Meeting Summary: **Mitigation "Triage" Workshop**
Prioritizing and Implementing Structural Seismic Risk Reduction Actions

Date: Tuesday March 17, 2015
Time: 9:00 a.m. – 12:00 p.m.
Location: Seattle Emergency Operations Center, 105 5th Avenue S, Seattle WA 98107

Attendees
In addition to the hosting organization, the Office of Emergency Management, and the workshop presenters, the following agencies and organizations attended the workshop:

- American Institute of Architects (AIA) - Seattle
- Bloodworks Northwest
- Capitol Hill Housing
- Catholic Community Services of King County
- City of Seattle Departments and Offices: Finance and Administrative Services, Office of Housing, Parks and Recreation, Seattle Center, Seattle Public Libraries, Seattle Public Utilities
- Group Health / CBRE
- King County Office of Emergency Management
- Plymouth Housing Group
- Port of Tacoma
- Puget Sound Blood Center
- Seattle Colleges
- Seattle Chinatown International District Preservation and Development Authority (SCIDpda)
- State of Washington Emergency Management Division
- University of Washington
- University of Washington / Valley Medical Center
- Virginia Mason Medical Center
- Washington State Emergency Management Division
- YMCA
- YWCA

Agenda

Time	Topic	Lead
9:00 AM	Welcome and Introductions	Barb Graff Office of Emergency Management
9:15 AM	2014 Seattle All-Hazards Mitigation Plan Overview	Matthew Lieuallen Environment & Ecology
9:25 AM	Earthquake Hazard and Current Research	Bill Steele University of Washington
9:45 AM	Q&A	All
10:00 AM	Break	All
10:15 AM	**Panel Presentations** Case Study 1: City of Seattle – Seismic Risk Assessment Demonstration Project Case Study 2: Washington State – School Seismic Safety Pilot Project Case Study 3: University of Washington – Restore the Core Program	Julie Matsumoto Seattle Department of Finance and Administrative Services Cale Ash Degenkolb Engineers Steve Charvat University of Washington
11:15 AM	Group Discussion	All
11:50 AM	Closing Remarks	Erika Lund Office of Emergency Management

Attachments

- Presentations can be found at http://www.seattle.gov/emergency-management

Summary

After updating the Seattle All-Hazards Mitigation Plan, Seattle's Office of Emergency Management (OEM) hosted a "Mitigation Triage Workshop" as a capstone to the planning effort, and to complete one of the mitigation activities identified in the updated plan. The goal of the workshop was to provide an opportunity for attendees to share best practices in seismic risk reduction, as well as to ask questions,

share ideas, and build relationships with others engaged in this type of work across the city. Topics addressed included:

- Strategies for prioritizing mitigation actions across multiple buildings
- Approaches to working with limited resources
- Technology tools (e.g., HAZUS)
- Other lessons learned and innovative ideas

The format of the meeting included several context-setting presentations, three case studies from different sectors, and a large-group discussion.

Welcome and Introductions
Barb Graff, Seattle OEM Director, and Erika Lund, Seattle OEM Recovery and Mitigation Coordinator

Erika Lund, Seattle OEM project manager for the All-Hazards Mitigation Plan update, welcomed the group and described the purpose of the workshop, a capstone to the plan update process. She then introduced Barb Graff, Seattle OEM Director. Barb also welcomed participants and emphasized the importance of networking and integrating expertise among participants at the workshop. She led a round of introductions, and encouraged participants to build relationships and get the most that they could from the workshop presentations and from each other.

2015 Seattle All-Hazards Mitigation Plan Overview
Matthew Lieuallen, Ecology & Environment

Matthew Lieuallen led the consultant team supporting Seattle's update of the All-Hazards Mitigation Plan, and provided a brief overview of the update process and results. He noted that it was great to use this final meeting to gather stakeholders together and accomplish one of the activities set forward in the plan.

Earthquake Hazard and Current Research
Bill Steele, University of Washington Seismology Lab Coordinator, Pacific Northwest Seismic Network

Bill Steele provided an overview of the latest research related to seismic risk in the region, describing the risks, probabilities, and unique seismic characteristics of the Seattle area. He also highlighted the latest efforts to test and implement an Earthquake Early Warning (EEW) system. One of the benefits of the system discussed is that it would provide the warning necessary to allow community partners to make key lifesaving decisions in the critical minutes/seconds before shaking begins (e.g., shutting down elevators and HVAC systems, suspending surgical procedures, slowing down trains).

Questions from workshop participants addressed the following topics:

- Further clarity about the physical characteristics of the region regarding seismic activity
- Agency participation in and testing of the EEW program
- Plans to extend EEW to the local hospital network

- Frequency of early warnings and statistics to document their effectiveness

Panel Presentations

Case Study 1: City of Seattle – Seismic Risk Assessment Demonstration Project
Julie Matsumoto, Asset Planning Advisor, Seattle Finance and Administrative Services (FAS)

Julie Matsumoto provided an overview of the process the City of Seattle implemented to evaluate and prioritize the seismic risks associated with their portfolio of buildings. She provided an overview of the assessment methodology used, how results are being applied to inform decision-making, and lessons learned that could help others considering a similar process.

