EARTHQUAKE READY BURNSIDE BRIDGE

Multnomah County Bicycle and Pedestrian Citizen Advisory Committee

Department of Community Services
Transportation Division
February 10, 2021

Purpose and Need

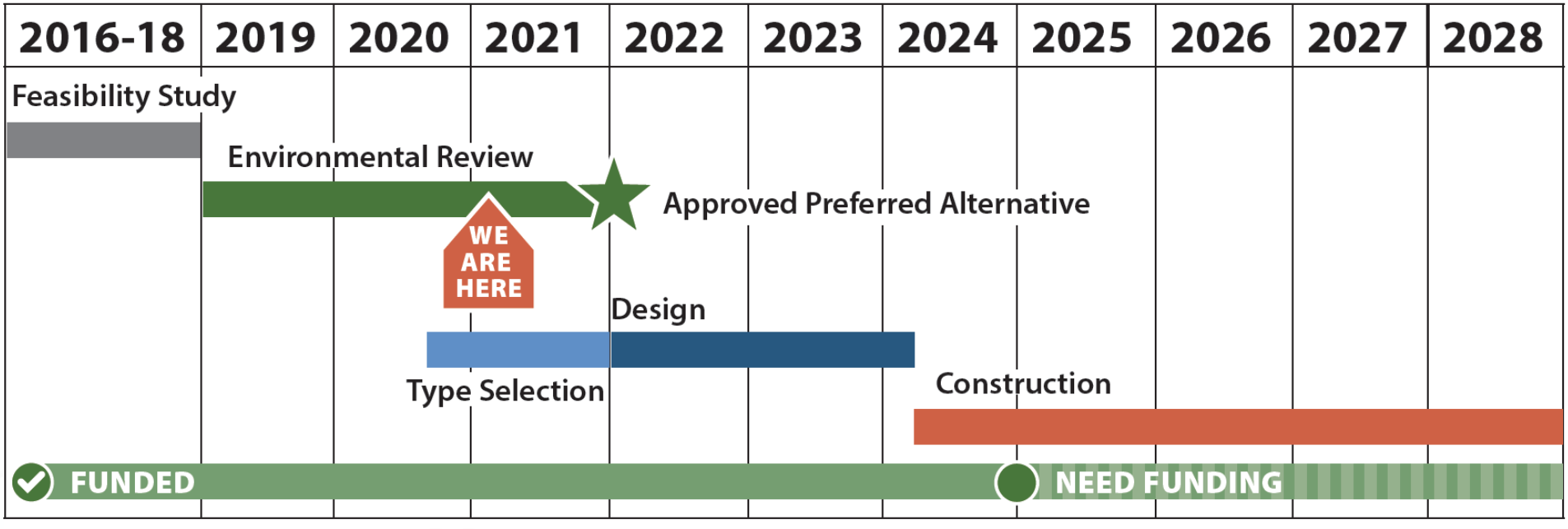
EARTHQUAKE READY BURNSIDE BRIDGE

Seismic Resiliency and Emergency Response

Regional Recovery and Rebuilding

Long-term Use

Project Timeline

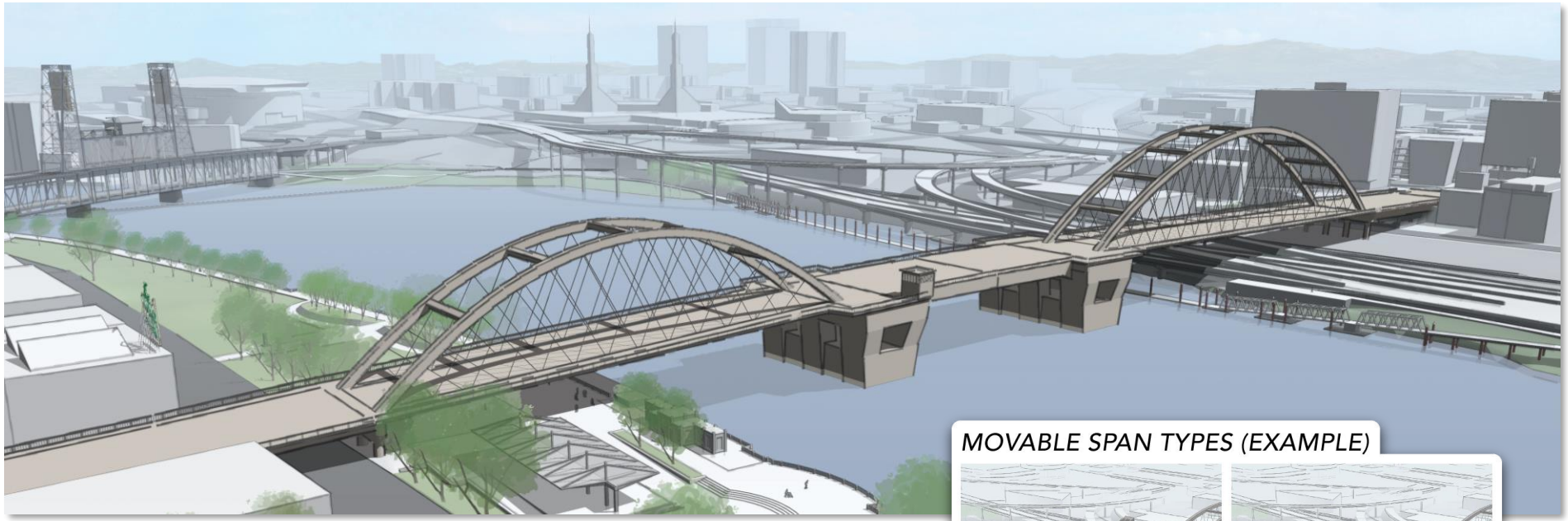


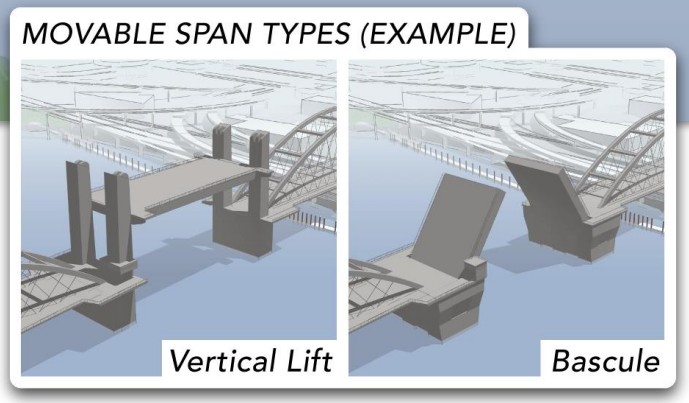
Draft Environmental Impact Statement

Recommended Preferred Alternative

EARTHQUAKE READY BURNSIDE BRIDGE

Replacement Long Span

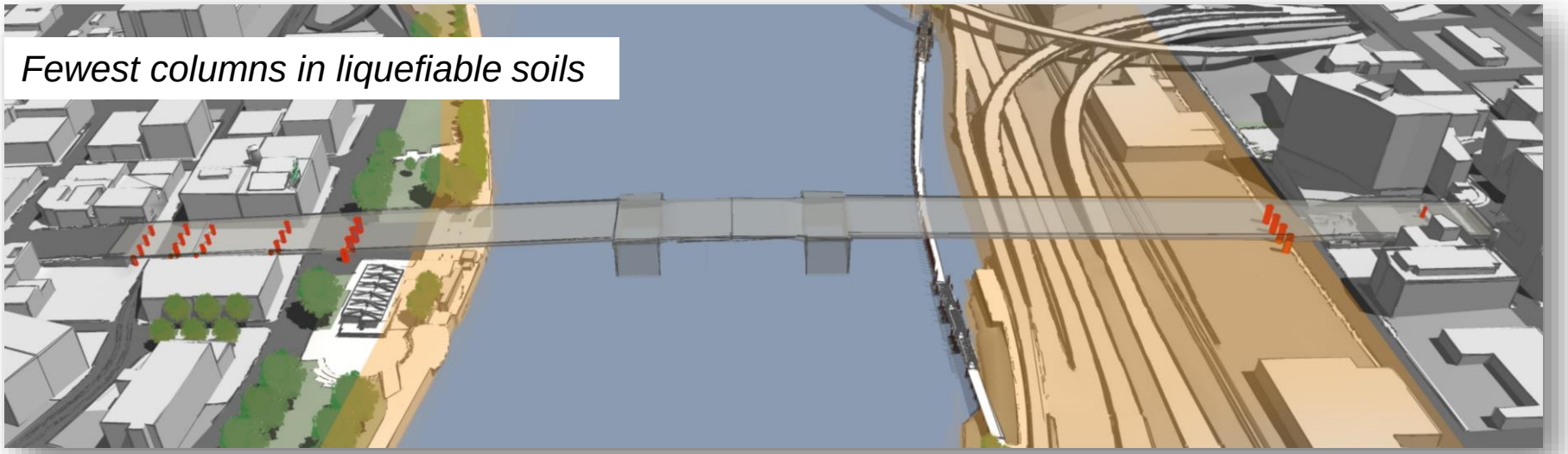




The example image above is just one variation of what a long span bridge could look like.

