PORT OF CASCADE LOCKS

BRIDGE OF THE GODS

CONNECTING & PRESERVING COMMUNITIES, CULTURE, & HISTORY

OREGON JOINT COMMITTEE ON TRANSPORTATION

FEBUARY 7, 2023

The Bridge of the Gods is…

- ✓**A pivotal emergency response connection**—central to bi-state transportation resiliency
- ✓**Unsafe for non-motorized users**—especially Pacific Crest Trail hikers
- ✓**Crucial to freight mobility, recreation, & the economy**—for Oregon & the bi-state region
- ✓**Of cultural significance**—to the tribes & our collective history
- ✓**Vital to the livelihood of interdependent rural communities** in the Columbia River Gorge

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Without more funding, the Bridge will…

- **Significant damage expected during a major earthquake:**
  - At a minimum it will be out of service for several years
  - Worst case, it will experience collapse of major segments
- **Put local communities at serious & immediate health & safety risk** for post-earthquake recovery
- **Severely impact local economies** in the short- & long-term

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Key Challenges

- The Port has a preservation plan, but **inadequate funding** for seismic retrofit
- **Seismic hazards** are a real & present danger & will impact the region
- Like the Port of Hood River, **Title 23** blocks the Port from essential federal highway funds

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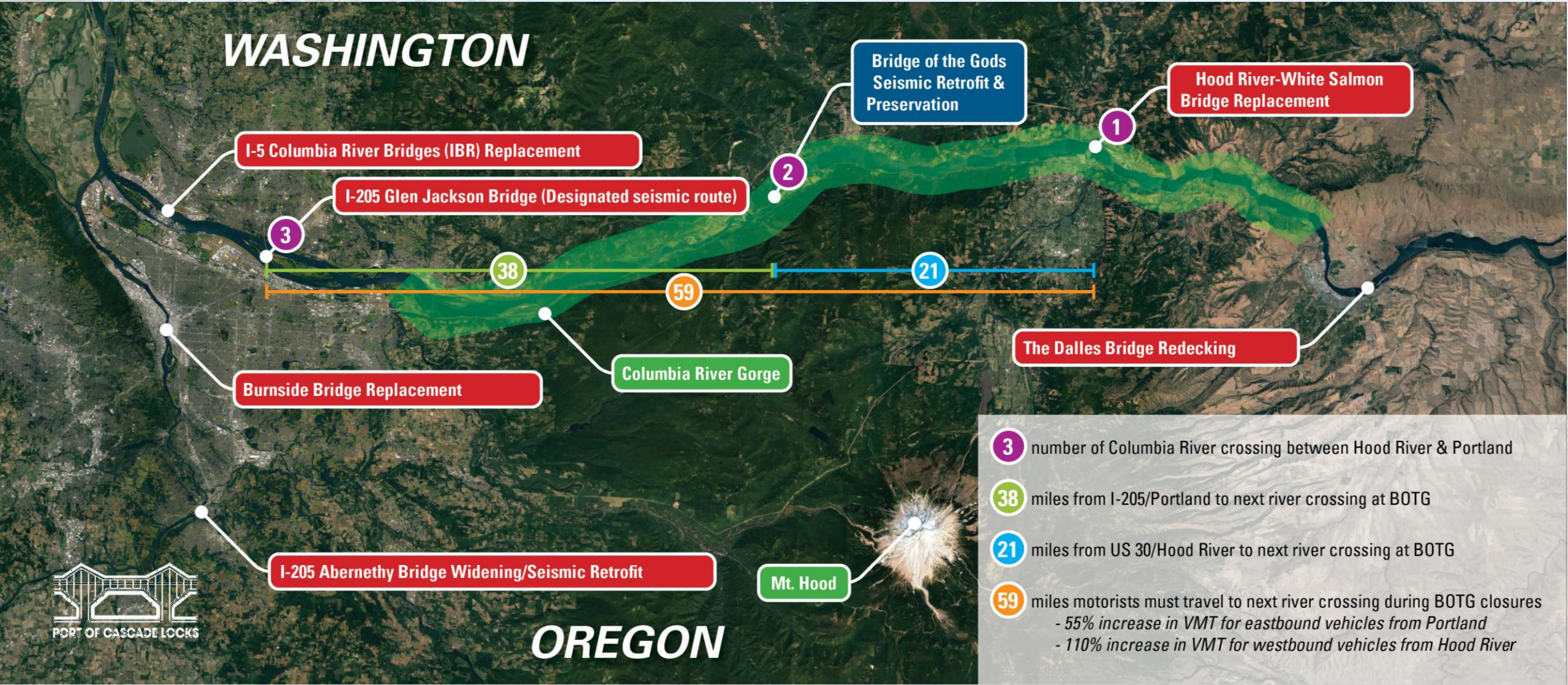
Part 1 – Purpose & Need

