How do you define yourself?

Other (1) = CEO of a seismic startup
How do you rate the current Seismic Resiliency Assessment capabilities in your area/field?
18 responses

- Inadequate with no roadmap or activity: 22.2%
- Inadequate but there is some coordinated activity: 61.1%
- Inadequate but there is a highly coordinated activity: 11.1%
- Adequate or adequacy within sight: 0%
- Comprehensive: 0%

Comments?
3 responses

The Bridge Industry has an active earthquake engineering community that recognizes the need for Seismic Resiliency and is moving toward performance based assessment.

Varies depending on application. Hospitals and schools do a good job, water distribution system are much more variable depending on agency.

"Coordinated" is an area that is critically lacking, for example, there is little coordination across systems, agencies, groups.
What is the level of funding on seismic resiliency assessment in your field
Current Capabilities

We are virtually blind  We have complete command
Current Capabilities

We are virtually blind  

We have complete command

Predictive response models
18 responses

- 0 (0%)
- 1 (0%)
- 5 (27.8%)
- 9 (50%)
- 4 (22.2%)
- 0 (0%)
Current Capabilities

Demand models
18 responses

We are virtually blind  We have complete command
Current Capabilities

We are virtually blind

We have complete command

Loss & downtime models
18 responses

Bar chart showing:
- 8 responses (44.4%) in level 2
- 5 responses (27.8%) in level 3
- 2 responses (11.1%) in level 4
- 0 responses (0%) in levels 1, 2, 3, 4, and 5
Current Capabilities

We are virtually blind ↔ We have complete command

Network/system level effects
18 responses

- 3 (16.7%)
- 9 (50%)
- 5 (27.8%)
- 1 (5.6%)
- 0 (0%)
Current Capabilities

We are virtually blind  We have complete command

Coupling effects among systems
18 responses

We are virtually blind  We have complete command
Current Capabilities

Societal impacts
18 responses

We are virtually blind  We have complete command
Current Capabilities

We are virtually blind  We have complete command

**Recovery models**

<table>
<thead>
<tr>
<th>Recovery Model</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3 (16.7%)</td>
<td>10 (55.6%)</td>
</tr>
<tr>
<td>2</td>
<td>10 (55.6%)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>5 (27.8%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>4</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>5</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
</tr>
</tbody>
</table>

18 responses
Impediments to progress

Check all that apply
18 responses

- Inadequate federal funding: 14 (77.8%)
- Inadequate local funding: 8 (44.4%)
- Present federal policies and regulations: 4 (22.2%)
- Present local policies and regulations: 2 (11.1%)
- Lack of interest by owners/stakeholders: 12 (66.7%)
- Lack of clarity on what constitutes res...: 14 (77.8%)
New tools we need

Check all that apply

18 responses

- Data analytics: 13 (72.2%)
- High performance and cloud computing: 10 (55.6%)
- New sensors and sensing methods: 12 (66.7%)
- Community efforts for bringing different: 13 (72.2%)
- New/improved seismic policies and regulations: 11 (61.1%)
- High resolution validated models of demand: 1 (5.6%)
Send email to etacir@ucla.edu to fill the survey
Gaps / Needs

• HAZUS “2.0”: open source, QGIS or other base ~ EPANET
• Systematic comprehensive engineering data capture / archiving ~ earth sciences
• MBTs: vague, concordance poor. GEM Taxonomy
• Actual building data – e.g., “50 year design life” but buildings >> 100 years
• Earthquake Early Warning: (1) operational, (2) end-end
• Lifelines – what is at risk? What does lifeline improvement seek to improve? (system / society)
One month after the event, the total losses were reported to be ~$400M (Kale, 2014).

Early media reports estimated losses around $4B (based on a insurance agency report)