Recommended Preferred Alternative

Replacement Long Span



BENEFITS

- Lowest risk from liquefiable soils
- Improves safety for bike/ped/ADA
- Lowest lifecycle cost
- Best overall for parks/recreation
- Lowest temp impacts to social services

IMPACTS

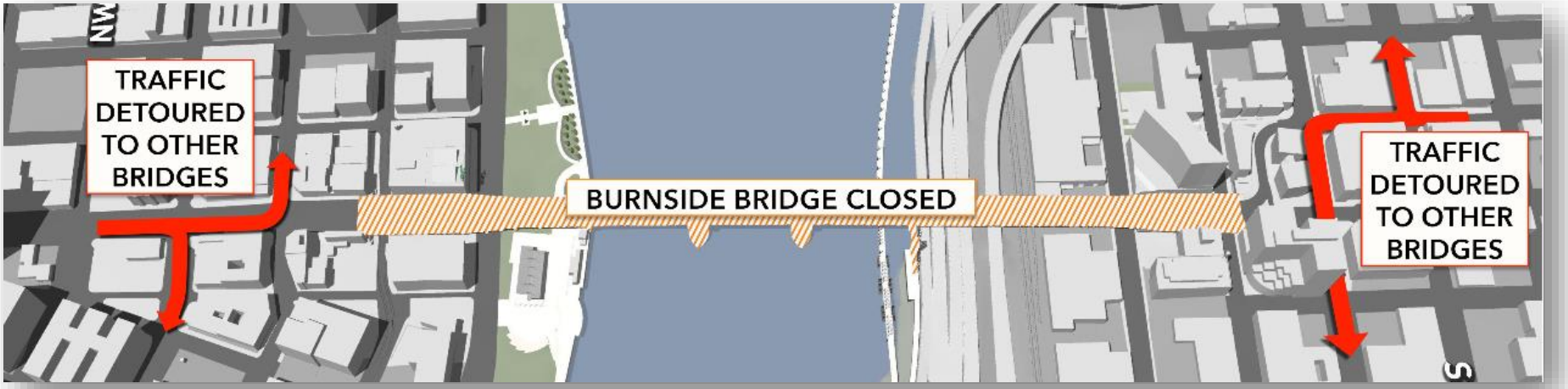
- Removes historic Burnside Bridge

CONSIDERATIONS

- Views

Recommended Preferred Alternative

Traffic During Construction: Full Bridge Closure



- **Least cost** (a temporary bridge would add $60-90 million to the project cost)
- **Shortest construction duration** (temporary bridge would add 1.5 years to construction duration, extending duration of impacts to surrounding area including parks, residents, recreational activities and transportation)
- **Least impact to natural resources** (temporary bridge adds in-water construction)
- ***Impact:*** *detours pedestrians, bicyclists, transit, vehicles to other bridges*

Draft Environmental Impact Statement

Technical Reports

- Acquisitions and Relocations
- Air Quality
- Climate Change*
- Economics
- Environmental Justice
- Equity*
- Floodplain and River Hydraulics
- Geology
- Hazardous Materials
- Health Impact Assessment*
- Historic and Archaeological Resources
- Land Use
- Noise and Vibration
- Parks and Recreation
- Public Services
- Right of Way
- River Navigation
- Social and Neighborhood Resources
- **Transportation**
- Utilities
- Vegetation, Wildlife, and Aquatic Resources
- Visual and Aesthetic Resources
- Water Quality
- Wetlands and Waters
- Section 4(f) Evaluation

**Additional technical reports developed, not part of FHWA requirement*

Draft Environmental Impact Statement

EARTHQUAKE READY BURNSIDE BRIDGE

Key Impacts of the Preferred Alternative: Replacement Long Span & Full Bridge Closure

Transportation

Temporary Closures due to Construction

Burnside Bridge:
Up to 4.5 years

Section of Eastbank Esplanade:
18 months to 4.5 years

Portion of Waterfront Park:
up to 4.5 years

Bike/ped/ADA: Bridge closure, detours, travel time delay, safety

Transit: Bus reroutes, temp MAX station closures, travel time delay, ridership

Freight and Traffic: Bridge closure, detours, travel time delay, congestion

River Navigation: Occasional channel closures

Draft Environmental Impact Statement

EARTHQUAKE READY BURNSIDE BRIDGE

Full Bridge Closure:

- **Drivers:** ~2-4 minute delay
- **Bicyclists:** ~5-12 minute delay
- **Pedestrians:** ~10-18 minute delay
- **Buses:** ~5 min travel delay

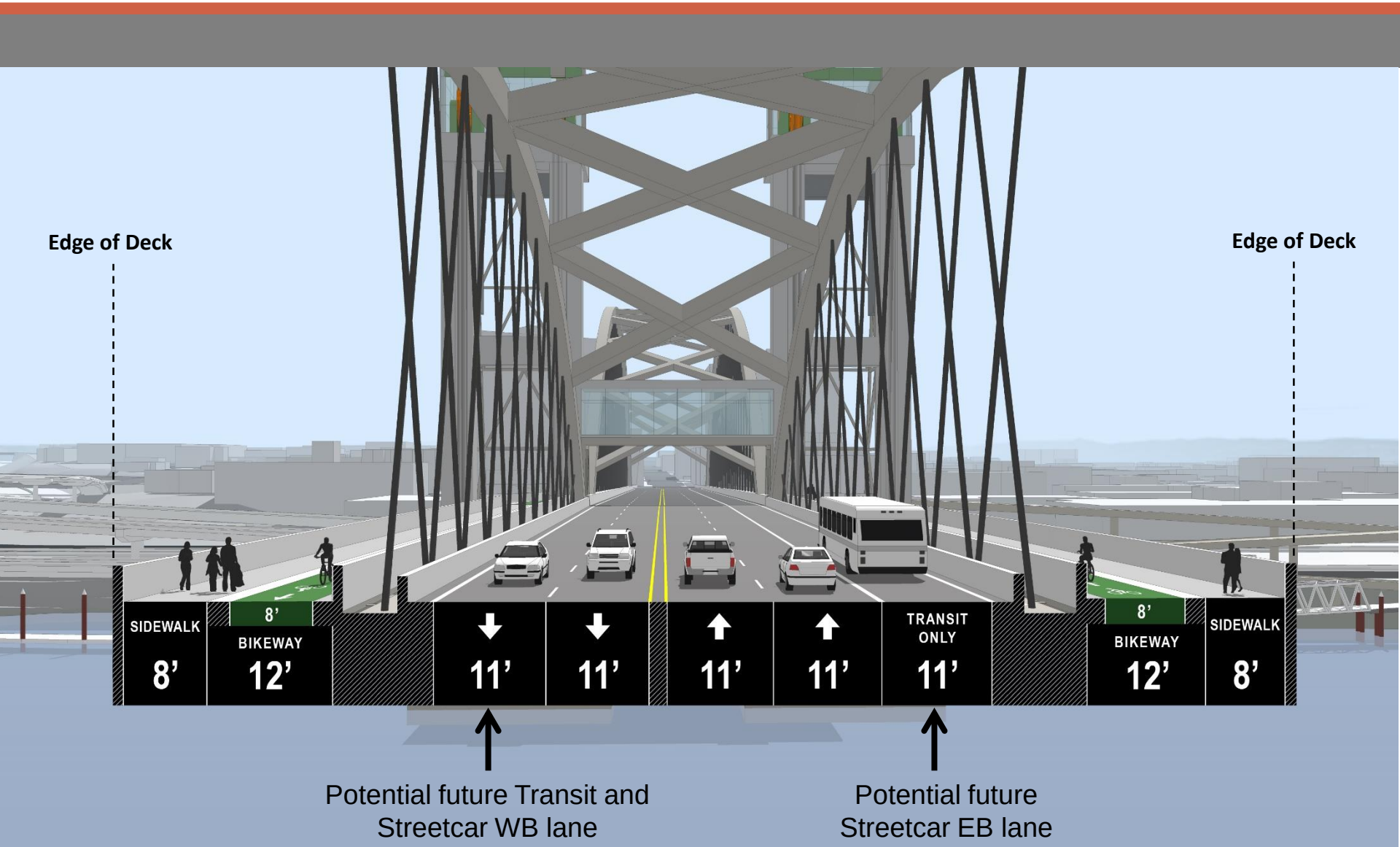
*(*Times reflect delay in comparison to building a temporary bridge)*

The analysis evaluated the following temporary bridge types:

- All modes
- Bike/Ped/Transit only
- Bike/Ped only

Bike/Ped/ADA Connections

Typical Cross Section

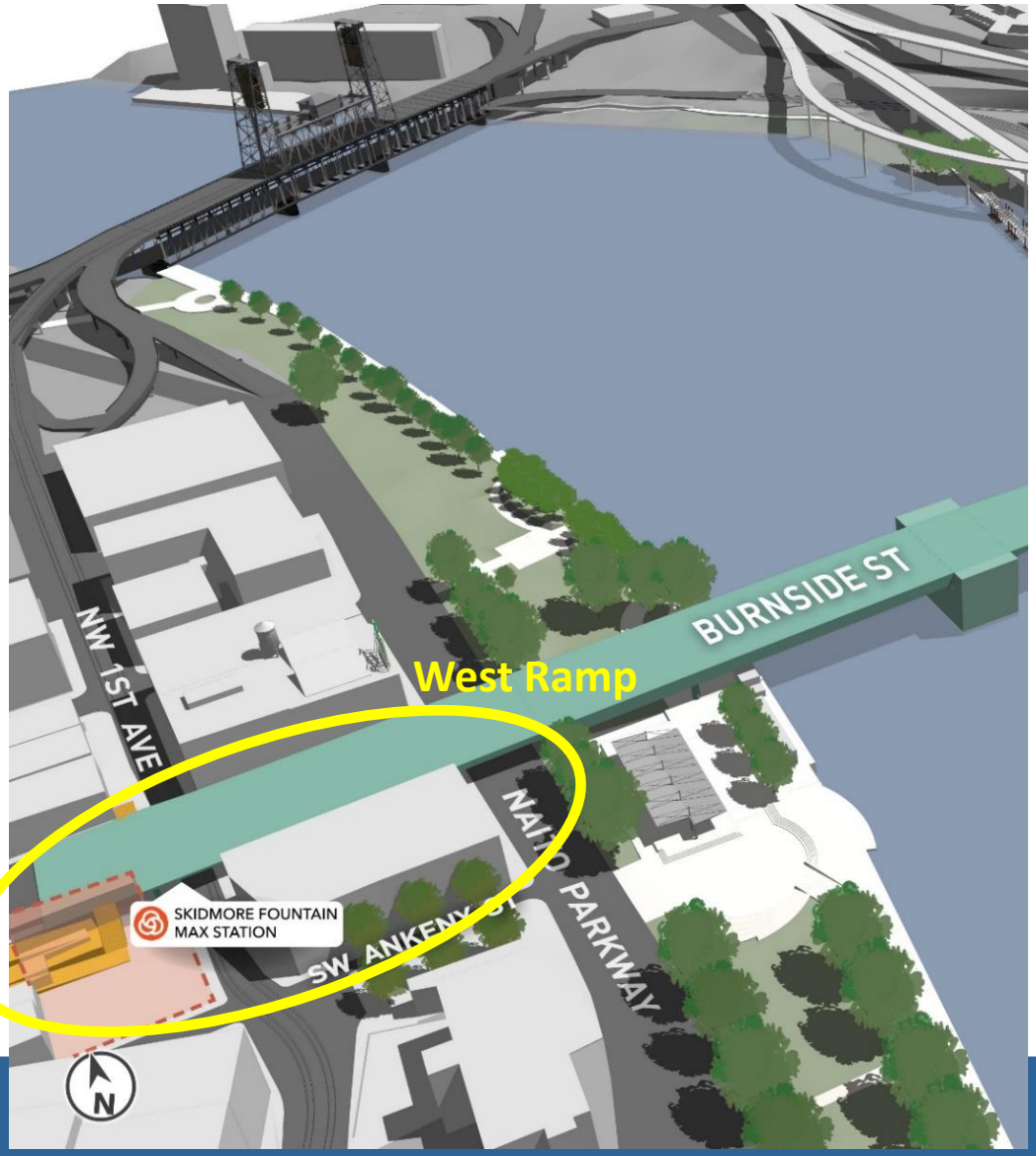


Bike, Pedestrian & ADA Connections

Initial Assumptions

Bike, Pedestrian & ADA Connections

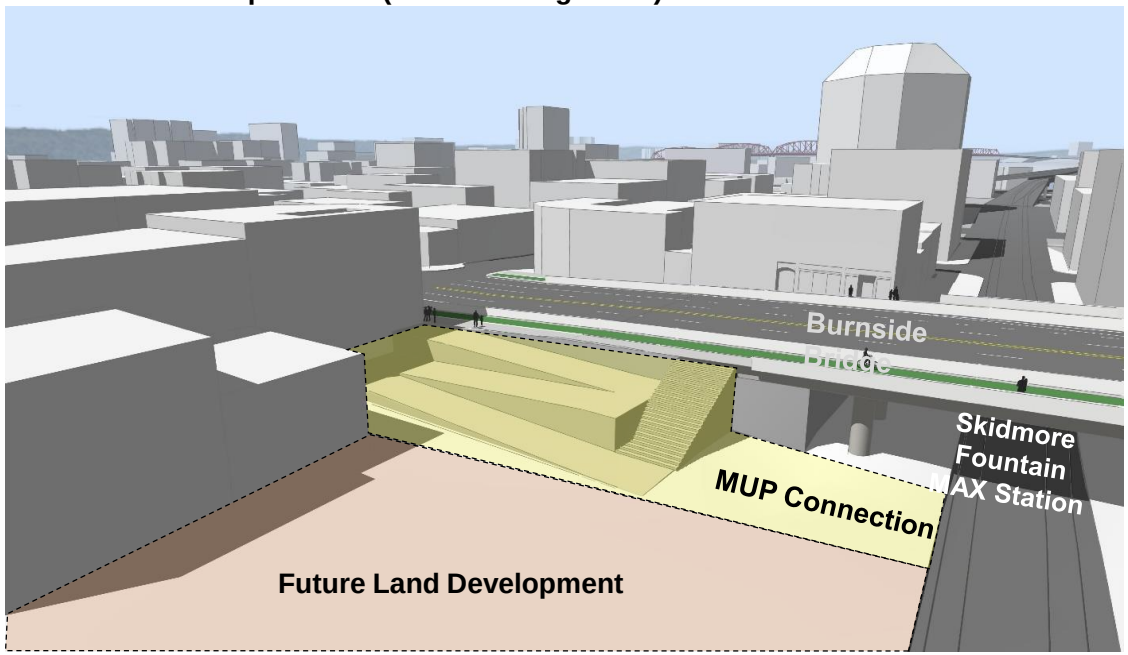
Westside Connections – Initial Assumption



Bike, Pedestrian & ADA Connections

Westside Connections – Initial Assumption

South Side: Ramp + Stairs (View Looking North)



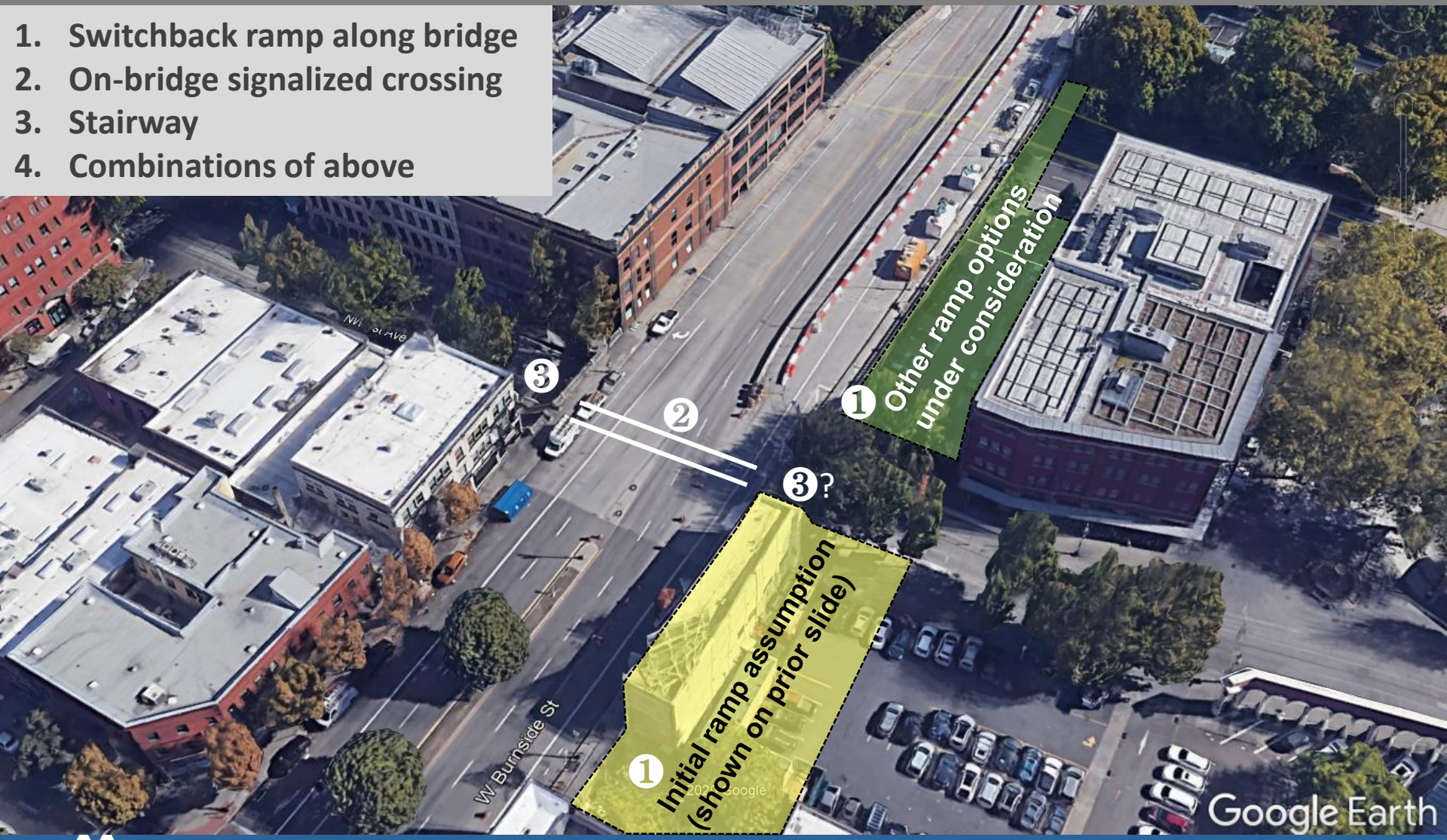
North Side: Stairs (View Looking South)