A Key Asset & Vital Transportation Link



- 3 number of Columbia River crossing between Hood River & Portland
- 38 miles from I-205/Portland to next river crossing at BOTG
- 21 miles from US 30/Hood River to next river crossing at BOTG
- 59 miles motorists must travel to next river crossing during BOTG closures
  - *55% increase in VMT for eastbound vehicles from Portland*
  - *110% increase in VMT for westbound vehicles from Hood River*

A Key Asset & Vital Transportation Link

- **Emergency response link**
  - Recent forest fires & ice storms
  - Recent landslides
  - Train derailments & accidents/closures
  - Expected earthquakes
- **Vital economic link**
  - Locally
  - Regionally
  - Bi-state-wide
- **Cultural landmark & historical icon**

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A Bi-State Priority for Resiliency

- Columbia River Gorge is a bi-state region, closed in by physical geography
- The Bridge Connects SR14 in Washington State to I-84 in Oregon
- The Bridge Provides bi-state transportation system resiliency & redundancy
- Like Hood River-White Salmon Bridge, the Bridge of the Gods is **not on the state system**

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Interest Groups & Stakeholders

- Columbia River Gorge National Scenic Area users
- Indigenous peoples & tribes
- Pacific Crest Trail Association
- Cities & counties
  - Cascade Locks, OR
  - Skamania County, WA
  - Stevenson & North Bonneville, WA
  - Hood River & Multnomah counties, OR
- So many, many more…

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Hiking in the Columbia River Gorge

- The Bridge of the Gods is vital to active transportation in the Gorge
  - The only designated pedestrian crossing in the heart of the Gorge
  - Also, the only place on the Pacific Crest Trail without safe pedestrian passage
- During Bridge closures, nearest pedestrian river crossings are:
  - 38 miles west on I-205 in Portland
  - 47 miles east on US197 at the Dalles

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Bridge Preservation Needs

- The Port has a preservation plan, including numerous projects
  - Maintenance
  - Repairs
  - Rehabilitation
  - Retrofits
- Example retrofits
  - Seismic retrofit
  - Strengthening/retrofit for heavy haul & heavy emergency vehicles
  - Addition of a safe ped/bike path

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Bridge Preservation Needs

- Example repairs & rehabilitation
  - Bridge painting (various locations)
  - Deck repair, rehabilitation, & future replacement
  - Bridge joint repair or replacement
  - Bridge lighting rehabilitation or replacement
  - Navigational lighting rehabilitation or replacement
  - Bridge safety & security measures
  - Signing & striping rehabilitation
  - Bridge railing replacement
  - Structural repairs

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Bridge Preservation Needs

- The Port is very proactive & maintains a “state of good repair”
- When recent inspections revealed a need for strengthening to support legal truck weights, **the Port took immediate action:**
  - Convened a Bridge Committee including the Port Engineer, county stakeholders, & key community members
  - Coordinated closely with ODOT
  - Weight reduction in place only 6 weeks; **project completed ahead of schedule**

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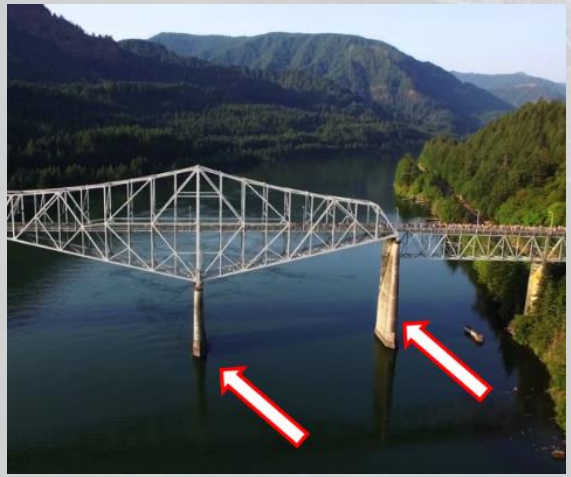
Seismic Vulnerabilities

- Port completed a Seismic Vulnerability Assessment & Report in 2017
- Vulnerabilities include:
  - Bearings
  - Transverse diaphragms
  - Deck-to-girder connections
  - Gusset plates & connections
  - Tall piers in the water
  - Spread footings
  - Lateral steel bracing members



