



Multnomah County is  
creating an earthquake-ready  
downtown river crossing.

BETTER – SAFER – CONNECTED

October 14, 2020

## Urban Design and Aesthetics Working Group (UDAWG) – Agenda Meeting #2

Project:	Earthquake Ready Burnside Bridge (EQRB)
Subject:	Urban Design and Aesthetics Working Group
Date:	Wednesday, October 14, 2020
Time:	1:00 PM – 3:00 PM
Location:	WebEx (see email for link)

### WORKING GROUP MEMBERS

Randy Gragg, Executive Director, Portland Parks Foundation  
Bill Will, Public Works Artist  
Paddy Tillett, ZGF  
Chris Herring, Artistic Director, Portland Winter Lights Festival  
Megan Crosby, Urban Development + Partners  
Ian Williams, Deadstock Coffee  
Priscilla Macy, Oregon Outdoor Coalition  
Izzy Armenta, Oregon Walks  
Dave Todd, Portland Rose Festival  
Brian Kimura, Japanese American Museum of Oregon

### AGENCY GROUP MEMBERS

Patrick Sweeney, PBOT  
Lora Lillard, BPS  
Hillary Adam, BDS  
Tate White, PPR  
Justin Douglas, Prosper Portland  
Bob Hastings, TriMet  
Magnus Bernhardt, ODOT

### PROJECT TEAM MEMBERS

Megan Neill, Multnomah County  
Ian Cannon, Multnomah County  
Mike Pullen, Multnomah County  
Heather Catron, HDR  
Steve Drahota, HDR  
Cassie Davis, HDR  
Michael Fitzpatrick, HDR  
Katy Segura, HDR  
Jeff Heilman, Parametrix  
Allison Brown, JLA  
Carol Mayer-Reed, Mayer/Reed  
Jeramie Shane, Mayer/Reed  
Josh Carlson, Mayer/Reed  
Anne Monnier, KPFF



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## Purpose:

*The purpose of the UDAWG is to serve as a technical resource body to the CTF for urban design and aesthetics by:*

- *Providing informed insights and opinions on the visual features for each type selection option*
- *Recommending measures to enhance aesthetic opportunities or mitigate potential visual impacts*
- *Representing urban design and aesthetic interests*
- *Reflecting the character of Portland by suggesting place-making opportunities*

## Outcomes:

*The outcomes for the UDAWG group are to:*

- *Inform a set of feasible bridge type options for the CTF's consideration*
- *Inform a project-specific Visual Performance Standard for use during the Type Selection and Final Design phases*
- *Recommend visual and aesthetic evaluation criteria for consideration by the CTF*

## Agenda:

Time	Session	Lead
12:45 p.m.	Early Arrivals <ul style="list-style-type: none"><li>• WebEx meeting platform will be available for folks that want to join early and test computer functions before meeting start</li></ul>	Project Team
1:00 p.m. (15 min)	Welcome, Introductions, Pre-Meeting Info, and General Comments	Allison Brown
1:15 p.m. (60 min)	Reflections on the “Character of Portland” and the Burnside Bridge	Allison Brown / Carol Mayer-Reed / All
2:15 p.m. (40 min)	Bridge Technical Needs and Criteria	Steve Drahota
2:55 p.m.	Next Steps and Closing Remarks	Allison Brown



# Urban Design and Aesthetics Working Group Mtg #2

*Attendees join meeting via  
WebEx link in calendar invite*

Department of Community Services  
Transportation Division

October 14, 2020

# Meeting Protocols

## Using WebEx participation features



*For WebEx tech support call or email Katy Segura:  
(503) 423-3709  
[Katy.Segura@hdrinc.com](mailto:Katy.Segura@hdrinc.com)*



# Agenda

1. Welcome, Introductions, and Pre-Meeting Info
2. Reflections on the “Character of Portland” and the Burnside Bridge
3. Bridge Technical Needs and Criteria
4. Next Steps and Closing Remarks



# Pre-meeting Information Packet

## Content

- ***“Draft Visual Technical Report” (Distributed 10/11/20)***
- **PDF #1 *“1\_EQRB Pre-UDAWG Mtg 02\_Prep Materials”* (Distributed Tuesday, 10/13/20)**
  - Consolidated findings from “Character of Portland” homework assignment
  - UDAWG Mtg #1 Notes
  - UDAWG Meeting #2 Agenda
- **PDF #2: *“2\_EQRB UDAWG Mtg 02\_Agenda and Presentation”* (Distributed Wednesday, 10/14/20)**
  - UDAWG Meeting #2 Agenda
  - UDAWG Draft Meeting #2 Presentation
  - UDAWG Mtg #1 Summary of Notes (3 Slides)



## UDAWG Purpose and Outcome

**Purpose:** To serve as a technical resource to the Community Task Force (CTF) for:

- Insights and opinions on the visual features
- Measures to enhance aesthetic enhancing opportunities or mitigate potential visual impacts
- Urban design and aesthetic interests
- Place-making opportunities that reflect character of Portland





**Outcomes:** To provide input on the following products for the CTF's consideration:

- A set of feasible bridge type options
- A project-specific Visual Design Guidelines
- Recommendations for visual and aesthetic evaluation criteria



# UDAWG Meetings

## General Focus

	UDAWG Meeting Number and Date								
	 #1 (9/30)	#2 (10/14)	#3 (10/28)	#4 (11/4)	#5 (11/18)	#6 (12/2)	#7 (12/16)	#8 (3/10)	#9 (6/2)
Character of Portland and the Burnside Bridge	_____								
Visual Design Principles			_____						
Visual Design Guidelines					_____		---		
Technical Design Criteria		_____							
Menu of Bridge Types			_____						
Range of Feasible Bridge Types					_____		---		
Evaluation Criteria Topic(s)					_____				
Evaluation Measures					_____			---	
Input on CTF's Eval Criteria								_____	
Input on CTF's Rec Bridge Type									_____

  
We are HERE



## Recent Activities

- Policy Group Preferred Alt Approval
- Working / Focus Groups
  - Adding Multi-modal Working Group
  - Ongoing Eastbank Esplanade connections discussion
- Coming soon: UDAWG Library



## Upcoming Working Group Mtgs

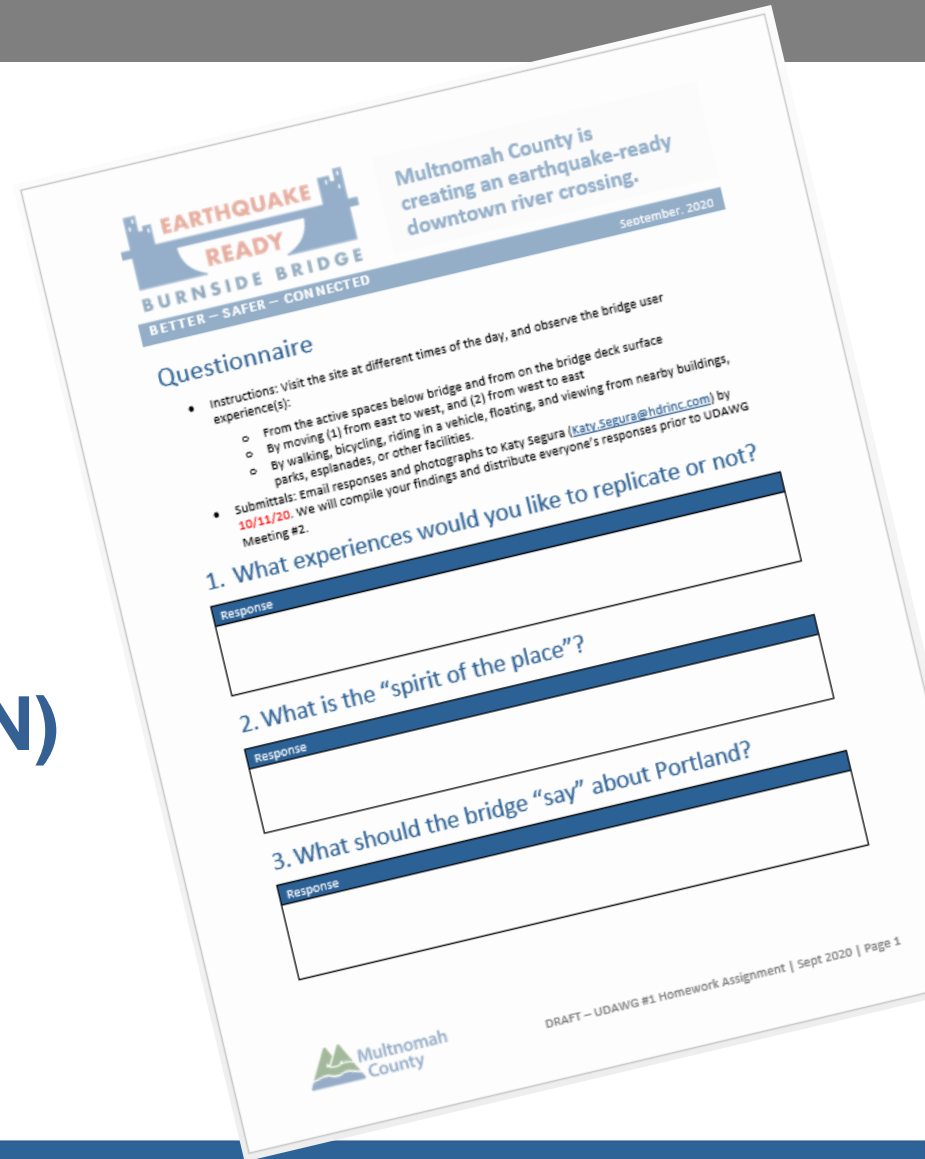
- Bridge / Seismic / Geotechnical Working Group (10/23)



# Reflections on the “Character of Portland” and the Burnside Bridge



## KEY INSIGHTS FROM HOMEWORK REPORT-OUT (1-2 MINUTES PER PERSON)



**EARTHQUAKE  
READY**  
BURNSIDE BRIDGE  
BETTER — SAFER — CONNECTED

Multnomah County is creating an earthquake-ready downtown river crossing.  
September 2020

### Questionnaire

- Instructions: Visit the site at different times of the day, and observe the bridge user experience(s):
  - From the active spaces below bridge and from on the bridge deck surface
  - By moving (1) from east to west, and (2) from west to east
  - By walking, bicycling, riding in a vehicle, floating, and viewing from nearby buildings, parks, esplanades, or other facilities.
- Submittals: Email responses and photographs to Katy Segura ([Katy.Segura@hdrcinc.com](mailto:Katy.Segura@hdrcinc.com)) by 10/11/20. We will compile your findings and distribute everyone's responses prior to UDAWG Meeting #2.

1. What experiences would you like to replicate or not?


Response

2. What is the “spirit of the place”?

Response

3. What should the bridge “say” about Portland?

Response

 Multnomah County

DRAFT — UDAWG #1 Homework Assignment | Sept 2020 | Page 1





## **GROUP DISCUSSION (PLEASE NO WEBEX CHATS)**



# Bridge Technical Needs and Criteria



# Project Purpose and Need

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

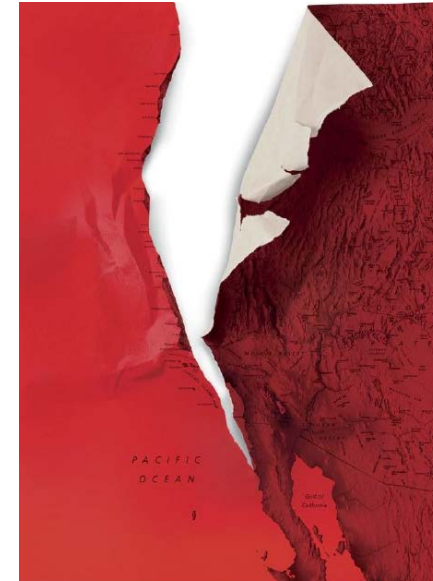


# Cascadia Subduction Zone Overview

## Facts

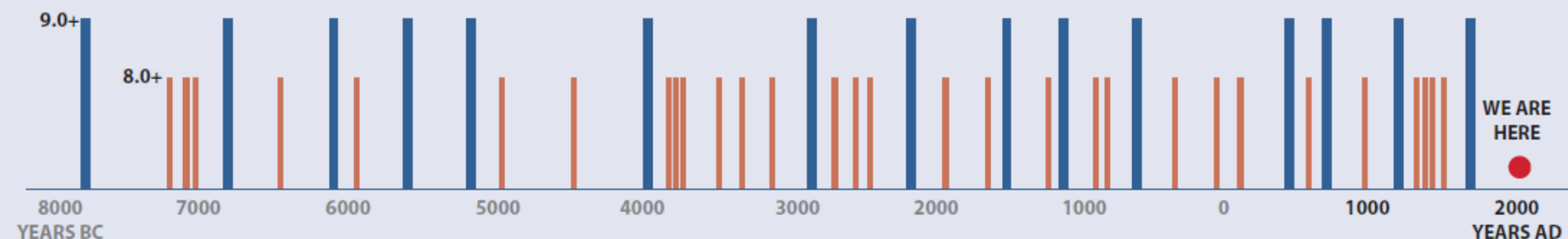
REGIONAL  
EARTHQUAKE  
RISK

1 in 3 chance of  
magnitude 8+  
earthquake  
within 50 years



## CASCADIA SUBDUCTION ZONE (CSZ) EARTHQUAKE

Last major quake in Oregon occurred 320 years ago, a timespan that exceeds 75% of the intervals between the major quakes to hit Oregon over the last 10,000 years.



