EARTHQUAKE READY BURNSIDE BRIDGE

Portland Freight Advisory Committee

Department of Community Services
Transportation Division

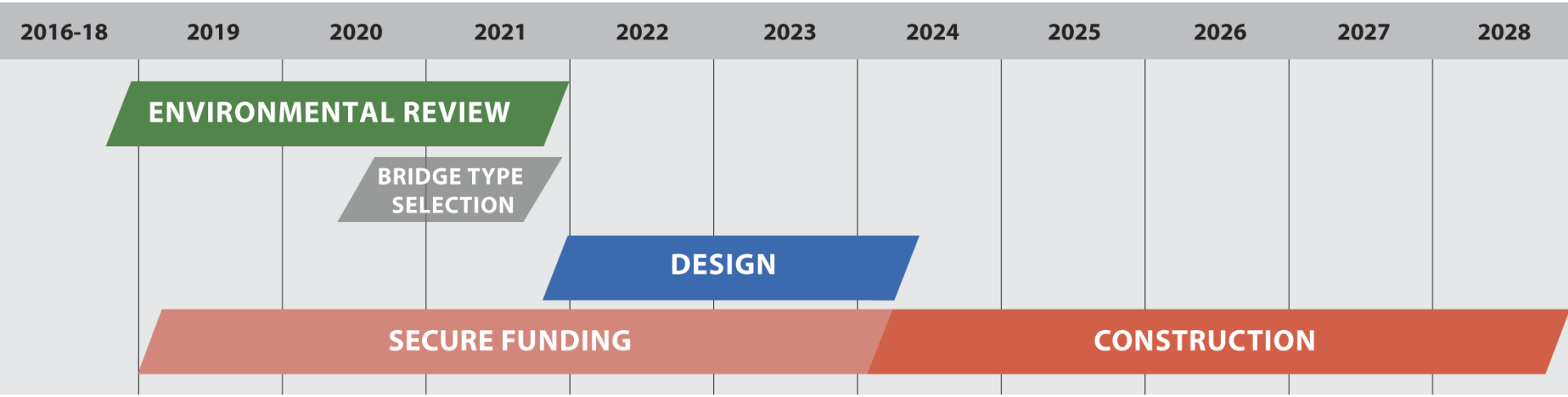
July 9, 2020

Project Overview

Purpose and Need

- Seismic Resiliency and Emergency Response
- Regional Recovery and Rebuilding
- Long-term Use

