



Multnomah County is creating an earthquake ready downtown river crossing.

BETTER – SAFER – CONNECTED

April 29, 2019

INTEREST AND VALUES

Interest and Values that will inform criteria development for Environmental Review Phase

- Businesses and Economy
- Social Services
- Community
- Resources
- Parks
- Historic resources
- Visual and Aesthetics
- Seismic Resiliency
- Cost
- Indirect Impacts to Uses/Buildings
- Natural Resources
- Personal Safety and non-Transportation Safety
- River Navigation
- Emergency Vehicles
- Utilities
- Sustainability
- Transit
- Active Transportation and ADA
- Motor Vehicles and Freight

DESIGN CRITERIA

Design Criteria (questions to be addressed) during Environmental Review Phase

- Seismic Resiliency
 - Ensure freight, large truck and tracked vehicles can be used in an emergency
 - Design bridge to increase safety for navigation
 - Ensure all modes can use bridge after earthquake
 - Bridge should be operable the same day as earthquake
 - Ensure liquefaction resilience
- River Navigation
 - Maintain the full width of the shipping channel through the bridge
 - Ensure adequate navigation vertical clearance (a fixed bridge height less than Tilikum Crossing is unacceptable)

FUTURE TOPICS

Topics to be addressed during a Future Project Phase

- Visual and Aesthetics
 - Integrate the project into the urban fabric
 - Respect the historic value and character of existing bridge, even if it's replaced
 - If bridge is retrofitted, maintain current bridge facade - railing and towers, heritage recognition
 - Create environment that is pleasing and enjoyable and doesn't overwhelm
 - Ensure public input on bridge aesthetics
 - Capture feeling of history and culture
 - Promote long-term aesthetics. How will it look over 100 years?
 - Enhance the visual look and feel - up close and far away, not obstructing
- Sustainability
 - Use sustainable materials
- Personal Safety & non-Transportation Safety
 - Safety during construction: air, water, dust, debris falling, environmentally safe

POTENTIAL CRITERIA FOR CONSIDERATION IN FUTURE PHASES

Seismic Safety

- How does the option affect seismic vulnerability beyond the bridge?
- How well does the option accommodate river use after a major earthquake?
- To what extent does the option's functional reliance on a power source affect its ability to provide immediate access for emergency response?
- To what extent does the option's length increase emergency vehicle travel time response and decrease reliability?

Transportation

- How consistent is the option with relevant transportation plans and policies?
- What is the impact from temporary traffic detours?
- What is the impact on congestion and street operations?
- How well does the alignment serve existing bus routes?
- How does the option affect safe and direct access to and from existing and planned (adopted) bike/ped/ADA facilities?
- What is the proximity/separation between bikes/peds and motor vehicles?
- To what extent does the option support safe and direct access for streetcar on the crossing?

Built Environment

- How consistent is the option with relevant land use plans and policies?
- To what degree does the option provide improved access to areas designated for development and redevelopment?
- How consistent is the option with relevant parks and recreation plans and policies?
- How would the option affect access to parks and recreation resources?
- How would the option affect archaeological resources?
- How would the option affect visual and aesthetic resources?
- What would the noise and vibration impacts be?

Natural Environment

- What is the net change in pollutant generating impervious surfaces?
- What is the extent of net new in-water fill?
- What would be the potential effect of new in-water fill on fish?
- What would be the potential effect of construction activities on fish?
- What are the effects on regulated air emissions?
- What are the effects of traffic changes on greenhouse gas emissions?
- How will future lower river flows and periodic higher water levels affect the bridge touchdown (flooding)?
- What are the embodied greenhouse gas emissions of construction materials?

Cost

- What is the total cost of ownership?
- What is the operations and maintenance cost?

Equity

- What is the community significance of the displaced properties and other changes?
- How will the option affect community cohesion?
- To what extent does the option affect the County's ability to meet housing goals?