# Bridge Design Criteria

## Seismic Performance Criteria

### The Burnside Bridge must:

- Sustain only minimal damage
- Withstand potential damage from adjacent buildings
- Be usable by all travel modes on the bridge immediately following the earthquake
- Have its movable span operational within 1-2 months following the earthquake
- Allow very heavy earthquake recovery, response, and material hauling vehicles to cross unhindered
- Be considered the only functioning bridge within weeks / months following the earthquake





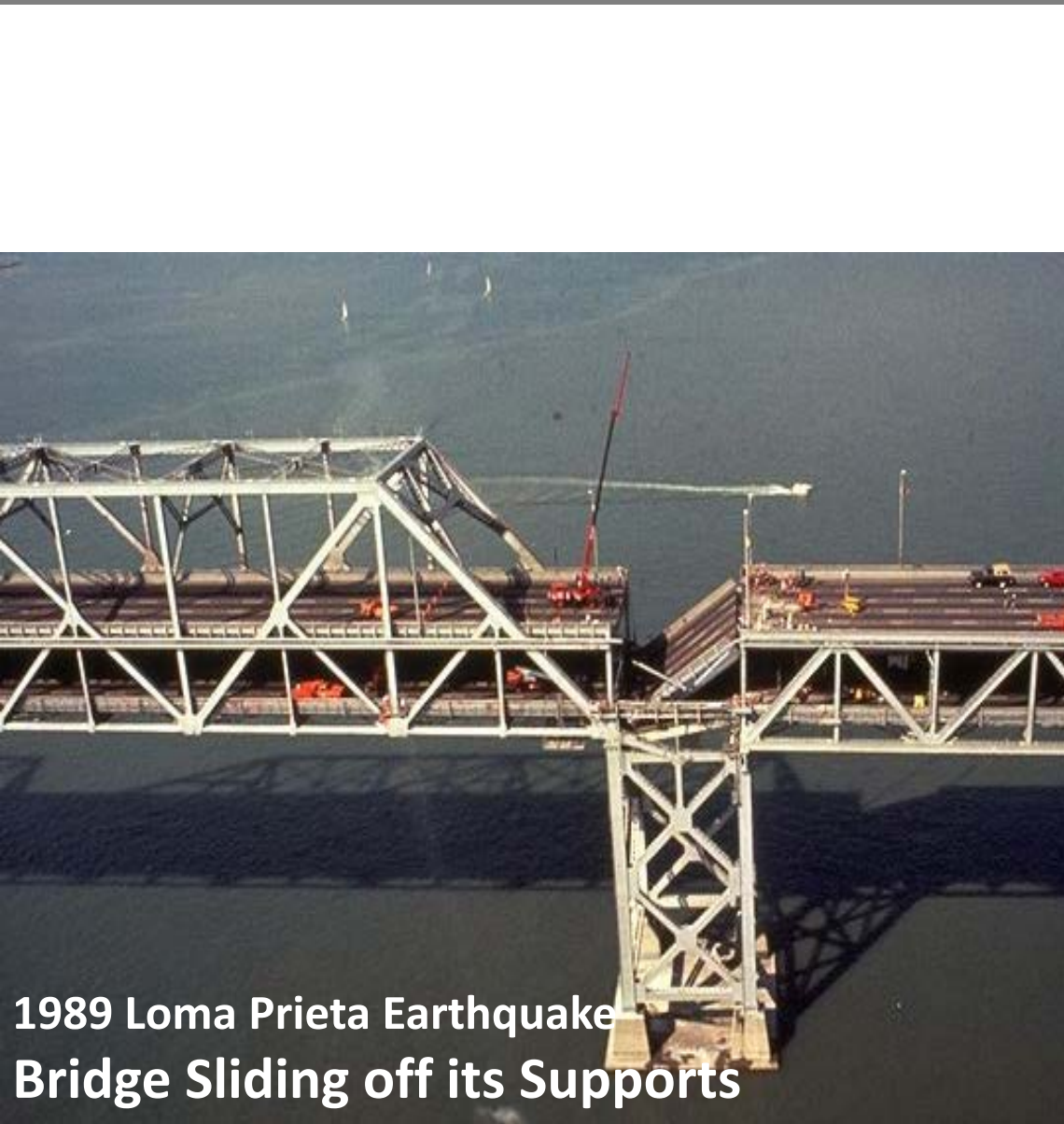
## 1989 Loma Prieta EQ (CA)



**1989 Loma Prieta Earthquake  
Column Failure**



## 1989 Loma Prieta EQ (CA)

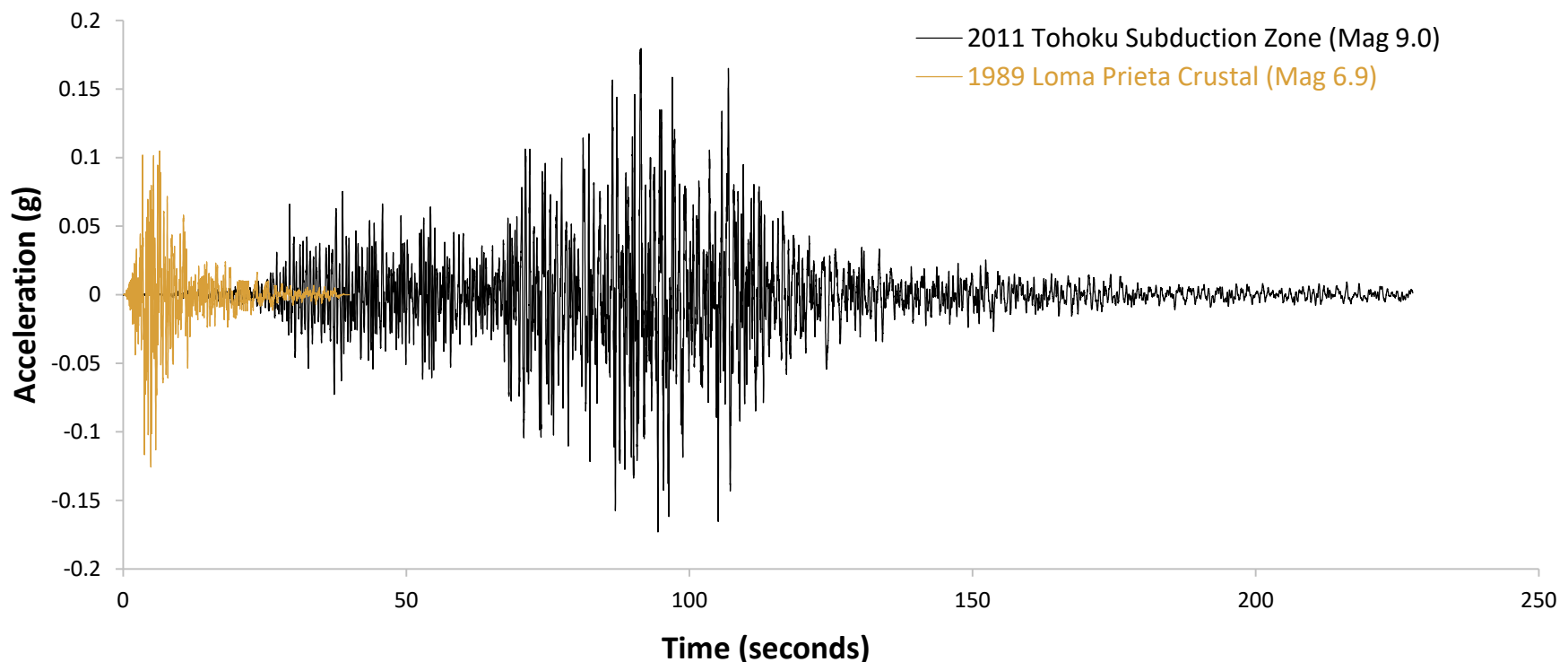


**1989 Loma Prieta Earthquake  
Bridge Sliding off its Supports**



## The Cascadia Subduction Zone Earthquake could have:

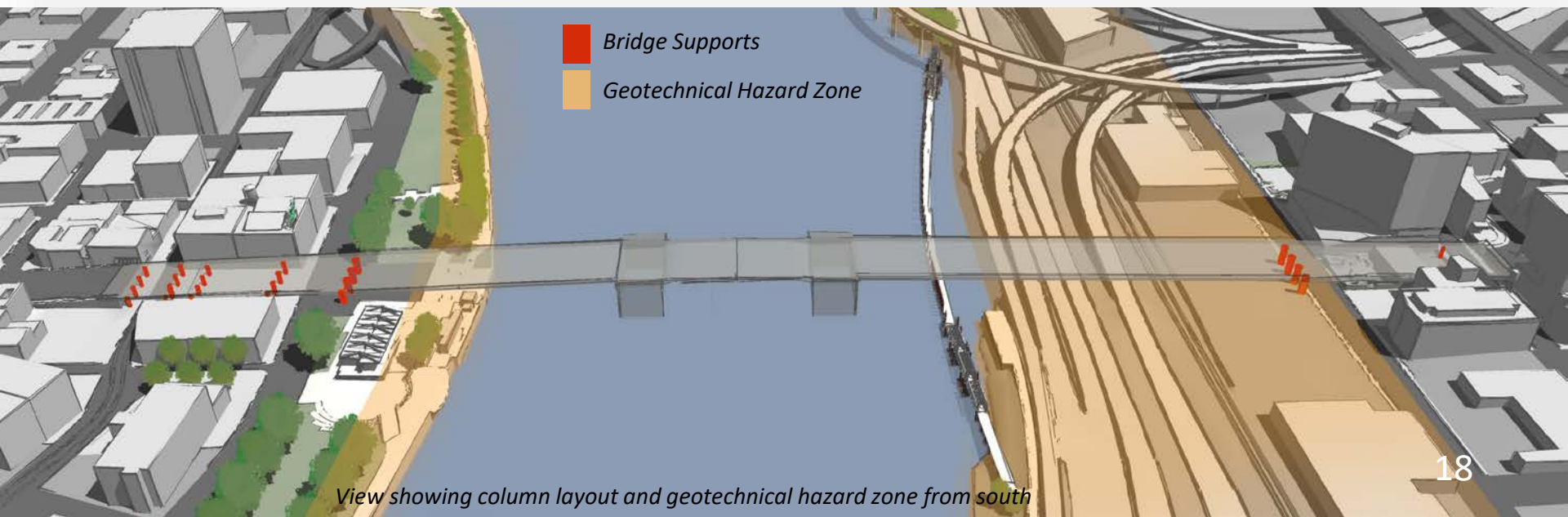
- 2x greater seismic loads than Loma Prieta EQ
- 3 minute longer duration than Loma Prieta EQ
- 100x more energy than Loma Prieta EQ





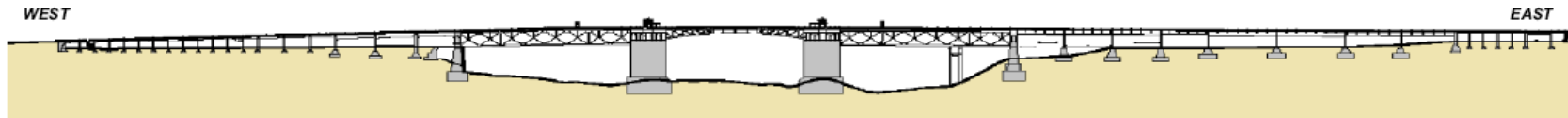
# Best for Seismic Resiliency

Fewer columns in liquefiable soils reduces its risk from soil movement during an earthquake

