EARTHQUAKE READY BURNSIDE BRIDGE

Multnomah County Bike and Pedestrian Advisory Committee

Department of Community Services
Transportation Division

July 8, 2020

Project Overview

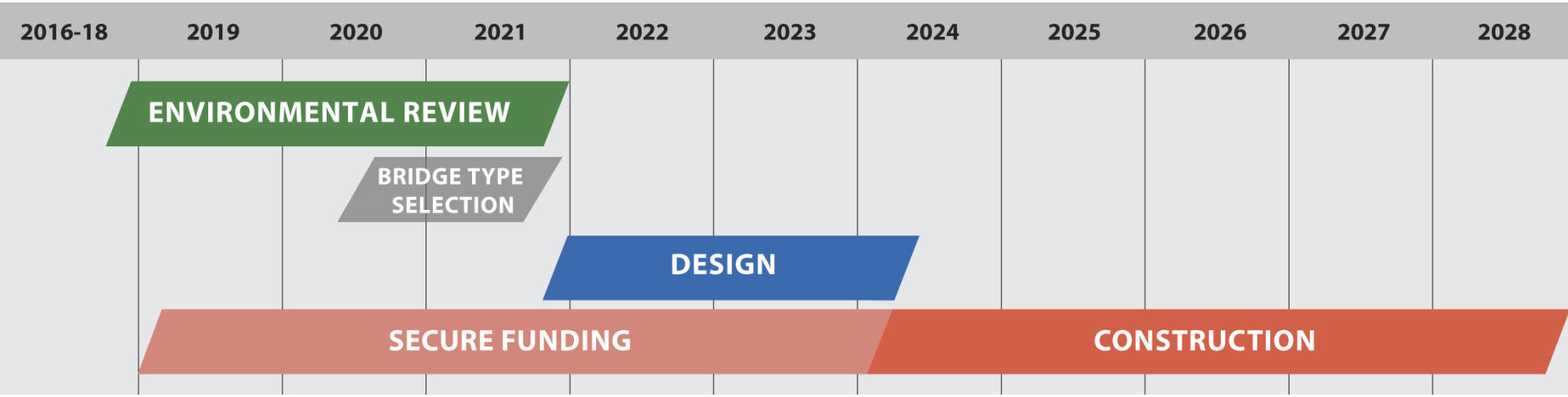
Purpose and Need

Seismic Resiliency and Emergency Response

Regional Recovery and Rebuilding

Long-term Use