Bike, Pedestrian & ADA Connections

EARTHQUAKE READY BURNSIDE BRIDGE

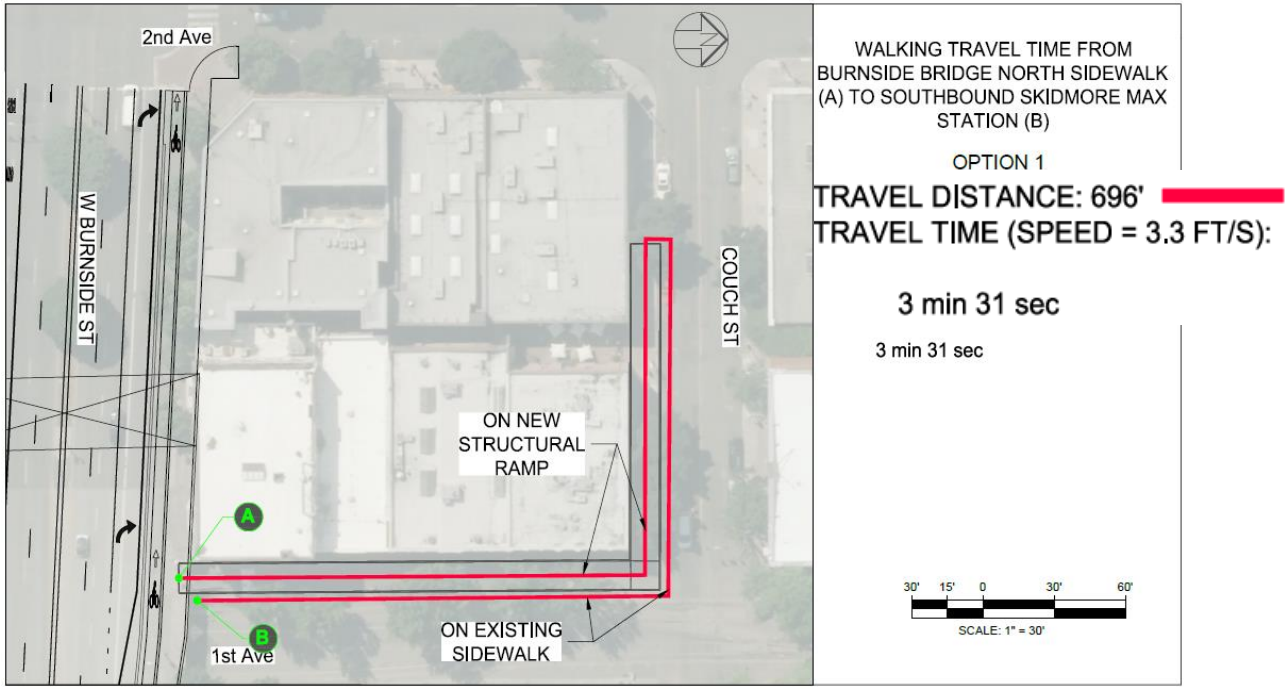
Westside Connections – Options under consideration

1. Switchback ramp along bridge
2. On-bridge signalized crossing
3. Stairway
4. Combinations of above



Bike, Pedestrian & ADA Connections

Westside Connections – Origin-Destination Analysis

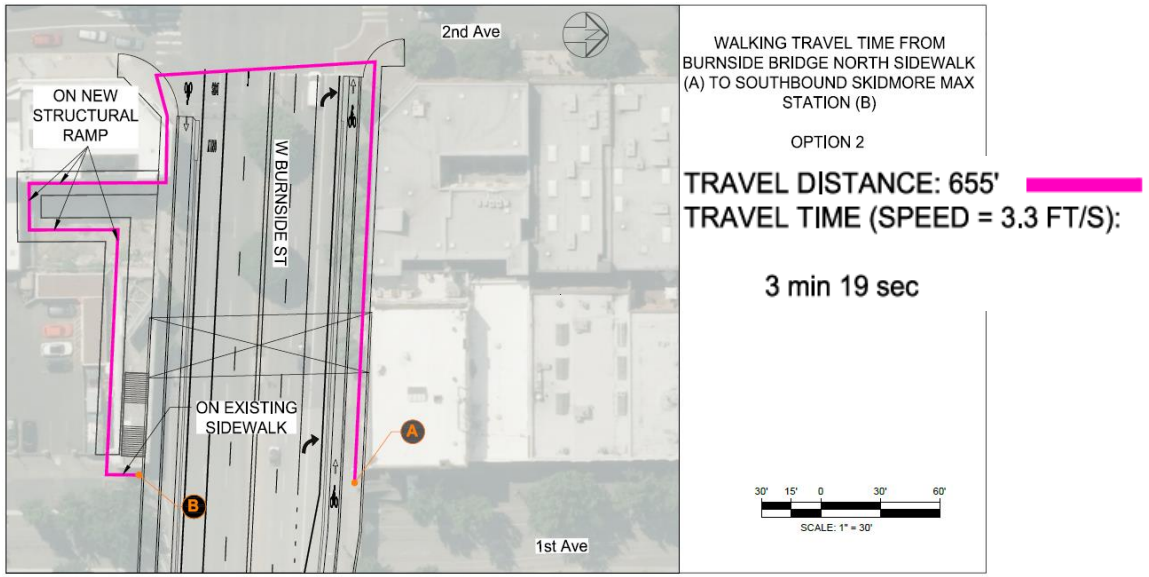


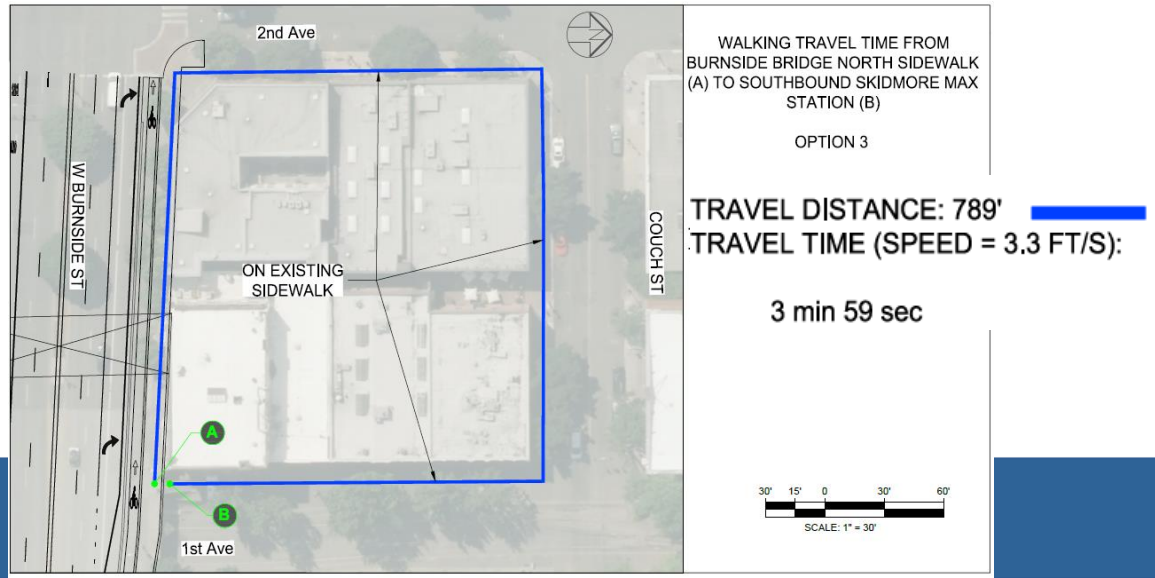
Notes:

- Even if ramp is steepened to 8.3% (not advisable), it still requires wrapping onto Couch by at least 30’ to 40’.
- All ramps create many conflicts with doors, trees, OCS poles, sidewalk flow, CPTED, etc.

Bike, Pedestrian & ADA Connections

Westside Connections – Origin-Destination Analysis

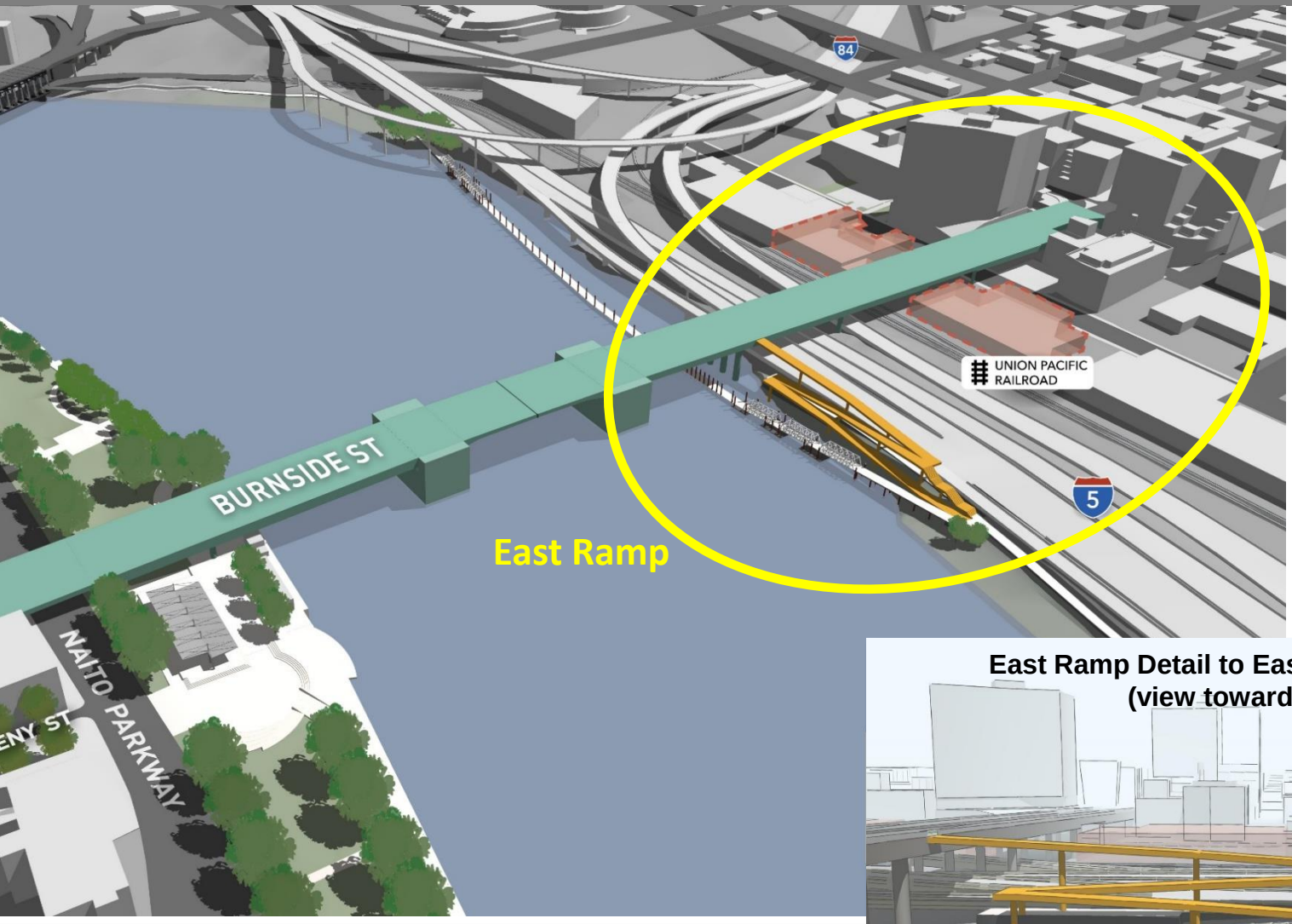




Bike, Pedestrian & ADA Connections

EARTHQUAKE READY BURNSIDE BRIDGE

Eastside Connection – Initial Assumption



East Ramp Detail to Eastbank Esplanade (view towards east)