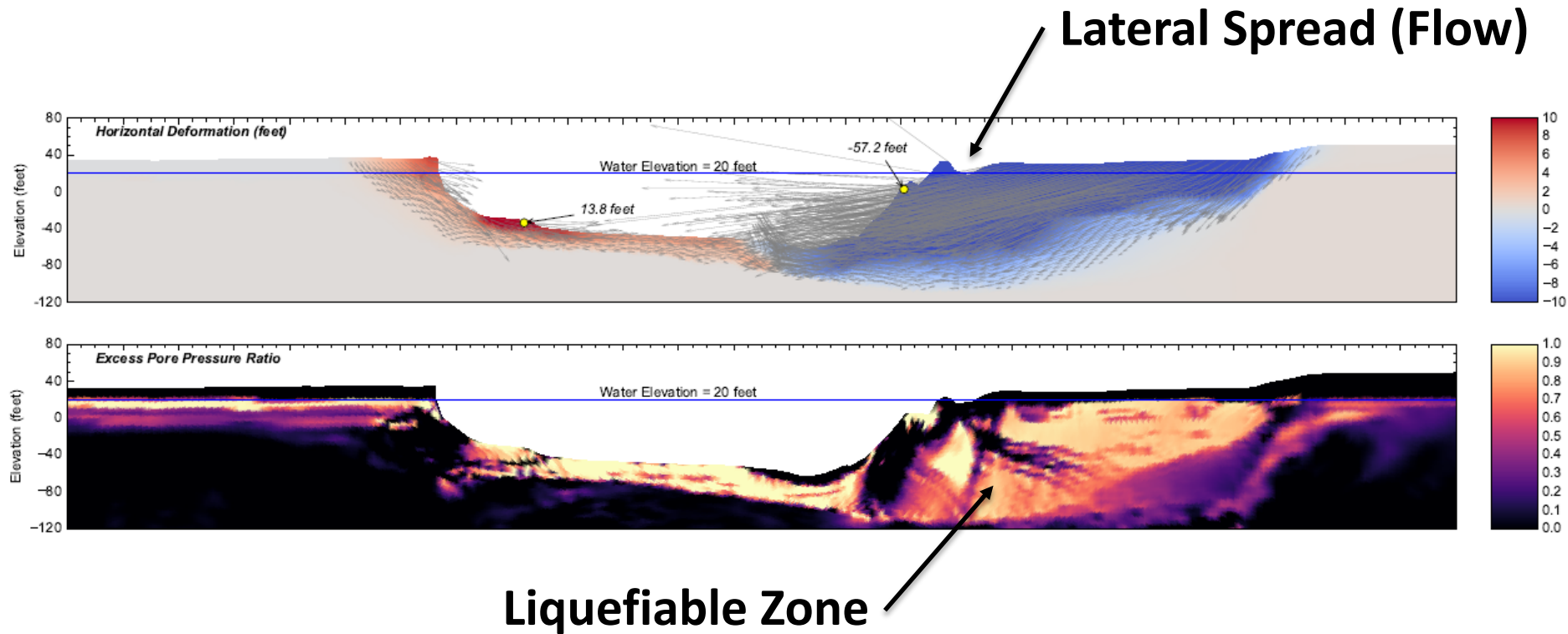




## Designing for “the Big One”



Existing Bridge



# Long-span Alternative

View towards downtown



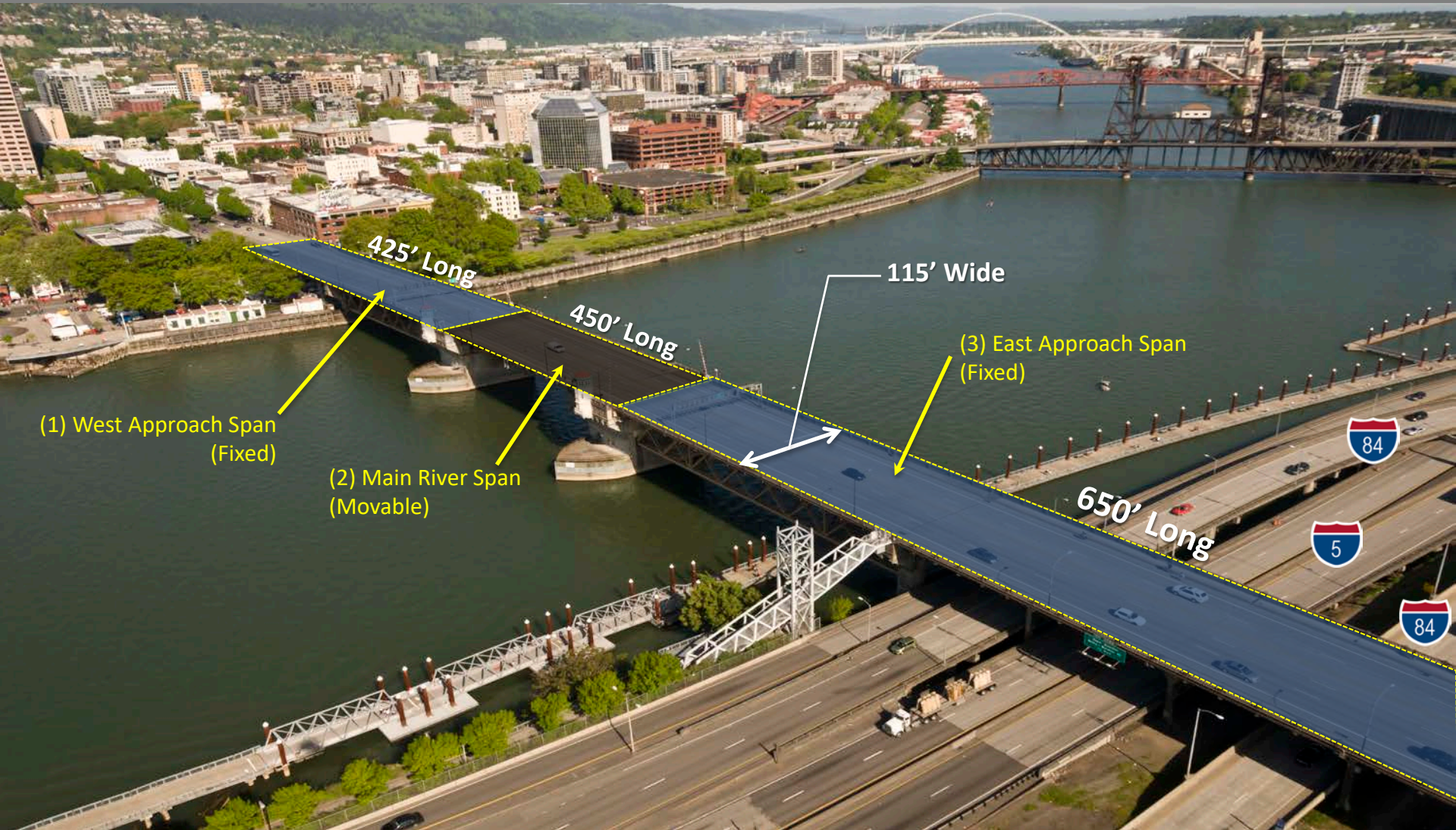
# Long-span Alternative

View towards northeast



# Long-span Alternative

“Three bridges in one”



# Long-span Alternative

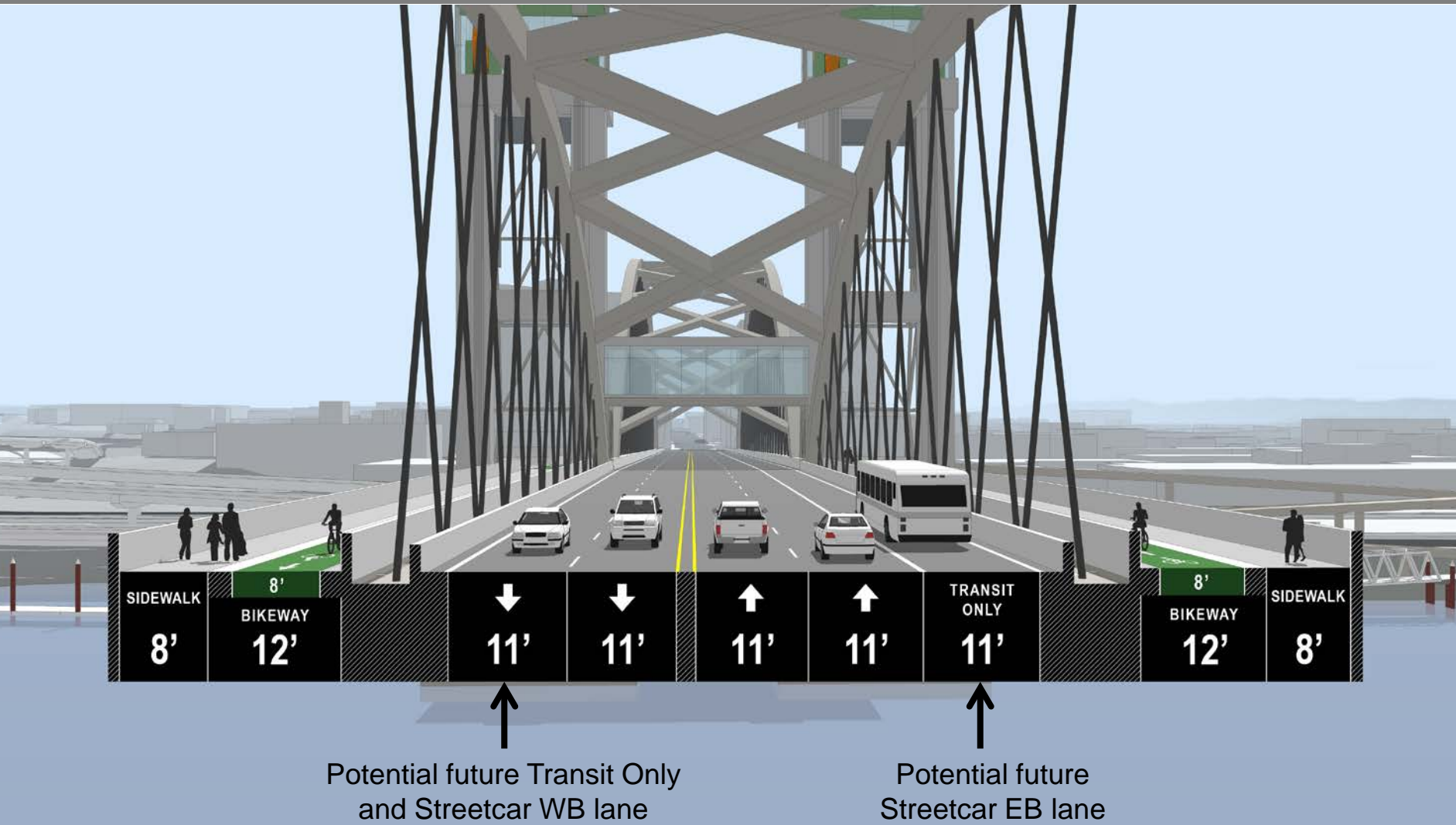
## Typical Sections



# Project Context: Mid-span Roadway Section



Additional deck width over the river provides a safer facility for bicyclists, pedestrians and other users



# Streetcar-Ready

## Designing for the Future

Maintain alignment of WB Couch St “S” curve on the east bridgehead



Consider future tracks, electrification, and catenary supports

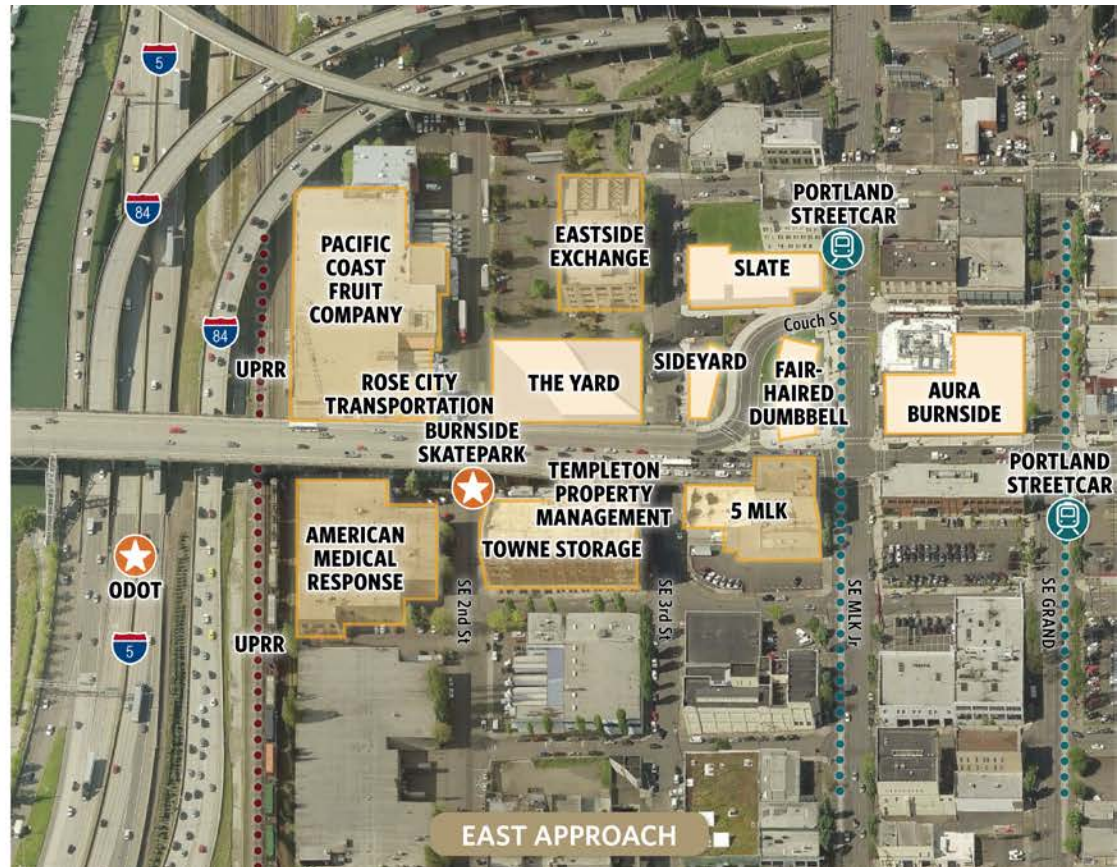


# Project Context

## West Approach



## East Approach



# Project Context

## Existing Facilities - Constraints



**TRI MET**

**1** TriMet Lightrail Service



**2** City of Portland Roadway  
(Naito Pkwy, NE/SE MLK,  
NE/SE Grand)

**3** City of Portland  
Combined Sewer Overflow



**4**

Oregon Department of  
Transportation Highway Facilities  
(I-5 and I-84)