Project Timeline



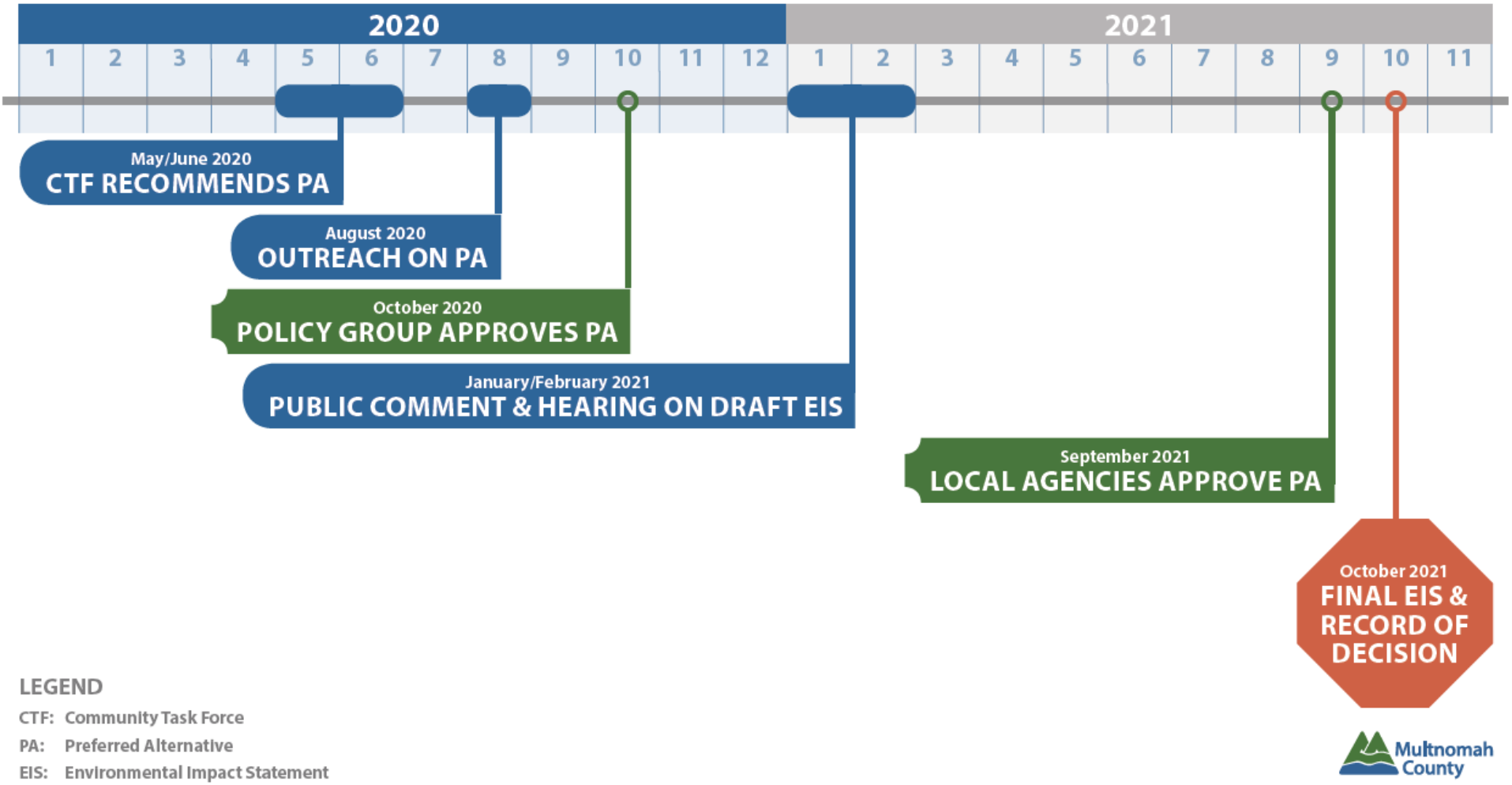
Project Update

Funding

- Metro Get Moving 2020
- Vehicle Registration Fee

Key Milestones

Environmental Review Phase – Key Milestones

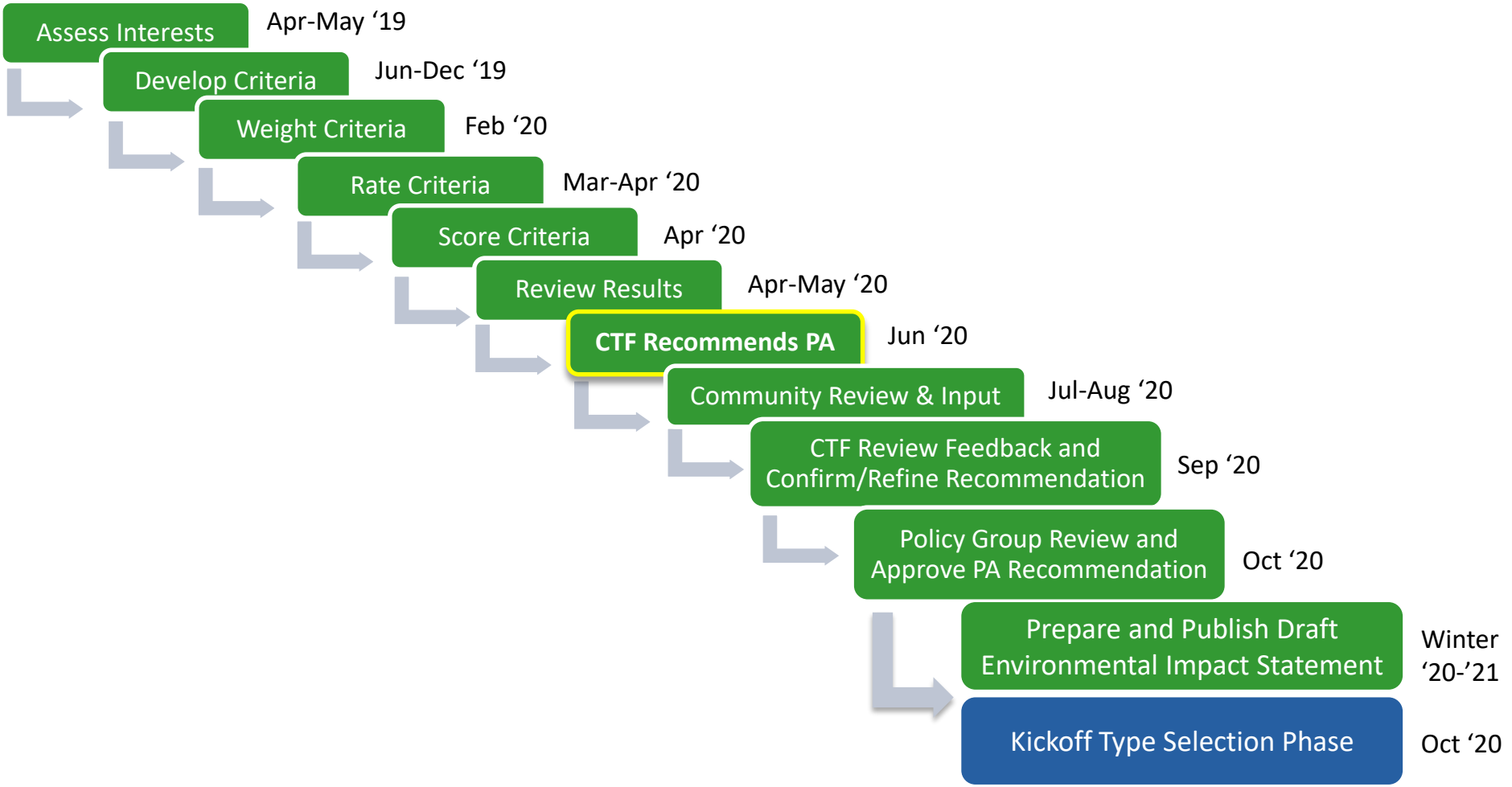


LEGEND

CTF: Community Task Force
PA: Preferred Alternative
EIS: Environmental Impact Statement

