Seismic Readiness of Oregon’s Highways
The Cascadia Subduction Zone
The Oregon Resilience Plan

Required by the legislature, supported by Governor

Comprehensive plan, developing a strategic approach

Transportation is critical
Collapse

I-5 Interstate Bridge
Collapse

Astoria-Megler Bridge
Collapse

US 30 Longview-Rainer Bridge
Slight to Moderate

I-205 Glenn Jackson Bridge
The solution

RETROFIT

For life safety to prevent collapse

For serviceability to keep the bridge functional
Bridge Conditions Decline

Target: 80% Non-Distressed

Percent Non-Distressed

2010 2020 2030 2040 2050 2060
Most bridges beyond design life

![Bar chart showing the number of bridges remaining in service by construction year. The chart indicates a significant number of bridges constructed between 1960 and 1969 are beyond their design life.](chart.png)
• Identify strategic lifeline routes
• Minimize long term economic damage
• Address overall bridge condition
## Route selection

<table>
<thead>
<tr>
<th>Category</th>
<th>Elements</th>
</tr>
</thead>
</table>
| 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: Full Seismic Program

Reduce economic loss by: $84 B
We need to start **NOW**
Transportation is key to the overall response

Seismic Retrofit by State

<table>
<thead>
<tr>
<th>State</th>
<th>Number of Bridges</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>California</td>
<td>5147</td>
<td>$13 Billion</td>
</tr>
<tr>
<td>Washington</td>
<td>416</td>
<td>$177 Million</td>
</tr>
<tr>
<td>Oregon</td>
<td>143</td>
<td>$44 Million</td>
</tr>
</tbody>
</table>
Next Steps ...

Route Continuity
- I-5/I-205
- US 97

Design Standards
- Life Safety
- Serviceability