**5**

Union Pacific Railroad Mainline



**6**

U.S. Coast Guard /  
River Navigation



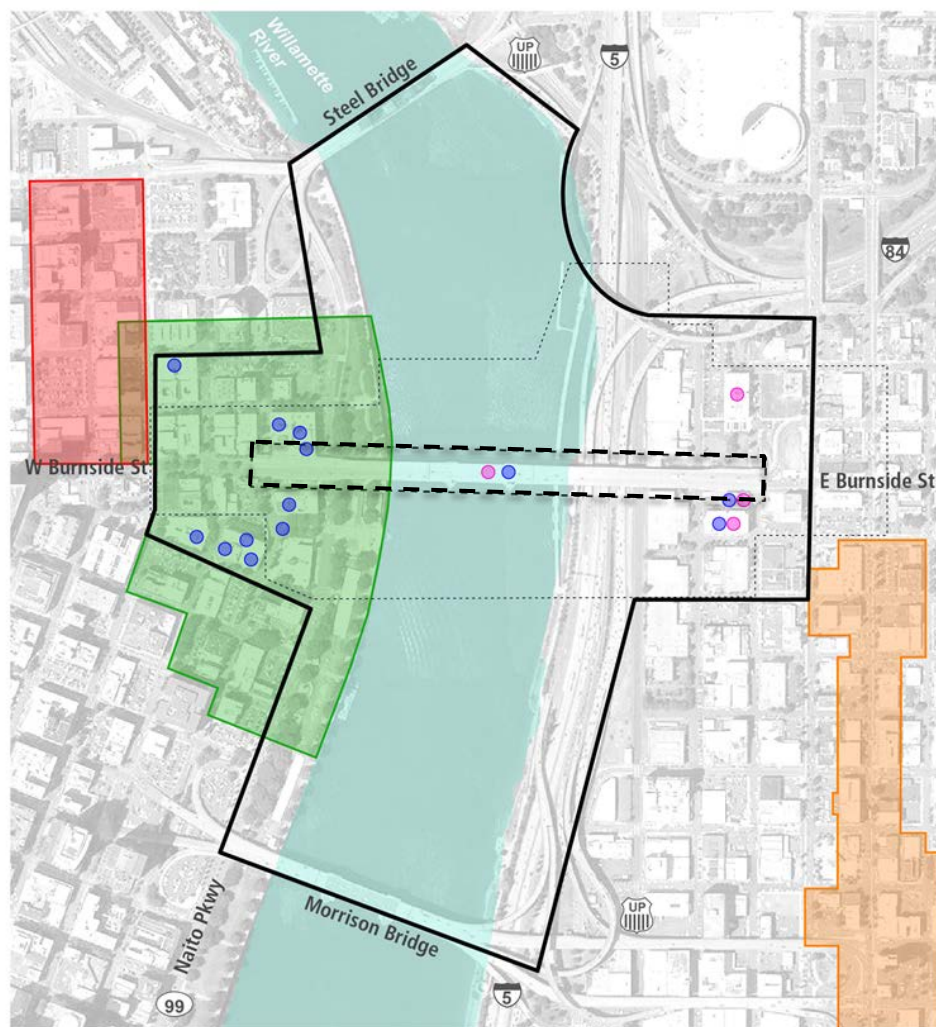
# Portland Rescue Mission

Must remain open throughout construction



# West Approach

## Historic Landmarks / Design Commission Approval



### National Register Historic Districts

- New Chinatown / Japantown
- Skidmore / Old Town
- East Portland / Grand Avenue

### Historic Resources

- National Registry
- Local

*Note: Only Landmarks within the AVE are shown,  
see EQRB Cultural Resources Technical Report for additional information.*

- Project Area
- Burnside Bridge
- Area of Visual Effect



# TriMet Skidmore Fountain Station

## Minimize Disruptions to MAX



# Naito Parkway

Minimize disruptions during construction



# Waterfront Park / Ankeny Plaza



# Japanese American Memorial Plaza

## Future Compatibility

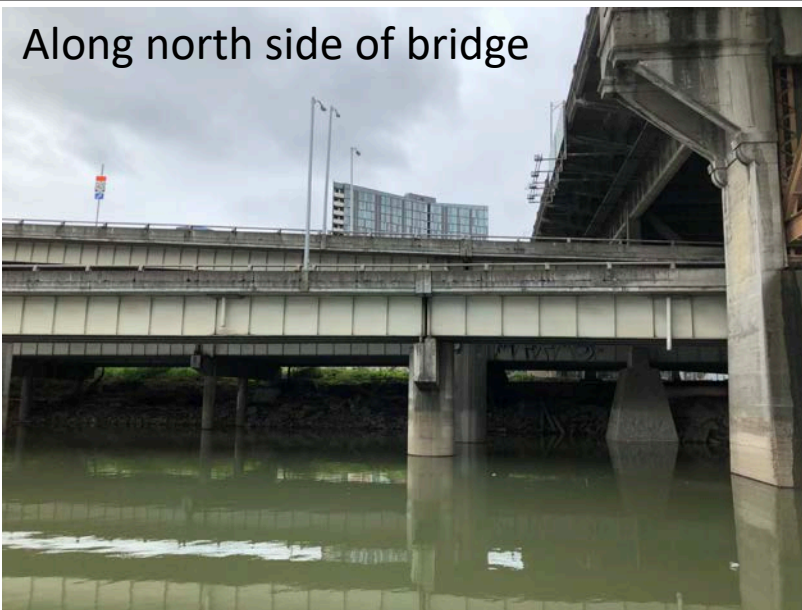


# Willamette River

## Portland as a River City

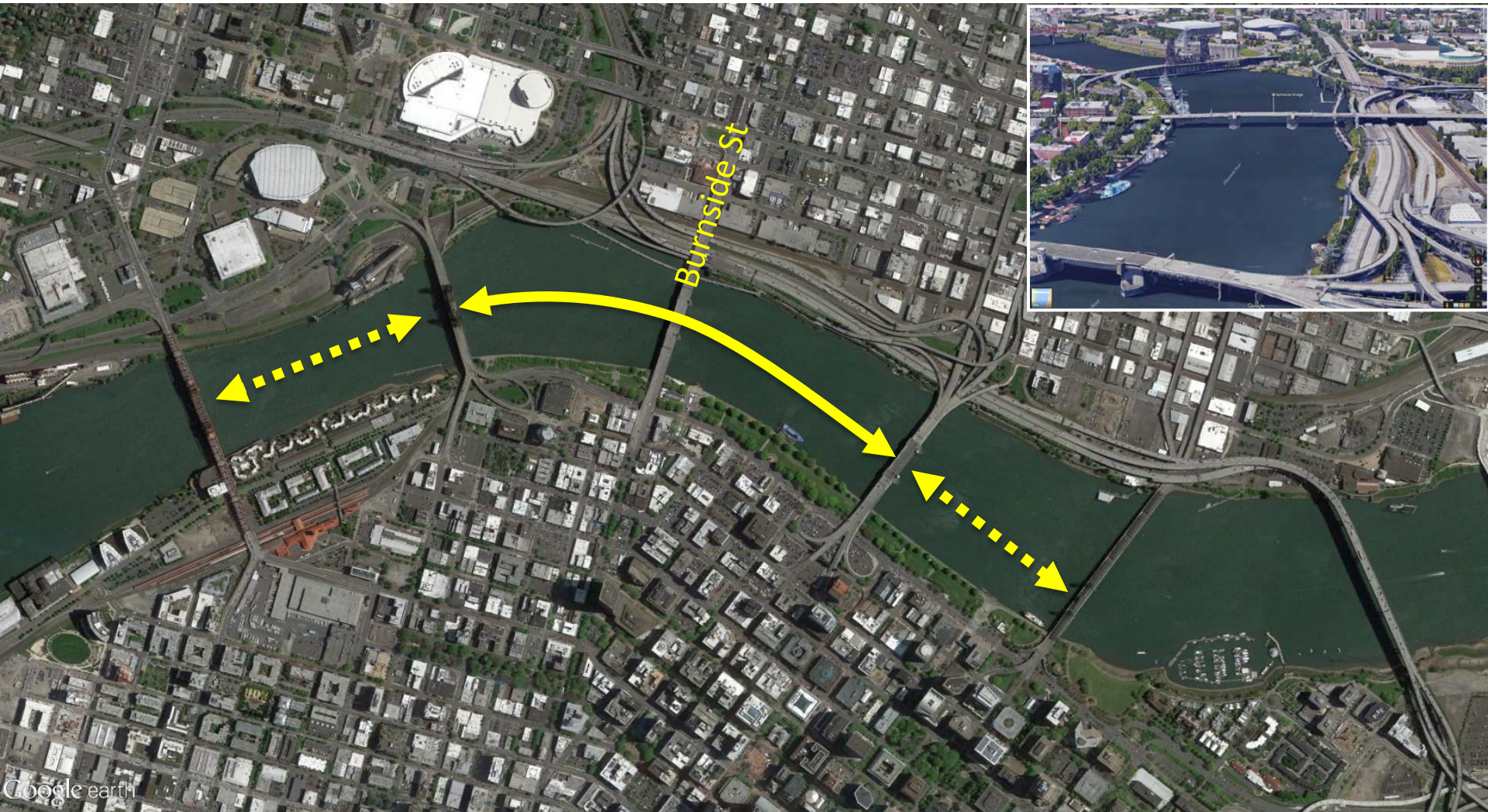


# Willamette River



# Ship Navigation

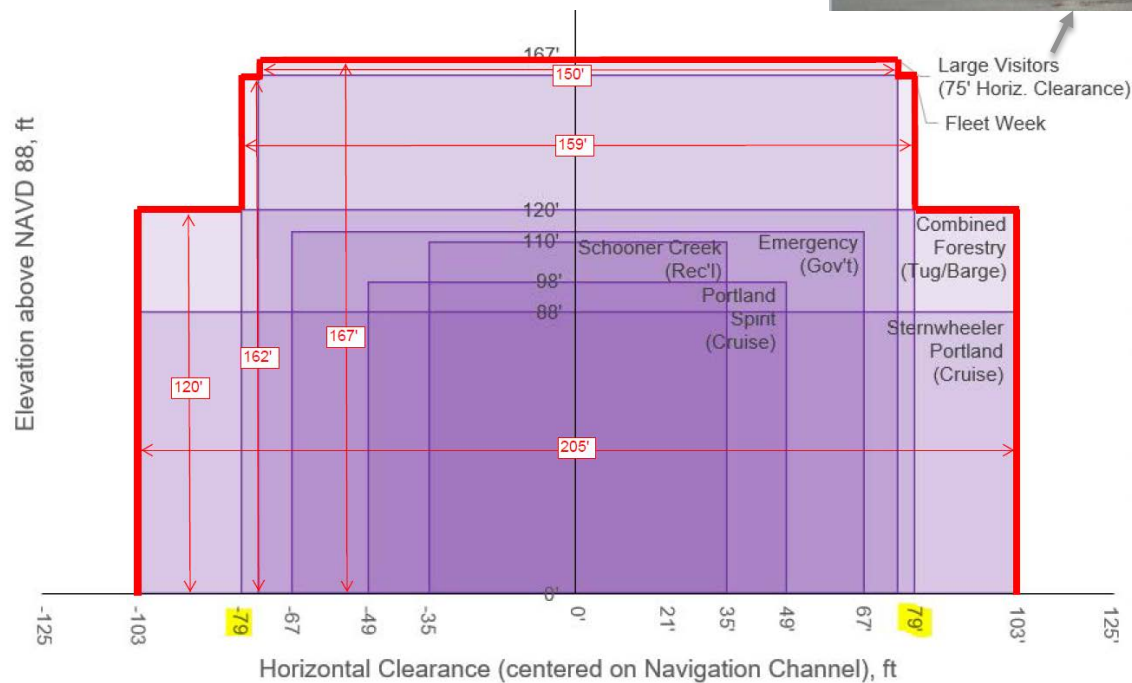
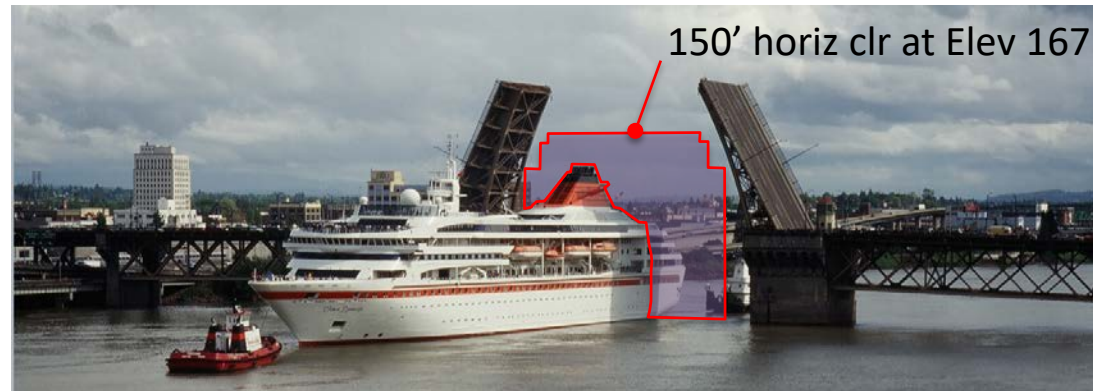
## Willamette River's Main Channel Alignment