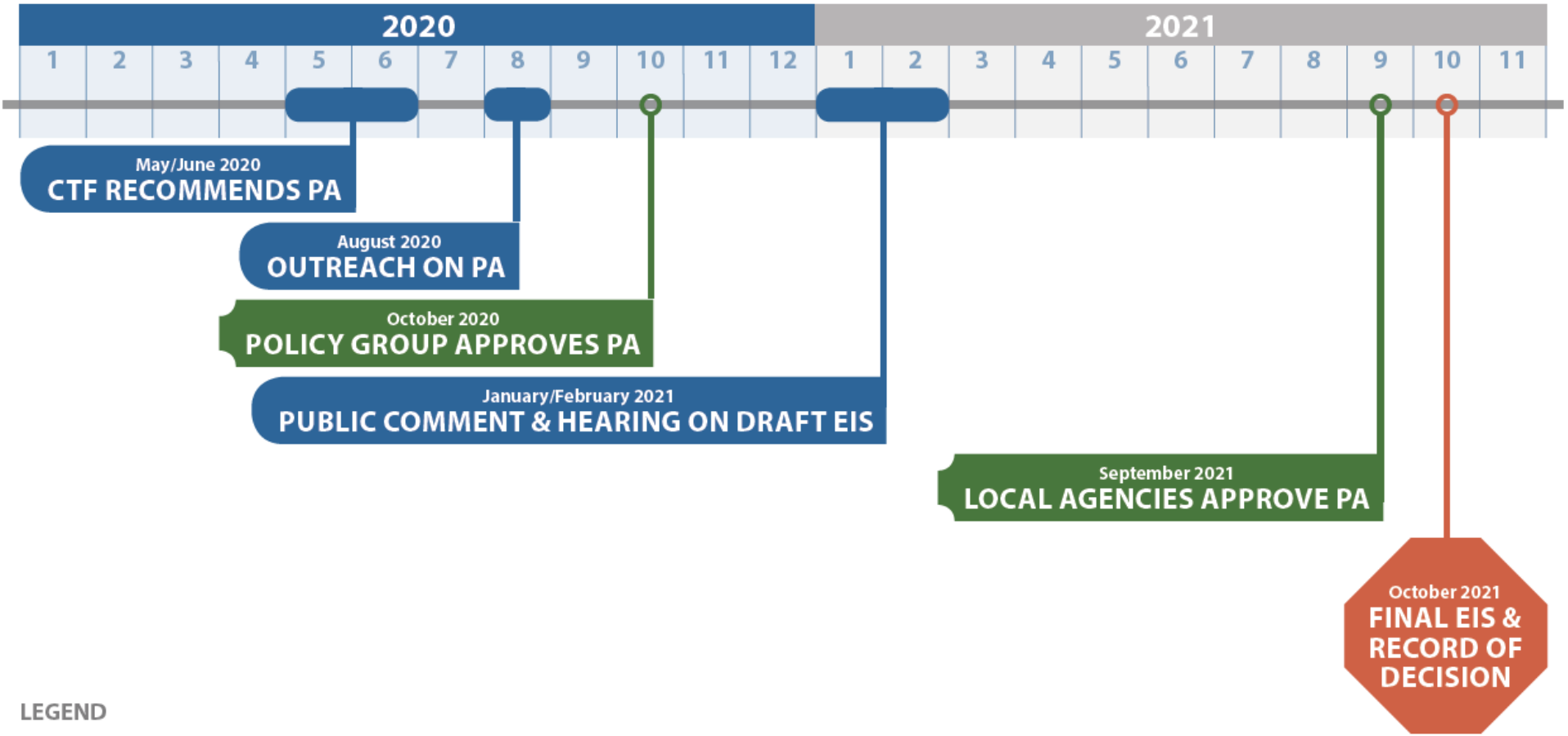
Project Timeline



Project Timeline

EARTHQUAKE READY BURNSIDE BRIDGE

Environmental Review Phase – Key Milestones



LEGEND

CTF: Community Task Force

PA: Preferred Alternative

EIS: Environmental Impact Statement

Multnomah County

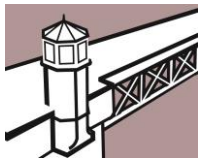
Process Overview

EARTHQUAKE READY BURNSIDE BRIDGE

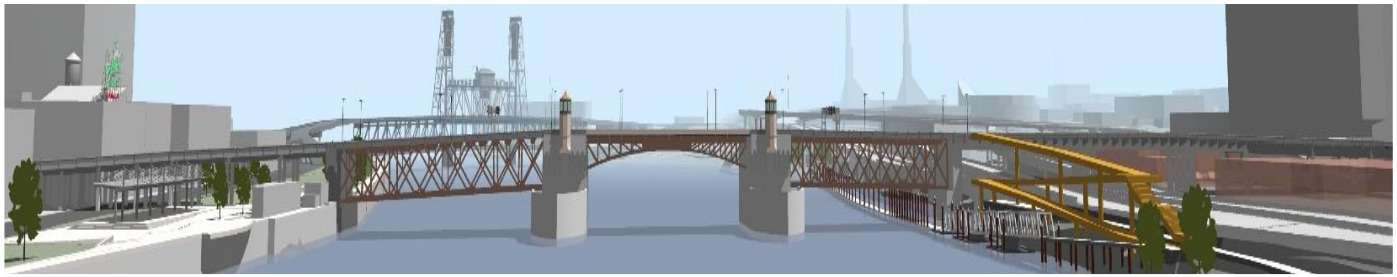
STEPS IN GETTING TO A PREFERRED ALTERNATIVE (PA)

- Assess Interests — Apr-May '19
- Develop Criteria — Jun-Dec '19
- Weight Criteria — Feb '20
- Rate Criteria — Mar-Apr '20
- Score Criteria — Apr '20
- Review Results — Apr-May '20
- **CTF Recommends PA** — Jun '20
- Community Review & Input — Jul-Aug '20
- CTF Review Feedback and Confirm/Refine Recommendation — Sep '20
- Policy Group Review and Approve PA Recommendation — Oct '20
- Prepare and Publish Draft Environmental Impact Statement — Winter '20-'21
- Kickoff Type Selection Phase — Oct '20

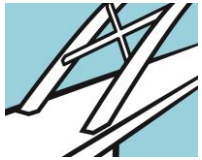
Range of Alternatives



Enhanced Seismic Retrofit

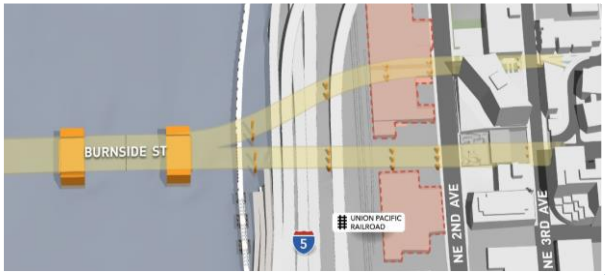


Replacement
Short Span
(Bascule or Lift)



Replacement
Long Span
(Bascule or Lift)

Replacement
Couch Extension
(Bascule or Lift)