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Seismic Vulnerabilities

KEY SEISMIC VULNERABILITIES

1. Tall in-water piers
2. Insufficient lateral bracing
3. Rigid bearings
4. Narrow bearing supports

Summary of Bridge Needs

- ☑ **Seismic retrofit**
  - Avoids major damage
  - Improves system resiliency
- ☑ **A wider path**
  - Provides safe pedestrian/bike passage
- ☑ **Structural strengthening against heavy trucks**
  - Improves freight mobility
- ☑ **Structural repairs & painting to fix damage & wear**
  - Preserves & ideally extends the bridge's service life
- ☑ **Modernizing traffic safety features**
  - Improves public safety

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A Project In-Line with Regional Values

- **Healthy & Safe Communities:** Increases the region's level of preparedness & improves seismic resilience of the region's transportation infrastructure
  - ✓ *Targeted & strategic investment reduces risks posed by Cascadia earthquake*
- **Responsible Environmental Stewardship:** Reduces traffic & diesel emissions
  - ✓ *Eliminating weight restrictions for freight trucks decreases congestion on local roads*
  - ✓ *New pedestrian/bicycle lane increases opportunities for active transportation*
- **A Thriving Statewide Economy:** Leverages the region's strength in trucking & tourism to invigorate the economy of rural & tribal communities
  - ✓ *Brings well-paying construction jobs to rural areas*
  - ✓ *Eliminates weight restrictions to help maintain a strong regional trucking industry*
  - ✓ *Creates a reliable transportation link that increases tourism*

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Part 2 – How you can help

Bi-State Ask for Help

OREGON - $6 million

WASHINGTON - $6 million

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Why is this Project a Smart Investment?

- ☑ Cost-effective & fiscally responsible way to address community resiliency
- ☑ Reasonable cost compared to other state bridge projects, which cost 10, 20, or 100 times more
- ☑ Schedule is much shorter than I-5 Bridge Replacement
- ☑ High return on investment (ROI)
- ☑ Good for region's economy, jobs, & preserving our heritage

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Why is Now the Time to Invest?

- Increased community resiliency can be achieved soon
- Bi-state cooperation is in place
- Additional federal transportation funding is available to the states

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In Summary

*A **combined $12 million investment** by the State's of Oregon & Washington today ($6 million each state) will begin the process of seismic retrofit and preservation of the Bridge of the Gods, improving the resiliency and of rural economies, communities, & help preserve the cultural history of the Columbia River Gorge.*

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ABOUT THE
BRIDGE OF THE GODS

Connecting the Columbia River Gorge Region for nearly 100 years

A VITAL BI-STATE CONNECTION:

The Bridge of the Gods is a crucial **economic, recreational & lifeline connection** for the region.

1 of 3 critical Columbia River Gorge bridges

1.6 MILLION vehicles cross the Bridge of the Gods every year

$600,000 IN TOLL REVENUE spent by the Port of Cascade Locks for bridge maintenance since 2019

SEISMIC RETROFIT
FUNDING NEEDS

To help advance a needed seismic retrofit for the Bridge of the Gods, the Port of Cascade Locks is **asking for a total of $12 million from its bi-state partners:**