# Ship Navigation

## Mandatory Vertical Clearance Criteria (from USCG)

*The World*  
(in Portland as recently as 2010)



# In-river Pier Protection

## Fender or Dolphin Systems



# East Bridgehead



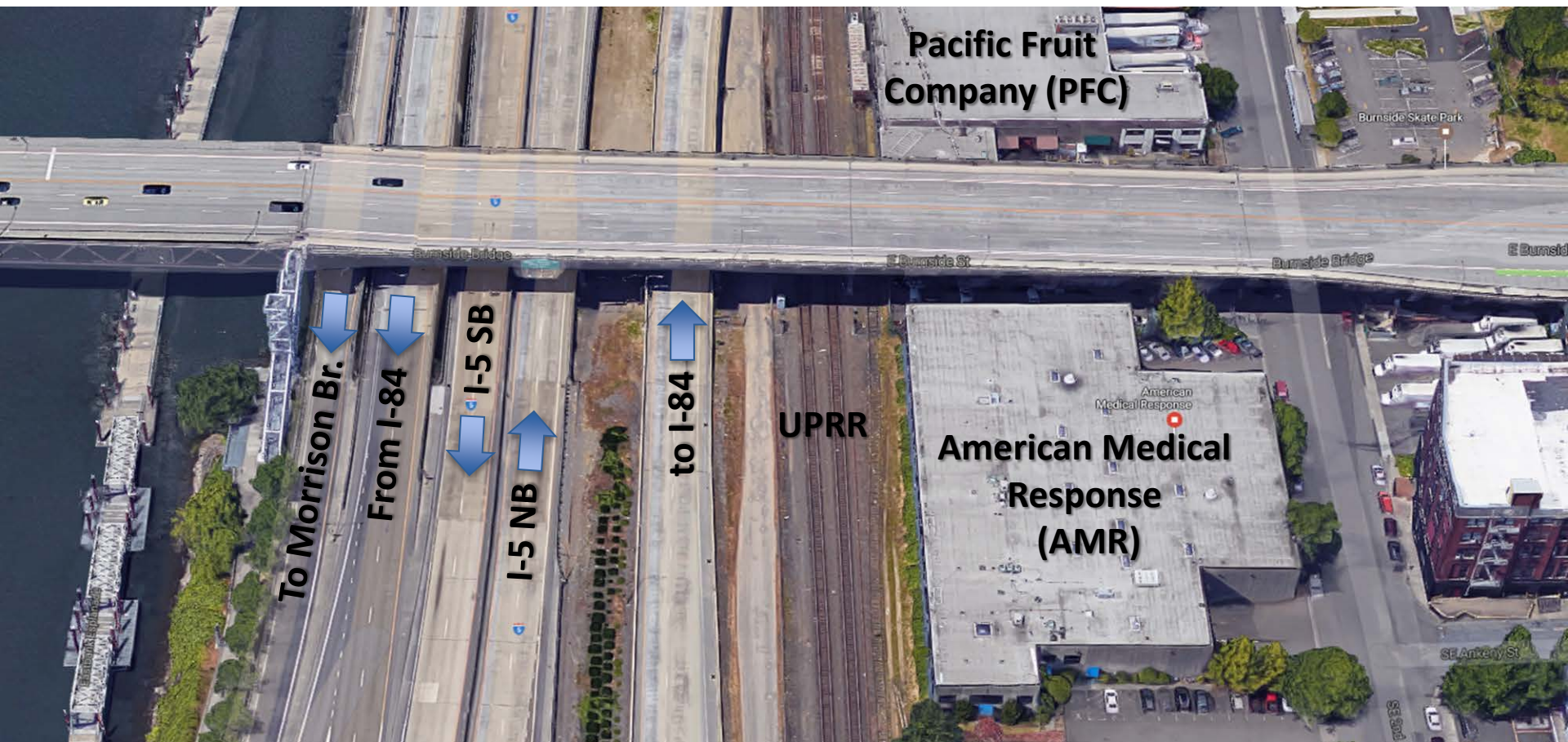
# Eastbank Esplanade Connection

## Urban Design Opportunity



# Crossing over I-5, I-84, and UPRR

A neighborhood connection over key transportation links



# Burnside Skatepark

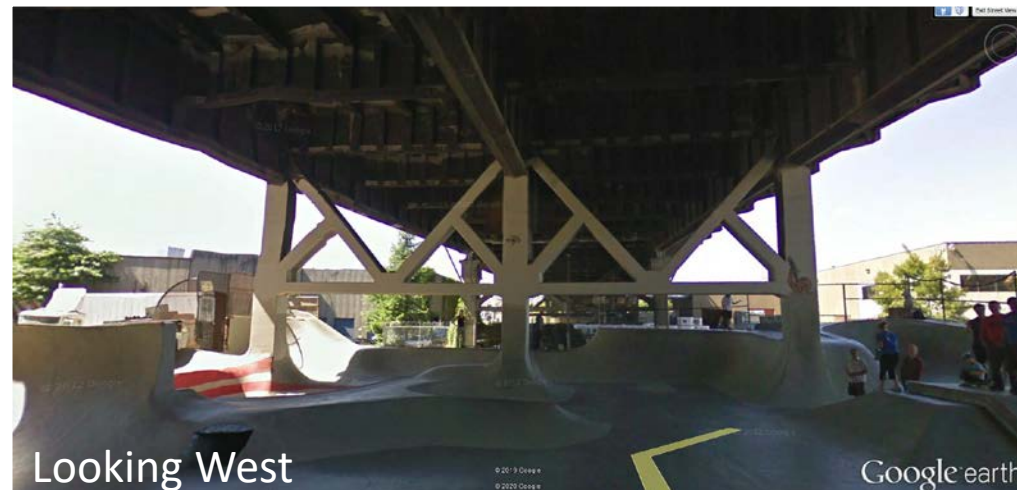
A world-renowned Portland asset



2<sup>nd</sup> Ave



Looking East

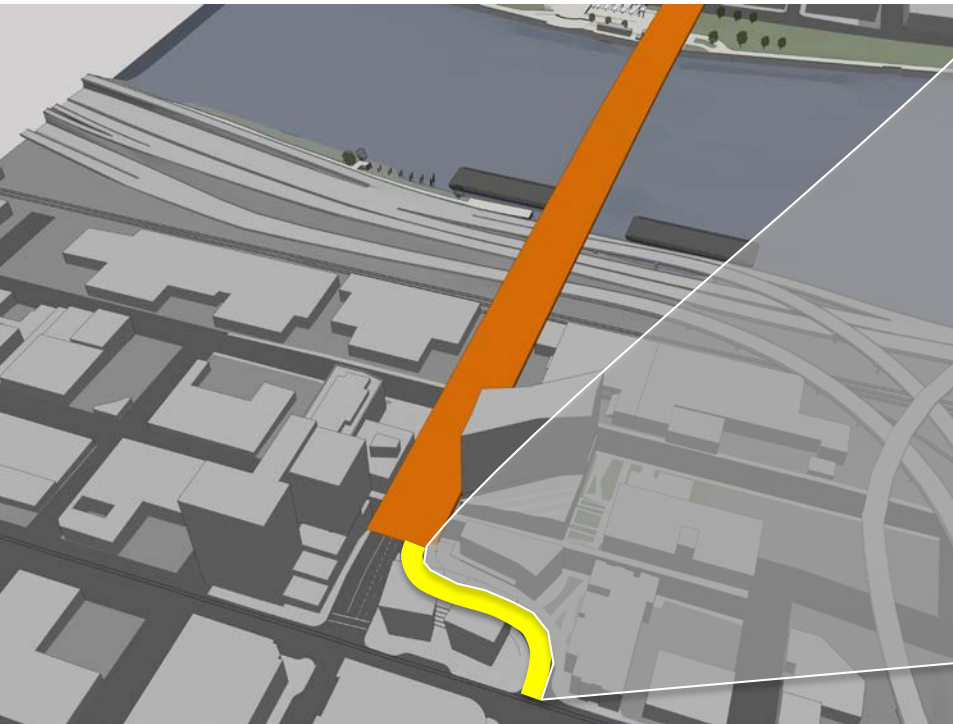


Looking West

Google earth

# East Bridgehead

A gateway to East Portland



Existing NE Couch St. Approach

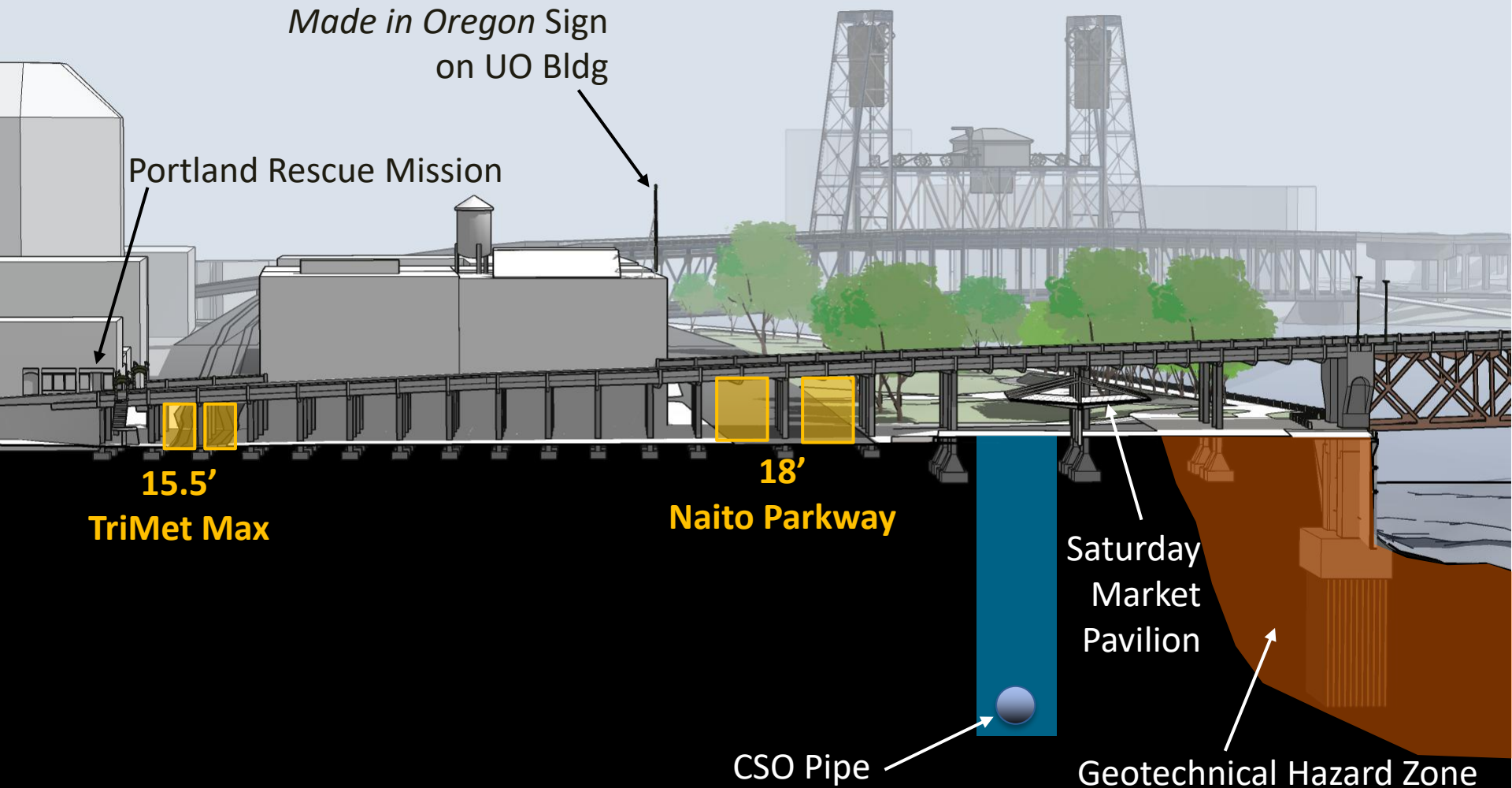
# Other Design-related Criteria

As identified by the Community Task Force

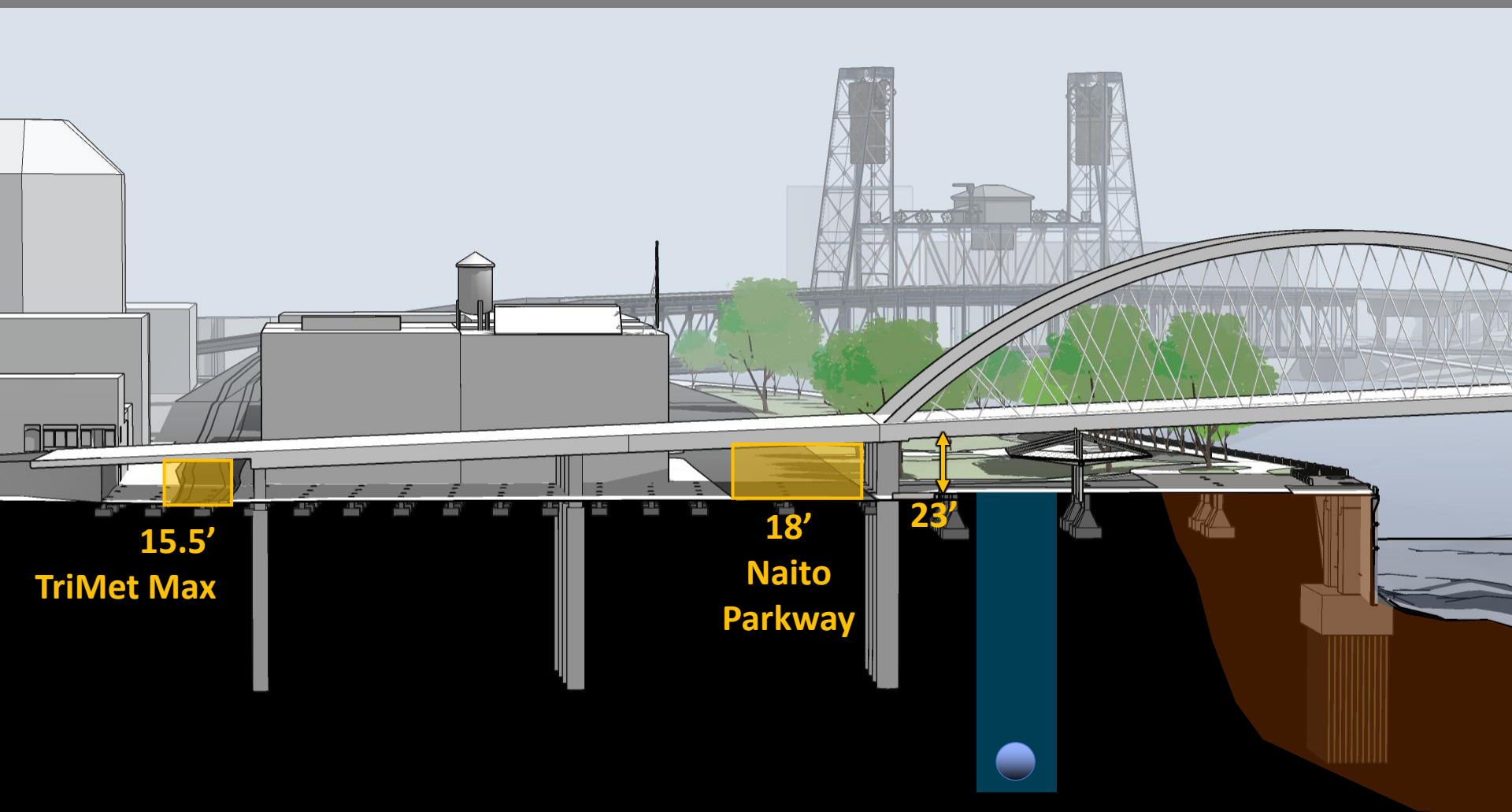
- Visual and Aesthetics
- Community Quality of Life
- Sustainability
- Equity
- Multi-modal Connectivity
- Personal Safety & non-Transportation Safety
- Permittability (Local, State, and Federal)
- Fiscal Responsibility (Cost and Long-term Operations)
- Ease of use