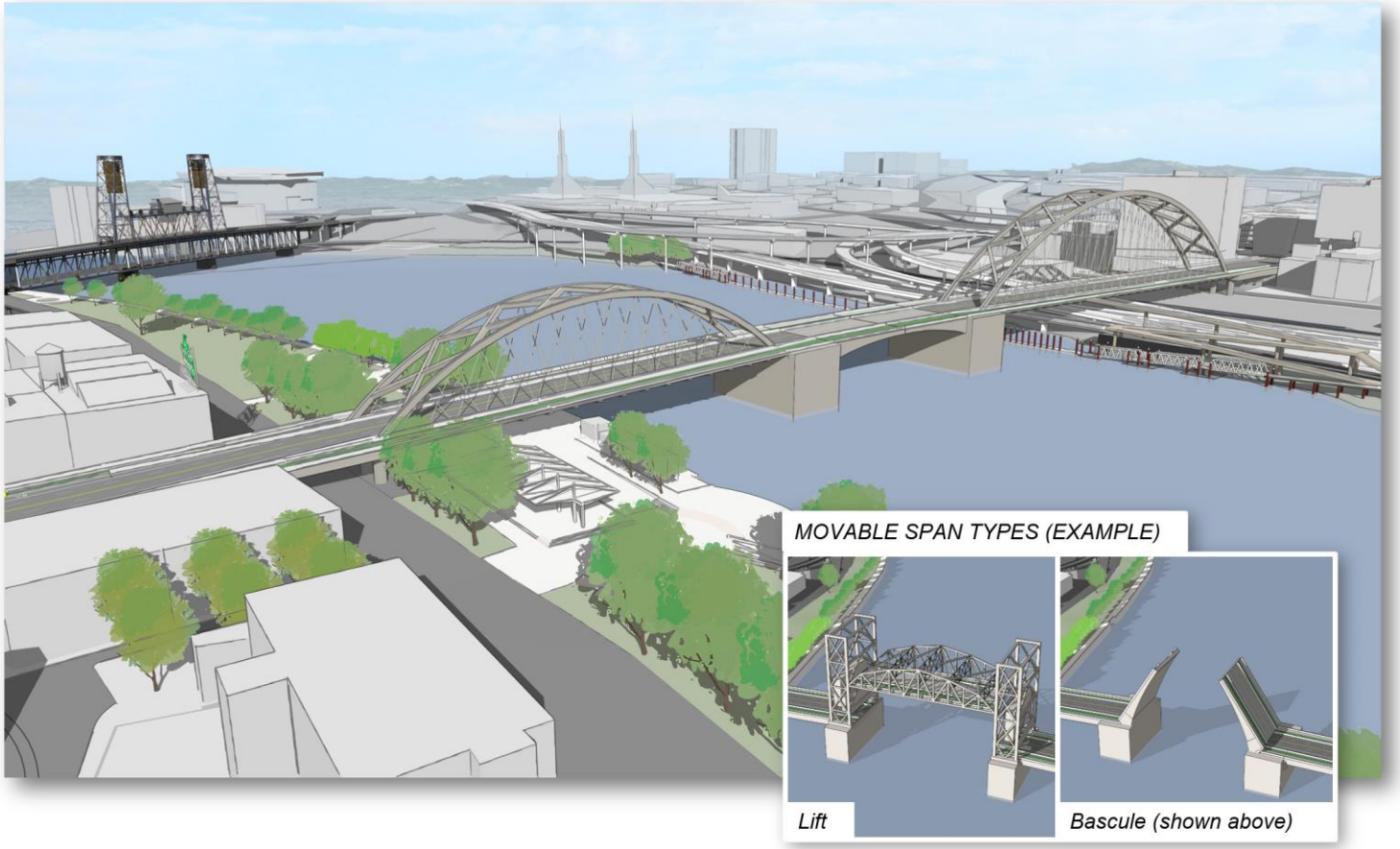


(Concept Images)

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.

