Seismic Readiness of Oregon’s Highways

Ways and Means Subcommittee on Transportation and Economic Development
Paul Mather, ODOT Highway Division Administrator
March 2, 2017
The Cascadia Subduction Zone
The Oregon Resilience Plan

Required by the legislature, supported by Governor

Comprehensive plan, developing a strategic approach

Transportation is critical
Moderate

I-5 Marquam Bridge
Moderate

I-405 Fremont Bridge
Collapse

US 26 Ross Island Bridge
Slight to Moderate

I-205 Glenn Jackson Bridge
The solution

For **life safety** to prevent collapse

For **serviceability** to keep the bridge functional
Bridge Conditions Decline

Target: 80% Non-Distressed
Most bridges beyond design life

![Chart showing the number of bridges remaining in service by decade. The chart shows a peak in the number of bridges remaining in service between 1960-1969, with a significant drop in the number of bridges remaining in service after 1980-1989.]

Number of Bridges

- <1950: 300
- 1950-1959: 400
- 1960-1969: 700
- 1970-1979: 300
- 1980-1989: 100
- 1990-1999: 50
- 2000-2009: 400
- 2010-2014: 10

Bridges remaining in service
## Route Selection

|Survivability|• Emergency responders  
• Critical care facilities|
|Life Support|• Critical care facilities  
• Life support resources  
• Evacuation routes|
|Economic Recovery|• Critical freight corridors  
• Mobility into and out of the region  
• Routes between large metro areas|
# Total Seismic PLUS Program Cost

<table>
<thead>
<tr>
<th>Program Phases</th>
<th>Total Bridge Cost</th>
<th>Landslides/Rockfalls Cost</th>
<th>Total Seismic PLUS Program Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$738 Million</td>
<td>$197 Million</td>
<td>$935 Million</td>
</tr>
<tr>
<td>2</td>
<td>$632 Million</td>
<td>$272 Million</td>
<td>$904 Million</td>
</tr>
<tr>
<td>3</td>
<td>$612 Million</td>
<td>$483 Million</td>
<td>$1,095 Million</td>
</tr>
<tr>
<td>4</td>
<td>$640 Million</td>
<td>$126 Million</td>
<td>$766 Million</td>
</tr>
<tr>
<td>5</td>
<td>$1,432 Million</td>
<td>$0</td>
<td>$1,432 Million</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$4.1 Billion</strong></td>
<td><strong>$1.0 Billion</strong></td>
<td><strong>$5.1 Billion</strong></td>
</tr>
</tbody>
</table>
Major Seismic Event: Isolated Areas

Total economic loss: $350 B
Isolated Zones: Phase 1 & 2 Scenario

Reduce economic loss by: $35 B
Isolated Zones: Full Seismic Program

Reduce economic loss by: $84 B
Seismic Plus Program

2016: OTC Approves $35M

Total = $5 Billion

Program Phases
- Phase 1
- Phase 2
- Phase 3
- Phase 4
Seismic Resiliency Triage Strategy
ODOT’s Short-Term Approach

- Southern Oregon Highway Triage
- Coastal Forward Supplies
- Local ODOT Triage
Southern Oregon Highway Triage
Interstate 5 and OR 140

- I-5 and OR 140 (key lifeline routes)
- 17 Bridges and 7 Unstable Slopes
- $35 Million
Coastal Seismic Response Kits
Supporting Communities (Post Seismic Event)
Local ODOT Triage

- Integrate local and statewide plans
- Secure strategic ODOT bridges
- Focus on major river crossings
Overall Seismic Resiliency Triage Strategy

$200 M over 20 years

Rogue Valley Seismic Triage (bridges and unstable slopes on I-5 and OR 140)

Coastal Forward Supplies & Seismic Response Kits
1. Astoria
2. Newport
3. Coos Bay

Local ODOT Triage
(address strategic ODOT and local bridges/major river crossings)

Seismic Options Report
(not part of $200 M total above)
- Phase 1 – Partially Funded
- Phase 2
Bridge Conditions