$6.0 million from the State of Oregon + **$6.0 million** from Washington State

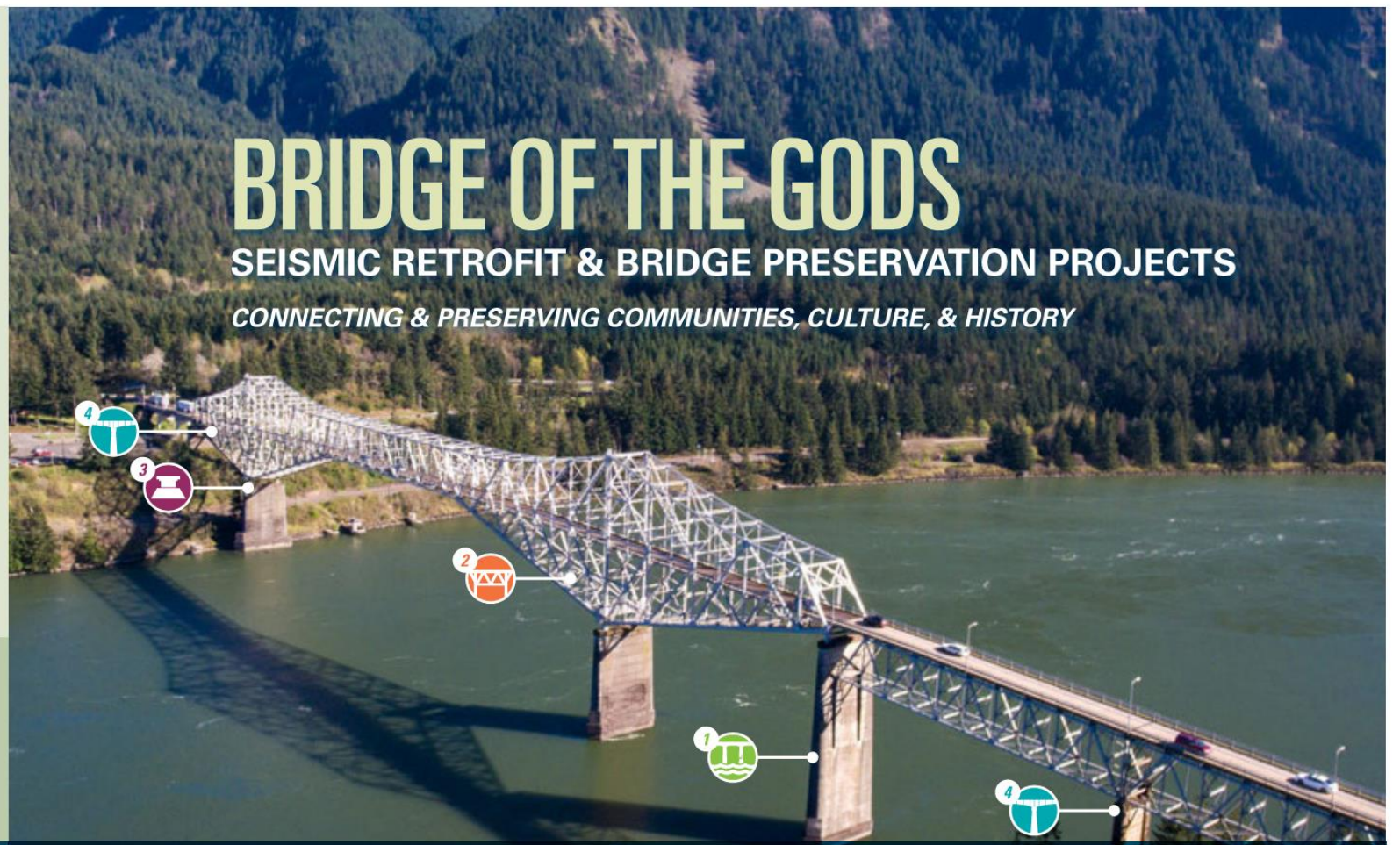
Despite the Port of Cascade Locks' investment in proactive maintenance, the Bridge of the Gods still is vulnerable to modern day hazards & **requires resiliency updates that are beyond the Port's financial capacity without help from the State.**

Without additional funding, the increased frequency of weight restrictions & bridge closures will impact the region's economy.

BRIDGE OF THE GODS

SEISMIC RETROFIT & BRIDGE PRESERVATION PROJECTS

CONNECTING & PRESERVING COMMUNITIES, CULTURE, & HISTORY



With $12 million from the States of Oregon & Washington, the Port of Cascade Locks can perform the studies, design development & stakeholder coordination that must be completed before the seismic retrofit of the Bridge of the Gods can begin construction.

SEISMIC RETROFIT TIMELINE

2022

Work To-Date $600,000

Initial Port Investments

Maintain Bridge in State of Good Repair

STATE FUNDING ALLOCATION ($12 MILLION)

Feasibility Study $2.5 million | Design Acceptance $3.5 million | Minor Improvements $6.0 million | Final PS&E $5.0 million | Construction $90 million

2028

$12 million from the State of Oregon & Washington State will allow the Port of Cascade Locks to:

- Provide budget clarity & confidence
- Evaluate feasible alternatives
- Engage regional & federal transportation agencies
- Coordinate with project stakeholders
- Identify construction impacts & plan mitigation
- Perform minor improvements, e.g. bearing replacements

Seismic Retrofit Complete

Improves Resiliency & Extends Bridge Life

PROJECT GOALS

- Seismic retrofit for **transportation resiliency**
- Give **safe pedestrian/ bike passage**
- Strengthen for **modern freight mobility**
- Rehabilitate to **fix structural deficiencies**
- Paint to **preserve bridge** service life
- **Modernize traffic safety** features

KEY SEISMIC VULNERABILITIES

1. **Tall in-water piers**
2. **Insufficient lateral bracing**
3. **Rigid bearings**
4. **Narrow bearing supports**