Other

- Cumulative Impacts
- Construction Impacts
- Permitting
- Sustainability
- Technology

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(SHEET 1)

	<i>Business and Economy</i>	<i>Indirect Impacts to Uses/Buildings</i>	<i>Social Services</i>	<i>Community Resources</i>	<i>Parks</i>	<i>Historic Resources</i>	<i>Visuals and Aesthetics</i>	<i>Natural Resources</i>	<i>Sustainability</i>
What you said	<p>Minimize harm to local businesses</p> <p>Avoid displacement of any buildings</p> <p>Consider usability of area under bridge (i.e., American Medical Response)</p> <p>Maintain access for customers to visit local businesses during construction and long-term</p>		<p>Minimize permanent displacements and relocations</p> <p>Avoid displacement of any buildings</p> <p>Minimize permanent, adverse access impacts</p> <p>Minimize disruption and relocation during construction</p> <p>Maintain access to social services during construction</p>	<p>Consider usability of area under bridge (i.e., Skatepark, Saturday Market)</p> <p>Minimize impacts to festivals and events such as Rose festival</p> <p>Maintain access to buildings during construction</p>	<p>Minimize impacts to parks on both sides of the river</p> <p>Support access to parks and the esplanade from the bridge, and in general</p> <p>Promote usability of area under the new bridge</p>	<p>Protect historic resources and the character of historic districts and neighborhoods (from direct and indirect impacts)</p>	<p>Consider views from the bridge, the esplanade and the water</p> <p>Enhance the visual look and feel - up close and far away, not obstructing</p>	<p>Protect air quality</p> <p>Protect environmental quality and water quality for fish and recreation</p>	<p>Balance short-term need and long-term legacy of the project - be smart and wise</p>
What we heard	<p>Alternatives</p> <ul style="list-style-type: none"> • Access • Displacement <p>Construction</p> <ul style="list-style-type: none"> • Access • Displacement 		<p>Alternatives</p> <ul style="list-style-type: none"> • Access • Displacement <p>Construction</p> <ul style="list-style-type: none"> • Access • Displacement 	<p>Alternatives</p> <ul style="list-style-type: none"> • Access • Displacement <p>Construction</p> <ul style="list-style-type: none"> • Access 	<p>Alternatives</p> <ul style="list-style-type: none"> • Access • Displacement <p>Construction</p> <ul style="list-style-type: none"> • Access • Displacement 	<p>Alternatives</p> <ul style="list-style-type: none"> • Displacement • Context • Indirect impacts 	<p>Alternatives</p> <ul style="list-style-type: none"> • View sheds/ corridors 	<p>Alternatives</p> <ul style="list-style-type: none"> • Air quality • Water quality • Aquatic species <p>Construction</p> <ul style="list-style-type: none"> • Air quality • Water quality • Aquatic species 	
Additional input from team	<p>Alternatives</p> <ul style="list-style-type: none"> • Development Potential <p>Construction</p> <ul style="list-style-type: none"> • Regional economy 	<p>Alternatives</p> <ul style="list-style-type: none"> • Noise • View and light/shadow 	<p>Alternatives</p> <ul style="list-style-type: none"> • Level of service 		<p>Alternatives</p> <ul style="list-style-type: none"> • Functionality <p>Construction</p> <ul style="list-style-type: none"> • Functionality 	<p>Construction</p> <ul style="list-style-type: none"> • Displacement • Indirect impacts 	<p>Construction</p> <ul style="list-style-type: none"> • Intrusion of temporary structures 		

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Input from CTF requiring clarification			Consider use by transient community and homeless	Being a resident without a local employer, Eastside gets forgotten and there are underserved communities there. Consider Central Eastside, don't want to minimize momentum: Don't want stacking, obstructed space, limiting parking	Access to the whole area		<p>Future-proofing of aesthetics; percentage of cost going to aesthetics as measure</p> <p>Bridge defines Portland, engineering, Importance to Portland</p> <p>Don't visually overwhelm</p>		

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(SHEET 2)