Bike, Pedestrian & ADA Connections

EARTHQUAKE READY BURNSIDE BRIDGE

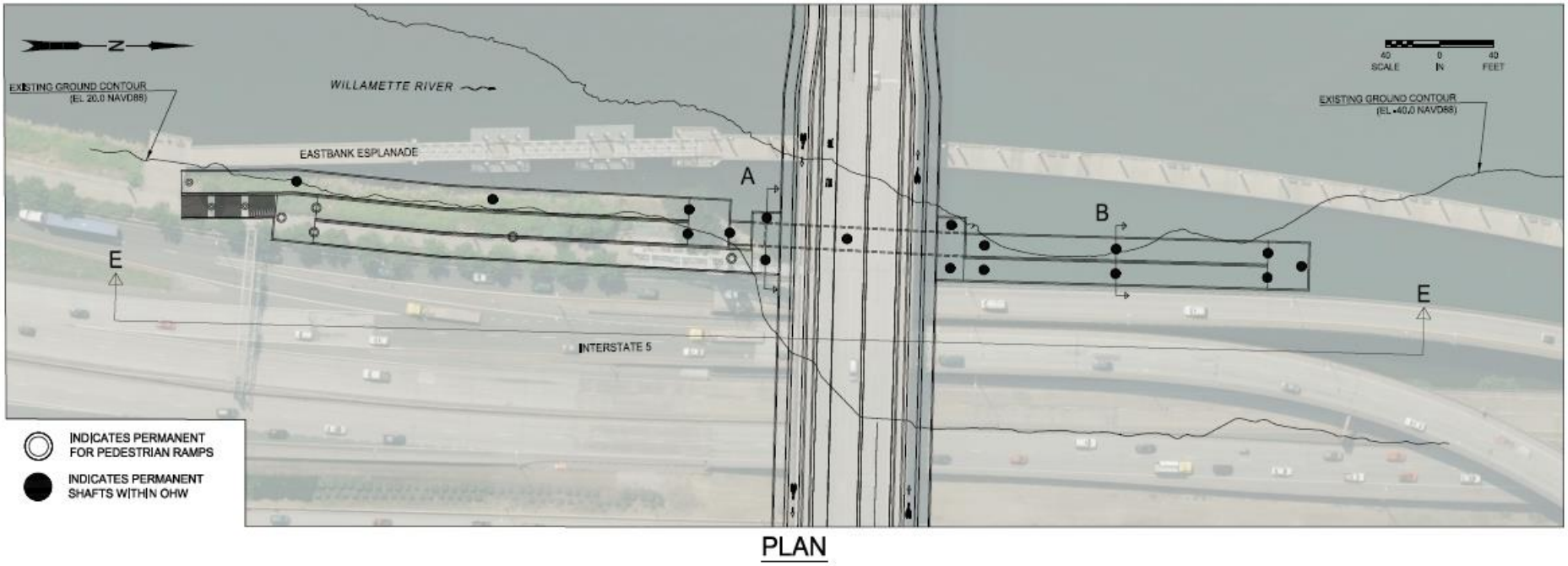
Eastside Connections – Options under consideration

1. Ramp from bridge
2. On-bridge signalized crossing or under bridge crossing
3. Stairway + Elevator
4. Combinations of above

Bike, Pedestrian & ADA Connections

EARTHQUAKE READY BURNSIDE BRIDGE

Alt 1: Passage under bridge between south and north sides



PLAN

Bike, Pedestrian & ADA Connections

EARTHQUAKE READY BURNSIDE BRIDGE

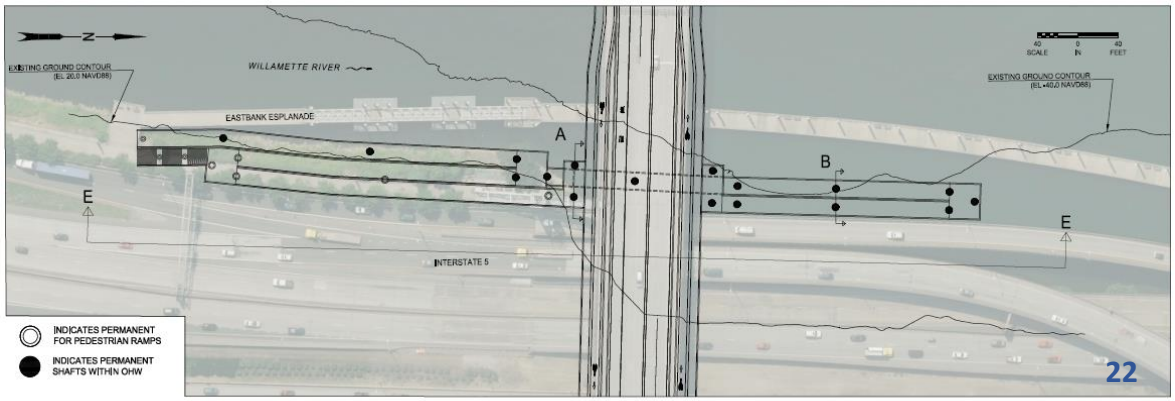
Alt 1: Passage under bridge between south and north sides

Pros:

- Provides “escape” during bridge openings
- Avoids traffic delays

Cons:

- Indirect route / not intuitive
- Has a larger visual impact
- Could have negative personal safety issues due to “out-of-sight” from roadway
- More natural resource impacts
- More expensive to build
- Higher maintenance costs
- Not currently supported by Portland Parks