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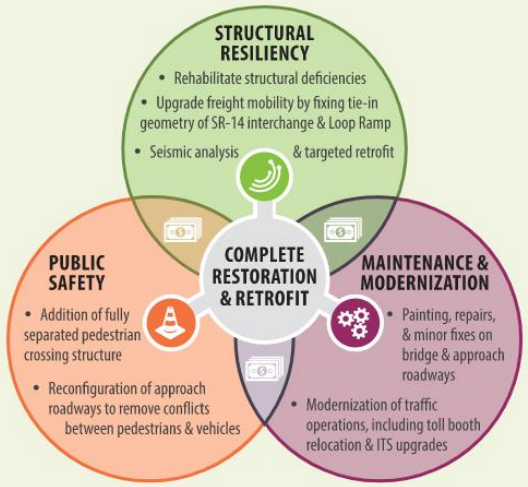
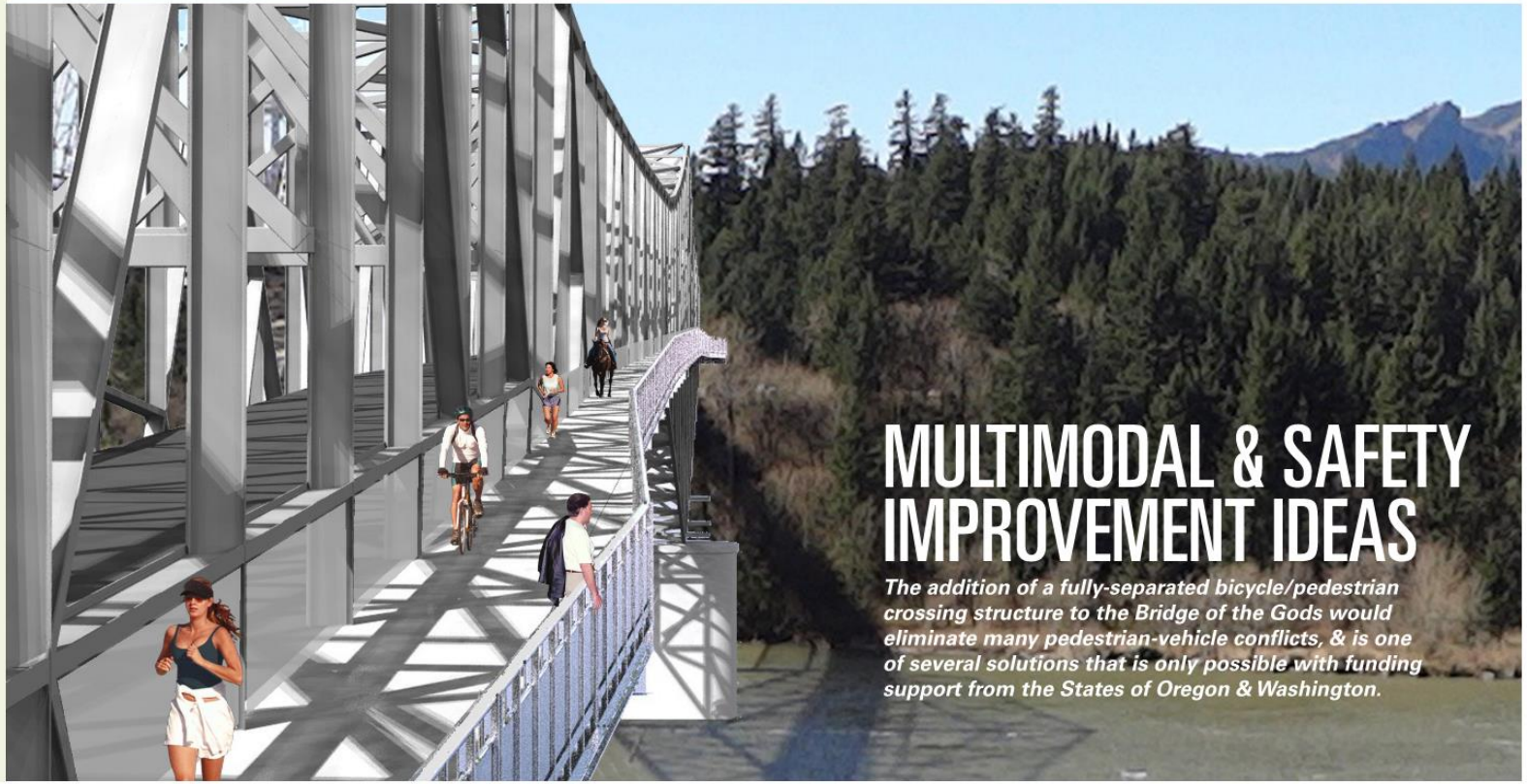
RETROFIT & PRESERVATION
IMPROVEMENTS

