



## **APPENDIX B. PLAN PROCESS MATERIALS**

- B-1 Mitigation Work Group Meeting #1
  - B-2 Mitigation Work Group Meeting #2
  - B-3 Mitigation Work Group Meeting #3
  - B-4 Mitigation Work Group Meeting #4
  - B-5 Disaster Management Committee
  - B-6 Emergency Executive Board
-



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## **B-1 Mitigation Work Group Meeting #1**



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### Meeting Summary (DRAFT)

Project Management     Mitigation Work Group     Other:

**Date:** February 24, 2014

**Time:** 11:00 a.m. to 1:00 p.m.

**Location:** Seattle Municipal Tower, Rooms 4050/4060

**Attendees:**

	Name	Organization	Department
1	Jill Crary	City of Seattle	Seattle Center
2	Lawrence Eichhorn	City of Seattle	Seattle Department of Transportation
3	Barb Graff	City of Seattle	Office of Emergency Management
4	Jay M. Havner	City of Seattle	Seattle Fire Department
5	Vickie Huff	City of Seattle	Seattle Police Department
6	Erika Ikstrums	City of Seattle	Seattle Parks and Recreation
7	Jerry Koenig	City of Seattle	Seattle City Light
8	Julie Matsumoto	City of Seattle	Department of Finance and Administrative Services
9	Tracy Morgenstern	City of Seattle	Office of Sustainability and Environment
10	Genna Nashem	City of Seattle	Department of Neighborhoods
11	Patti Petesch	City of Seattle	Seattle Parks and Recreation
12	Becky Rufin	City of Seattle	Seattle Parks and Recreation
13	Karl Stickel	City of Seattle	Office of Economic Development
14	Grant Tietje	City of Seattle	Office of Emergency Management
15	Maureen Traxler	City of Seattle	Department of Planning and Development
16	Donna Voss	City of Seattle	Office of Emergency Management
17	Jill Watson	City of Seattle	Human Services Department
18	Vicki Wills	City of Seattle	Department of Information Technology
19	Ned Worcester	City of Seattle	Seattle Public Utilities
20	Mathew McBride	Boeing Employees Credit Union	
21	Betty Lunceford	Seattle Community Colleges	
22	Matthew Lieuallen	Ecology and Environment, Inc.	
23	Natalie Seitz	Ecology and Environment, Inc.	
24	Sarah Brandt	Envirolssues	
25	Chelsey Funis	Envirolssues	



**\*See Attachment 1**

**Agenda:**

	<b>Meeting Items</b>	<b>Duration</b>	<b>Presenter/Facilitator</b>
1	Opening remarks and introductions	5 minutes	Donna Voss, City of Seattle Natalie Seitz, Ecology and Environment
2	Time tracking	5 minutes	Donna Voss, City of Seattle
3	Local Hazard Mitigation Plan purpose and requirements and Mitigation Work Group participation	15 minutes	Matthew Lieuallen, Ecology and Environment
4	2009 Seattle Hazard Mitigation Plan review and feedback	30 minutes	Natalie Seitz, Ecology and Environment
5	Vision statement review and revision	30 minutes	Natalie Seitz, Ecology and Environment
6	Inclusive Outreach and Public Engagement Strategy	30 minutes	Sarah Brandt, EnviroIssues
7	Next steps	5 minutes	Natalie Seitz, Ecology and Environment

**\*See Attachment 2**

**Attachments:**

1. Sign-in sheets
2. Meeting agenda
3. PowerPoint presentation
4. Hazard Mitigation Plan Update Local Match Documentation Certificate
5. Hazard Mitigation Plan Update Grant Local Match Documentation Certificate
6. Seattle City Light Mitigation Team, Risk Identification Table
7. Vision statement handout

**Summary:**

The Seattle Hazard Mitigation Plan (HMP or Plan) Update project team hosted the first of five Mitigation Work Group (MWG) meetings on February 24, 2014. This MWG meeting was intended to provide MWG participants with an overview of the purpose and need for the HMP update and requirements; discuss MWG participation; review and collect feedback on the 2009 Seattle HMP process; review and revise the 2009 vision statement; and review the Inclusive Outreach and Public Engagement strategy for the Seattle HMP update process (*see Attachment 3*). Twenty members of the MWG and five members of the project management team participated in the meeting.

***Opening remarks and introductions***

Barb Graff, Director, Seattle Office of Emergency Management (OEM), thanked the group for participating in this process and reiterated her appreciation for the MWG's time and willingness to be involved. She stated that this is an exciting opportunity for the City to mitigate some of the current



hazards that pose a threat to the people of Seattle. The fruits of the MWG's efforts will be a safer, stronger, more survivable and resilient city. Unlike previous update processes, Barb noted that the City is now focusing on improving interdepartmental coordination to ensure the plan meets the needs of all City departments.

Donna Voss, Project Lead, OEM, introduced members of the project management team. She noted that the City had the opportunity to hire professional consultants and selected Ecology and Environment, Inc. (E & E) to facilitate the update process. E & E is responsible for helping the City ensure that local, state, and federal requirements are met during the update process and that the Plan's development is as successful as possible. EnviroIssues was brought on to support OEM and E & E with the public engagement portion of the process.

Natalie Seitz, Project Manager, E & E, welcomed the group and thanked them for attending and participating in the Seattle HMP update process.

### ***Time tracking***

Donna provided an overview of the Grant Match Requirement. MWG members are encouraged to track and report the number of hours they and their staff spend on the project, as the hours can be applied toward the match contribution needed for OEM's grant requirements (*see Attachments 4 and 5*).

### ***Local HMP purpose and requirements***

Matthew Lieuallen, Quality Manager, E & E, provided an overview of the HMP's purpose and described how the HMP fits within the broader context of Emergency Management. There are many different plans at the local, state, and federal levels related to the four phases of Emergency Management – Mitigation, Prevention/Protection, Recovery, and Response. The Seattle HMP is a piece of the larger Emergency Management puzzle; however, the goal of this Plan is to ensure that it links with other plans that currently exist.

Matthew explained that mitigation planning allows communities to:

- Identify the natural hazards for which they are at risk.
- Assess the potential impacts of those hazards (e.g., loss of life and property).
- Develop goals, objectives, and actions to reduce impacts.
- Prioritize and implement mitigation actions.

Mitigation planning is important because it not only encourages communities to become more flexible and adapt to change more easily, but it also:

- Guides mitigation activities in a coordinated and economic manner.
- Integrates mitigation into existing community plans/programs.
- Considers future growth and development trends.
- Makes a community more disaster resilient.



- Ensures eligibility for grant funding.

Matthew noted that keeping Seattle's HMP up-to-date allows the City to apply for grant funding. The HMP provides an opportunity to identify and document specific project needs and serve as a vehicle to seek funding to accomplish those projects.

Matthew reviewed the steps associated with hazard mitigation planning processes: Pre-Planning, Plan Development, and Plan Implementation. These processes are developed and overseen by the Federal Emergency Management Agency (FEMA). As part of the Plan Development stage, a risk assessment must be conducted. Seattle OEM has begun a separate process to update the Seattle Hazard Identification and Vulnerability Analysis (SHIVA). SHIVA identifies Seattle's hazards and looks at them in the context of how Seattle's unique qualities as a community affect the severity of the hazards and subsequent impacts. The updated SHIVA will be woven into the final Seattle HMP.

Matthew reviewed the planning process requirements mandated by FEMA (outlined in 44 Code of Federal Regulations §201.6). As part of this project, OEM and E & E must:

- Document the planning process.
- Provide stakeholders with an opportunity to participate.
- Conduct and document public involvement.
- Incorporate existing plans and reports.
- Discuss continued public participation and plan maintenance.
- Provide a method for monitoring, evaluating, and updating the Plan.

Matthew provided an overview of the mitigation strategy requirements, which include:

- Document existing authorities and policies.
- Address participation in the National Flood Insurance Program.
- Identify goals to reduce or avoid long-term vulnerabilities.
- Identify and analyze a comprehensive set of mitigation actions.
- Describe how mitigation actions will be prioritized, implemented, and administered.
- Describe how mitigation actions can be integrated into other planning mechanisms.

The MWG is a critical component in identifying and reviewing all possible hazards and how those hazards might impact Seattle's communities. The Plan is intended to reflect changes in development, city-wide priorities, and progress in local mitigation efforts. To ensure that the Plan is representative of interdepartmental needs and concerns, it will be vetted by members of the MWG before going to the City Council for approval.

### ***2009 Seattle HMP review and feedback***

Natalie provided an overview of the 2009 All-Hazards Mitigation Plan and how the previous process was conducted. Approximately one-third of the MWG group was involved in the 2009 update process.



The overall goal of the updated Plan is that it works for the people who use it. As such, Natalie asked a series of questions to collect feedback from MWG participants. Questions and responses are summarized below.

#### Planning Process

Q: Do you think your agency's goals and priorities were incorporated into the plan process and recommendations? Do you think the right stakeholders were involved?

A: Members were happy to see that the Office of Sustainability and Environment and business and community college representatives were added as new stakeholders in the process. Members also asserted that nongovernmental organizations should be included for stakeholder consideration in future HMP updates.

#### Risk Assessment

Q: Do you think risks to the city are identified and adequately addressed in the 2009 plan?

A: Risks should be re-evaluated as part of this process for adequacy.

Q: What hazards pose the greatest risk to your agency, including infrastructure and assets as well as ability to perform essential functions?