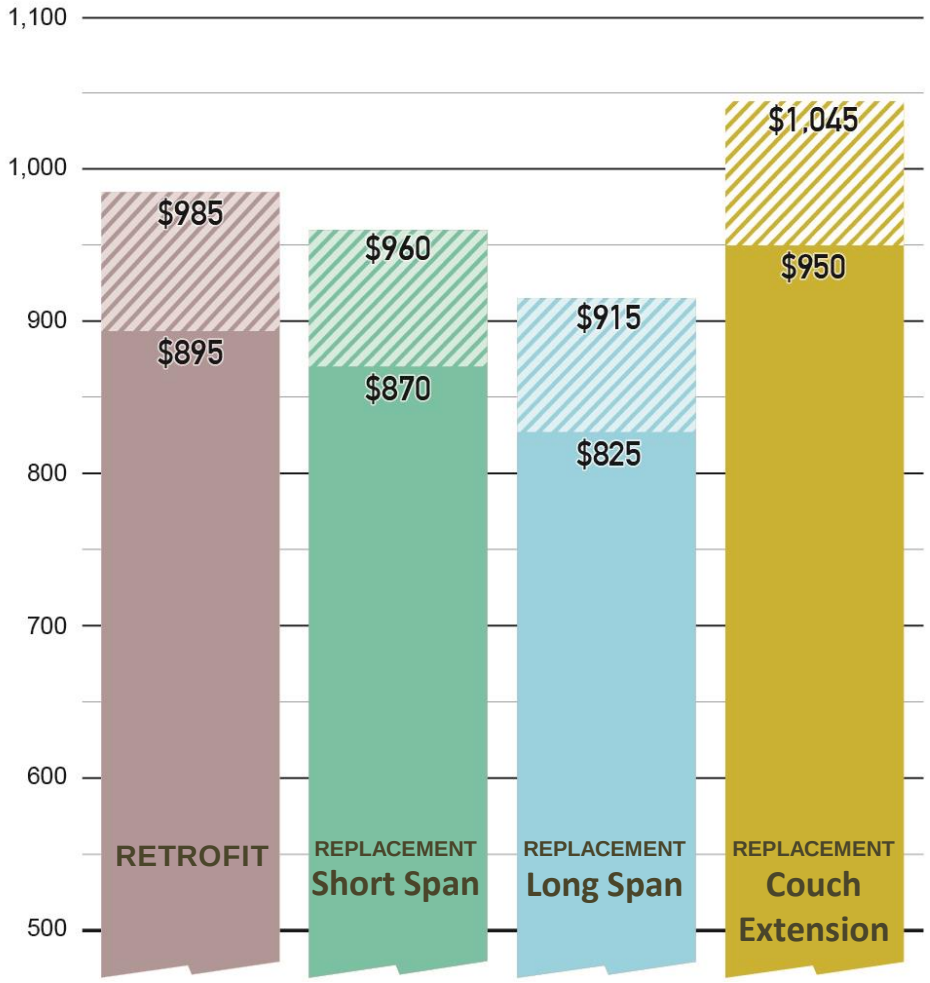
CTF Recommendation

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

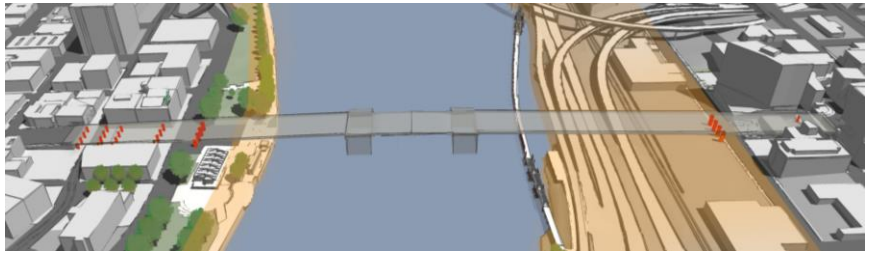
Project Cost by Alternative



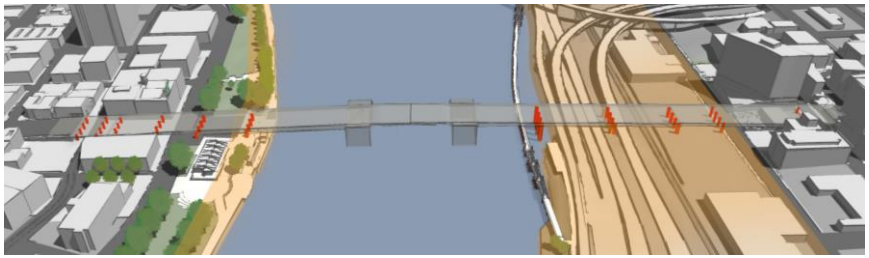
= Add'l cost for Temporary Bridge During Construction