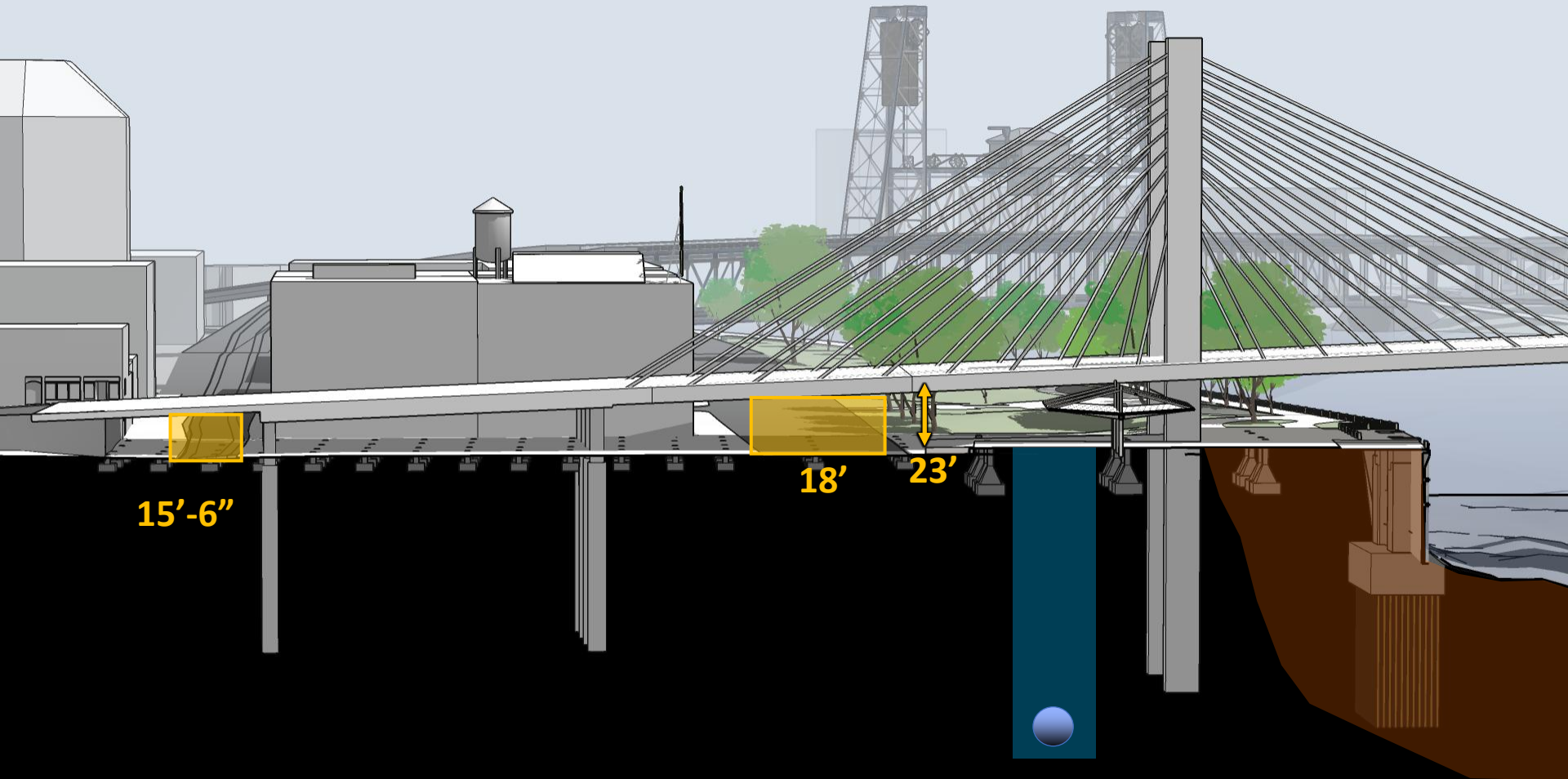
# West Approach View: Existing Bridge



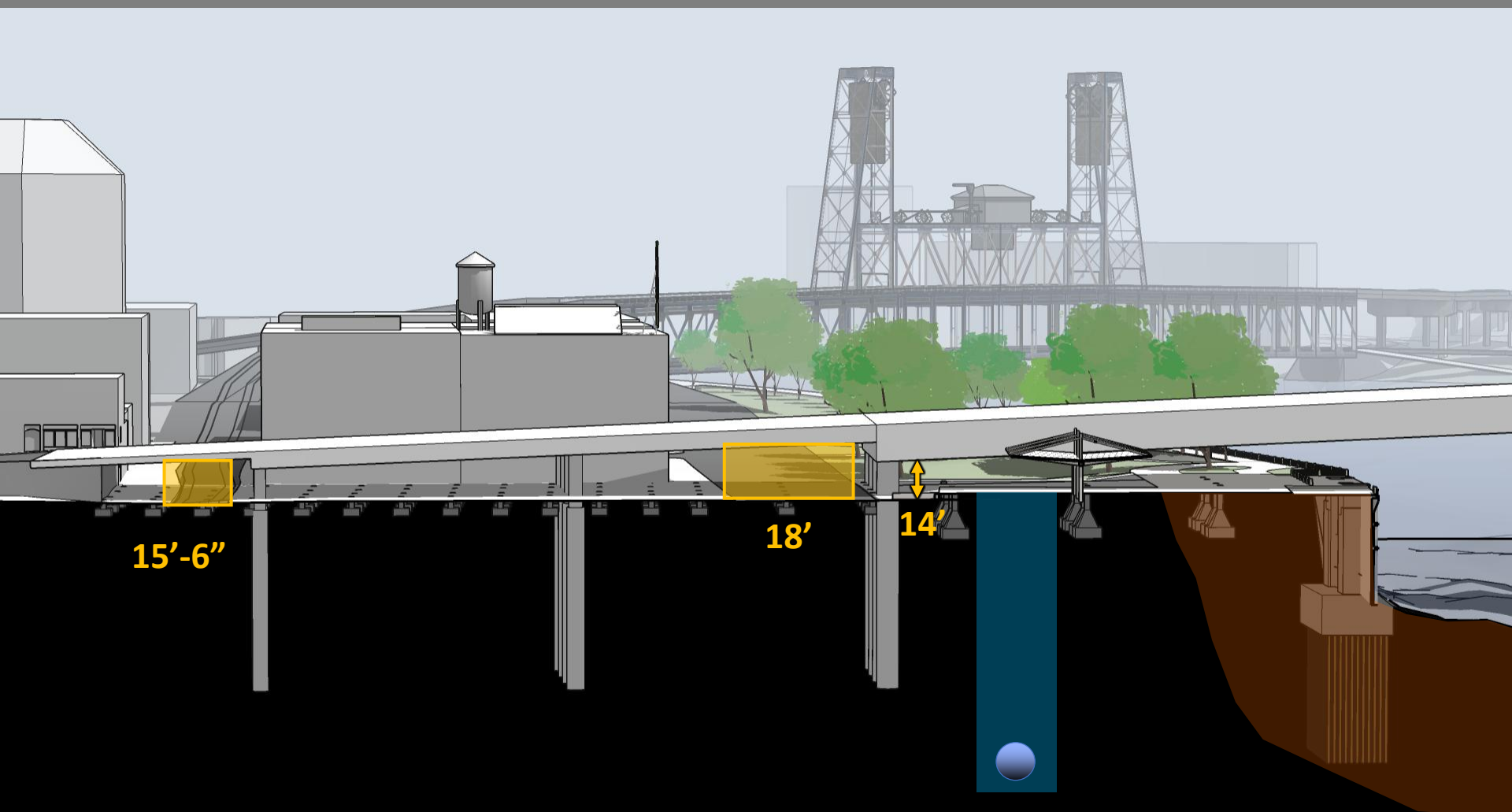
# West Approach View: Tied Arch Concept



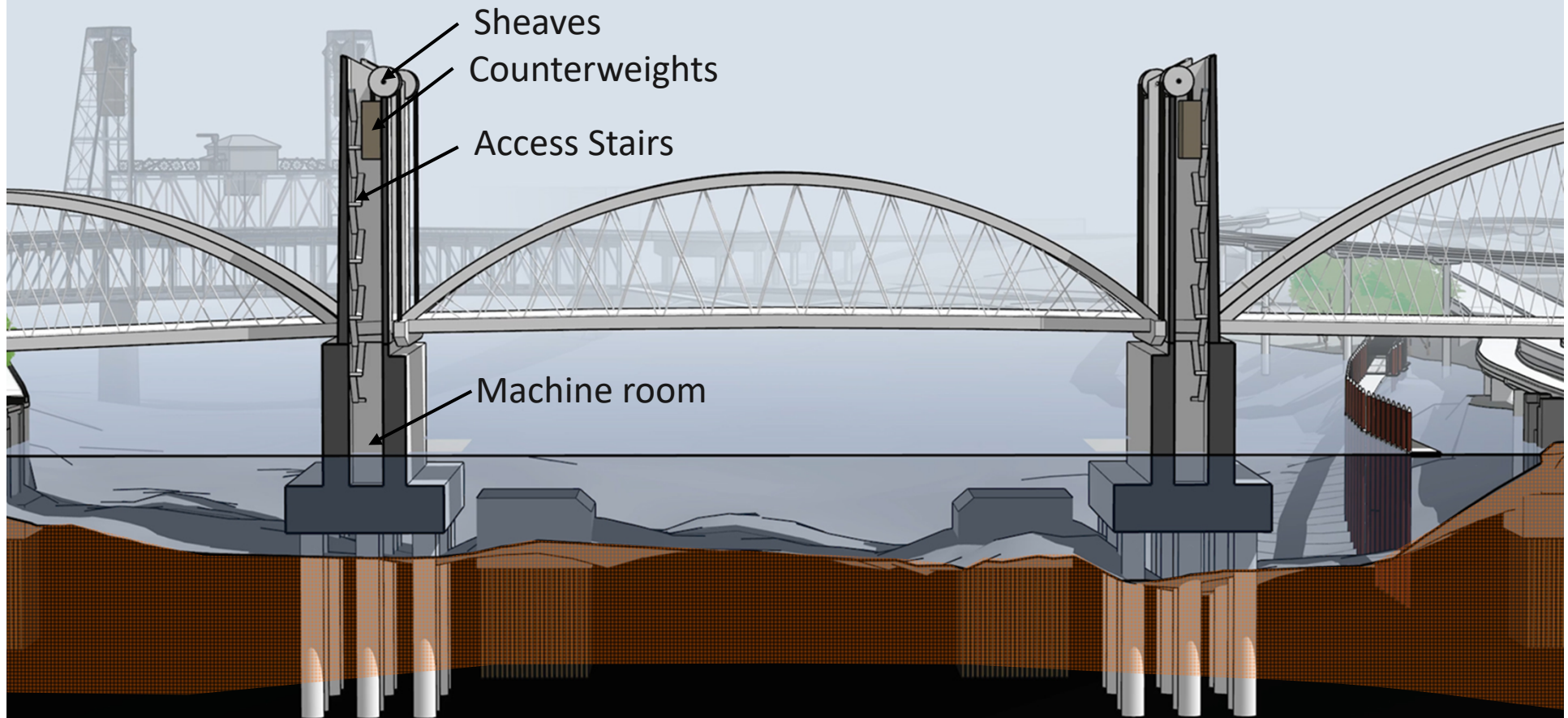
# West Approach View: Cable Stayed Concept



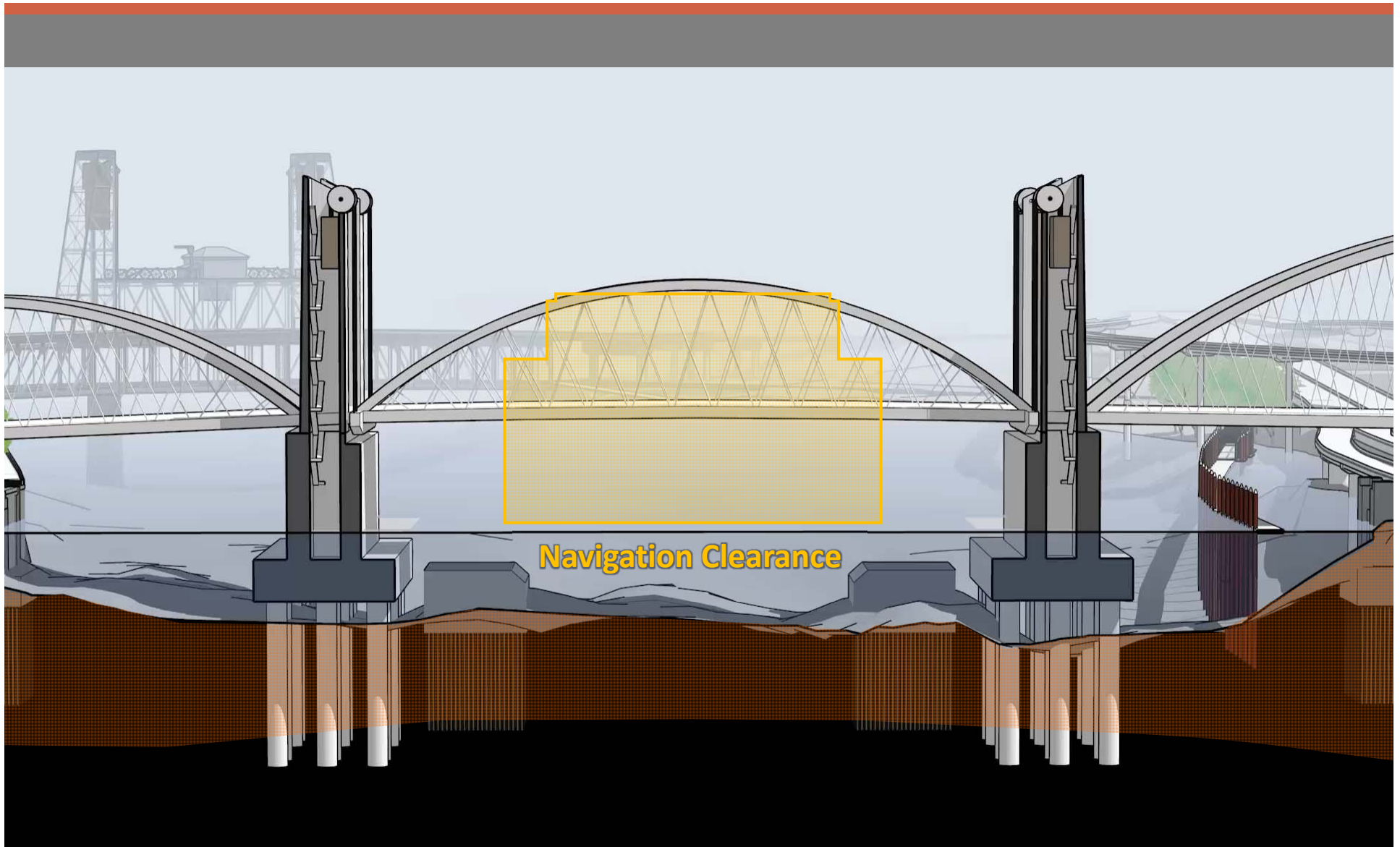