A: Hazards are listed below by department:

- Parks and Recreation (Parks)
  - o Landslides
  - o Weather
  - o Earthquake/seismic events
  - o Volcanic activity
  - o Need for shelters
- Office of Sustainability and Environment (OSE)
  - o Climate change
- Human Services Department (HSD)
  - o Anything impacting people
  - o Coordination with and reliance on nongovernmental organizations
  - o Earthquake/seismic events
- Boeing Employees Credit Union (BECU)
  - o Earthquake/seismic events
  - o Cascading hazards and effects
- Department of Information Technology (DIT)
  - o Earthquake/seismic events
  - o Cyber-terrorism
- Seattle City Light



- Provided a Risk Identification Table to the project management team following the MWG Meeting (*see Attachment 6*)
- OEM
  - Increased poverty/decreased resiliency
  - Aging infrastructure
  - Earthquake/seismic events
  - Terrorism
- Seattle Center
  - Terrorism
  - Aging infrastructure
  - Earthquake/seismic events
  - Large gatherings of people (partnered with the above hazards)
- Seattle Community Colleges
  - Terrorism
  - Aging infrastructure
  - Earthquake/seismic events
  - Pandemic
  - Transient communities
  - Large numbers of people (partnered with the above hazards)
- Department of Planning and Development (DPD)
  - Earthquake/seismic events
  - Fire
  - Pandemic with workforce
- Department of Transportation (SDOT)
  - Earthquake/seismic events
  - Landslide
  - Winter storm
  - Volcanic activity
  - Public need for services vs. willingness to pay for them
  - Logistics and supply chain
- Office of Economic Development (OED)
  - Earthquake/seismic events
  - Fire
  - Pandemic with workforce
  - Transportation infrastructure to aid recovery
- Department of Finance and Administrative Services (FAS)
  - Aging infrastructure
  - Earthquake/seismic events
  - Continuity of support for individual departments to aid in response
- Department of Neighborhoods (DON)



- Aging infrastructure
- Preservation of historic structures
- Large gatherings of people
- Seattle Police Department
  - Communications and power; public's ability to contact 911
  - Access to critical infrastructure and emergency services
  - Earthquake/seismic events
  - Weather events
- Seattle Fire Department (SFD)
  - Increase in transport of hazardous material to/through Seattle. Example: Crude-by-rail through focused event (e.g., Seahawks game)

### Seattle's Mitigation Capacity

Q: What authorities, policies, programs, and new resources have you instituted in the past 5 years?

A: Programs are listed below by department:

- FAS: natural gas shut-off valve installation
- OEM: Training for homeowners on home retrofit (ongoing program)
- DPD: Provides retrofit plans for homeowners
- DPD: is planning in the next year to introduce and try to pass by ordinance new seismic retrofit requirements for unreinforced masonry buildings. This is anticipated to require significant outreach due to the general public opposition to new requirements.
- Parks: seismic retrofits at community centers
- Parks: installation of generators at six community centers
- DPD: Americans with Disabilities Act accessibility and compliance
- SDOT: Incident Management Team to respond to transportation emergencies
- SFD: Fire Station seismic retrofits (levee)
- SPU: Hardening reservoirs and wastewater facilities
- SCL: Seismic upgrades; Massachusetts Substation
- SCL: Emergency response/mitigation teams in place

### Mitigation Strategy

Q: Were mitigation actions successfully implemented?

A: The format of the 2009 HMP was cumbersome to share with others and did not include sufficient information regarding how to use the Plan and/or train others to use it. Training and internal outreach were identified as two key areas that hindered the implementation of the 2009 HMP.

Q: Did agencies use project criteria to rank mitigation actions? Do criteria reflect your current priorities?



A: Overall, the group felt that the current ranking criteria were too cumbersome.

The group suggested reconsidering how criteria are weighted. The number of people “affected” by a hazard does not appropriately describe hazards and associated impacts (e.g., as it is written, it implies “if they don’t bleed they don’t count”). Rewording the ranking to read “cause serious injury or death” better captures human suffering and allows the Plan to reflect a mass casualty event.

The group agreed that collecting the public’s input about mitigation actions and projects is critically important because public support is a political driver; however, public support for mitigation actions should not outweigh safety needs. Public outreach and education should be coordinated between mitigation projects and other building projects in order to identify opportunities for information about multiple projects to be shared at each public outreach opportunity.

OEM noted that short-term opportunities may arise that make difficult mitigation tasks more achievable. Such short-term opportunities can reduce the cost of a project and increase the overall project ranking based on the cost/benefit criteria. Project criteria should have a way to capture these opportunities. These opportunities may be identified at regular MWG meetings. The group also suggested a higher weighting for economic impacts.

Q: How can we increase the visibility of the HMP within each of your organizations?

A: Ensure that the right projects are included in the Plan. Develop a good executive summary for the HMP update that can be used to quickly educate staff and leadership. Develop clear direction about how to educate and train staff about what is included in the Plan and how to implement it. Identify regularly held meetings where discussion of the Plan is appropriate (e.g., monthly SDOT Incident Management Team meetings) or assemble an HMP team for each department.

#### Plan Maintenance

Q: Did the MWG review the Plan annually?

A: OEM used Strategic Work Group meetings to discuss the Plan; however, these meetings do not include all City departments or external partners.

Q: Was ongoing public outreach conducted? Was it successful?

A: OEM conducts 300 programs per year about general emergency preparedness, which reach approximately 10,000 people. Some information about hazard mitigation is siloed into project-specific outreach efforts and materials, such as bridge retrofit projects.

Q. Comments on Plan format?



A: The Plan should be prepared in a readable format and facilitate engagement of department heads. Developing pieces of the Plan (e.g., the introduction or executive summary) in a way that can be easily taken out of the larger context of the document and shared with others will encourage use and visibility of the Plan.

### ***Vision statement review and revision***

The group discussed the 2009 vision statement and began brainstorming possible revisions (see *Attachment 7*). Initial suggestions from the MWG included:

- Limit technical language – e.g. “built environment.”
- Create a true vision statement.
- Make the vision statement stronger.
- Make it positive – “enhance resilience” vs. “reduce the vulnerability.”
- Vision statement should empower the public to reduce their household vulnerability.

The MWG will have another opportunity to review and wordsmith the vision statement at the third MWG meeting on June 23.

### ***Inclusive Outreach and Public Engagement Strategy***

Sarah Brandt, Public Outreach and Engagement Project Manager, EnviroIssues, provided an overview of the Seattle HMP update process’s Inclusive Outreach and Public Engagement (IOPE) Plan. Sarah described the goals and objectives of public involvement, key stakeholders, outreach schedule, and proposed tools (including an online survey) and ways the project management team plan to measure success of public engagement.

The MWG was asked to provide initial feedback on the IOPE. Questions and responses are summarized below.

Q: Is the approach on target?

A: The survey should clearly describe how the public’s feedback will be used and why it is important for them to participate. This is a good opportunity for OEM to educate the public about the City’s Comprehensive Emergency Management Plan and how the HMP specifically fits into it. In terms of the April 8 public meeting, the group suggested hosting four public meetings in the four corners of the city, or moving the public meeting to City Hall as it is a more centralized location and there are many transportation options for people getting to and from downtown.

Q: Can the stakeholder list be refined?

A: The stakeholder list should include the Puget Sound Regional Council, faith-based organizations and the Northwest Health Care Coalition. The group agreed to review the



stakeholder list independently and send suggested additions to Sarah Brandt, EnviroIssues, directly.

Q: How can you help us spread the word / broaden the conversation?

A: Suggestions included neighborhood blogs, DPD newsletter, Vision 2030 process updates, City Public Information Officer monthly meetings, and SDOT multi-modal advisory boards meetings (bicycle, pedestrian, and freight).

Q: How should we measure success?

A: Track the number of comments received and what part of the city the comments come from.

### **Next steps**

Natalie discussed next steps in the HMP update process, including the first comment period scheduled from March 25 to April 23 and the first public meeting scheduled for April 8. MWG members were encouraged to participate in MWG meetings and public meetings as they are available.

In closing, Natalie introduced the Project Planning Portal, which will be used by the MWG to review documents and timelines and provided feedback into the planning process.