Process Overview

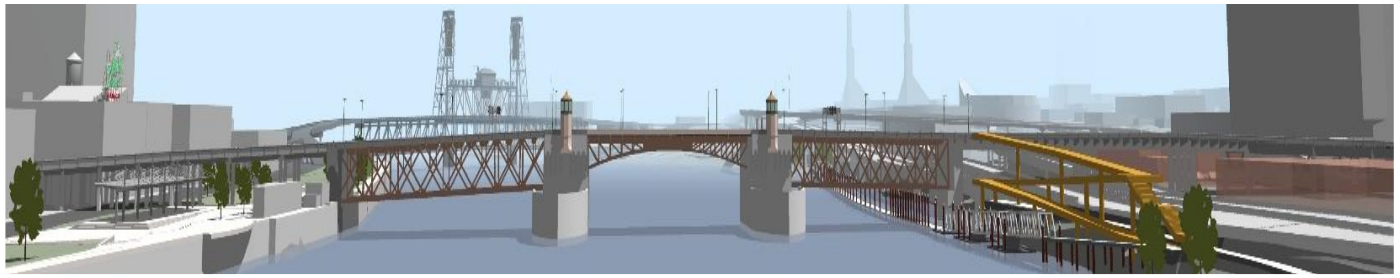
STEPS IN GETTING TO A PREFERRED ALTERNATIVE (PA)



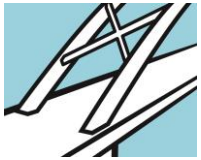
Range of Alternatives

EARTHQUAKE READY BURNSIDE BRIDGE

Enhanced Seismic Retrofit

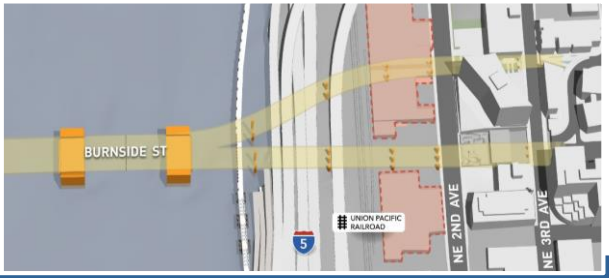


Replacement **Short Span** (Bascule or Lift)



Replacement **Long Span** (Bascule or Lift)

Replacement **Couch Extension** (Bascule or Lift)

