternative support/uphold principles of multi-modalism and compact growth?
			1.8.2 Is alternative consistent with relevant comprehensive plans?
			1.8.3 Is alternative consistent with project-specific policies in the Vancouver City Center Vision?
			1.8.3 Amount of developable, redevelopable land to be lost under alternative.
	1.9 Incorporate aesthetic values of the community in the project design		**1.9.1** To be measured in later phases of project when design details are available to support 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		**2.1.1** Passenger auto travel times in minutes between selected corridor points along I-5. Morning commute (SB I-5) Salmon Creek to Portland CBD; Evening commute (NB I-5) Portland CBD to Vancouver CBD
			2.1.2 Passenger auto vehicle hours of delay (VHD) on I-5 within BIA and corridor area
	2.2 Reduce travel times and delay in the I-5 corridor and within the bridge influence area for transit modes		**2.2.1** Peak period transit vehicle travel time and aggregate VHD (transit vehicle hour delay) from selected corridor points along I-5
	2.3 Reduce the number of hours of daily highway congestion in the I-5 corridor and within the bridge influence area		**2.3.1** No. of congested lane miles and daily number of hours of congestion on I-5 in the I-5 corridor and within 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		**2.4.1** Employment and housing accessibility- No. of jobs and households reachable in 15, 30, 45, and 60 minute trips by auto and transit from specific I-5 travel markets
			2.4.2 Change in # of existing highways/arterials that directly access I-5 within Bridge Influence Area
	2.5 Improve person throughput of I-5 Columbia River crossing		**2.5.1 & 2.5.2** Peak period and daily persons crossing Columbia River between SOV, HOV, and transit modes
	2.6 Improve vehicle throughput of I-5 Columbia River crossing		**2.6.1 & 2.6.2** Peak period and daily SOV, HOV, Bus, and Medium/Heavy Truck volumes across I-5 Columbia River crossing.
			2.6.3 Peak period volumes on east-west and north-south adjacent I-5 corridor arterial roadways within Bridge Influence Area
3. Modal Choice	3.1 Provide for multi-modal transportation choices in the I-5 corridor and within the bridge influence area		**3.1.1** Percent of population and employment with access to transit within 1/4 mile of bus lines and 1/2 mile of HCT stations
			3.1.2 Access to employment and housing within transit travel time contour in 15, 30, 45, and 60 minutes
	3.2 Improve transit service to target markets in the I-5 corridor and within the bridge influence area		**3.2.1** Transit travel times from the 7 Clark County transit markets to the 5 major transit markets in Oregon (both in vehicle and out of vehicle for a few representative pairs) (Salmon Creek, dt Vancouver, N Portland, dt Portland)
	3.3 Improve bike/pedestrian connectivity in the I-5 corridor and within the bridge influence area		**3.3.1** Provide multi-use facility designed to at least minimum design standards; providing continuous and non-circuitous north-south pathway and convenient connections -- qualitatively evaluated
	3.4 Increase vehicle occupancy in the I-5 corridor and within the bridge influence area		**3.4.1** Peak period SOV + HOV + Bus + Medium & Heavy Truck volumes across I-5 Columbia River crossing and vehicle occupancy at I-5 Columbia River crossing
4. Safety	4.1 Enhance Vehicle/Freight Safety		**4.1.1** Highway improvements to I-5 that specifically improve vehicle/freight safety
	4.2 Enhance bike/pedestrian facilities and safety		**4.2.1** Qualitative assessment of bicycle and pedestrian pathways provided within an alternative, and their affect on bike/ped safety
	4.3 Enhance or maintain marine safety		**4.3.1** Quality of navigation channel geometrics to accommodate ship movements. Does alternative improve barge turning maneuvers
	4.4 Enhance or maintain aviation safety		**4.4.1** Ability to accommodate FAA clearance zone for Pearson Airpark
	4.5 Provide sustained life-line connectivity		**4.5.1** Ability 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		**4.6.1** Ability to accommodate incident/emergency service access to incidents on I-5 in the bridge influence area

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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		**5.1.1** Peak period Medium/Heavy Truck travel times in minutes on I-5 within Bridge Influence Area.
			5.1.2 Peak period Medium/Heavy Truck vehicle hours of delay (VHD) on I-5 within Bridge Influence Area
	5.2 Reduce travel times and reduce delay for vehicle-moved freight in the I-5 corridor		**5.2.1** Peak period Medium/Heavy Truck travel times in minutes within I-5 corridor.