	<b>Action Items</b>	<b>Responsibility</b>	<b>Timeline</b>
1	Confirm existence of OEM natural gas shut-off valve installation program.	TBD	TBD
2	Confirm FAS home retrofit program included in the 2009 HMP.	TBD	TBD
3	Cross check programs included in the 2009 HMP to ensure they are still current and carried over into 2014 HMP.	E & E	TBD
4	Review similar Stanford-published surveys for graphics and picture examples.	EnviroIssues	TBD
5	Obtain OEM survey results with information regarding city-wide hazards and what the public is willing to do about them.	TBD	TBD
6	Distribute Sarah Brandt's contact information to the MWG.	E & E	TBD
7	Reconsider April 8 public meeting venue and/or consider adding additional public meetings in four corners of the city.	PM team	TBD
8	Addition of suggested organizations to the Stakeholder List	EnviroIssues	TBD

## **Attachments**

*[PDFs of meeting handouts and sign-in sheets to be added after the summary is finalized]*



## SEATTLE HAZARD MITIGATION PLAN UPDATE Mitigation Working Group #1 Agenda

**Date:** Monday February 24<sup>th</sup>, 2014

**Time:** 11:00am to 1:00pm

**Location:** Seattle Municipal Tower, Rooms 4050/4060

Meeting Items	Duration	Presenter/Facilitator
1 Opening Remarks and Introductions	5 minutes	Donna Voss, City of Seattle and Natalie Seitz, Ecology and Environment
2 Time tracking	5 minutes	Donna Voss, City of Seattle
3 Local Hazard Mitigation Plan Purpose and Requirements and Mitigation Work Group Participation	15 minutes	Matthew Lieuallen, Ecology and Environment
4 2009 Seattle Hazard Mitigation Plan Review and Feedback	30 minutes	Natalie Seitz, Ecology and Environment
5 Vision Statement Review and Revision	30 minutes	Natalie Seitz, Ecology and Environment
6 Inclusive Outreach and Public Engagement Strategy	30 minutes	Sarah Brandt, EnviroIssues
7 Next Steps	5 minutes	Natalie Seitz, Ecology and Environment



## Hazard Mitigation Plan Update Mitigation Work Group Meeting #1 February 24, 2014

Please Print

Sign - In Sheet

Name	Organization	Phone	E-mail
1. Matthew Iwaller	E+E	503.248.5400	miwaller@ene.com
2. [Signature]	Seattle OEM	2064233821	
3. BWS Grant	Seattle OEM	206-684-0437	BWS.GRANT@SEATTLE.GOV
4. Sarah Brandt	Emeraldsues	206-269-5041	sbrandt@emeraldsues.com
5. Jerry J. Koenig	SCU	206-684-3095	jerry.koenig@seattle.gov
6. Julie Matsumoto	FAS	206-684-0357	julie.matsumoto@seattle.gov
7. [Signature]	DOA	206-684-0227	gemma.nastome@seattle.gov
8. Betty Lenceford	SCCD	206 934 4195	betty.lenceford@seattle.gov
9. Jill Crary	Seattle Center	684-7107	jill.crary@seattle.gov
10. Maureen Traxler	DPD	233-3892	maureen.traxler@seattle.gov
11. Tracy Morgenstern	OSE	386-4595	tracy.morgenstern@seattle.gov
12. Vicki Willis	DOIT	206 684-3217	vicki.willis@seattle.gov
13. Becky Rutin	Parks	233-3870	becky.rutin@seattle.gov
14. [Signature]	SDOT	684-7574	afid
15. KARL STICKEL	OED	4-8095	KARL.STICKEL@SEATTLE.GOV
16. Jill Watson	HSD	4-7788	jill.watson@seattle.gov
17. Matt McBride	BEU	439-5986	patricia.petesch@seattle.gov
Patricia Petesch	Parks	206-465-1803	conference call-in participant

## Hazard Mitigation Plan Update Mitigation Work Group Meeting #1 February 24, 2014

**Please Print**

**Sign - In Sheet**

	Name	Organization	Phone	E-mail
18.	VICKIE HUFF	SPD	684-8951	vickie.huff@seattle.gov
19.	J. M. HAVNER	SFD	733-9465	J. HAVNER@SEATTLE.GOV
20.	Erika Ikstrums	Parks	425-289-8761	erika-ikstrums@seattle.gov
21.	NED WORCESTER	SPL	<sup>233-2000</sup> 206-954-7512	NED.WORCESTER@SEATTLE.GOV
22.	Donna Voss	OEM	206-233-5089	donna.voss@seattle.gov
23.	Natalie Seitz	Ecology & Environment	206-224-9537	nseitz@ene.com
24.	Chelsey Furnis	enviroissues	206-269-5041	cfurnis@enviroissues.com
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# MITIGATION WORK GROUP - MEETING #1

## ***Agenda***

1. *Opening Remarks and Introductions*
2. *Time Tracking*
3. *Local Hazard Mitigation Plan Purpose and Requirements and Mitigation Work Group Participation*
4. *2009 Seattle Hazard Mitigation Plan Review and Feedback*
5. *Vision Statement Review and Revision*
6. *Inclusive Outreach and Public Engagement Strategy*
7. *Next Steps*

# TIME TRACKING



- *Match – grant requirement*
- *Match eligibility – non-grant funded or grant match hours*
- *Tracking*

# SEATTLE HAZARD MITIGATION PLAN UPDATE

- *Purpose and Requirements*
- *Mitigation Work Group Participation*



## SETTING THE SCENE

Mitigation

Prevention/Protection

Response

Recovery

**Hazard Mitigation**

**Washington State Enhanced Hazard Mitigation Plan**

**SEATTLE ALL-HAZARDS MITIGATION PLAN**

JULY 2009

**National Response**

**WASHINGTON STATE COMPREHENSIVE EMERGENCY MANAGEMENT PLAN**

**Seattle Disaster Readiness and Response Plan**

**National Disaster Work**

**Resilient Washington State**

**CITY OF SEATTLE**

**Post-Disaster Recovery Plan Framework**

January 22, 2013

Federal

State

Local

# WHAT IS HAZARD MITIGATION?

*Mitigation is the effort to reduce loss of life and property by lessening the impact of disasters. Mitigation is taking action now—before the next disaster—to reduce human and financial consequences later (FEMA).*

*Mitigation planning allows communities to:*

- Identify the natural hazards for which they are at risk*
- Assess the potential impacts of those hazards*
- Develop goals, objectives, and actions to reduce impacts*
- Prioritize and implement mitigation actions*



## WHY IS MITIGATION PLANNING IMPORTANT?

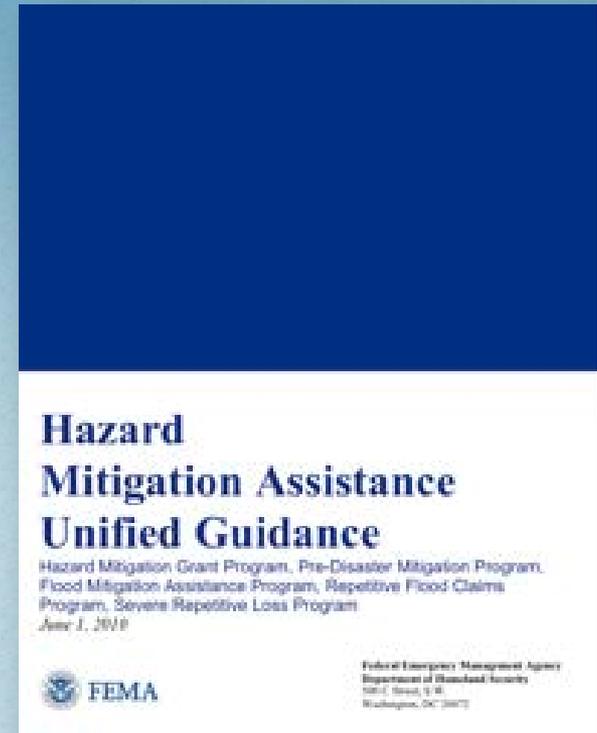
- *Guides mitigation activities in coordinated and economic manner*
- *Integrates mitigation into existing community plans/programs*
- *Considers future growth and development trends*
- *Makes community more disaster resilient*

*“.....a society that is flexible and able to adjust in the face of uncertainty and surprise is also able to capitalize on positive opportunities the future may bring.”*

— Berkes and Folke 1998; Barnett 2001

# ELIGIBILITY FOR GRANTS

- *Hazard Mitigation Grant Program*
- *Pre-Disaster Mitigation Program*
- *Expect More in the Future...*





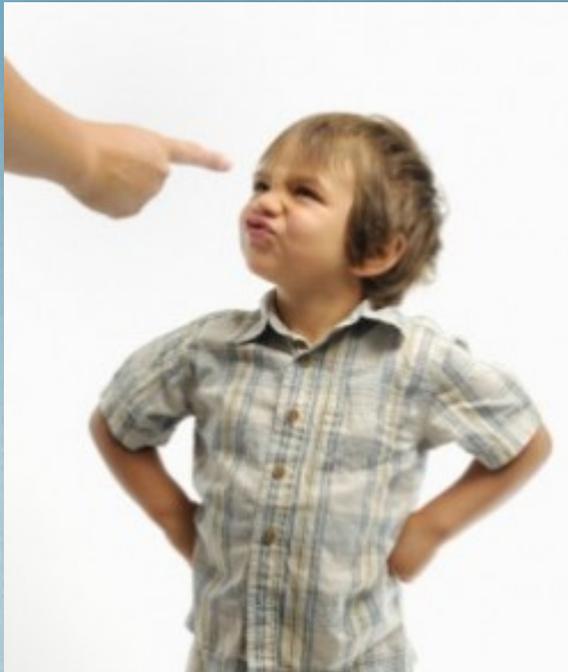
# HAZARD MITIGATION PLANNING PROCESS

Pre-Planning	Plan Development	Plan Implementation
#1: Determine the Planning Area and Resources  #2: Build the Planning Team  #3: Create an Outreach Strategy	#4: Review Community Capabilities  # 5: Conduct a Risk Assessment  #6: Develop a Mitigation Strategy	#7: Keep the Plan Current  #8: Review and Adopt the Plan  #9: Create a Safe and Resilient Community

Source: FEMA Local Mitigation Planning Handbook, 2013



# BECAUSE FEMA SAID SO...PLAN REQUIREMENTS



- *Plan will be developed to meet the requirements outlined in 44 CFR §201.6*
- *We will track the regulatory requirements so you don't have to.*
- *Local Mitigation Plan Review Tool*



# PLANNING PROCESS REQUIREMENTS

- *Document planning process*
- *Provide stakeholders with an opportunity to participate*
- *Conduct and document public involvement*
- *Incorporate existing plans and reports*
- *Discuss continued public participation and plan maintenance*
- *Provide a method for plan monitoring, evaluating, and updating*