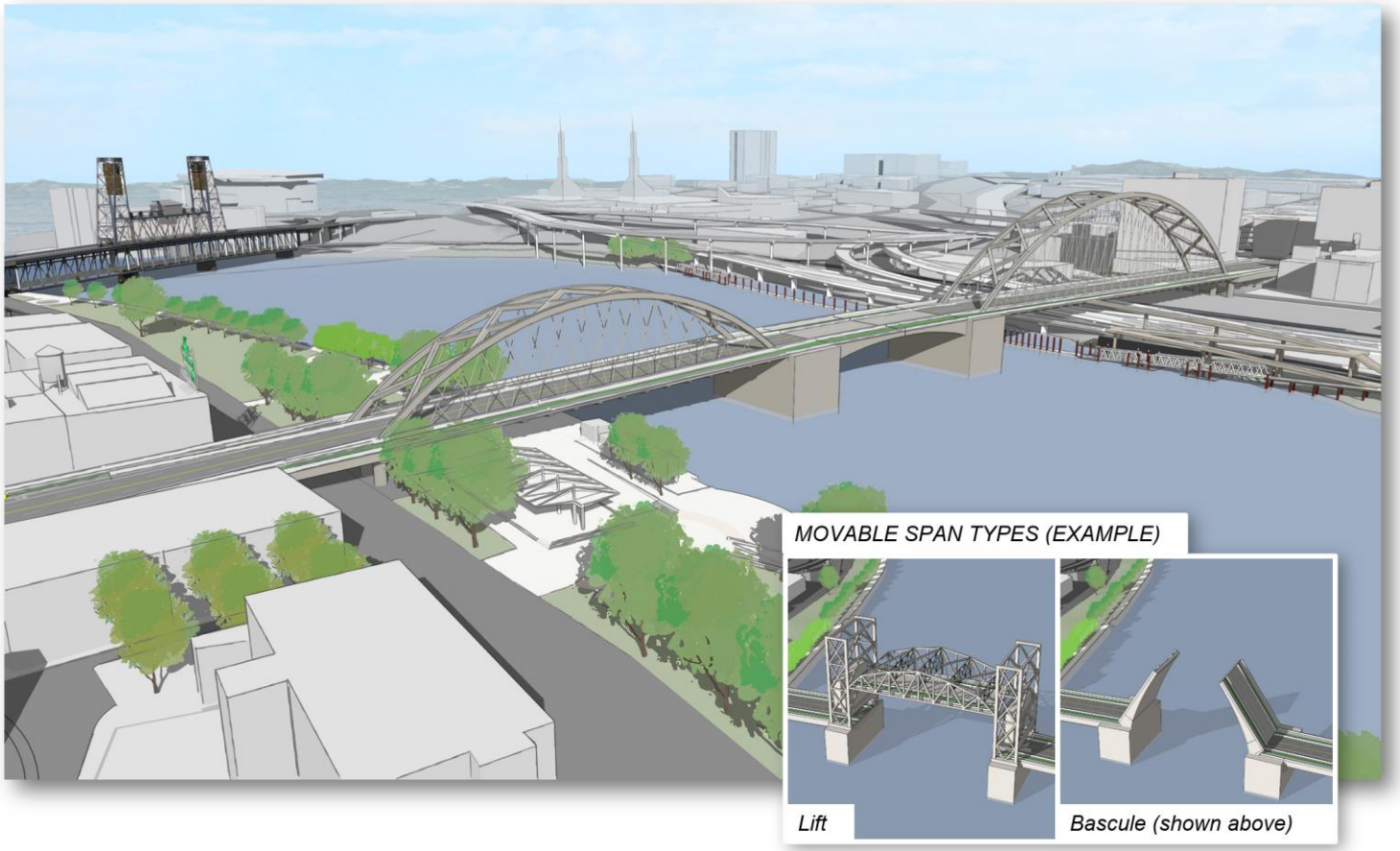


(Concept Images)

CTF Recommendation

Preferred Alternative

Replacement, Movable: Long Span Alternative



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

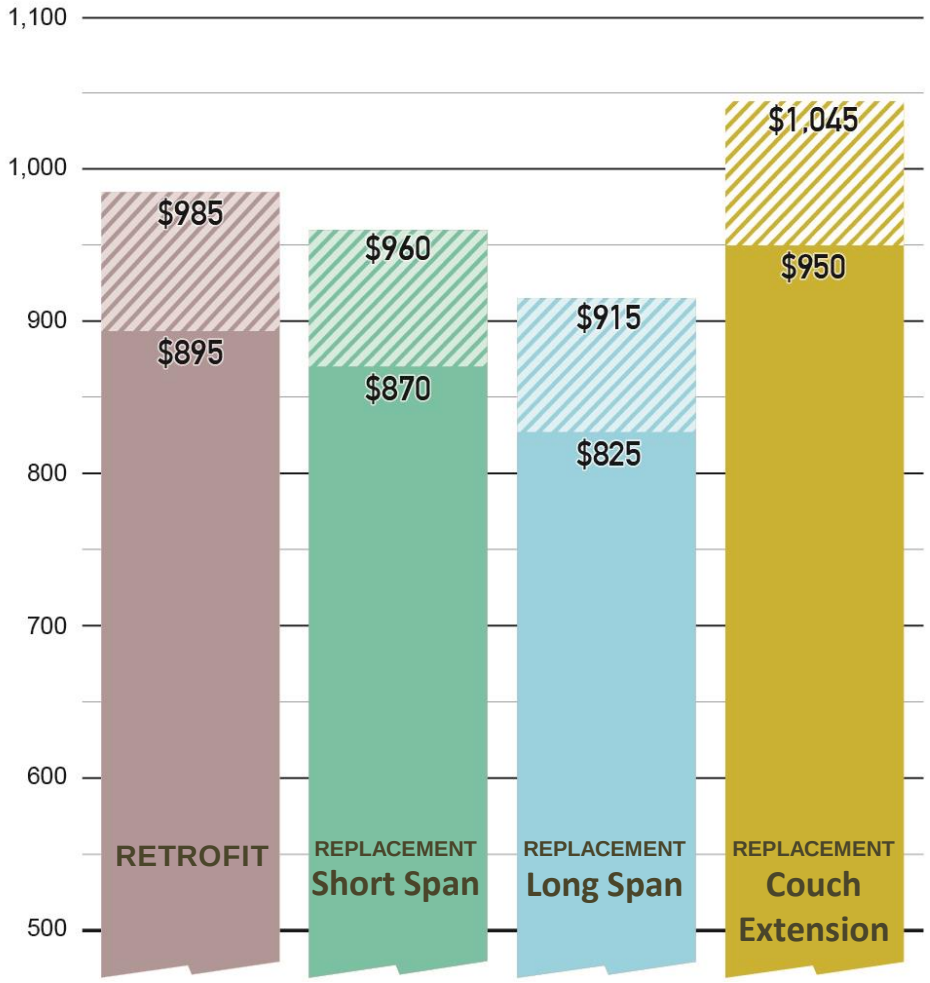
CTF Recommendation

Preferred Alternative: Replacement – Long Span

What we heard from CTF:

- Best for seismic resiliency - locating fewer columns in liquefiable soils gives it the least risk from soil movement during an earthquake
- It is the lowest cost of four build alternatives ($825 million compared to as high as $950 million for the most expensive option)
- The reduced number of columns also benefits Waterfront Park users, crime prevention, and preservation of the Burnside Skatepark
- Additional deck width over the river provides a safer facility for bicyclists, pedestrians and other users
- Reduced impacts to natural resources due to fewer columns in the water
- Explore ways to mitigate the long span's impacts on views