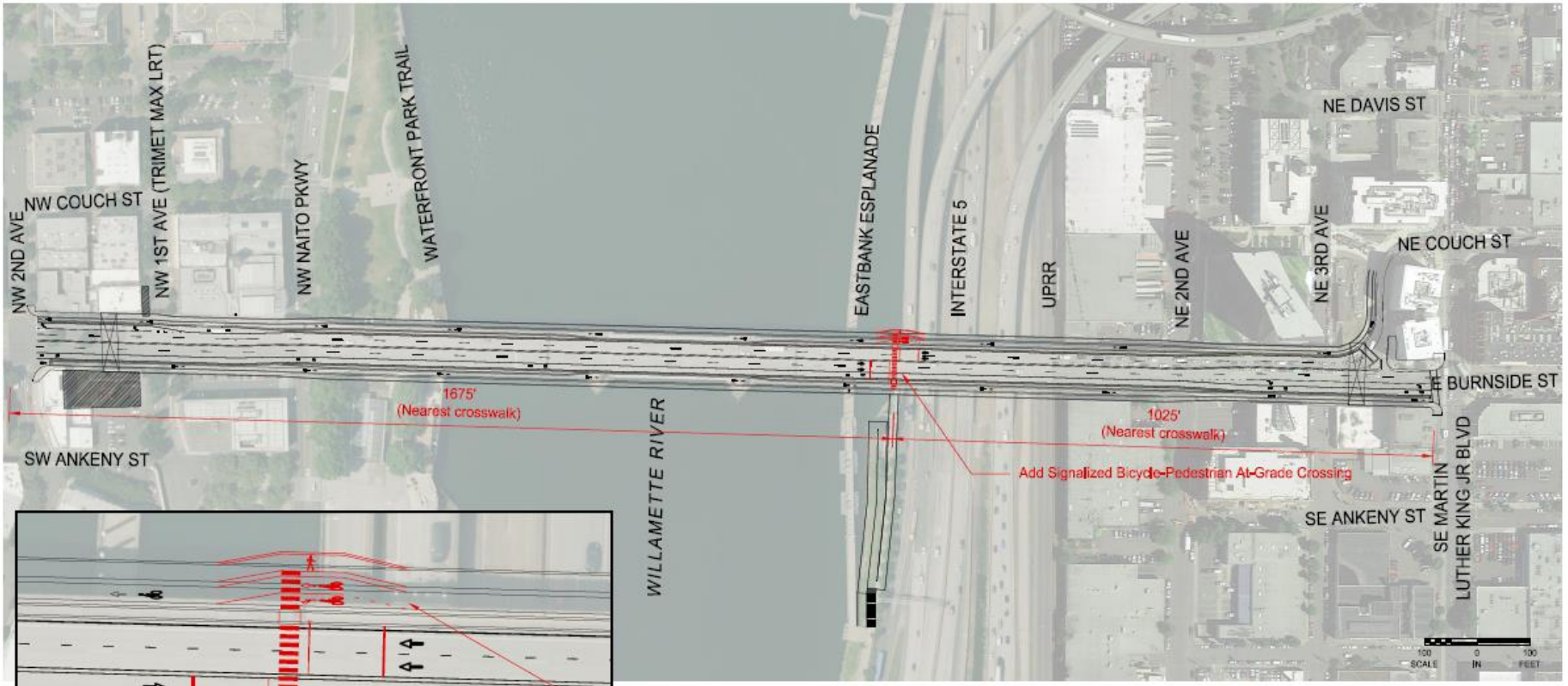


PLAN

Bike, Pedestrian & ADA Connections

EARTHQUAKE READY BURNSIDE BRIDGE

Alt 2: Signalized crossing of vehicle lanes on bridge deck



Bridge Connection – East Side

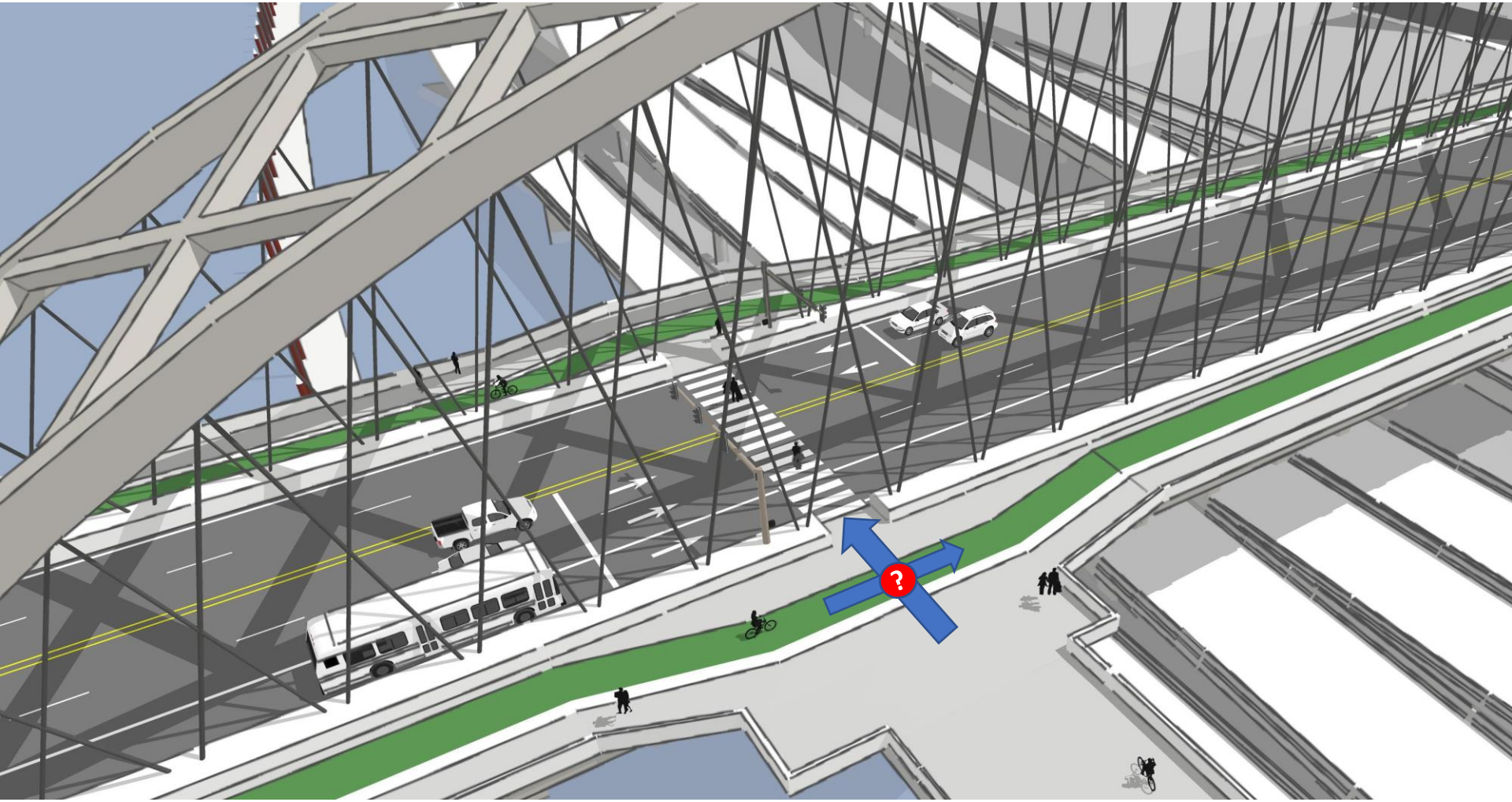
EARTHQUAKE READY BURNSIDE BRIDGE

Alt 2: Signalized crossing of vehicle lanes on bridge deck

Bridge Connection – East Side

EARTHQUAKE READY BURNSIDE BRIDGE

Alt 2: Signalized crossing of vehicle lanes on bridge deck



Bike, Pedestrian & ADA Connections

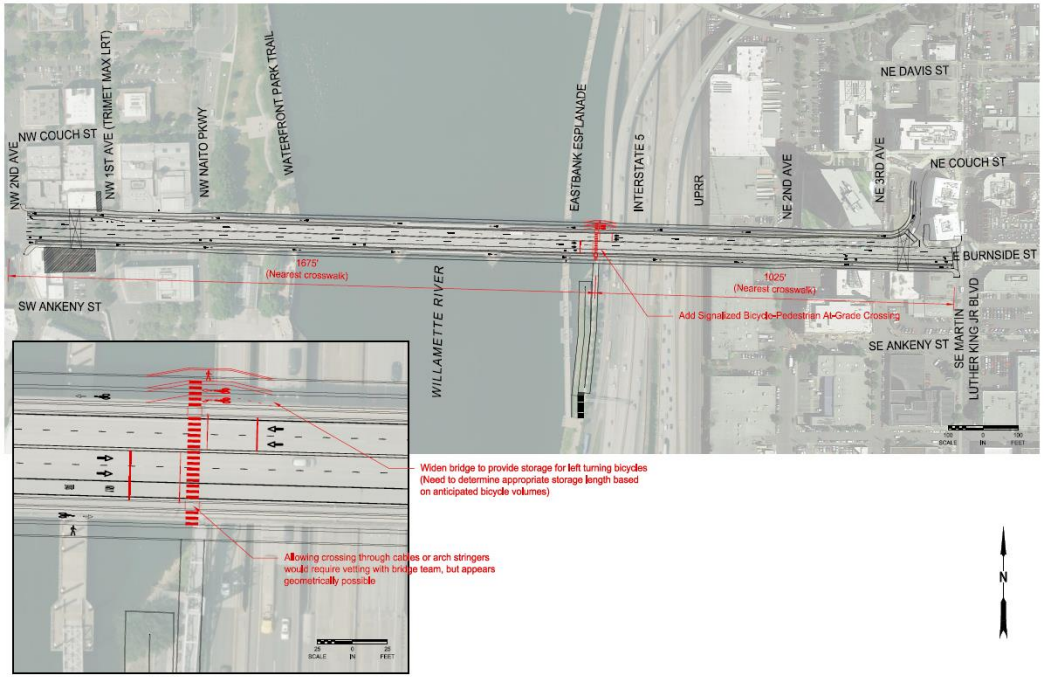
Alt 2: Signalized crossing of vehicle lanes on bridge deck

Pros:

- Direct / intuitive route
- Maintains above deck visibility
- Provides “escape” during bridge openings
- Lower cost
- Reduces Esplanade and natural resource impacts

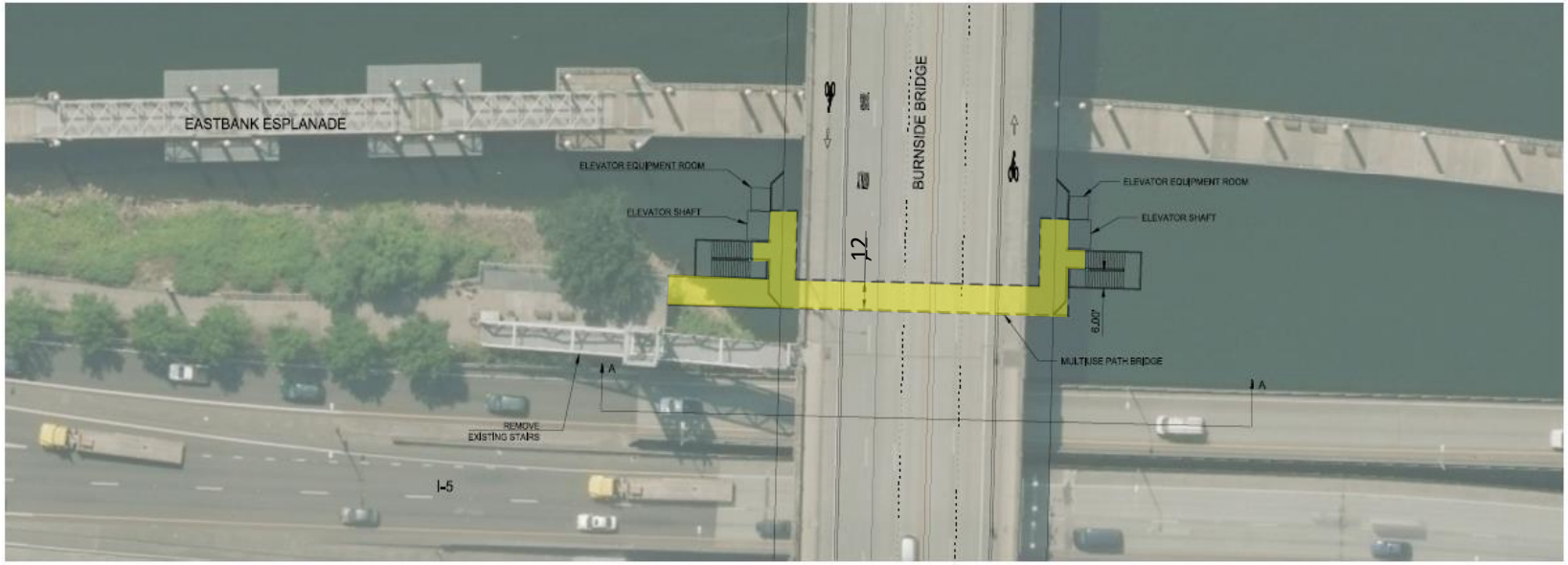
Cons:

- Potential traffic delays (requires signals timed with intersections)
- Perpendicular crossing conflicts (for users of mid-block crossing)
- Requires belvedere for bike / pedestrian storage