	<i>Personal Safety & Non-Transportation Safety</i>	<i>River Navigation</i>	<i>Active Transportation and ADA</i>	<i>Motor Vehicles/ Freight</i>	<i>Emergency Vehicles</i>	<i>Utilities</i>	<i>Transit</i>	<i>Seismic Resiliency</i>	<i>Cost</i>	
What you said	<p>Promote safety and comfort through lighting, visibility, connection points: crime prevention through environmental design (CPTED) Techniques – ensure bridge doesn't encourage crime</p> <p>Make areas below the bridges on land safe for everyone</p>	(moved to design criteria)	<p>Access/Connectivity: Maintain and improve access and connections for bikes, peds, ADA</p> <ul style="list-style-type: none"> - Esplanade - Riverbanks - Businesses - Services - Parks <p>Ensure accessibility for different users</p> <p>Ease of use, particularly for people in a wheelchair/disabled.</p> <p>Safety/Comfort: Ensure safe, comfortable and welcoming ped and bike facilities:</p> <ul style="list-style-type: none"> - Ramps should not be too steep (consider icy conditions and emergencies) even to the Esplanade - Bridge camber allows all to cross - Wide sidewalk and bike lanes - Separate bike from ped and all from motor vehicles <p>Have places for bikes and peds to linger</p>	<p>Access/Connectivity: Maintain access and connections for motor vehicles to neighborhoods and other uses.</p> <p>Provide approaches that promote access and safety</p> <p>Ensure bridge allows for freight and large truck use in both directions</p> <p>Capacity/Congestion: provide travel capacity for commuters and all modes</p> <p>Consider future traffic volumes</p> <p>Consider traffic impacts caused by bridge lifts</p> <p>Promote efficiency for all modes</p> <p>Safety for traffic on bridge, avoid S-curve</p> <p>Provide adequate width for car lanes (e.g., Hawthorne bridge has too narrow car lanes)</p> <p>Preserve on-street parking in the vicinity</p> <p>Traffic flow across river isn't harmed during construction</p>	<p>Minimize traffic pinch points to reduce emergency travel times</p> <p>Ensure first responders can cross the river after the project</p> <p>Smooth and unencumbered access for emergency vehicles during construction</p> <p>Minimize choke points like I-84 and I-205N; ensure shoulders are available.</p>			<p>Maintain routes for transit commuters during construction, but don't sacrifice long term benefits</p>	<p>Expedite project to be in place before an earthquake</p> <p>Emergency response will be improved with a wider bridge</p> <p>Travel for motor vehicles post-earthquake</p> <p>Ensure that bridge components have post-event reparability</p> <p>Emergency response will be improved with a fixed bridge</p>	<p>Promote ease of long-term maintenance, lower maintenance costs and construction cost</p>

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What you said			<p>Make the bridge accessible, comfortable and inviting for all ages</p> <p>Design should avoid need to regularly block bike and ped for maintenance</p> <p>Promote efficiency for all modes</p> <p>Maintain routes for ped commuters during construction, but don't sacrifice long term benefits</p>	<p>Travel speed for all modes</p> <p>Traffic flow disruptions during construction: timelines, lift times</p> <p>Maintain access to the neighborhoods during construction</p>					
What we heard	<p>Alternatives</p> <ul style="list-style-type: none"> CPTED principles 	(moved to Design Criteria)	<p>Alternatives</p> <ul style="list-style-type: none"> Access / connectivity Capacity Travel time Safety/Comfort <p>Construction</p> <ul style="list-style-type: none"> Access/connectivity 	<p>Alternatives</p> <ul style="list-style-type: none"> Access / connectivity Capacity Travel time Safety On-street Parking <p>Construction</p> <ul style="list-style-type: none"> Access Travel time 	<p>Alternatives</p> <ul style="list-style-type: none"> Access Travel time <p>Construction</p> <ul style="list-style-type: none"> Access Travel time 		<p>Construction</p> <ul style="list-style-type: none"> Access 	<p>Alternatives</p> <ul style="list-style-type: none"> Duration to resilient bridge completion Post-earthquake operability and reparability confidence Post-earthquake emergency vehicle access <p>Construction</p> <ul style="list-style-type: none"> Duration to resilient bridge completion 	<p>Alternatives</p> <ul style="list-style-type: none"> Long-term maintenance Direct construction
Additional input from team		<p>Construction</p> <ul style="list-style-type: none"> Temporary direct 	<p>Construction</p> <ul style="list-style-type: none"> Travel time 	<p>Construction</p> <ul style="list-style-type: none"> Safety On-street Parking Capacity 		<p>Alternatives</p> <ul style="list-style-type: none"> Major utility impacts (e.g., 	<p>Alternatives</p> <ul style="list-style-type: none"> Streetcar readiness Bus accessibility 		<p>Construction</p> <ul style="list-style-type: none"> Temporary direct

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Additional input from team		<ul style="list-style-type: none"> Temporary indirect 				Ankeny Pump Station) Construction <ul style="list-style-type: none"> Major utility impacts (e.g., Ankeny Pump Station) 	Construction <ul style="list-style-type: none"> Travel times 		<ul style="list-style-type: none"> Temporary indirect
Input from CTF requiring clarification			Connections: <ul style="list-style-type: none"> ADA access challenges and feasibility What's the easiest? 	Comparisons to other crossing for success metrics				Emergency response times Make the best long-range decision	Cost factors: fixed vs. lift vs. rise, long-term effects, longevity, alternative modes, vision zero