Project Cost by Alternative

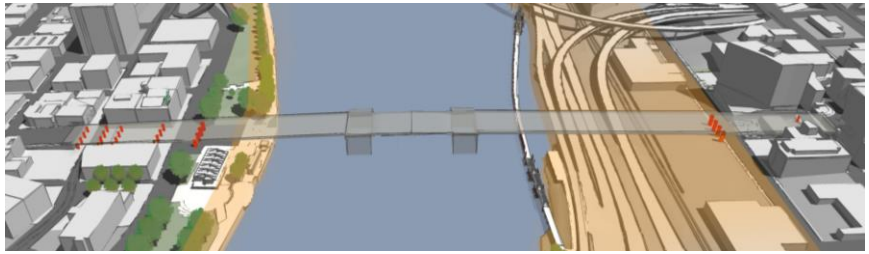


= Add'l cost for Temporary Bridge During Construction

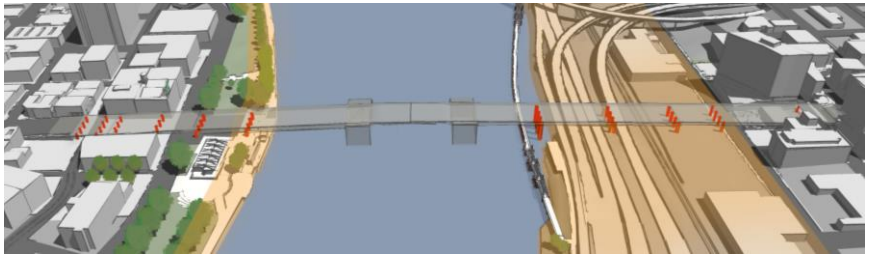
Columns in dangerous soil

EARTHQUAKE READY BURNSIDE BRIDGE

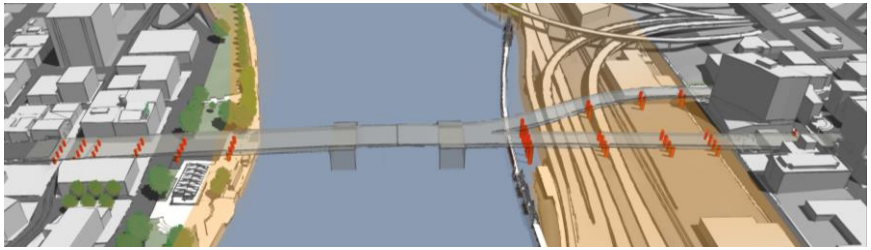
Replacement
Long Span



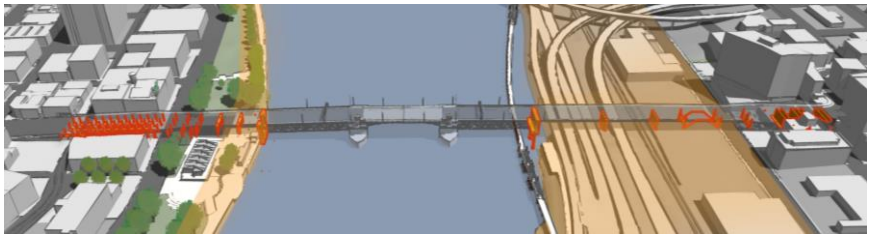
Replacement
Short Span



Replacement
Couch Extension



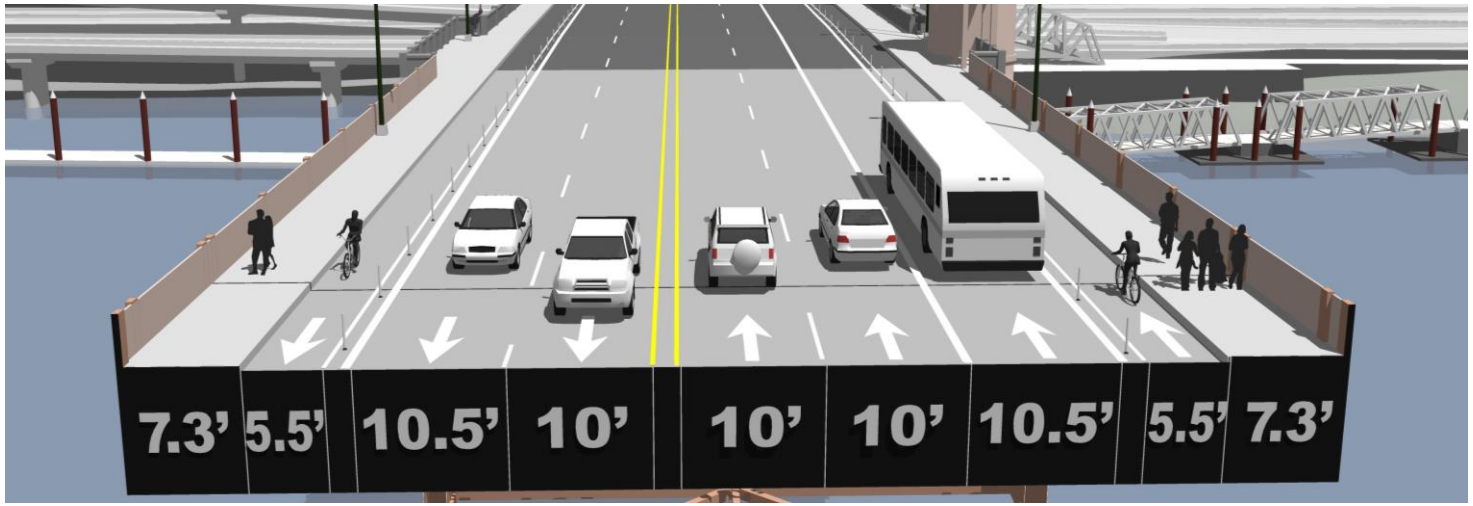
Enhanced
Seismic Retrofit



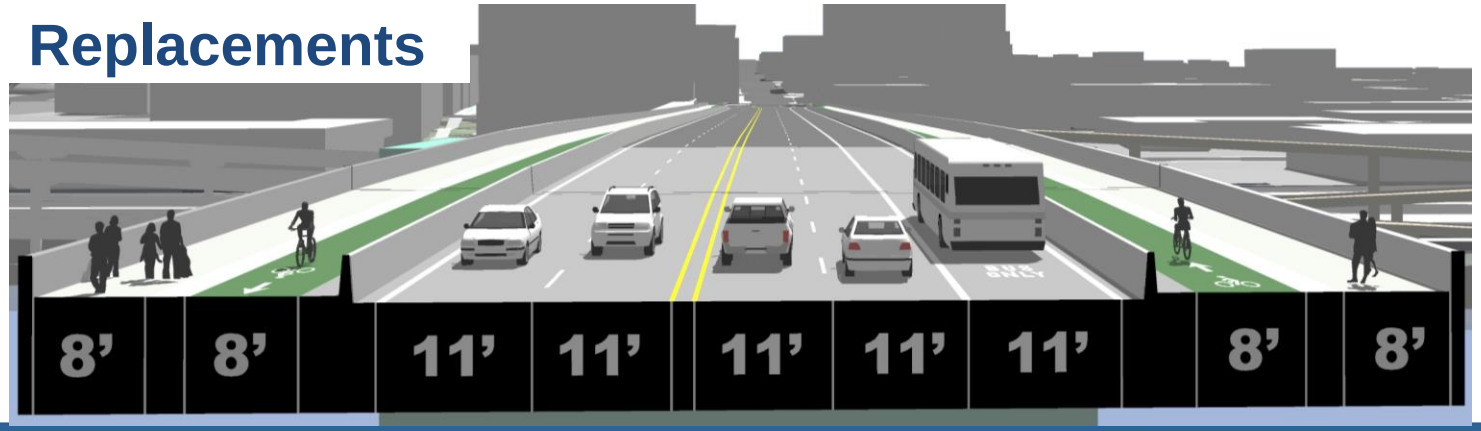
Less columns in parks

Cross Sections

Retrofit



Replacements



Replacement, Movable: Long Span

EARTHQUAKE READY BURNSIDE BRIDGE

Bridge Type Examples

BRIDGE TYPE OPTION: Tied Arch examples


Hastings Bridge, Minnesota


Torikai Ohas Bridge, Japan


Siuslaw River Bridge, Oregon