Columns in dangerous soil

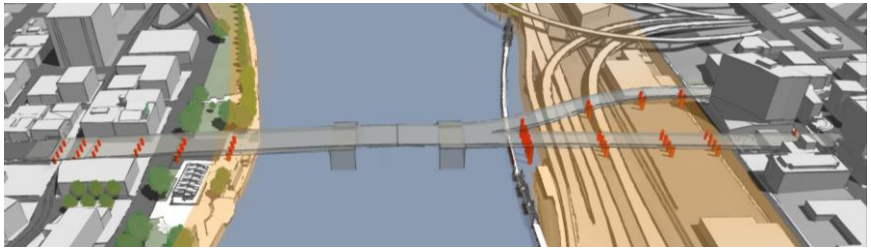
Replacement
Long Span



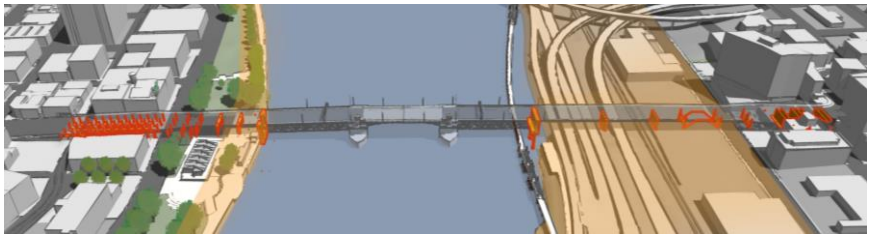
Replacement
Short Span



Replacement
Couch Extension



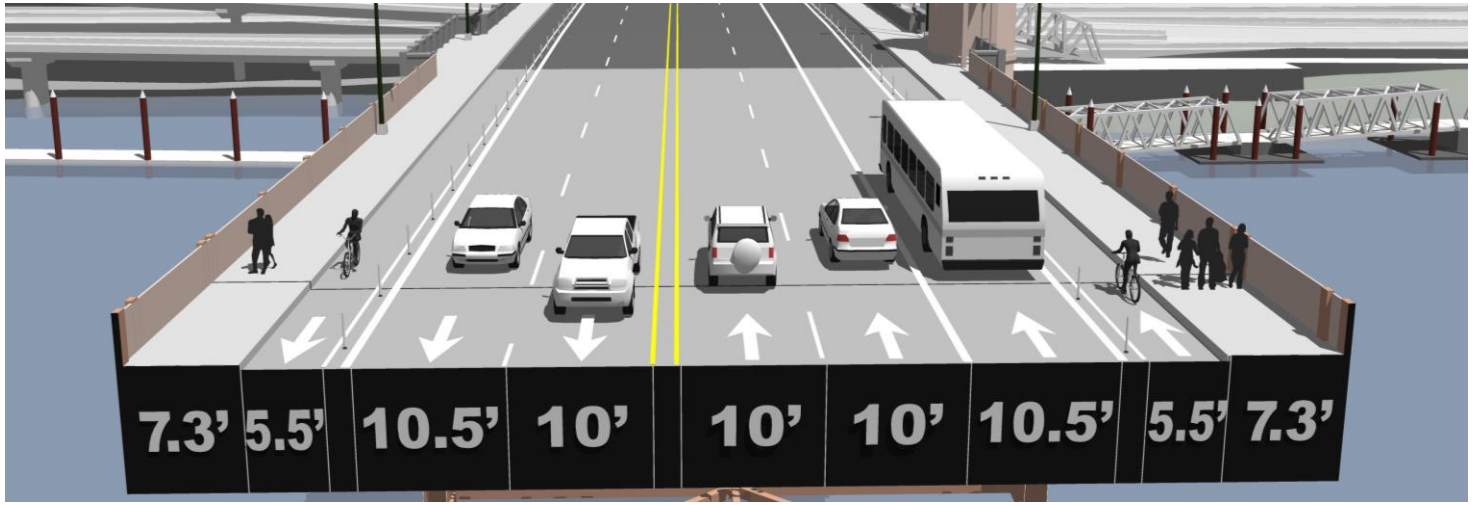
Enhanced
Seismic Retrofit



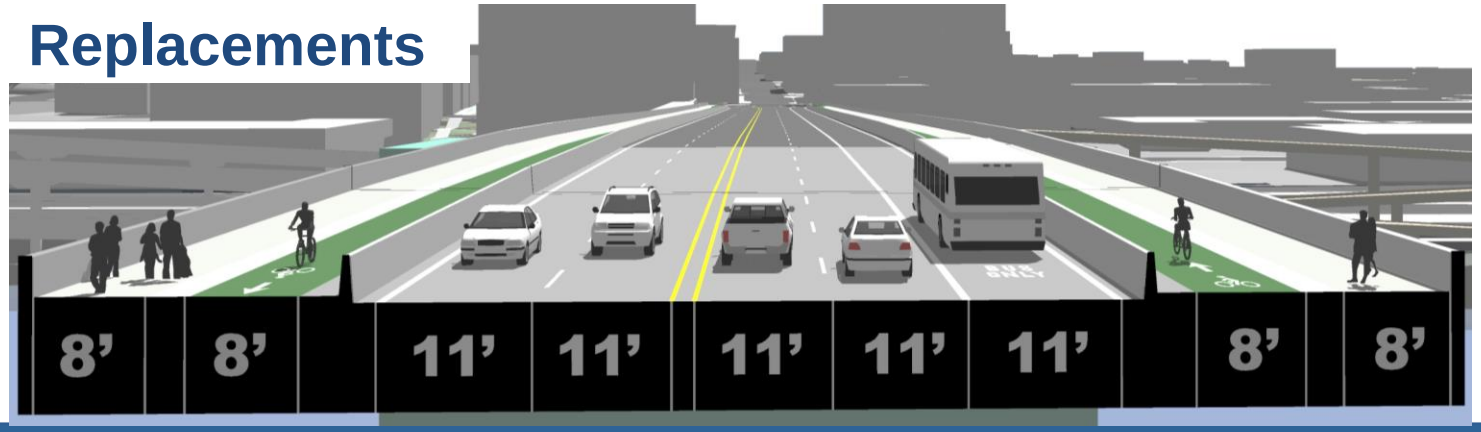
Less columns in parks

Bridge Width

Retrofit



Replacements



Bridge Width

Freight and Streetcar Considerations

- With no lane reductions and a slight increase in lane widths, freight access (primarily local deliveries) is not compromised