			5.2.2 Peak period aggregate vehicle hours of delay (VHD) for Medium/Heavy Trucks within I-5 Corridor
	5.3 Enhance or maintain efficiency of marine navigation		**5.3.1** Potential for an alternative to avert extension of "no bridge lift" periods tied to I-5 congestion
	5.4 Improve freight truck throughput of the bridge influence area		**5.4.1** Peak period Medium & Heavy Truck volumes across I-5 Columbia River crossing
	5.5 Avoid or minimize adverse impacts to the parallel freight rail corridor		**5.5.1** Peak period congestion along east-west arterials within Bridge Influence Area with at-grade crossings of westerly north-south BNSF railline
	5.6 Enhance or maintain access to port, freight, and industrial facilities		**5.6.1** Peak period Medium/Heavy Truck travel times in minutes between typical freight centers
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		**6.1.1** Total area in acres of critical and native habitat for threatened and endangered (T&E) species within conceptual footprint
			6.1.2 Relative quality of the habitat identified under Measure 6.1.1
	6.2 Avoid, then minimize adverse impacts to, and where practicable enhance, other fish and wildlife and their habitat		**6.2.1** Total area in acres of fish and wildlife habitat within alternative's conceptual footprint
			6.2.2 Impacts to wildlife crossings/passage
			6.2.3 Type and relative quality of the habitat identified under Measure 6.2.2
	6.3 Avoid, then minimize adverse impacts to, and where practicable enhance, rare, threatened, or endangered plant species		**6.3.1** Total area in acres of rare plant habitat within alternative's conceptual footprint
	6.4 Avoid, then minimize adverse impacts to, and where practicable enhance and/or restore, wetlands		**6.4.1** Total area in acres of wetlands within alternative's conceptual footprint
			6.4.2 Type and relative quality of the wetlands identified under Measure 6.4.1
	6.5 Avoid, then minimize adverse impacts to, and where practicable enhance, water quality		**6.5.1** Total area in acres of additional impervious surface created under alternative. How much existing impervious surface would remain?
	6.6 Minimize total energy consumption of construction and transportation system operations		**6.6.1** Amount of energy use
	6.7 Avoid, then minimize adverse impacts to, and where practicable enhance, waterways		**6.7.1** Identified removal/fill impacts to 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		**7.1.2** Do potential acquisitions and noise impacts cluster in areas considered high minority or low income?
			7.1.3 Is traffic diverted to census tracts considered high minority or low income?
	7.2 Provide for equitable distribution of benefits to low income and minority populations		**7.2.1** Which block groups experience improved access to I-5, downtown Vancouver, downtown Portland, or other resources?
			7.2.2 Which block groups experience the greatest improvements in transit service?
8. Cost Effectiveness and Financial Resources	**8.1** Minimize the cost of construction.	Criteria 8.1, 8.2 and 8.3 are collectively addressed by measures 8.1.1 through 8.1.6	**8.1.1** Estimated Capital Construction Cost
			8.1.2 Estimated Operations and Maintenance Cost
	8.2 Ensure transportation system construction cost effectiveness.		**8.1.3** Estimated lifecycle cost
			8.1.4 Estimate of FTA Cost Effectiveness index (as an indicator of each alternative's potential eligibility for FTA New Starts funds). This will be reported in ranges given the preliminary nature of the data
	8.3 Ensure transportation system maintenance and operation cost effectiveness.		**8.1.5** Daily Time Savings (vehicle hours) per highway alternative life cycle cost
			8.1.6 Daily reduction in congested hours of operation (hrs/day) per highway alternative life cycle cost
	8.4 Ensure a reliable funding plan for the project		**8.4.1** To be measured in later phases.
			8.4.2 To be measured in later phases.
9. Growth Management, Land Use	**9.1** Support adopted regional growth management and comprehensive plans		**9.1.1** Consistency with regional plan policies (e.g., multi-modalism, compact growth) summarized in Table 1-2 of the draft land use MDR, and other regional plan policies specific to the project. Is the alternative included in the RTP and MTP?
			9.1.2 Proximity of proposed HCT stations to areas of higher density, either existing or planned (in local comprehensive plans) and with supportive parking, pedestrian and other policies in place.
10. Constructability	**10.1** Maintain transportation operations during construction		**10.1.1** Magnitude of delays to current highway, transit, and navigation use.
	10.2 Minimize adverse construction impacts		**10.2.1** Magnitude of noise, air quality, and visual impacts to environment.
	10.3 Provide flexibility to accommodate future transportation system improvements		**10.3.1** Ease by which transportation system can be improved.
	10.4 Use construction practices and materials that minimize environmental impact		**10.4.1** To be measured in later phases.