# West Approach View: Steel Girder



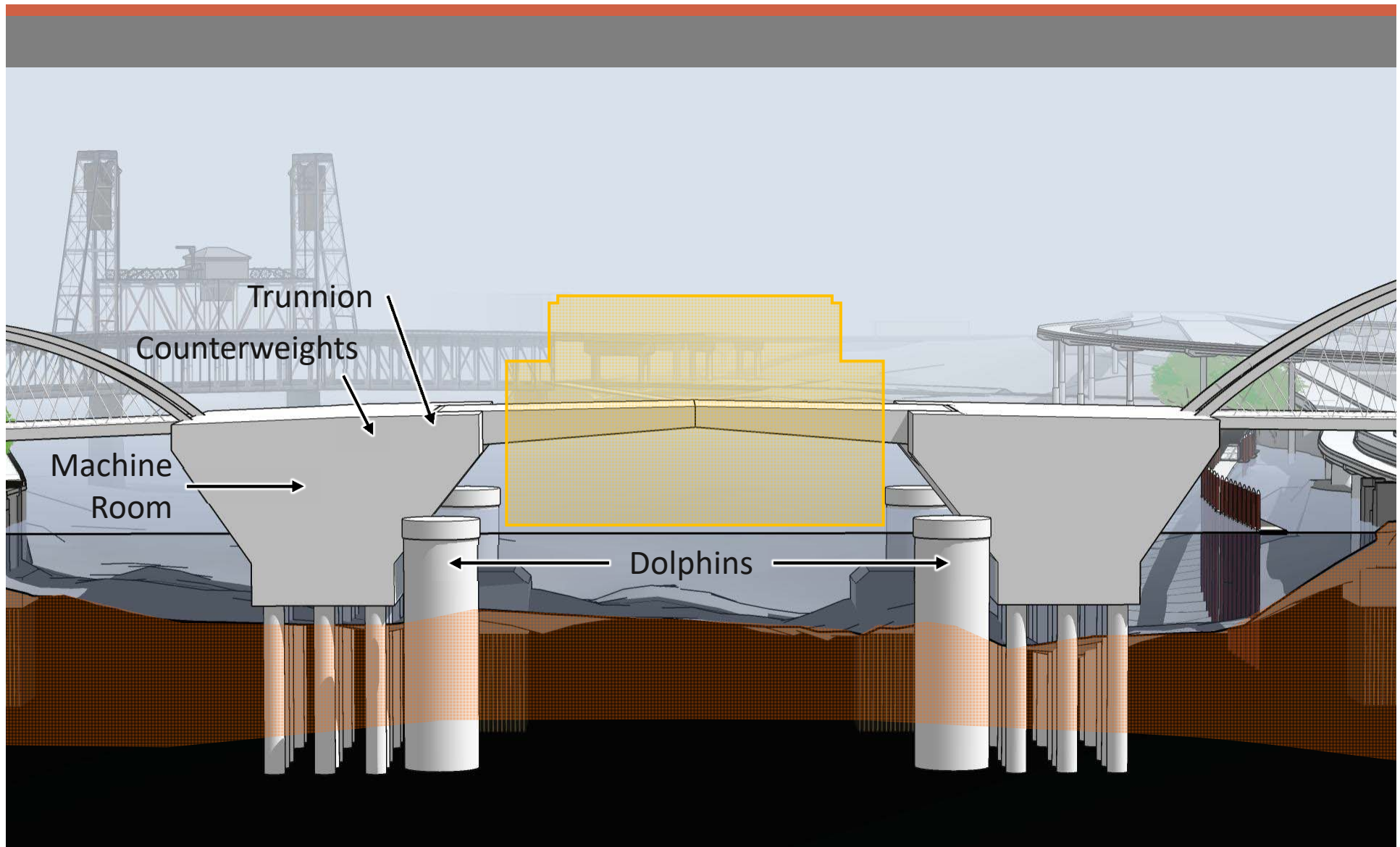
# River View: Vertical Lift + Tied Arch Concept



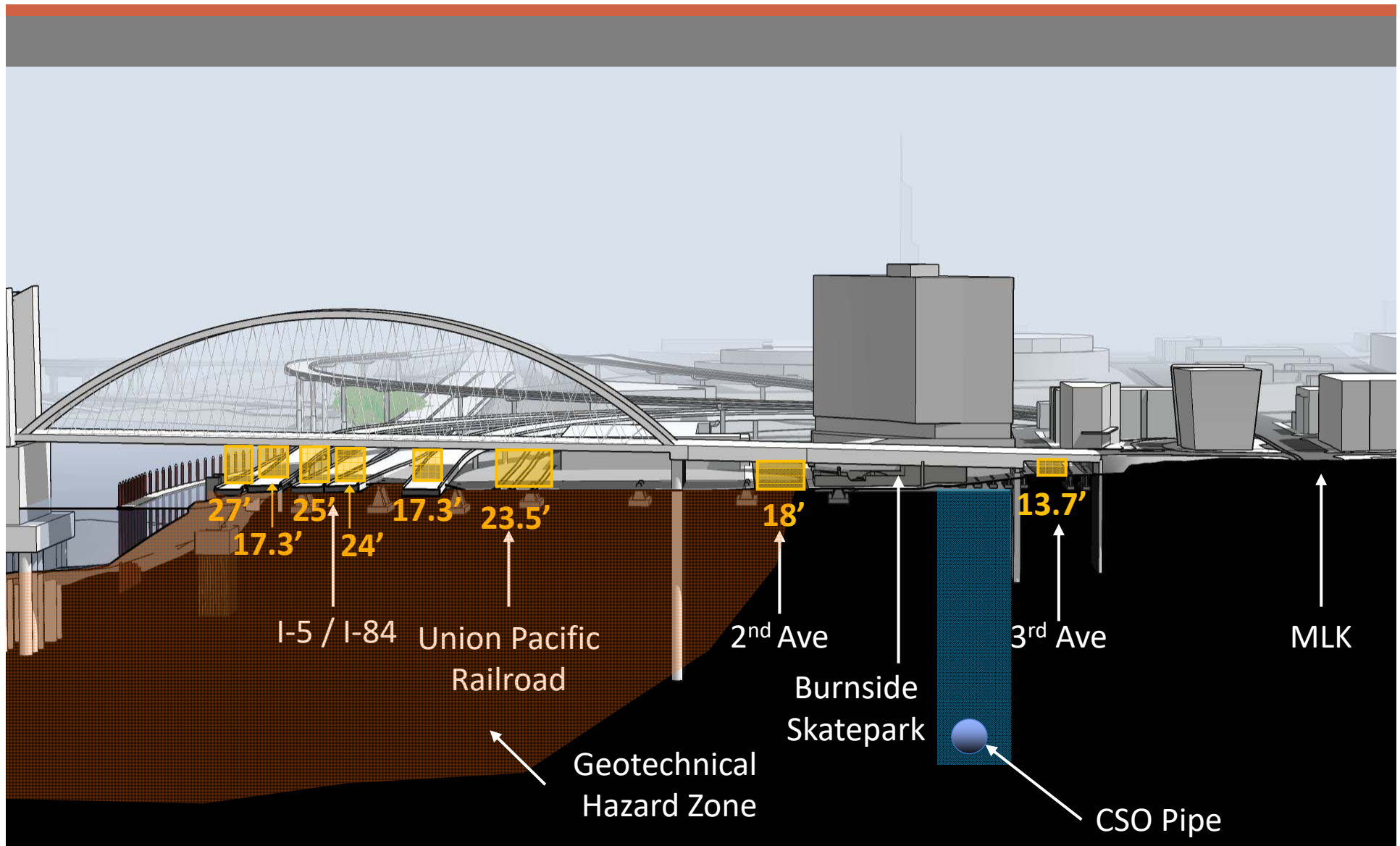
# River View: Vertical Lift + Tied Arch Concept