- Slight straightening of Couch St “S” curve horizontal alignment
- Westbound travel:
  - Straightening includes a small right of way acquisition (at bridge end) to fit future Streetcar within outside traffic lane
- Eastbound travel:
  - No change in alignment

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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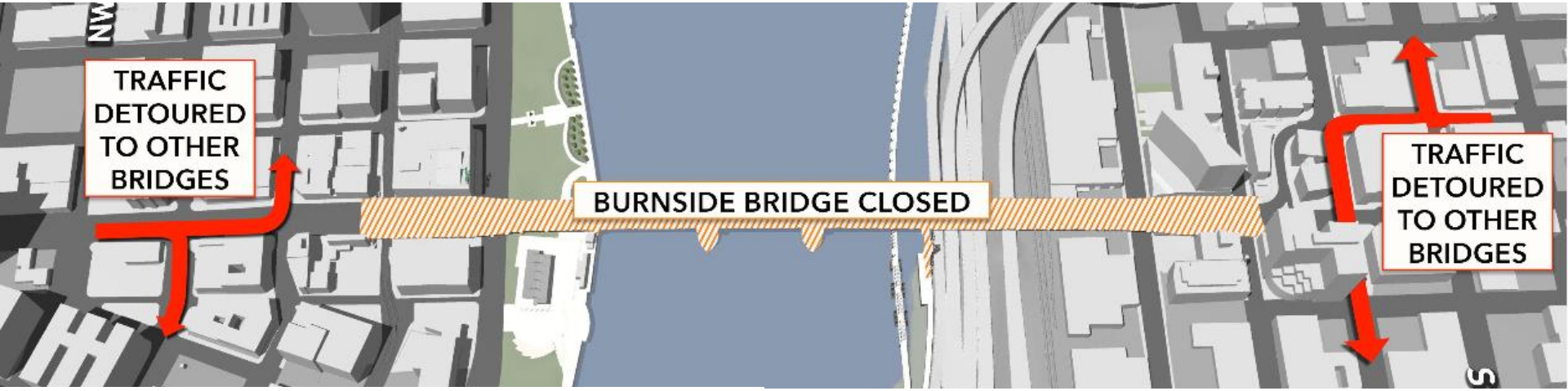
Multnomah County