# HAZARD IDENTIFICATION AND RISK ASSESSMENT REQUIREMENTS

- *Include type, location, and extent of all natural hazards that can impact jurisdiction*
- *Include information on previous occurrences of hazards and probability of future events*
- *Describe each hazard's impact on the community, including a summary of the community's vulnerability*
- *Address National Flood Insurance Program insured structures and repetitive loss properties*





# MITIGATION STRATEGY REQUIREMENTS

- *Document existing authorities and policies*
- *Address participation in the National Flood Insurance Program*
- *Include goals to reduce/avoid long-term vulnerabilities*
- *Identify and analyze a comprehensive set of mitigation actions*
- *Describe how mitigation actions will be prioritized, implemented, and administered*
- *Describe how mitigation actions can be integrated into other planning mechanisms*



# PLAN REVIEW, EVALUATION, IMPLEMENTATION, AND ADOPTION REQUIREMENTS

- *Update plan to reflect changes in development*
- *Revise plan to reflect progress in local mitigation efforts*
- *Revise plan to reflect changes in priorities*
- *Include plan adoption documentation*



# ROLES AND RESPONSIBILITIES

- *Confirm plan vision statement*
- *Review current mitigation plan*
- *Support Public and Stakeholder Outreach*
- *Provide feedback on*
  - *The updated risk assessment,*
  - *City capabilities, and*
  - *Mitigation strategy*
- *Review draft and final plans*



# SEATTLE ALL-HAZARDS MITIGATION PLAN JULY 2009

## *Review and Feedback*

# 2009 SEATTLE HMP REVIEW



Photo by Laurel Mercury

*Jefferson Community Center –  
Seismic Retrofit Complete*

- *How many of you were involved in the mitigation work group for the 2009 Hazard Mitigation Plan?*
- *How many of you were aware of the City's hazard mitigation plan prior to your invitation to this group?*
- *Who is new to City-wide hazard mitigation planning?*



# 2009 SEATTLE HMP REVIEW

## *Planning Process*

- *Do you think your agency's goals and priorities were incorporated into the plan process and recommendations?*
- *Do you think the right stakeholders were involved?*



# 2009 SEATTLE HMP REVIEW



Photo by Ted S. Warren/AP Photo

## *2012 Winter Storm*

### *Risk Assessment*

- *Do you think risks to the City are identified and adequately addressed in the 2009 plan?*
  - *Including risks to vulnerable populations*
- *What hazards pose the greatest risk to your agency?*
  - *infrastructure and assets*
  - *Ability to perform essential functions*



# 2009 SEATTLE HMP REVIEW

## Seattle's Mitigation Capacity

- *What authorities, policies, programs, and new resources have you instituted in the past 5 years?*
- *Are there any programs that you have stopped?*
  - *If so, why?*



Photo Credit : SDOT

*Ferry Avenue SW and California Way -  
Landslide Inter-Departmental Team (LIDT)*

# 2009 SEATTLE HMP REVIEW

## Part 1 : Long-term Directions

Mitigation Action	Responsible Department
1 Integrate Hazard Mitigation into the City's Comprehensive Plan	all departments
2 City departments should include hazard mitigation as a criterion for internally evaluating projects as part of their annual capital planning processes	all departments
3 Promote interdepartmental hazard planning efforts, such as those initiated around seismic and landslide issues	all departments
4 Departments should integrate mitigation into repair and recovery planning and projects	all departments

### Mitigation Strategy

- *Were mitigation actions successfully implemented?*
- *Did agencies use project criteria to rank mitigation actions?*
  - *Do criteria reflect your current priorities?*
- *How can we increase the visibility of the Hazard Mitigation Plan within each of your organizations?*



# 2009 SEATTLE HMP PROJECT CRITERIA

	<b>Project Criteria</b>	<b>Weight -ing</b>	Score			Total Points (Weight X score)
			(1-3 points possible) <b>Low</b>	(4-6 points possible) <b>Medium</b>	(7-9 points possible) <b>High</b>	
1.	<b>Public health and safety (potential for causing injury or death)</b>	<b>4</b>	<b>No people harmed</b>	<b>Fewer than 25 people affected</b>	<b>More than 25 people affected</b>	
2.	<b>Cost-benefit – comparison of the mitigation project's costs and benefits (whenever possible, attempt to use FEMA's criteria for FEMA funding requests)</b>	<b>3</b>	<b>No cost-benefit analysis completed or weak case presented of benefits outweighing costs</b>	<b>Moderately strong case demonstrated (i.e. greater than 1:1)</b>	<b>Excellent case (i.e. greater than 2:1)</b>	
3.	<b>Criticality of infrastructure, building or network</b>	<b>3</b>	<b>Facility or system not deemed critical</b>	<b>Facility or system moderately important to lifeline services</b>	<b>Critical to provision of lifeline services</b>	
4.	<b>Vulnerability of facility/system/function</b>	<b>3</b>	<b>Not located in vulnerable area or system not likely to be impacted</b>	<b>Moderate vulnerability</b>	<b>High vulnerability</b>	
5.	<b>Level of Target Hazard Risk (frequency and impact)</b>	<b>3</b>	<b>Hazard Risk score below 20 in SHIVA</b>	<b>Hazard Risk score in SHIVA of 20-35</b>	<b>Hazard Risk score in SHIVA above 35 or multiple hazards addressed</b>	
6.	<b>Economic impact (if project not completed)</b>	<b>2</b>	<b>Minimal impact on business or city services or related jurisdiction</b>	<b>Moderate impact on business or city services or related jurisdiction</b>	<b>High impact on business or city services or related jurisdiction</b>	
7.	<b>Public involvement</b>	<b>2</b>	<b>No public hearings held</b>	<b>Prioritized by department with public involvement</b>	<b>Included in neighborhood plan</b>	
V.	<b>TOTAL POINTS</b>					

# STAPLEE CRITERIA

	Social	Technical	Administrative	Political	Legal	Economic	Environmental
Considerations	<p>Community Acceptance</p> <p>Adversely Affects Segment of Population</p>	<p>Technical Feasibility</p> <p>Long-term Solution</p> <p>Secondary Impacts</p>	<p>Staffing (sufficient number of staff and training)</p> <p>Funding Allocated</p> <p>Maintenance/Operations</p>	<p>Political Support</p> <p>Local Champion or Plan Proponent</p> <p>Public Support</p>	<p>State Authority</p> <p>Existing Local Authority</p> <p>Action Potential Subject to Legal Challenge by Opponents</p>	<p>Benefit of Mitigation Action</p> <p>Cost of Mitigation Action</p> <p>Contributions to Economic Health</p> <p>Outside Funding Required</p>	<p>Affects Land/Water Bodies</p> <p>Affects Endangered Species</p> <p>Affects Hazardous Materials and Waste Sites</p> <p>Consistent with Community's Environmental Goals</p> <p>Consistent with Federal Laws</p>

# 2009 SEATTLE HMP REVIEW

SEATTLE ALL-HAZARDS MITIGATION  
PLAN

JULY 2009

## *Plan Maintenance*

- *Did annual Mitigation Work Group plan reviews occur?*
- *Was ongoing public outreach conducted?*
  - *Was it successful?*
- *Comments on Plan Format*

# SEATTLE ALL-HAZARDS MITIGATION PLAN JULY 2009

## *Vision Statement Review and Revision*



# 2009 VISION STATEMENT

*“To reduce the vulnerability of Seattle’s people, businesses, communities, and built and natural environment to the effects of a natural or human-caused disaster.”*



Photo Credit : [www.seattlerex.com](http://www.seattlerex.com)

# INCLUSIVE OUTREACH & PUBLIC ENGAGEMENT PLAN

# OVERVIEW

- *Goals and objectives of public involvement*
- *Key stakeholders*
- *Schedule and tools*
- *Questions for the MWG:*
  - *Is the approach on target?*
  - *Can the stakeholder list be refined?*
  - *How can you help us spread the word / broaden the conversation?*
  - *How should we measure success?*

# GOALS AND OBJECTIVES

- *Create a public dialogue around protecting the people of Seattle*
  - *Raise public awareness about the HMP update*
- *Provide the opportunity for all affected communities to participate*
  - *Implement open, transparent, culturally sensitive process*
  - *Identify community values*
  - *Include diverse stakeholders*
  - *Engage the public at meaningful milestones*
- *Generate public acceptance and support for the resulting plan*
- *Create a project record of public input, responses, and outreach activities*
- *Comply with FEMA and City of Seattle requirements*

# KEY STAKEHOLDERS

- *City of Seattle departments and offices*
- *Emergency service providers*
- *Transportation and transit agencies*
- *Public utilities*
- *Elected officials, local jurisdictions, Tribal nations*
- *Neighborhood and community groups*
- *Non-profit organizations / vulnerable populations*
- *School districts and higher education institutions*
- *Businesses and employers*
- *Cultural institutions*
- *State and federal regulatory agencies*
- *Public health*
- *Weather and geological information*
- *Complementary and parallel processes*



# OUTREACH SCHEDULE



Photo by Laurel Mercury

***Rainier Community Center –  
Public Meeting Location***

- ***March 25 – April 23: Public comment period to inform draft development***
- ***April 8: First public meeting***
- ***Fall: Public comment period on draft Seattle HMP***
- ***October: Second public meeting***
- ***December: Close-out workshop***



## TOOLS

- **Spreading the word**
  - Traditional media: News releases
  - Social media: OEM website, Seattle Facebook, Twitter, listservs, community calendars
  - Ethnic media
  - Piggy-backing on other processes and opportunities
- **Collecting feedback**
  - Web-based comment solicitation and tracking
  - Online and hardcopy survey
- **Informing plan development**
  - Real-time access to public input
  - Updates at all MWG meetings

The screenshot shows the Seattle.gov website's Event Calendar page. The header includes the Seattle.gov logo and navigation links for Business in Seattle, Living in Seattle, Visiting Seattle, City Services, and City Departments. A search bar and a 'Need Help? Give us a Call. 206-684-CITY(2489)' link are also present. The main content area features a sidebar with a navigation menu, a central 'EVENT CALENDAR' section with a table of events, and a right-hand sidebar with a calendar for February 2014 and search filters for keywords, location, and audience.