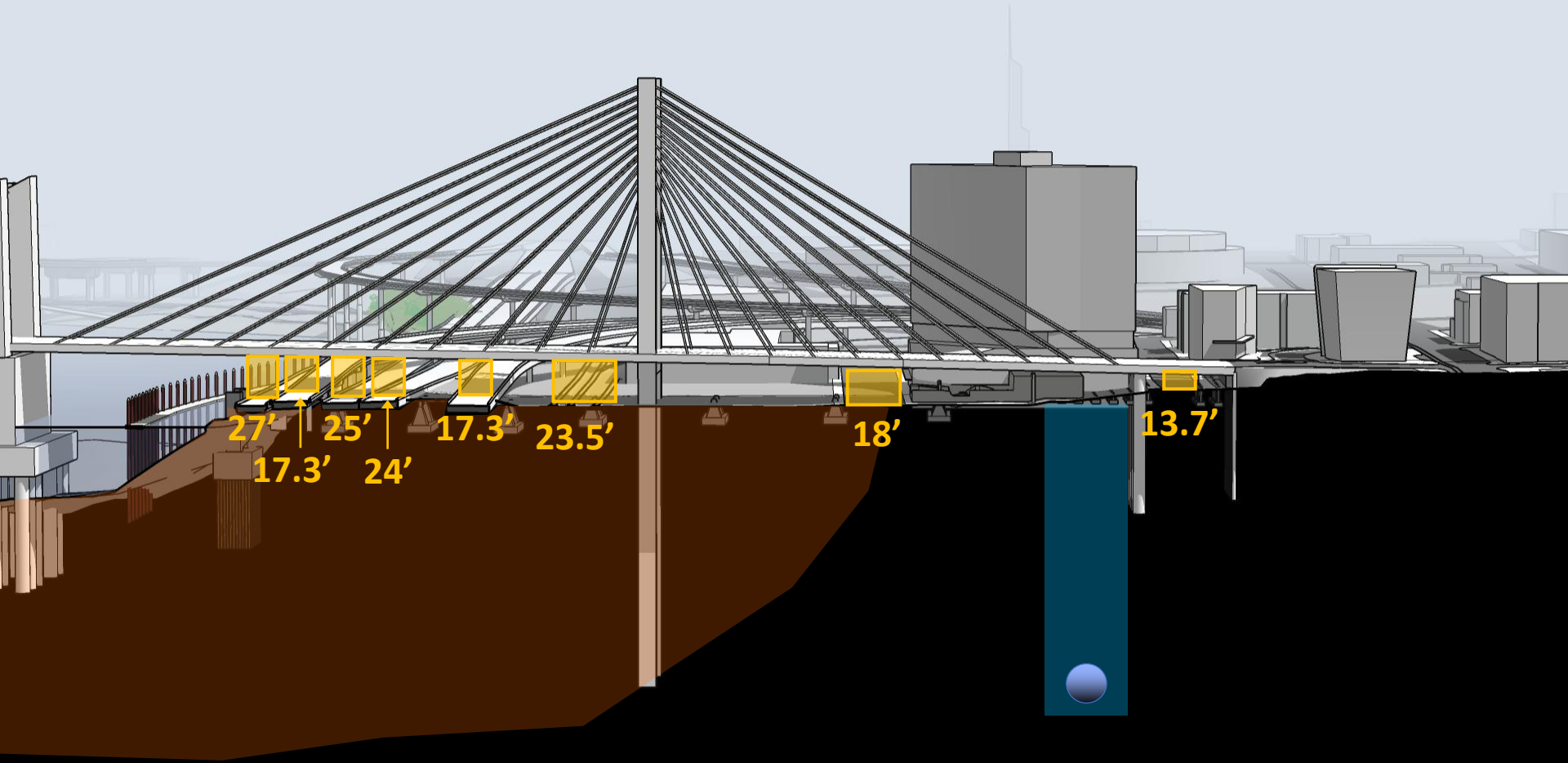
# River View: Bascule + Tied Arch Concept



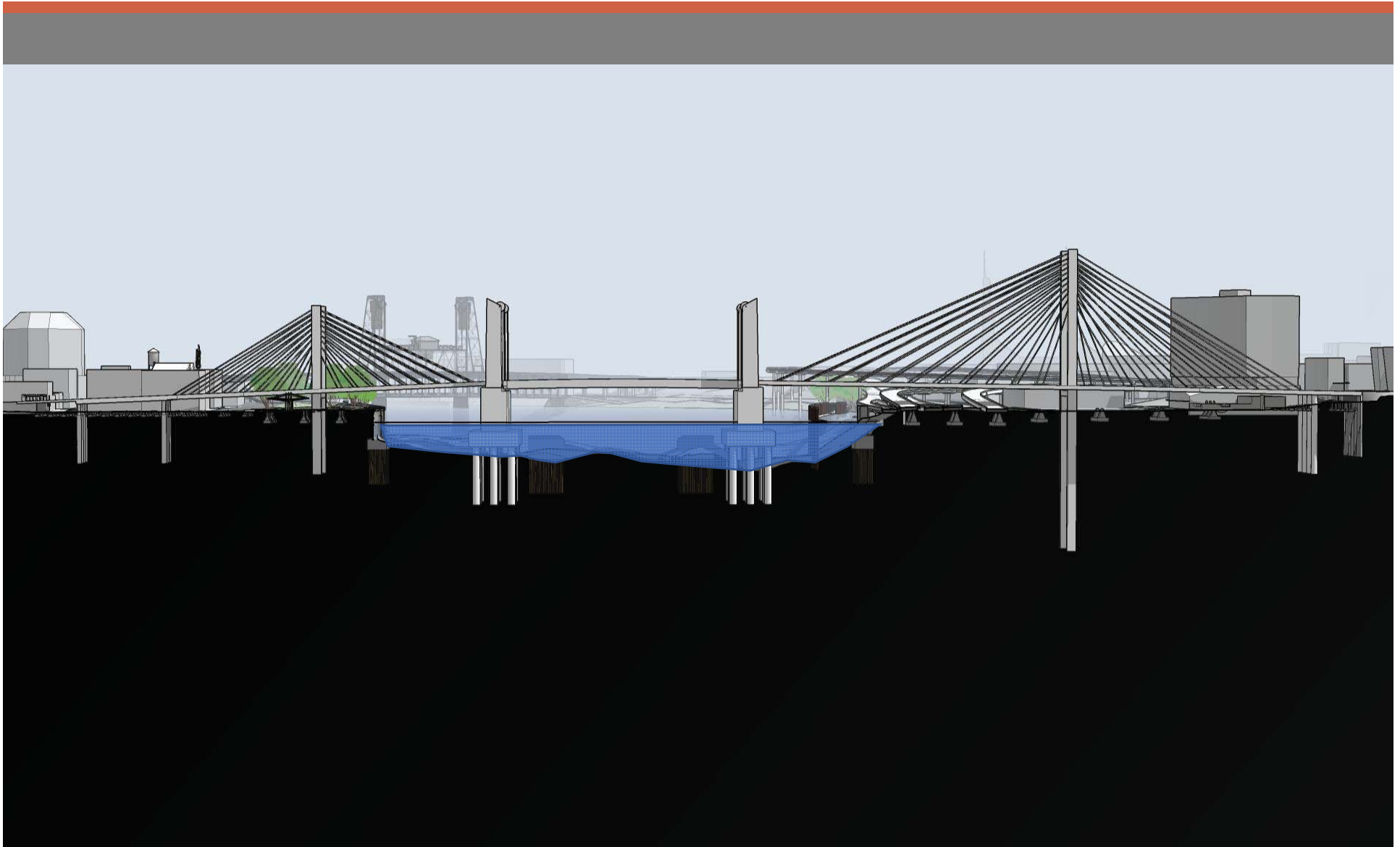
# East Approach View: Tied Arch Concept



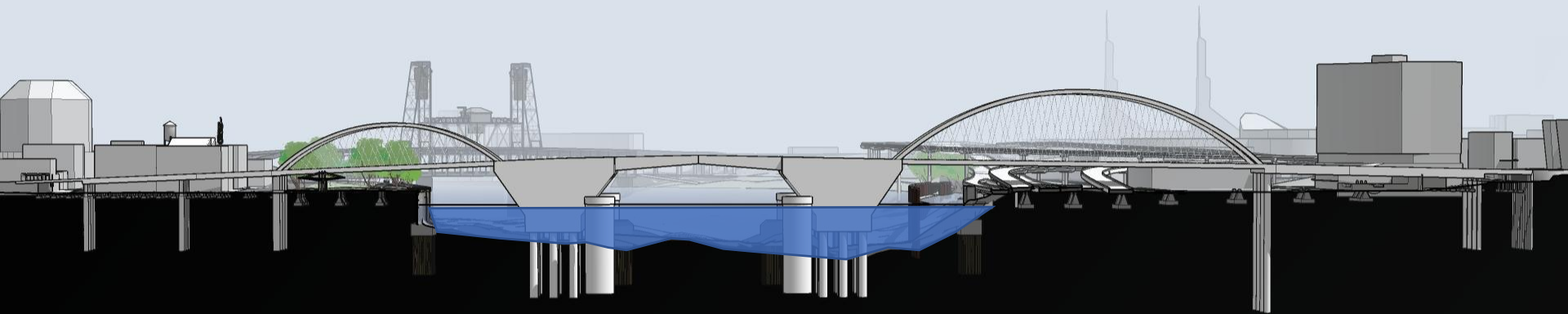
# East Approach View: Cable Stayed Concept



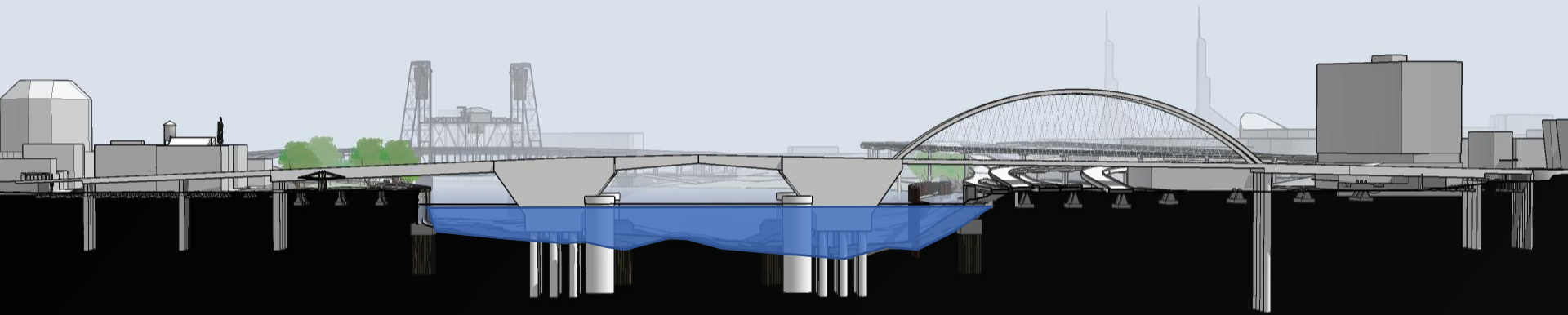
# Vertical Lift + Cable Stayed Concept



# Bascule + Tied Arch Concept



# Bascule + Arch/Girder Asymmetrical Concept



## Proposed Meeting Sequence

### Proposed Meeting Dates and Durations:

- **Mtg #3 (4 hrs) – Wed 10/28/20**
  - Key Topics: Bridge type options; Typology (i.e., how tower shapes, cable arrangements, various truss and arch forms to be designed during Final Design phase influence the draft Visual Design Guidelines)
- **Mtg #4 (2 hrs) – Wed 11/4/20**
  - Key Topics: Converting the “Character of Portland” findings into Visual Design Guidelines; Honing to feasible bridge types
- Mtg #5 (2 hrs) – Wed 11/18/20
- Mtg #6 (2 hrs) – Wed 12/2/20
- Mtg #7 (2 hrs) – Wed 12/16/20
- Mtg #8 (2 hrs) – Wed 3/10/21
- Mtg #9 (2 hrs) – Wed 6/2/21



# Thank you!