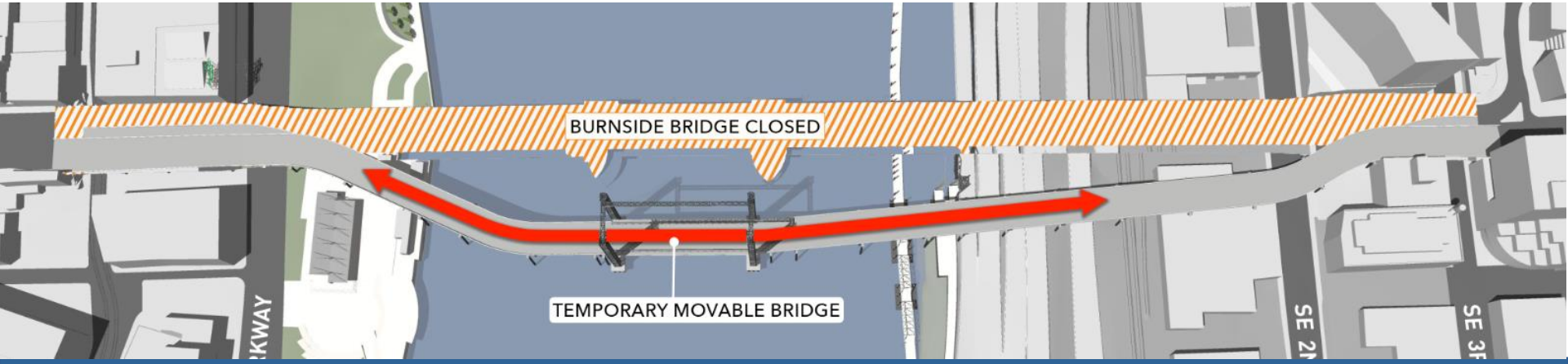
Range of Alternatives

Traffic Options During Construction

Full Bridge Closure



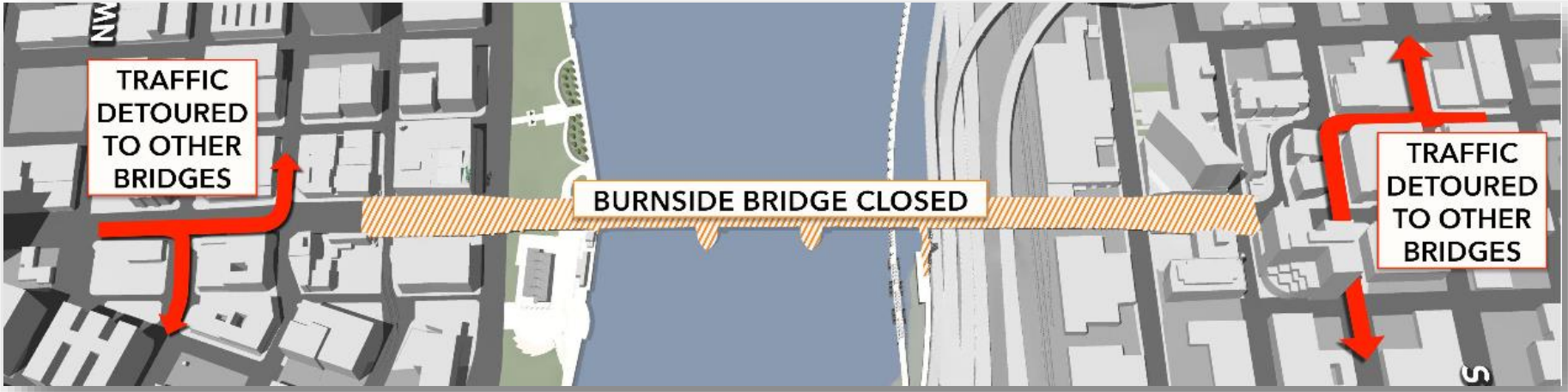
Temporary Bridge



CTF Recommendation

Preferred Alternative

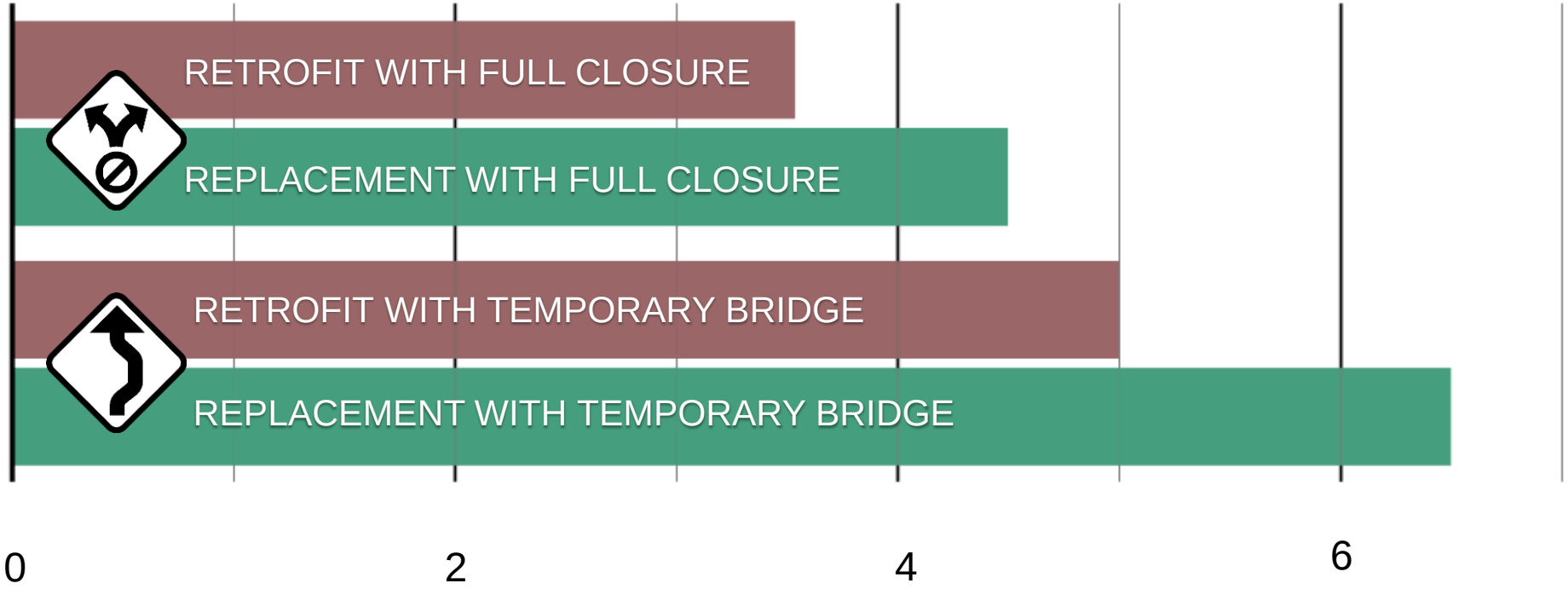
Traffic During Construction: Full Bridge Closure