Date	Time	Event	Location
2/19	9:30am	Toddler Play Room	Ballard Community Center 6020 28th Ave NW Seattle, WA 98107
2/19	9:30am	The Nobel method of BlackBerry Removal	Please refer to the below-link for address information.
2/19	9am	Washington Post Caregivers Forum	W Hotel 1112 Fourth Ave Seattle, WA
2/19	9:30am	Toddler Com	Butler Lake Community

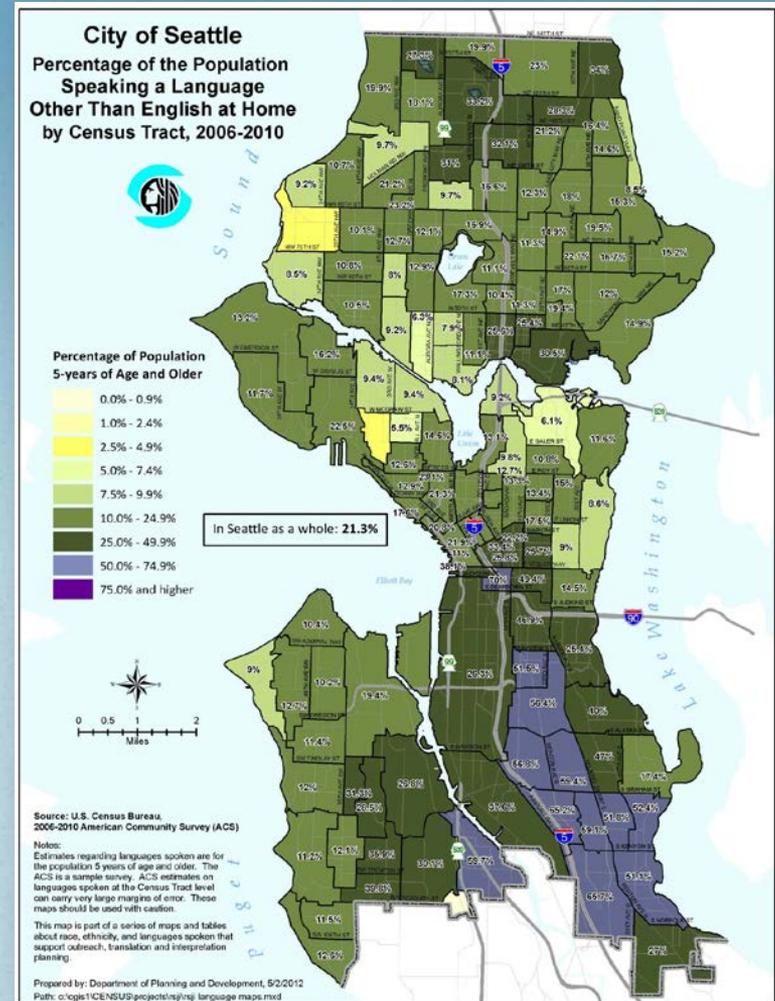
# SURVEY

- *Respondent information (optional)*
- *How concerned are you about the following hazards in Seattle?*
  - *Earthquake, Landslide, Tsunami & Seiches, Volcanic Eruptions & Lahars, Civil Disorder, Terrorism, Active Shooter, Transportation Incidents, Fire, Hazardous Materials Incidents, Excessive Heat, Floods, Snow, Water Shortages, Wind Storms*
- *How important are the following mitigation activities to reducing hazards?*
  - *Prevention*
  - *Property protection*
  - *Public education*
  - *Natural resource protection*
  - *Emergency services*
  - *Structural projects*
- *What is the most effective way for you to stay involved?*



## MEASURING SUCCESS

- *Number of published and posted public announcements*
- *Number of “partner platforms” used to spread word to stakeholders*
- *Number of participants and (to the extent possible) degree of diversity:*
  - *Public meeting participants (inclusive sign-in sheets)*
  - *Map of participant locations*
  - *Surveys completed (including translated versions)*



# QUESTIONS FOR THE MWG



- *Is the approach on target?*
- *Can the stakeholder list be refined?*
- *How can you help us spread the word / broaden the conversation?*
- *How should we measure success?*

# NEXT STEPS

- *Public Outreach and Engagement*
  - *Public Comment Period: **March 25 – April 23***
  - *Public Meeting: **April 8***
- *Planning Support*
  - *Provide feedback*
    - *Status of mitigation actions identified in the 2009 HMP*
    - *Other feedback, as necessary*
  - *Mitigation Work Group Meeting #2: **April 28***
    - Topic: **Seattle Hazard Identification and Vulnerability Analysis & Risk Assessment***
  - *Use the **Project Planning Portal** to review documents and timelines and provided feedback into the planning process*



# QUESTIONS?

*Thank you for your participation!*

City of Seattle Hazard Mitigation Plan Update

nseitz@ene.com | My Account | Sign Out

Home > Calendar

Print:

Calendar Events

Add Event:

February 2014

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
26	27	28	29	30	31	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24 Mitigation Work Group Meeting #1 11:00 AM - 1:00 PM	25	26	27	28	1
2	3	4	5	6	7	8



## **B-2 Mitigation Work Group Meeting #2**



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### Meeting Summary

Project Management     Mitigation Working Group     Other:

**Date:** April 28, 2014

**Time:** 11:00 a.m. to 1:00 p.m.

**Location:** Seattle Municipal Tower, Room 2450

**Attendees:**

	Name	Organization	Department
1	Barb Graff	City of Seattle	Office of Emergency Management
2	Donna Voss	City of Seattle	Office of Emergency Management
4	Laurel Nelson	City of Seattle	Office of Emergency Management
5	TJ McDonald	City of Seattle	Office of Emergency Management
6	Jill Cray	City of Seattle	Seattle Center
7	Julie Willcher	City of Seattle	Seattle Department of Transportation
8	Jerry Koenig	City of Seattle	Seattle City Light
9	Betty Lunceford	Seattle Community Colleges	
10	Julie Matsumoto	City of Seattle	Department of Finance and Administrative Services
11	Mathew McBride	BECU	
12	Genna Nashem	City of Seattle	Department of Neighborhoods
13	Patti Petesch	City of Seattle	Seattle Parks and Recreation
14	Jill Watson	City of Seattle	Human Services Department
15	Vicki Wills	City of Seattle	Department of Information Technology
16	Matthew Lieuallen	Ecology and Environment, Inc.	
17	Natalie Seitz	Ecology and Environment, Inc.	
18	Bill Richards	Ecology and Environment, Inc.	
19	Aoife Blake	Envirolssues	



**Agenda:**

	<b>Meeting Items</b>	<b>Duration</b>	<b>Presenter/Facilitator</b>
1	Opening remarks and time tracking	5 minutes	Donna Voss, City of Seattle
2	City of Seattle Hazards and Risk Assessment Results	1 hour	TJ McDonald, City of Seattle
3	Public Outreach and Engagement Initial Results	10 minutes	Natalie Seitz, Ecology and Environment
4	Mitigation Goals and Objectives Review and Revision	20 minutes	Matthew Lieuallen, Ecology and Environment
5	Hazard Mitigation Project Examples	10 minutes	Natalie Seitz, Ecology and Environment
6	Presentation of Mitigation Review Criteria	10 minutes	Natalie Seitz, Ecology and Environment
7	Next steps	5 minutes	Matthew Lieuallen, Ecology and Environment

**\*See Attachment 2**

**Attachments:**

1. Sign-in sheets
2. Meeting agenda
3. Seattle Hazard Identification and Vulnerability Analysis, Hazard Ranking Table
4. PowerPoint presentation
5. City-wide Vision, Mission and Guiding Principles and MWG Mission, Goals and Objectives
6. Draft Review Criteria Options

**Summary:**

The Seattle Hazard Mitigation Plan (HMP) Update project team hosted the second of five Mitigation Work Group (MWG) meetings on April 28, 2014. This meeting was intended to provide MWG participants with an overview of the Seattle Hazard Identification and Vulnerability Analysis (SHIVA); share the results from the open house and public comment survey; review and collect feedback on the 2009 Seattle HMP goals and objectives; identify resources for mitigation strategy development; and share mitigation review criteria. Twelve members of the MWG and seven members of the project management team participated in the meeting.

***Opening Remarks and Introductions***

Donna Voss, Project Lead, Office of Emergency Management (OEM), welcomed the group and thanked them for attending and participating in the Seattle HMP Update process. Donna noted the great response from the public through the open house and public comment survey and thanked the MWG for their help in sharing the information.



Donna reminded the MWG to track and report the number of hours they and their staff worked on the project, as the hours can be applied toward the in-kind contribution needed for OEM's grant.