A physical restoration & retrofit of the Bridge of the Gods would require making several improvements that address critical safety needs for both motorized & non-motorized users. These **improvements can be divided into three main areas of need: Public Safety, Structural Resiliency, & Maintenance & Modernization.** Funding from the States of Oregon & Washington would allow the Port of Cascade Locks to advance targeted improvement projects that would help resolve each area of need:



While each area of need can be addressed individually, **a complete bridge restoration & retrofit addressing all three areas provides opportunities for cost savings due to the overlapping work components of several projects.**



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Parking Lot – Additional Slides

Seismic Vulnerabilities – Lateral Steel Bracing

- If lateral steel bracing members fail in an earthquake, then total collapse is possible.

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Seismic Vulnerabilities – Main Span Bearings

- Main span bearings (see red arrow) are not designed for an earthquake
- If these bearings fail, total collapse is possible
- If replaced with new, modern seismic bearings, the bridge will perform better in an earthquake

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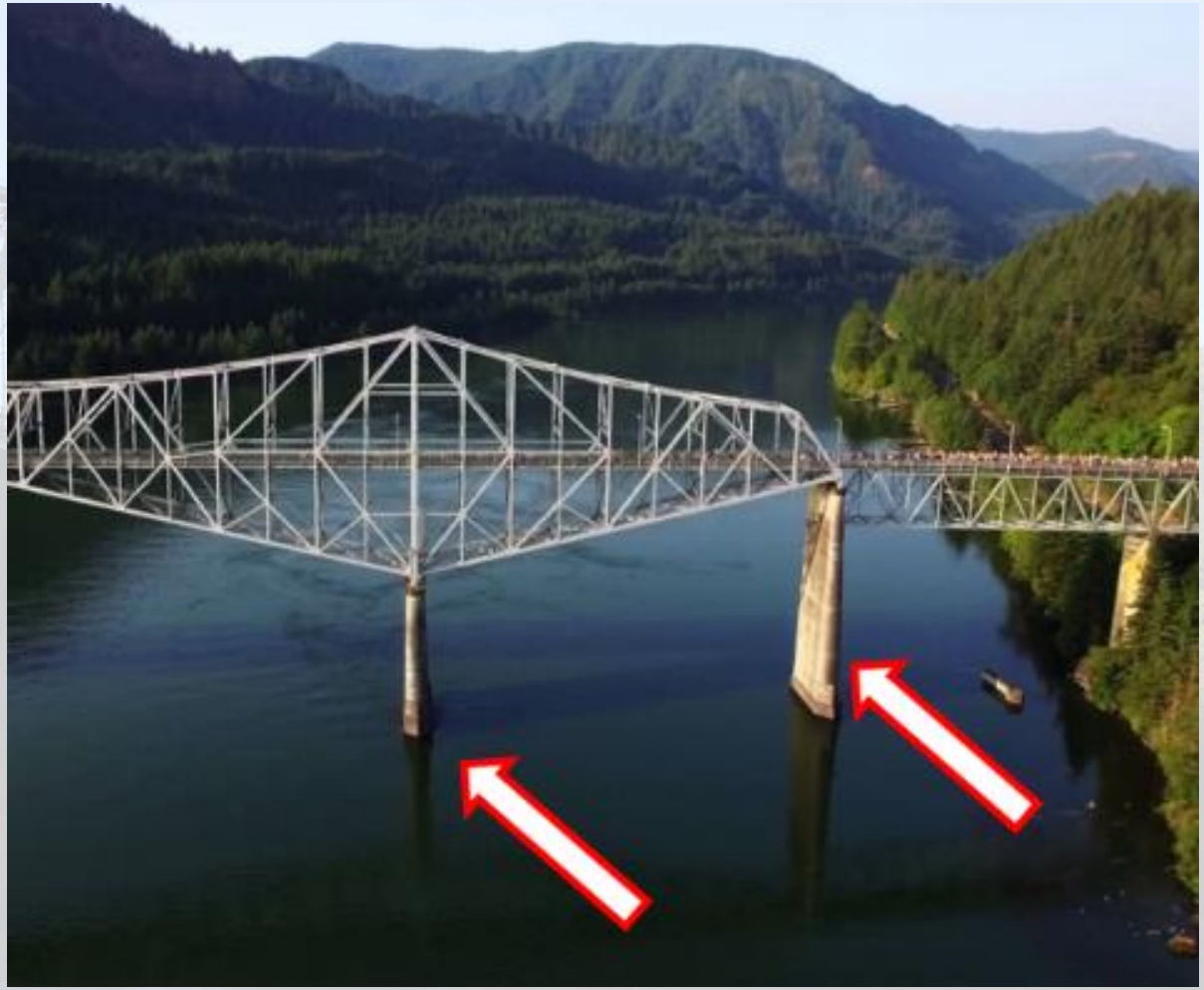
Seismic Vulnerabilities – Tall Piers