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 Duration



Travel Time

A vehicular temporary bridge would **reduce driver travel time by approximately ~2-4 minutes** and **add $90 million to project cost**

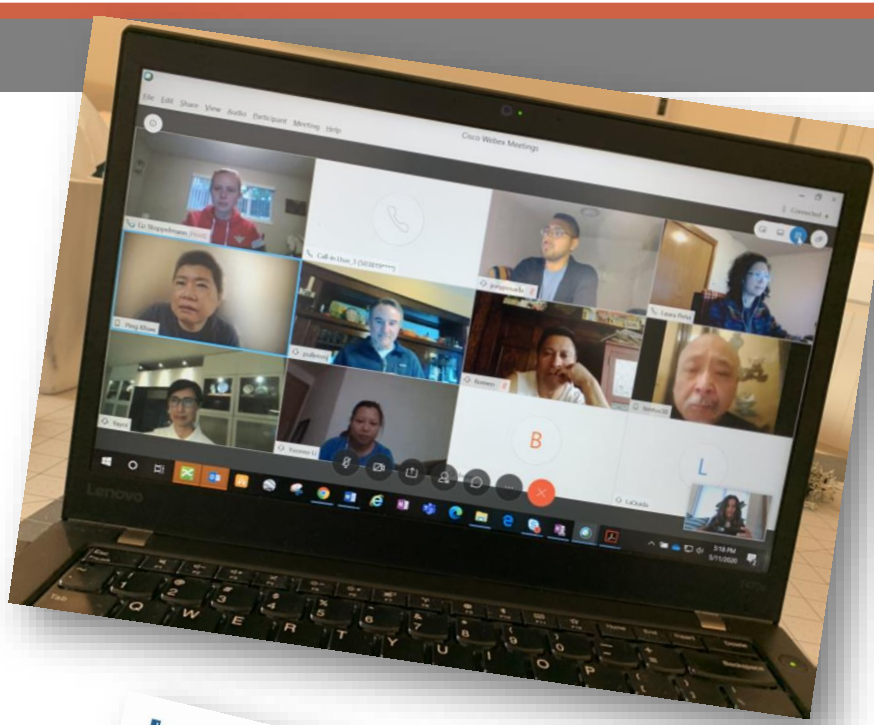
Depending on the origin-destination route driven (12 routes analyzed):

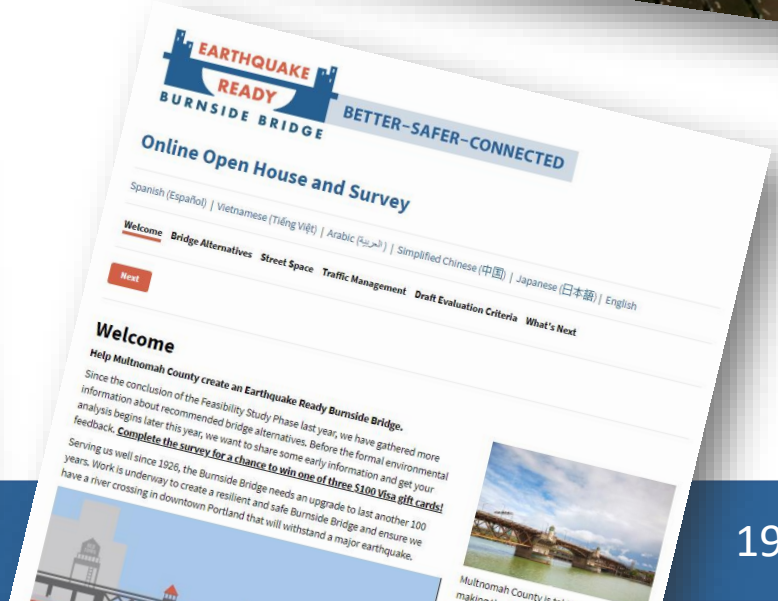
- Daily Travel Delay *without* a Temporary Bridge ranges from +3 to +10.5 minutes
- Daily Travel Delay *with* a Temporary Bridge ranges from +1 to +7.5 minutes

The CTF did not feel the travel time savings justified the cost and added construction duration

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?