Case Study 2: Washington State – School Seismic Safety Pilot Project
Cale Ash, Associate principal, Degenkolb Engineers

Cale Ash provided an overview of the Washington State School Seismic Safety Pilot Project, led by the Washington State Seismic Safety Committee (including the Washington State Emergency Management Division and Department of Natural Resources), and supported by the Structural Engineers Association of Washington and Washington Association of Building Officials. Pilot projects were conducted in Walla Walla and Aberdeen to estimate loss and impact due to earthquake, wind, and flood; convert results into damage state probabilities; and inform mitigation planning and FEMA grant applications. The hope is that this process could be replicated across the state to support seismic safety project prioritization and implementation. Cale also described the current status, next steps, and lessons learned from the project.

Case Study 3: University of Washington – Restore the Core Program
Steve Charvat, Director of Emergency Management, University of Washington

Steve Charvat described the University of Washington's "Restore the Core" program, an effort to evaluate and prioritize seismic renovations for the campus's most critical buildings. Steve described the analysis, data collection, and planning processes that supported decision-making. He touched on the importance and challenges associated with consensus building, unexpected funding challenges, and lessons learned.

Group Discussion

Sarah Brandt, EnviroIssues, facilitated a large-group discussion for the final hour of the workshop. The group was encouraged to ask questions of the presenters and other participants, as well as share feedback about their own programs and experiences. Key points are captured below by general theme.

Making the case

- A strong voice is needed within the capital projects community to communicate to Congress that funding is needed for these types of capital programs.

- A key need is raising awareness. Building relationships with partners around the issue should be encouraged. There is synergy between earthquake retrofits and other types of hazard mitigation. The public has a misconception that damage is going to be catastrophic, but mitigation will work for many earthquake events. We need to help avoid resignation and fuel the desire to fix buildings.
- What should you do when decision-makers' priorities differ from your analysis that supports seismic safety projects?
    - You've got to put some money into the effort up front to develop the study. You may not recoup this cost but you need to make the investment. A proposal backed by sound data, engineering, and numbers is more likely to be successful.
    - You've got to have shovel-ready projects ready to propose to take advantage of funding. This requires coordination between facility and emergency managers. The window of interest in a project, hazard, related funding may be limited. Be ready!
    - To be successful, you need to manage expectations. Understand at the beginning of the process what the end game is, and educate decision-makers.

Data

- Pre-disaster mitigation grant programs could better support the process of collecting facility vulnerability data first (this is often not allowed). Data is needed to make decisions around prioritization.
- Seattle departments should have compatible databases. Could OEM help?
- How accessible is HAZUS as a tool to make the case for mitigation projects?
    - It requires a specialized skill set (GIS) to use well, and be cautious of the "garbage in, garbage out" phenomenon (or "garbage in, gospel out").
- Is there an inventory of buildings designed to immediate occupancy standards? The group did not know of any such inventory.
- We need better earthquake scenario studies and databases to help justify expenditures.

Approaches to support implementation

- Can we look at the types of earthquakes we might have in the region and where people are most likely to be injured? Could this tactical approach help us make small investments to minimize injury?
    - Julie Matsumoto (Seattle FAS) noted that the City is taking a holistic look at building condition so that rehabilitation actions can be integrated into larger projects (for example, include seismic upgrades when a roof is due to be replaced).
- The Seattle Center has many old buildings and is taking an incremental approach. After the Nisqually earthquake, they used Tier I assessments to get a bond for retrofits. Opportunities may be opening up again.
- What types of buildings are participants most concerned about?

    - Unreinforced masonry, tilt-ups, and utility infrastructure (underground water and sewer, power lines)
- Include seismic assessments in master planning.

Challenges

- Funding: Pre-disaster mitigation grant programs are underfunded. Finding funding for studies is also challenging.
    - Erika Lund, OEM, identified two FEMA funding programs for public entities (and some non-profits), and can provide information and contacts with the State Emergency Management Division.
- How do we bring insurers to the table?
- How do we avoid reinventing the wheel?
- Performance objective will impact cost of design/build.
- Shifting uses – may need to relocate functions (what is that cost?)

Future hot topics

- A central point of contact is needed to facilitate this ongoing conversation. Could OEM serve as a broker for this conversation?
- Non-structural retrofits and related best practices
    - The Port of Tacoma noted that they had conducted a walk-through to look for and correct immediate life safety issues.
- Resiliency is a hot topic. Coordination with resiliency/climate change planning efforts would identify overlaps.
- How should an agency address life safety level and immediate occupancy issues? For example, the Seattle Center buildings are built to life safety, not immediate occupancy. How do we plan for that scenario, where buildings may not be available for immediate use?