- Tall piers in the water (see red arrow) are not designed for an earthquake
- Too much loading will cause these piers to fail, increasing probability of a total bridge collapse
- New, modern seismic bearings will reduce the load on these piers



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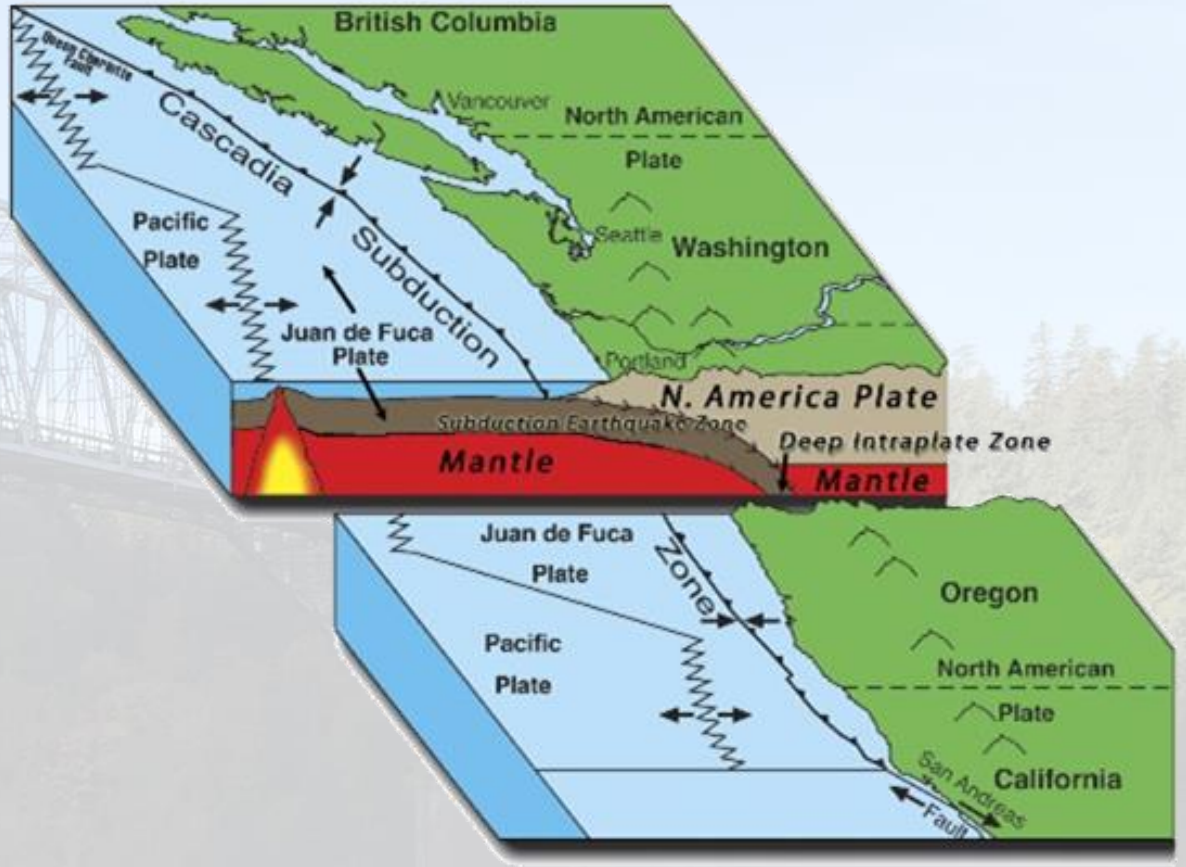
Why Seismic Retrofit First?