Tacony-Palmyra Bridge, Pennsylvania


Gateway Bridge, Michigan

BRIDGE TYPE OPTION: Cable Stayed examples


Indian River Inlet Bridge, Delaware


Chongqing Expressway Bridge


Copper River Bridge


Tilikum Crossing Bridge, Oregon

BRIDGE TYPE OPTION: Through Truss examples


Main Street Bridge, Florida


Triboro (Harlem River) Bridge


Tower Bridge, CA


Broadway Bridge


Hawthorn Bridge

MOVABLE SPAN: Bascule examples


South Park Bridge


Harbor Bridge, Spain


New Johnson St. Bridge, Canada


Woodrow Wilson Bridge

MOVABLE SPAN: Vertical Lift examples


Teregganu Bridge


Fore River Bridge


Pont Jacques Chaban - Delmas


Manchester Millenium Bridge, England

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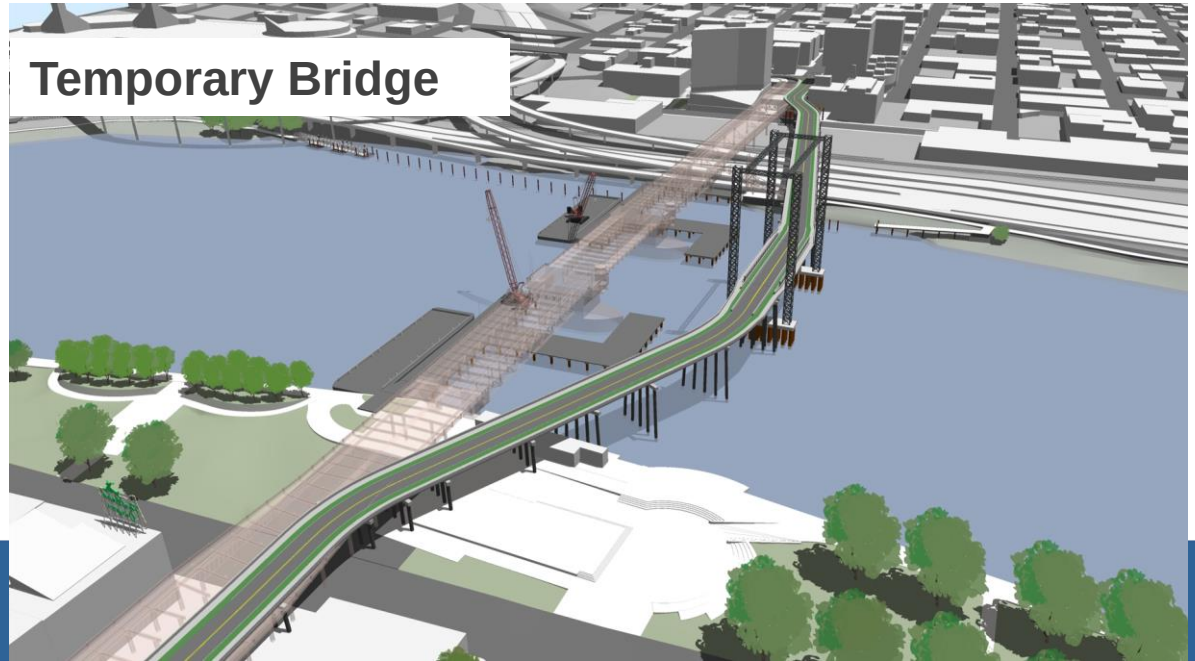
Multnomah County