### ***City of Seattle Hazards Identification and Vulnerability Assessment Results***

TJ McDonald, OEM, provided an overview of the SHIVA results. TJ explained that there is no average hazard or disaster. Disasters are examined in terms of frequency and magnitude. For example, a number of smaller landslides could occur often with very few to no impacts, but one big landslide can have huge impacts, such as the recent Oso landslide. TJ highlighted that the SHIVA ranks 18 hazards according to the severity of the most likely hazard and the maximum credible hazard. He explained that the SHIVA accounts for frequency, but the overall ranking is driven by the consequence of extreme events (maximum credible hazard; *See Attachment 3*).

TJ provided an overview of the process used to identify hazards (e.g., history of hazards) and the methodology used for the assessment. TJ explained the ranking of the 18 hazards highlighted in the SHIVA, with particular focus on the hazards identified by the public as most concerning. For each hazard, TJ provided an overview of each hazard, as well as the City's exposure to impacts from these hazards (*see Attachment 4*).

### ***Public Outreach and Engagement Initial Results***

Natalie Seitz, Ecology and Environment Inc., reported to the MWG on the results of the public comment period. She noted that a summary of the comments received will be shared with the MWG. Natalie reminded the group that a public meeting was held on Tuesday, April 8, 2014, and reported that 20 attendees participated. The attendees identified earthquake as the hazard of primary concern. Natalie noted that while earthquake scored higher than all other hazards, the next highest rankings were floods, hazardous materials, and an active shooter. Natalie noted that concern regarding an active shooter also scored high in the survey of respondents in the Downtown and Southeast Seattle neighborhoods. Public meeting attendees identified prevention (e.g., building codes) as the most popular sector to allocate mitigation resources.

Natalie presented the key findings from the survey—which received over 700 responses—by neighborhood and by vulnerable populations (e.g., those 65 years of age and older, experiencing a disability, and/or who speak a language other than English at home). Natalie reported that overall people were most concerned with earthquake, infrastructure/cyber incidents, and transportation hazards. She noted some variation by population segment and neighborhood, with landslides, power outages, active shooter, and hazardous materials incidents ranking higher for select populations and neighborhoods. The greatest number of respondents identified prevention as a very important sector to allocate mitigation resources. Natalie noted that the fewest number of people identified property mitigation as very important; however, the majority of respondents thought that this sector was very important as well. Natalie concluded that the findings indicate the need for a multi-pronged approach for addressing hazards.



The internet and public workshops/neighborhood meetings were identified as the top two sources for information across the entire population of respondents, for vulnerable groups, and for each neighborhood. Some variation was identified, as television, social media, and newspapers were the third most popular information sources for each of the vulnerable populations evaluated. Friends/relatives were the third most popular information source for the population at large.

TJ asked if the team felt survey respondents may have misinterpreted the meaning of “public workshops,” as they had always experienced low attendance at those type of events. Matthew McBride (BECU) suggested that the survey was probably filled out by respondents who would normally attend public meetings. Matthew was also surprised that social media did not score higher as an information source.

Natalie provided an overview of the written-in comments, which largely echoed what was heard at the public meeting. She noted the range in comments from those who recommended that the City use science-based methods to identify hazards and mitigation to others who appreciated providing input.

### ***Mitigation Goals and Objectives Review and Revision***

Matthew Lieuallen, Ecology and Environment Inc., emphasized the importance of how the City talks about mitigation goals and strategies, and emphasized that these goals and strategies should reflect the City’s direction for hazard mitigation. Matthew presented the overarching vision, mission and guiding principles for the City’s emergency management planning. These vision, mission and guiding principles are reflected in multiple ongoing planning efforts. Matthew outlined the 2014 Mitigation Work Group Mission, as well as goals and strategies from the 2009 City of Seattle HMP Update (*see Attachment 5*).

The MWG identified some areas of change in the goals set out in the 2009 City of Seattle HMP Update, including the following revisions:

- Protect Public Health and Safety
  - Julie Willcher (Seattle Department of Transportation) noted that “*improve disaster warning systems*” should be ranked as the lowest priority among the other objectives.
- Safeguard Critical Public Facilities and Infrastructure
  - Jerry Koenig (Seattle City Light) suggested changing “*Create redundancies for critical networks such as water, sewer, digital data, power and communications*” to “*Create redundancies for critical networks such as water, sewer, digital data, energy, and communications.*”
- Protect Public and Private Property
  - Matthew McBride (BECU) suggested that *objective F, “Promote mitigation of historic buildings,”* was not a consistent objective across the City’s emergency management and response community. Matthew recalled a specific planning exercise surrounding



recovery of Pioneer Square in the aftermath of a disaster where it was determined not to preserve the buildings.

- Barb Graff (OEM) noted that the specific scenario was in the context of an exercise. Since then, the City has been doing more work looking toward mitigation measures and the cost analysis of mitigation.
- Maintain Seattle's Economic Vitality
  - No comment provided.

Matthew Lieuallen asked the MWG for additional feedback, conflicts, and suggested language changes to refine the goals and objectives of the 2009 Hazard Mitigation Plan Update. Mathew McBride and Jerry Koenig discussed adding a fifth category relating to recovery actions after a disaster. MWG members suggested that many philanthropists, businesses, transportation providers, and others may see the recovery after a disaster as an opportunity to rebuild and make improvements. It was acknowledged that the focus of the MWG is to prepare and mitigate impacts, rather than focus on rebuilding after a disaster. Julie Willcher suggested the team look at strategic abandonment in relation to hazards.

Matthew Lieuallen asked the MWG to review and provide feedback on the goals and objectives identified in the 2009 HMP Update.

### ***Hazard Mitigation Project Examples***

Natalie Seitz presented tools for identifying mitigation strategies. She noted that the SHIVA, public feedback, 2009 HMP, and capability assessment (implementing mitigation actions through existing programs and policies) all feed into mitigation strategies. Natalie asked departments to review actions that have not been accomplished since the 2009 HMP to determine if these actions are still a high priority for the City. Natalie noted that the City also has mitigation concepts within existing City plans and suggested that the MWG look at their respective department's plans to inform mitigation strategies for the 2014 HMP Update.

Natalie noted that mitigation actions are specific projects and activities that help achieve goals and objectives. Mitigation strategies should be actions that are specific, measurable, achievable, relevant, and time bound. Natalie suggested that MWG members talk with their departments and come up with a wish list of mitigation actions for the next MWG meeting.

### ***Presentation of Mitigation Review Criteria***

Natalie Seitz provided an overview of the mitigation review criteria updated from the 2009 Hazard Mitigation Plan based on feedback from MWG Meeting #1 (*see Attachment 6*). She noted that the feedback on the criteria was that they were cumbersome to work with, political support should not outweigh life safety, and there should be a higher weight given to economic impacts.



Natalie presented two methods the MWG could use to assess costs:

- Option 1: Assess cost based on the economic cost of the particular mitigation item. This method would include the cost of regulatory review.
- Option 2: Assess cost using the Social, Technical, Administration, Political, Legal, Environment, and Economic (STAPLEE) criteria. This approach is in line with Federal Emergency Management Agency (FEMA) guidance and would help capture short-term opportunities that lower the non-monetary costs of implementing a mitigation action.

Matthew McBride suggested a blended approach of options 1 and 2. For example, you would fill out option 1 and if the particular mitigation action and if it scores in a certain bracket then you would also be required to fill out STAPLEE Criteria in option 2. Barb Graff pointed to the “Public” aspect of the STAPLEE approach and suggested that there is no one unified public, some members of the public may support a project while others may be vocally opposed. She suggested this area would need further discussion. Natalie agreed that assessing the benefit of a particular mitigation item may need to be tested to examine its functionality. TJ McDonald noted the specific reference to SHIVA and expressed some concern about associating a score with the SHIVA. Natalie noted that questions related to vulnerability reduction are reflective of the 2009 criteria and are not required for the update.

Julie Willcher suggested increasing the cost identified in option 1. She suggested that the cost bracket needs to be higher to be able to incorporate the typical costs for transit-related projects. Jerry Koenig suggested adding a cost-benefit ratio to allow for easier comparison across a number of mitigation items. MWG members also discussed whether the criteria should reflect availability of grant funding.

Matthew Lieuallen noted that the criteria are intended to be used for high-level prioritization. Additional detail will be considered during project-specific planning. Matthew also suggested that the MWG provide feedback on the criteria options. He noted that the project team will discuss these criteria further and recognized the need for this tool to be easy to use across all departments.

### **Next Steps**

Matthew Lieuallen discussed the next steps in the HMP Update process and reminded the MWG of the next meeting on June 23 that will focus on mitigation strategies. Matthew thanked the MWG for their participation in the meeting.