- Cascadia Subduction Zone has not produced an earthquake since 1700
- Greater than 1 in 3 chance a "megathrust" earthquake (7.1+ magnitude) occurs in next 50 years
- Estimated 2-4 minutes of shaking will be felt at Oregon's coast, but strength & intensity will decrease further inland



Source: Oregon Office of Emergency Management : Cascadia Subduction Zone : Hazards and Preparedness : State of Oregon

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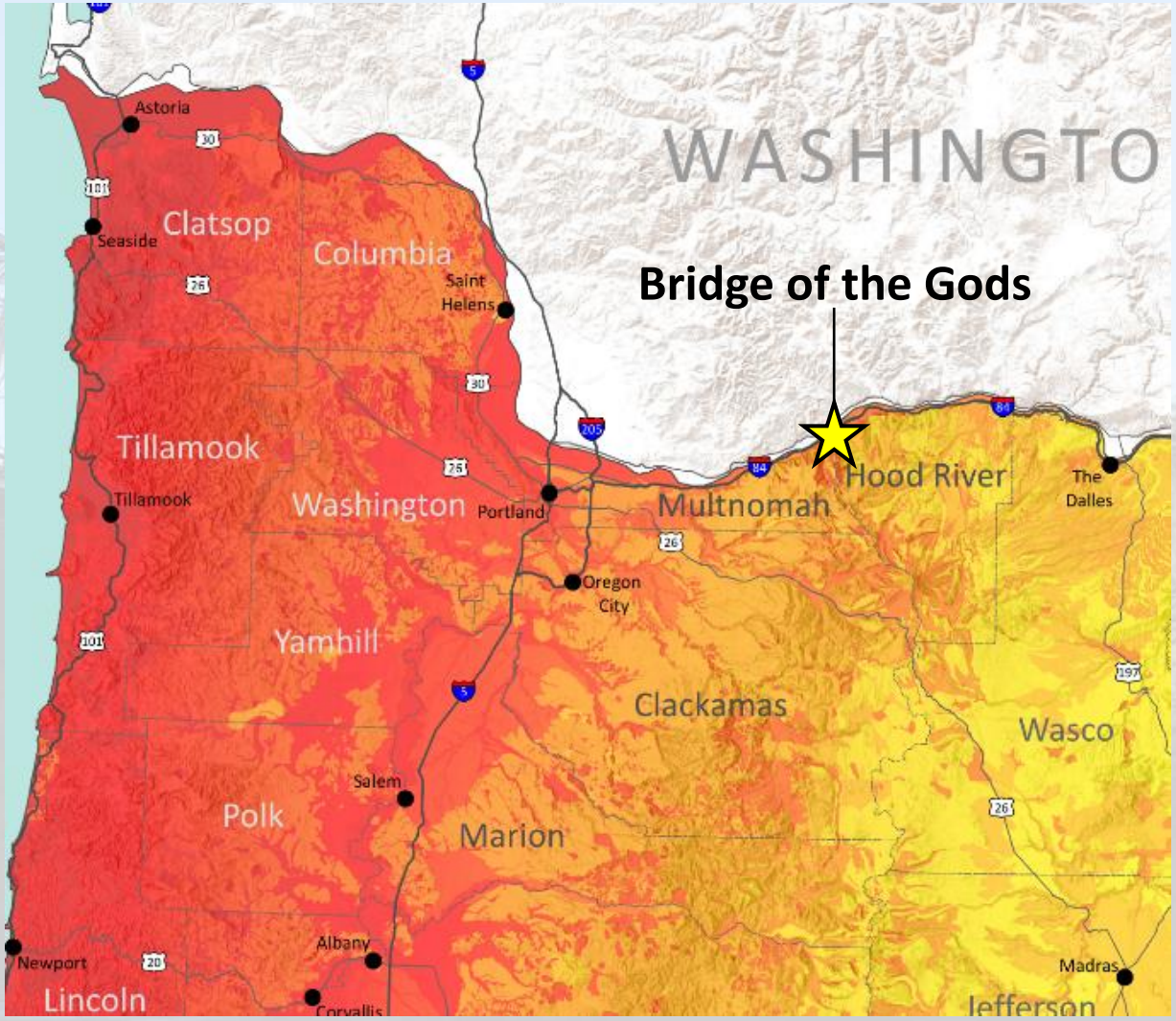
Seismic Hazards are Reduced at the BOTG

- Ground-shaking at the Bridge of the Gods is less than in Portland & Vancouver
- Retrofit of the bridge is needed, but also practical given lower earthquake intensity
  - Given lower seismic activity at the bridge, a seismic retrofit now will ensure it remains a viable evacuation route after an earthquake



Source: https://www.oregongeology.org/pubs/dds/oshd/Plates/OSHD_Release1_Plate1.pdf

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