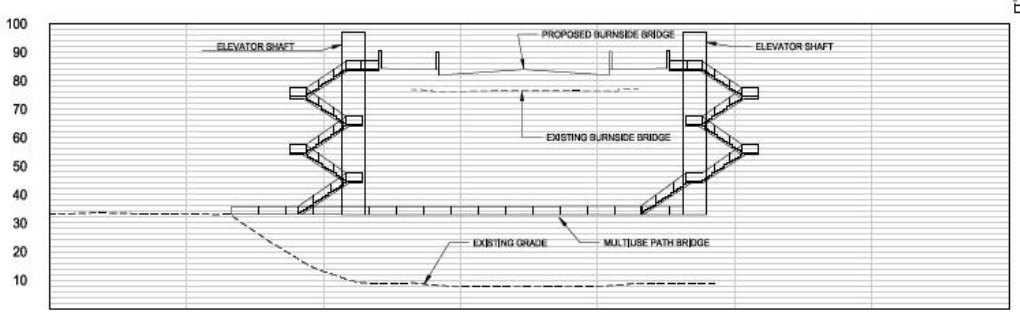


Bike, Pedestrian & ADA Connections

Alt 3: Stairs and Elevators



PLAN

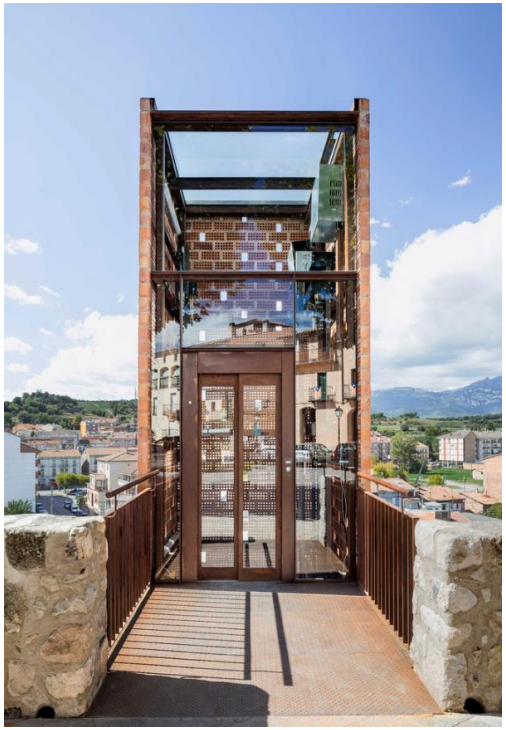


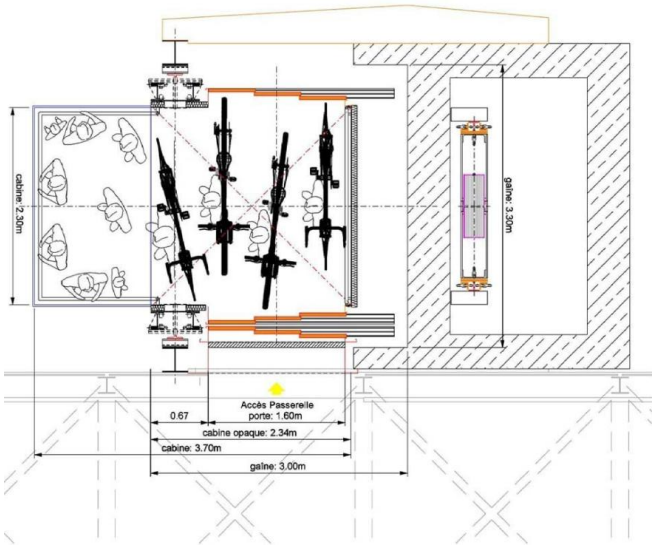
ELEVATION A

Bike, Pedestrian & ADA Connections

EARTHQUAKE READY BURNSIDE BRIDGE

Alt 3: Stairs and Elevators





Bike, Pedestrian & ADA Connections

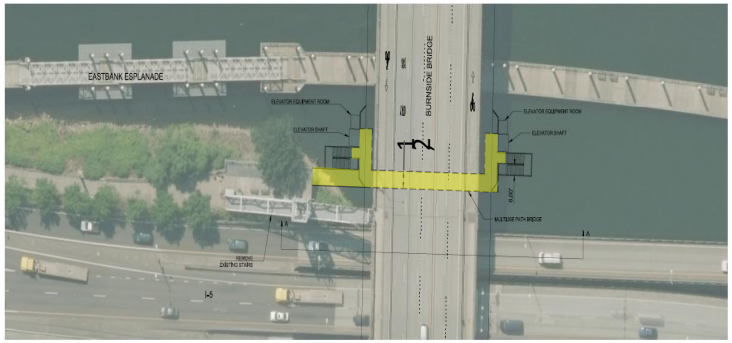
Alt 3: Stairs and Elevators

Pros:

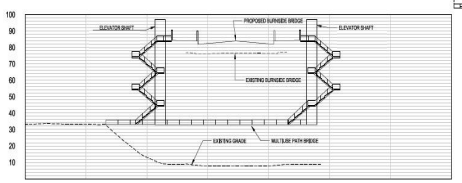
- Direct / intuitive route
- Maintains above deck visibility
- Provides “escape” during bridge openings
- Least cost
- Minimizes Esplanade and natural resource impacts

Cons:

- Enclosed Public Elevator (CEPTED issues)
- Limited Capacity during Peak Periods of Use



PLAN



ELEVATION A

Outreach: Draft Environmental Impact Statement

February 5 – March 22

Objective: Share findings of the environmental analysis and allow for public review and comment on the DEIS. 45-day comment period.

Key Activities:

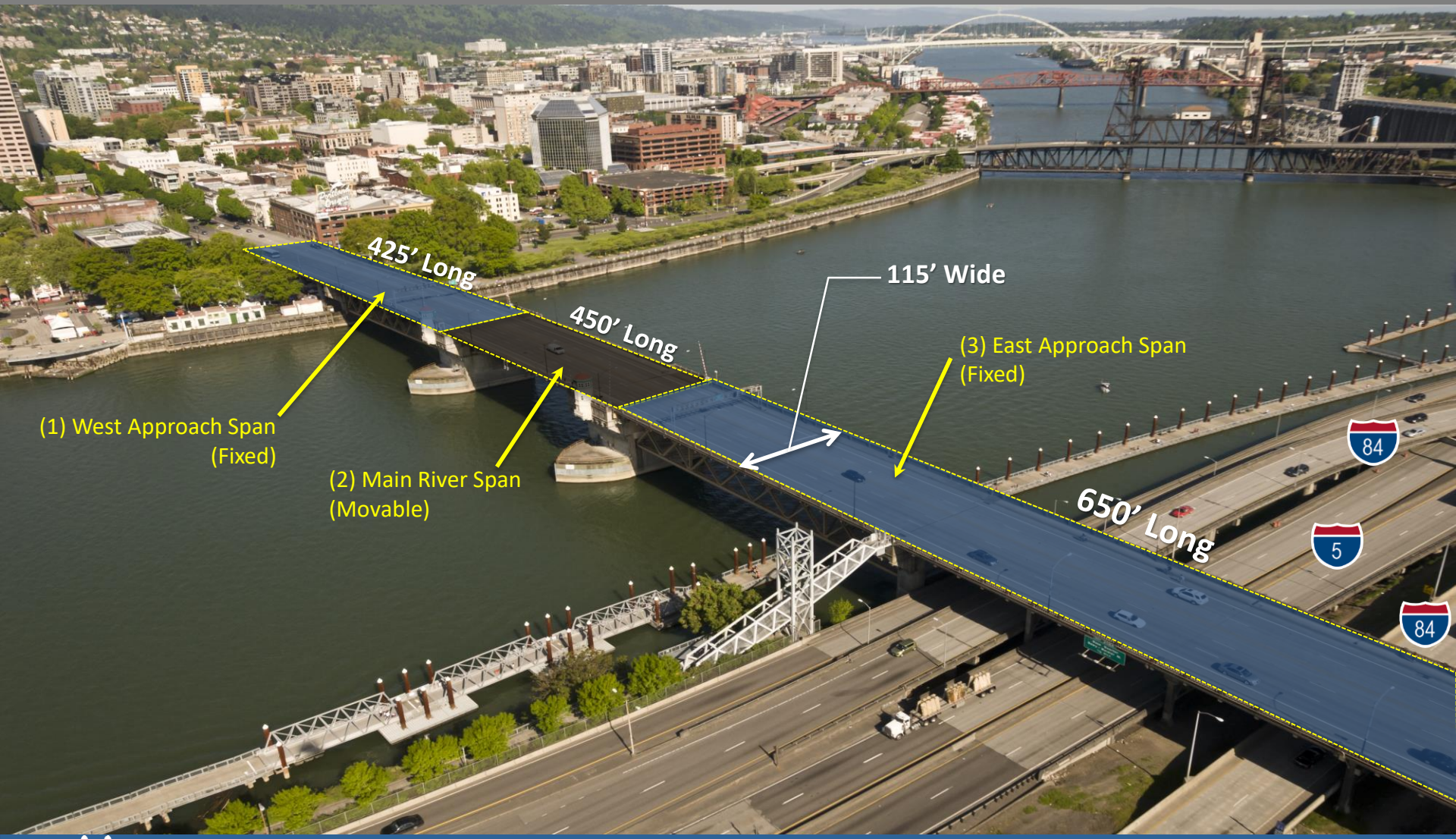
- Online open house
- Briefings
- In-person hearing by appointment
- Voicemail, emails, comment form, snail mail
- E-newsletters, news releases and social media

Bridge Type Selection

Range of Bridge Types

EARTHQUAKE READY BURNSIDE BRIDGE

Long-span Alternative: “Three bridges in one”



Range of Bridge Types

EARTHQUAKE READY BURNSIDE BRIDGE

Long Span

Tied Arch

Truss

Cable Supported

Girder (applicable to west approach only)