Range of Alternatives

Traffic Options During Construction

Full Bridge Closure

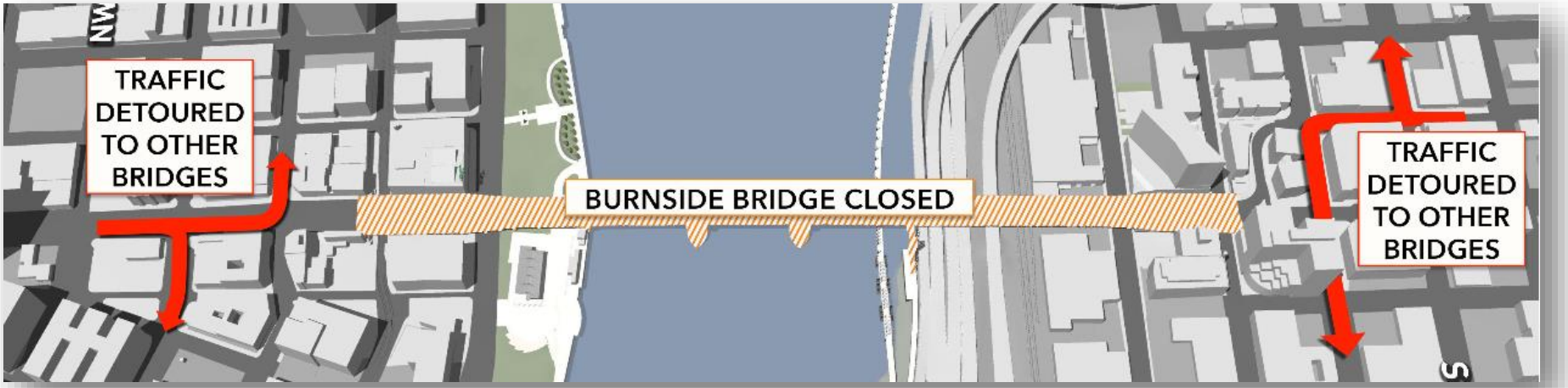
Temporary Bridge



CTF Recommendation

Preferred Alternative

Traffic During Construction: Full Bridge Closure

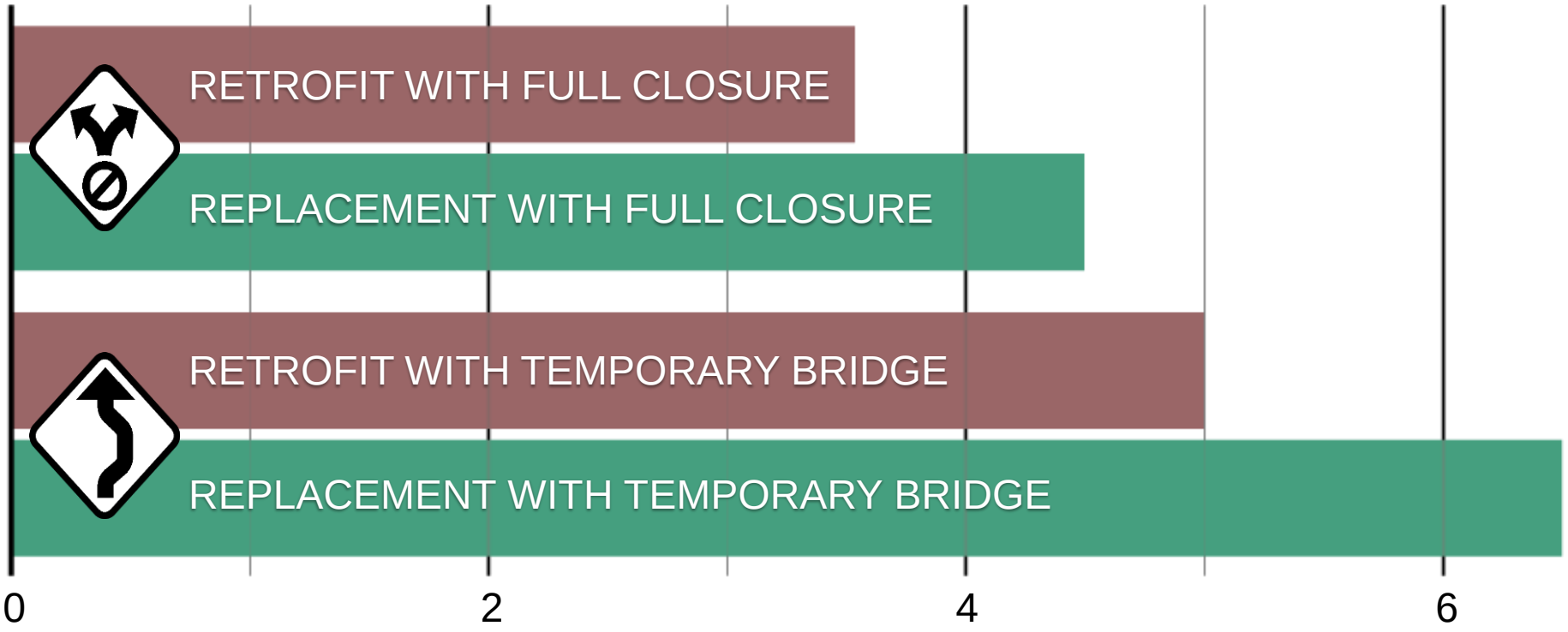


What we heard from CTF:

- **Least cost** - the temporary bridge would add $90 million to the project cost
- **Shortest construction duration** (the 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 in-water construction which **reduces impact to natural resources**

Construction Timeline

PROJECT DURATION (Years)



Traffic Analysis

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

The analysis evaluated the following temporary bridge types:

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

Travel Time

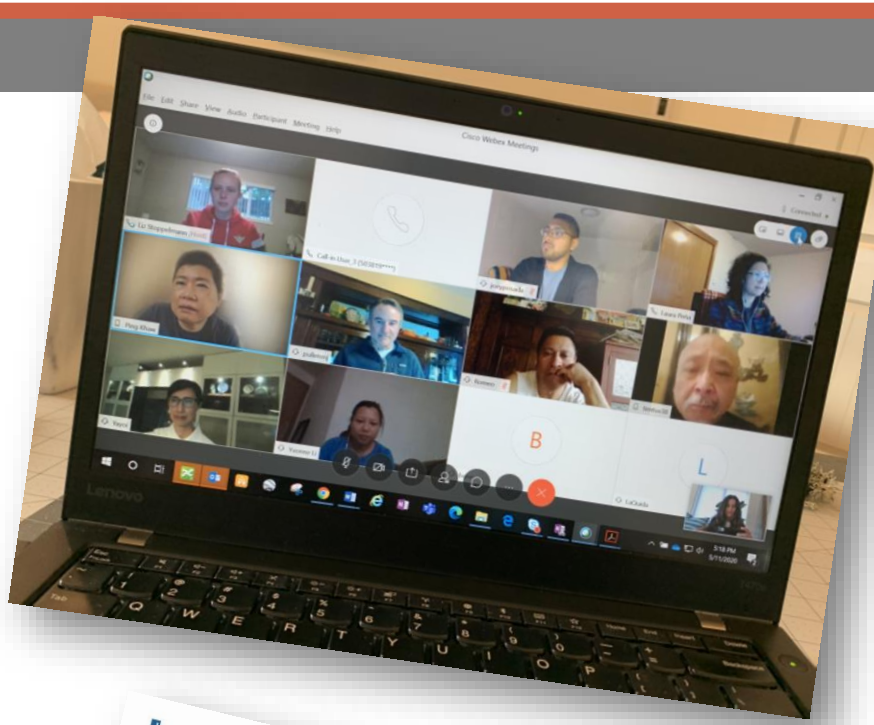
The CTF did not feel the travel time savings justified the cost, added construction duration and impacts to natural resources.

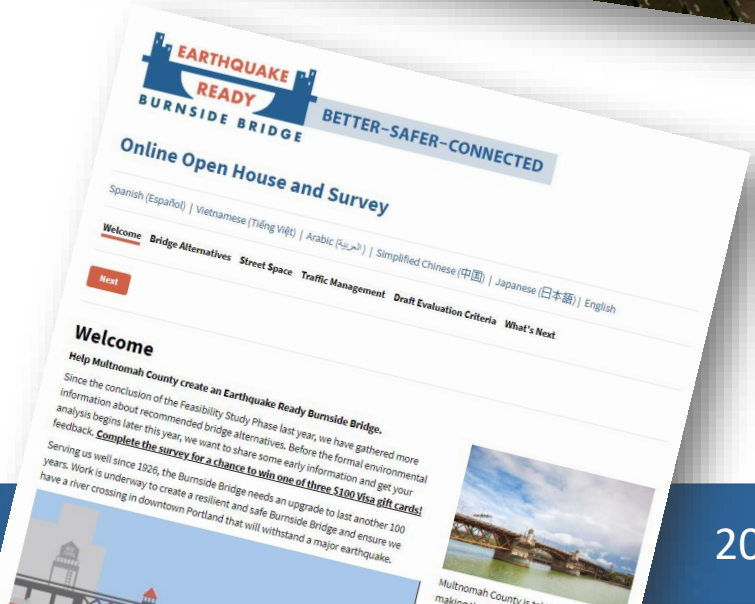
…however, they strongly supported mitigation techniques to address safety and access

Demand management strategies would be developed during design

Summer Outreach

- Online Open House
- Briefings
- Virtual Tours and Animations
- Diverse Outreach (CEL Program)





Upcoming Meetings & Next Steps

- July: MultCo Board of County Commissioners briefing
- **August: Public Outreach on recommended PA**
- September: CTF & SASG
- October 2: Policy Group PA Recommendation Approval
- October: CTF – Kickoff Type Selection Phase
- January: Draft Environmental Impact Statement Publication

Questions?