	<b>Action Items</b>	<b>Responsibility</b>	<b>Timeline</b>
1	Review and provide feedback on the goals and objectives from the 2009 City of Seattle Hazard Mitigation Plan Update	MWG	TBD
2	Review and provide feedback on the mitigation review criteria	MWG	TBD
3	Share public comment survey with MWG	E&E	TBD



4	Share Capability Assessment with MWG	E&E	TBD
5	Provide examples from Federal Emergency Management Agency's best practices guide to identifying hazard mitigation measures	E&E	TBD



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## SEATTLE HAZARD MITIGATION PLAN UPDATE Mitigation Working Group #2 Agenda

**Date:** Monday, April 28, 2014

**Time:** 11:00 am to 1:00 pm

**Location:** Seattle City Light, Department Operations Center, Seattle Municipal Tower Room 2450

Meeting Items	Duration	Presenter/Facilitator
1 Opening Remarks and Time tracking	5 minutes	Donna Voss, City of Seattle
2 City of Seattle Hazards and Risk Assessment Results	1 hour	TJ McDonald, City of Seattle
3 Public Outreach and Engagement Initial Results	10 minutes	Natalie Seitz, Ecology and Environment Inc. (E & E)
4 Mitigation Goals and Objectives Review and Revision	20 minutes	Matthew Lieuallen, E & E
5 Hazard Mitigation Project Examples	10 minutes	Natalie Seitz, E & E
6 Presentation of Mitigation Review Criteria	10 minutes	Natalie Seitz, E & E
7 Next Steps	5 minutes	Matthew Lieuallen, E & E

**Table 1. Hazard Ranking**

	Most Likely Scenario													Maximum Credible Scenario													Combined Ranking						
	Geographic Scope	Duration	Health Effects	Displacement	Economy	Environment	Structures	Transportation	Critical Services	Confidence in Govt	Base Score	Frequency (F)	Cascading Effects (CE)	Multiplier (F + CE)	Subtotal	Geographic Scope	Duration	Health Effects	Displacement	Economy	Environment	Structures	Transportation	Critical Services	Confidence in Govt	Base Score		Frequency (F)	Cascading Effects (CE)	Multiplier (F + CE)	Subtotal	Future Emphasis	
Earthquakes	5	2	2	2	2	2	3	2	2	1	2.3	4	4	8	18.4	5	4	5	5	5	5	5	5	5	5	5	4.9	2	5	7	34.3	3	55.7
Snow & Ice Storm	5	3	1	2	2	1	2	2	2	1	2.1	5	2	7	14.7	5	4	2	3	3	2	2	4	3	3	3	3.1	3	3	6	18.6	5	38.3
Infrastructure / Cyber	1	2	1	2	2	2	2	2	2	3	1.9	5	2	7	13.3	5	4	2	5	4	3	1	4	4	3	3	3.5	1	4	5	17.5	5	35.8
Windstorms	5	1	2	2	2	2	2	2	2	1	2.1	5	1	6	12.6	5	2	2	3	3	3	3	4	4	3	3	3.2	2	4	6	19.2	3	34.8
Power Outages	3	2	2	2	2	1	1	2	2	1	1.8	5	2	7	12.6	5	4	2	4	3	1	2	3	3	5	3.2	3	3	6	19.2	3	34.8	
Terrorism	1	1	2	2	2	2	2	2	1	3	1.8	4	2	6	10.8	4	3	5	5	5	5	5	5	5	5	4.7	1	3	4	18.8	5	34.6	
Disease Outbreaks	5	5	4	1	2	1	1	1	1	1	2.2	4	1	5	11.0	5	5	5	5	4	1	1	3	3	3	3	3.5	3	2	5	17.5	5	33.5
Flooding / Atmo. River	5	2	1	2	2	2	2	2	1	1	2.0	5	1	6	12.0	5	4	2	4	3	2	3	4	3	3	3.3	2	3	5	16.5	5	33.5	
Excessive Heat Events	5	3	2	2	2	1	1	2	1	1	2.0	5	1	6	12.0	5	4	4	4	3	2	1	3	3	3	3.2	3	2	5	16	5	33.0	
Fires	2	2	2	5	1	2	1	2	2	1	2.0	4	2	6	12.0	2	4	4	3	3	2	2	4	2	3	2.9	2	4	6	17.4	3	32.4	
Tsunamis and Seiches	3	2	2	3	3	2	3	2	1	1	2.2	2	2	4	8.8	4	4	4	5	4	3	3	3	3	3	3.4	2	4	6	20.4	3	32.2	
Landslides	4	3	1	2	1	2	3	2	1	1	2.0	5	1	6	12.0	3	3	3	3	2	3	3	3	2	3	2.8	2	4	6	16.8	3	31.8	
Transport Incidents	1	1	3	2	1	1	2	2	1	1	1.5	5	2	7	10.5	3	2	4	3	2	2	2	3	2	3	2.6	2	5	7	18.2	3	31.7	
Water Shortages	5	5	1	2	2	2	2	1	3	1	2.4	5	2	7	16.8	5	5	1	3	3	3	2	1	3	3	2.9	2	2	4	11.6	3	31.4	
Social Unrest	3	1	2	4	1	1	2	2	1	3	2.0	5	2	7	14.0	5	3	3	5	3	1	3	2	2	5	3.2	2	2	4	12.8	3	29.8	
HazMat Incidents	3	1	2	4	2	2	2	2	2	1	2.1	3	2	5	10.5	3	3	2	2	3	4	2	3	2	5	2.9	1	3	4	11.6	3	25.1	
Volcano Hazards	2	5	1	4	3	2	3	2	3	1	2.6	2	1	3	7.8	5	5	1	2	3	2	4	4	2	1	2.9	1	3	4	11.6	3	22.4	
Active Shooter	2	2	2	1	1	1	1	1	1	1	1.3	4	1	5	6.5	4	2	3	3	2	1	2	4	4	3	2.8	2	1	3	8.4	5	19.9	



## Mitigation Work Group Meeting #2, Monday, April 28, 2014

Please Print

Sign – In Sheet

Name	Organization	Phone	E-mail	Prep Hours *	Meeting Hours	Hours Travel	Total Hours	Miles Travel
1. Matthew Licuallen	E+E	503.248.5600 x432	mlicuallen@ene.com					
2. AOIFE BLAKE	EI	206-269-5041	ablake@environissues.com					
3. Natane Seir	E+S	206-624-9537	nseir@ene.com					
4. Donna Voss	OEM	206-233-5089	donna.voss@seattle.gov					
5. Bill Richards	E+E	206-624-9537	wrichards@ene.com					
6. Jerry S. Koenig	SCL	206-684-3095	jerry.koenig@seattle.gov	2	2			
7. Laurel Nilson	SOEM	206/233-5075		2.5	2			
8. PATTI PETESCH	PARKS	206 615-1803	patti.petesch@seattle.gov	.5	2			
9. JIDE WILLETTER	SDOT	206.684.4059	jide.willetter@seattle.gov		2			
10. Genna Rastor	DOV	206-684-0227	genna.rastor@seattle.gov		2			
11. Julie Matsumoto	FAS	206-684-0357	julie.matsumoto@seattle.gov	1.5	2			
12. TJ McDonald	OEM	206-233-5073	tj.mcdonald@seattle.gov					
13. Betty Luncetford	SColleges	206 9344195	betty.luncetford@seattlecolleges.edu		2			
14. Jill Watson	HSD	206-684-7788	jill.watson@seattle.gov	.5	2			
15. Mathew McBride	BECO	206.501.0156	mathew.mcbride@becu.org	1.3	3.2	2		30

\* Prep Hours were time spent at public meeting, on update of status of 2009 HM Projects, review and comment on Vision and Mission



## Mitigation Work Group Meeting #2, Monday, April 28, 2014

Please Print

Sign - In Sheet

	Name	Organization	Phone	E-mail	Prep Hours	Meeting Hours	Hours Travel	Total Hours	Miles Travel
16.	Jill Cray	Seattle Center	4-7107	jill.cray@seattle.gov		2			
17.	Brian Gandy	OCM	4-0437	brian.gandy@seattle.gov		2			
18.	Vicki Willis	DOTT	4-5719	v.willis@seattle.gov		2			
19.									
20.									
21.									
22.									
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25.									
26.									
27.									
28.									
29.									
30.									

\* Prep Hours were time spent at public meeting, on update of status of 2009 HM Projects, review and comment on Vision and Mission

# MITIGATION WORK GROUP - MEETING #2

## ***Agenda***

1. *Opening Remarks and Time Tracking*
2. *City of Seattle Hazard Identification and Risk Assessment (SHIVA) Results*
3. *Public Outreach and Engagement Results*
4. *Mitigation Goals and Objectives Review and Revision*
5. *Hazard Mitigation Project Examples*
6. *Presentation of Mitigation Review Criteria*
7. *Next Steps*



# TIME TRACKING



- *Match – grant requirement*
- *Match eligibility – non-grant funded or grant match hours*
- *Tracking*



# SEATTLE HAZARD IDENTIFICATION AND VULNERABILITY ANALYSIS AND RISK ASSESSMENT

# HAZARD RANKINGS

*Ranking are a weighting of a Most Likely and a Maximum Credible Scenario.*

*Not a list of frequency.*

*Consequences of most extreme events help drive ranking*

***Any hazard on this list could cause Seattle's worst ever disaster!***

1. Earthquakes
2. Snow and Ice Storms
3. Infrastructure / Cyber Disruption
4. Windstorms
5. Power Outages
6. Terrorism
7. Disease Outbreaks
8. Flooding / Atmospheric River
9. Excessive Heat Events
10. Fires
11. Tsunamis and Seiches
12. Landslides
13. Transportation Incidents
14. Water Shortages
15. Social Unrest
16. Hazardous Materials Incidents
17. Volcano Hazards
18. Active Shooter

