PEER Tall Buildings Project

Task 2 – Develop Consensus Performance Objectives

Interview Process

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Approach – *Engage Stakeholders*

- Identify and interview stakeholders individually
- Hold workshop (with stakeholders and others)
- Stakeholders by discipline (approx. 20 interviewees):
  - Legal (regulatory) – city attorney
  - Legal (condo) – private practice attorney (condo development)
  - Financial (insurance) – insurance industry representative
  - Financial (lenders) – mortgage banker
  - Owners (short-term) – property development representative
  - Owners (long-term) – condo association, BOMA representative
  - Social Impacts – city planner/emergency planner
  - Economic Impacts – urban economist
  - Public Safety – fire marshal (and building official)
  - Design Professionals – architect (and structural engineer)
Background Material

• Building Code Performance Overview (Petak)
  – Traditional – Set of rules that specify the minimum acceptable level of safety of buildings based on Occupancy
  – Occupancy I an II – Safety object is to minimize risk of serious or life-threatening injury (but not to preserve function/minimize loss)

• Tall Building Damage/Loss Scenarios (Kircher/Youssef)
  – Estimated damage/loss to a hypothetical portfolio of 40 tall buildings located in a high seismic region of coastal California
    • 40 tall core-wall condominium buildings
    • 40 tall steel office buildings
  – Two scenario earthquakes: a rare, very strong (major) earthquake and an occasional (moderate) earthquake
  – Three hypothetical performance levels (Level A, B and C)
Damage and Loss Scenarios
( expected damage to 40 tall buildings due major and moderate earthquake ground motions)

Major Earthquake - One in Ten Chance of Occurring During the Life of the Structure

<table>
<thead>
<tr>
<th>Hypothetical Performance</th>
<th>Expected No. of Bldgs in each Structural Damage State</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>None/Slight</td>
</tr>
<tr>
<td>Level A</td>
<td>20</td>
</tr>
<tr>
<td>Level B</td>
<td>19</td>
</tr>
<tr>
<td>Level C</td>
<td>12</td>
</tr>
</tbody>
</table>

Moderate Earthquake - Likely to Occur at Least Once During the Life of the Structure

<table>
<thead>
<tr>
<th>Hypothetical Performance</th>
<th>Expected No. of Bldgs in each Structural Damage State</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>None/Slight</td>
</tr>
<tr>
<td>Level A</td>
<td>38</td>
</tr>
<tr>
<td>Level B</td>
<td>38</td>
</tr>
<tr>
<td>Level C</td>
<td>35</td>
</tr>
</tbody>
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Interview Process and Key Questions

• Interview Outline and Response Form (Holmes):
  – Describe project background (PEER research project)
  – Discuss background material:
    • Interviewees thoughts on Code safety objectives?
    • Interviewees reaction to scenario damage and loss estimates (for Level A, B and C performance)?
  – Discuss appropriate performance of tall buildings:
    • Should tall buildings perform better than “normal” buildings (are Code objectives for normal buildings acceptable)?
    • Should tall buildings have an improved level of performance and, if so, what should that level of performance be?
    • What would it be worth (cost premium) to achieve improved performance?
  – Prepare Interview Summary