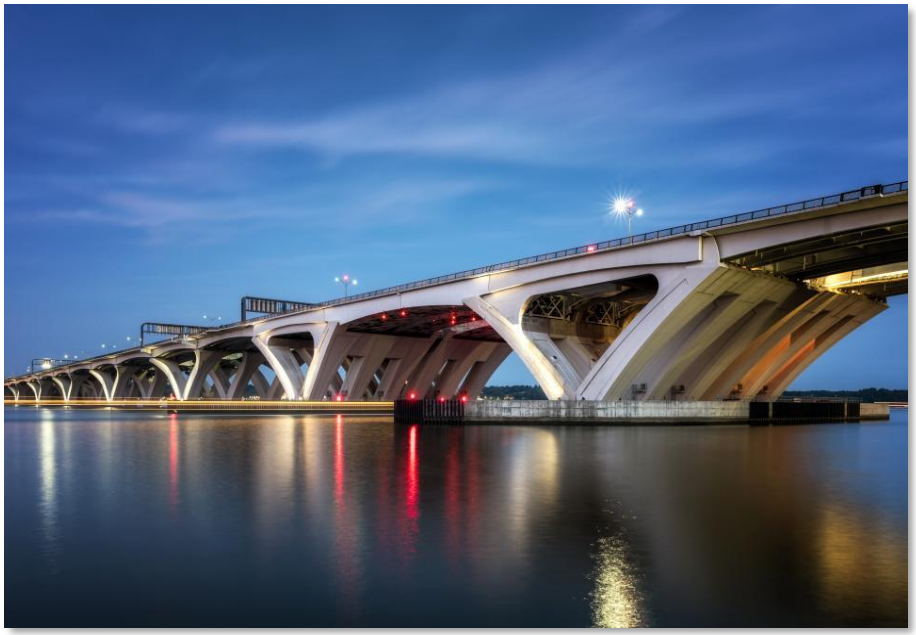
Range of Bridge Types

EARTHQUAKE READY BURNSIDE BRIDGE

Movable Span

Lift

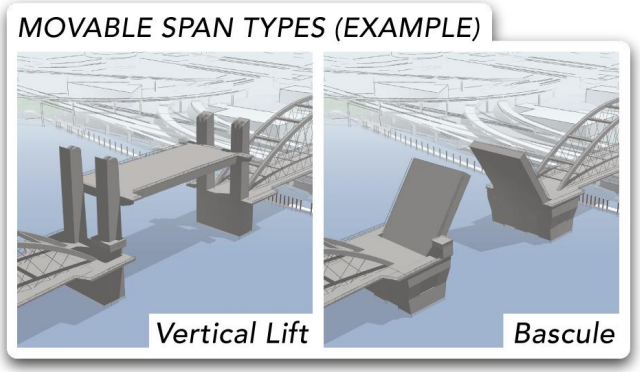
Bascule



Range of Bridge Types

EARTHQUAKE READY BURNSIDE BRIDGE

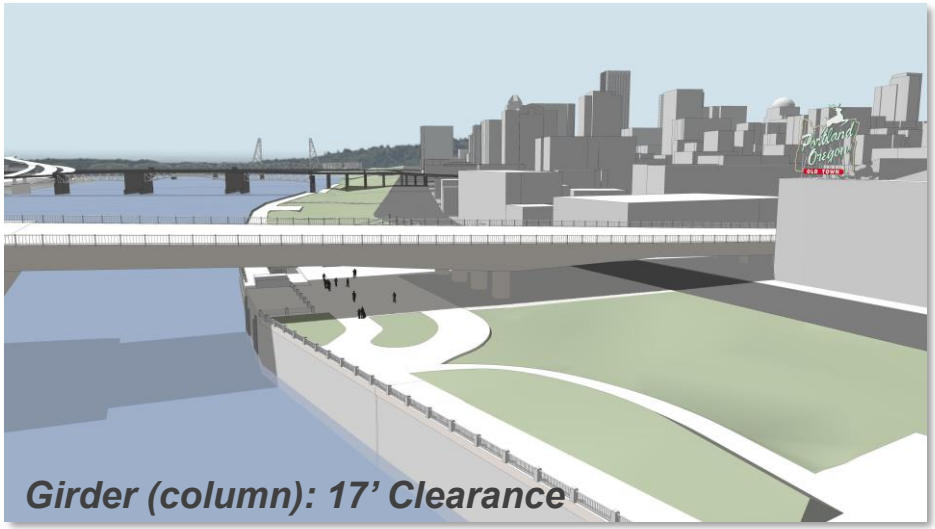
Replacement Long Span - come in different types…

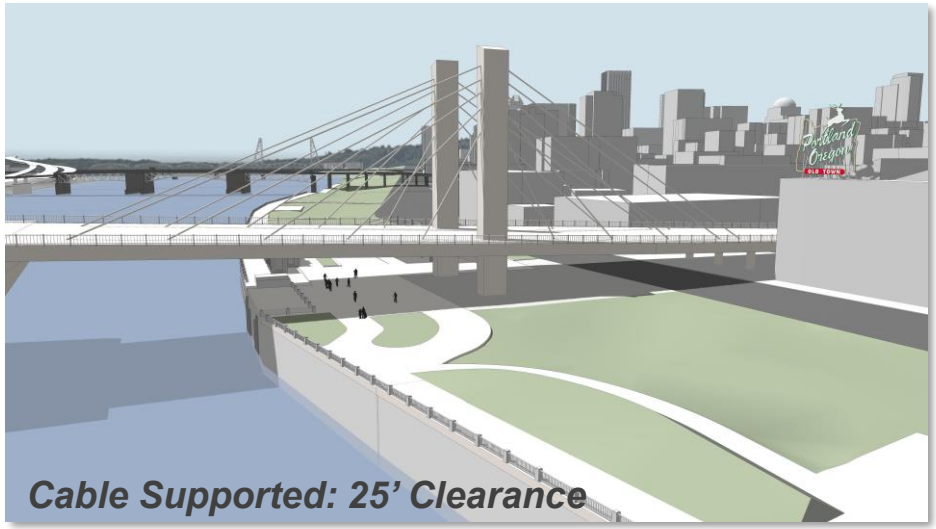


Range of Bridge Types

EARTHQUAKE READY BURNSIDE BRIDGE

West Girder Option Comparison





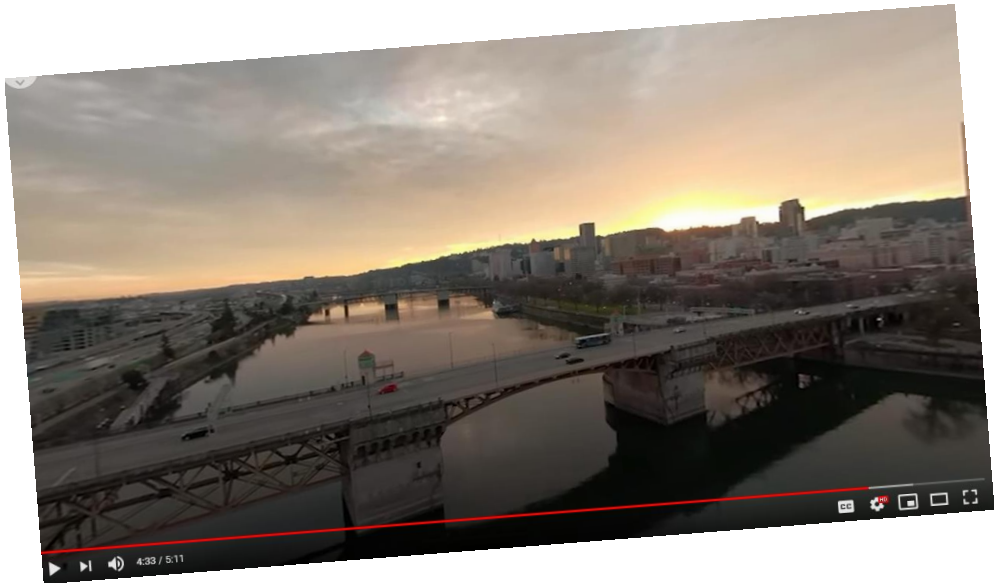
Evaluation Criteria Topics

Human Experience & Bridge Surroundings	On-bridge Experience
	Below-bridge Experience
	Relation to Surroundings
	Pedestrian and Cyclist Connectivity
Overall Look & Feel of the Bridge	Bridge Overall Look
	Bridge Form and Style
	Flexible Design
Cost & Construction Impacts to Users	Total Project Cost
	Long Term Costs
	Construction Impacts

Outreach: Bridge Type Selection

EARTHQUAKE READY BURNSIDE BRIDGE

January 22 – February 21



Objective: Gather input on range of bridge types and evaluation topics

Key Activities:

- Virtual Briefings
- Online Open House and Survey
- Videos
- Webinar
- E-newsletters, news releases and social media
- Diverse outreach through the Community Engagement Liaisons program

Next Steps

EARTHQUAKE READY BURNSIDE BRIDGE

ENVIRONMENTAL REVIEW (EIS)

- **February/March 2021:** Comment period on Draft Environmental Impact Statement (DEIS)
- **Spring/Summer 2021:** Review and address DEIS comments and update mitigation
- **Fall 2021:** Final Environmental Impact Statement and Record of Decision

BRIDGE TYPE SELECTION

- **January/February 2021:** Outreach on Range of Bridge Types and Criteria
- **March 2021:** Policy Group Approval of Bridge Type Options and Evaluation Criteria
- **May/June 2021:** Community Outreach on Recommended Bridge Type
- **July 2021:** Policy Group and Multnomah County Board of County Commissioners Approval of Bridge Type

Questions

EARTHQUAKE READY BURNSIDE BRIDGE

Thank you!

Learn more at **BurnsideBridge.org**