## HAZARD VS DISASTER?

- *Hazard is a source of potential harm.*
- *A hazard is a class of phenomena regardless of magnitude. e.g. a fire in a trashcan and the 1889 Seattle Fire.*
- *Disasters are an occurrence of a hazard that require activation of the City's emergency management system.*
- *Most disasters involve multiple hazards.*
- *Departments can usually handle single hazard incidents with their own resources.*
- *The SHIVA concentrates on hazards that can trigger disasters. Discounts smaller hazard occurrences that happen more frequently.*
- *Hazards are ranked based on their role as the trigger (or primary hazard) for a disaster.*
- *For many hazards, the worst occurrence would be as a secondary hazard. (e.g. Fires and landslides following quake).*
- *Most hazards generate many more small incidents that don't rise to the level of a disaster. These small incidents are not captured in rankings.*

# HOW ARE HAZARDS IDENTIFIED?

- *Ask the scientific community*
- *Research local historical documents*
  - *Newspaper articles*
  - *After-action reports*
- *Identify hazards nationally or internationally that may occur here but haven't yet*
- *Read plans and reports from local governments, non-profits and businesses*
- *Compile draft list*
  - *Group like items (e.g. oil trains -> hazmat)*
- *Consult stakeholders*
- *Compile final list*

# HOW ARE HAZARDS RANKED?

- *Use three measures:*
  1. *Consequences*
  2. *Frequency*
  3. *Secondary hazards (AKA ‘Cascading Effects’)*
- *Consequences vary. Many more small consequence incidents than large consequence incidents.*
  - *Develop a ‘Most Likely’ scenario and a ‘Maximum Credible’ scenario.*
- *Rank consequences, frequency and cascading effects from 1 (low) to 5 (high) for both scenarios*
- *Multiply the numbers together for both scenarios*
- *Add the scenario scores and a ‘future emphasis’ score for final hazard score.*



# CONSEQUENCES

- *To understand consequences, must understand the community.*
  - *SHIVA has extensive Community Profile.*
- *Use 10 consequence categories. Averaged to yield overall rating.*

<i>Geographic Scope</i>	<i>Environment</i>
<i>Duration</i>	<i>Structures</i>
<i>Health Effects</i>	<i>Transportation</i>
<i>Displacement</i>	<i>Critical Services</i>
<i>Economy</i>	<i>Confidence in Government</i>

# ABOUT SCENARIOS

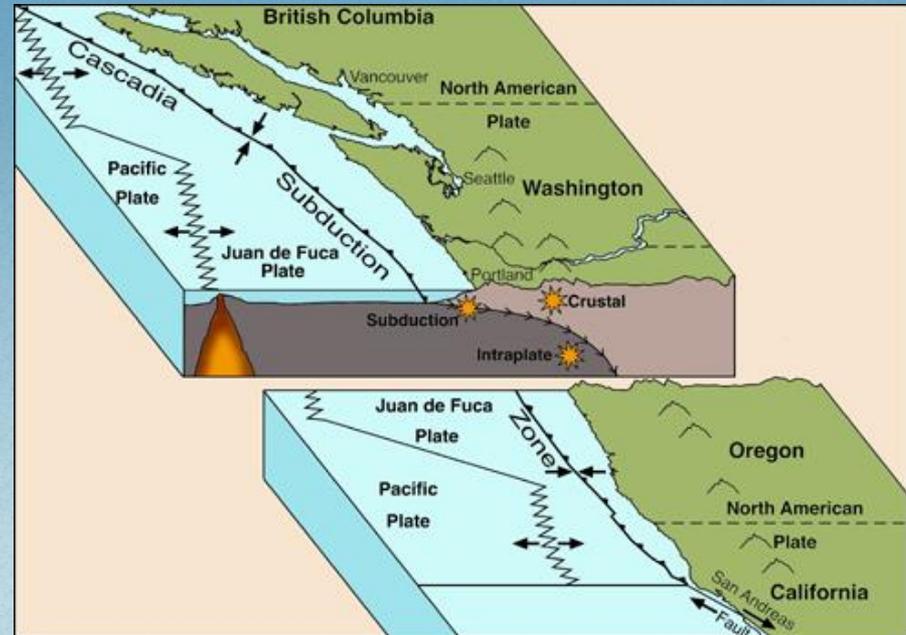
- *SHIVA uses scenarios to illustrate hazard consequences.*
- *We imagine what could reasonably happen in two situations for each hazard.*
- *These scenarios are not predictions or forecasts. It is not possible to predict disasters.*
- *The effects of the disasters envisioned in the scenarios based on the best available data and science but are often educated guesses.*
- *They are meant to provoke discussion, help readers visualize hazards and promote emergency planning targets.*

# EARTHQUAKES

#1 hazard due to catastrophic potential and likelihood of occurrence.

## Major Points

- Three different kinds of earthquakes affect Seattle
  - **Deep.** Like 2001 earthquake. About every 50 years.
  - **Shallow.** Seattle Fault. Last one about 900 AD. Up to M 7.5. Tsunami and massive landslides strong possibility. Chance M 6.5+ 1 in 1000 per year.
  - **Megathrust.** Offshore. Last one 1/26/1700. Regional scope. Landslides possible. Tsunami on coast but not in Seattle. Chance 1 in 500 per year.
- Liquefaction is a major hazard in Seattle. 15% of Seattle's soil can liquefy.
- Older brick buildings are most vulnerable. Seattle has 969 possibly more.





## LIQUEFACTION

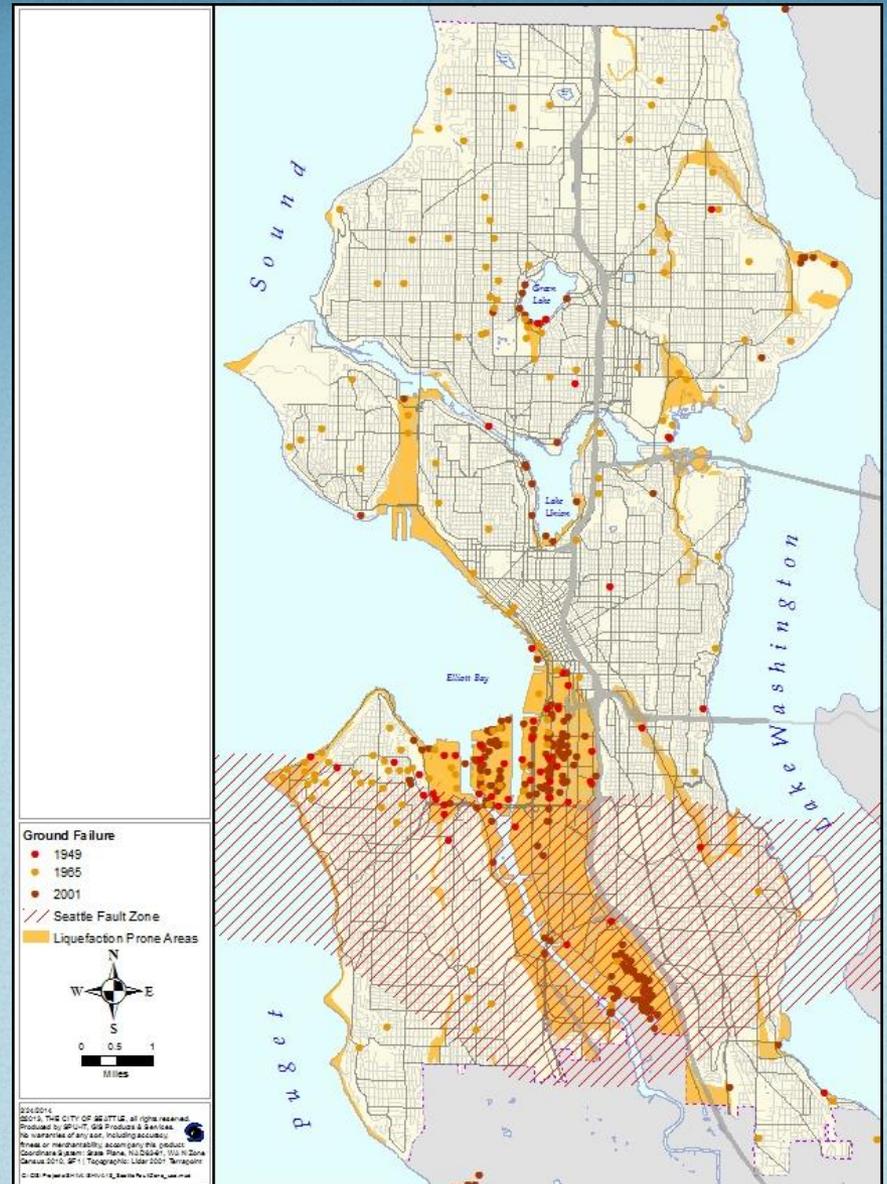
15% of Seattle prone to liquefaction. Most of these areas are river and stream bottoms. Land use is predominately industrial.

### Vulnerability

- Why hazard? When soil liquefies it can't support structures well.



- 73% of Seattle's industrial land is in liquefaction prone areas.
- 35,000 people estimated to live in areas.
- King County Int'l Airport and Port of Seattle in area.
- Key transportation routes and infrastructure travel through areas.





## LANDSLIDES

Seattle is very landslide prone. The bluffs along Puget Sound and Lake Washington have had the most slides historically.

### Major Risks

- Landslide prone areas: 8.4% of the City's land area.
- Ground water and shaking increase the chance of landslides.
- During storms swarms of landslides can occur. 180 in January 1997.
- Most slides are less than 10 feet deep, but bigger 'deep' or 'rotational' slides not uncommon. Sunken forests in Lk. Wash.
- Most slide prone areas are open space but are bordered by a range of land uses – residential being the most common.
- Most insurance does not cover landslides.
- Slides in Seattle Fault Earthquake could be massive – 10,000+ given saturated soils.





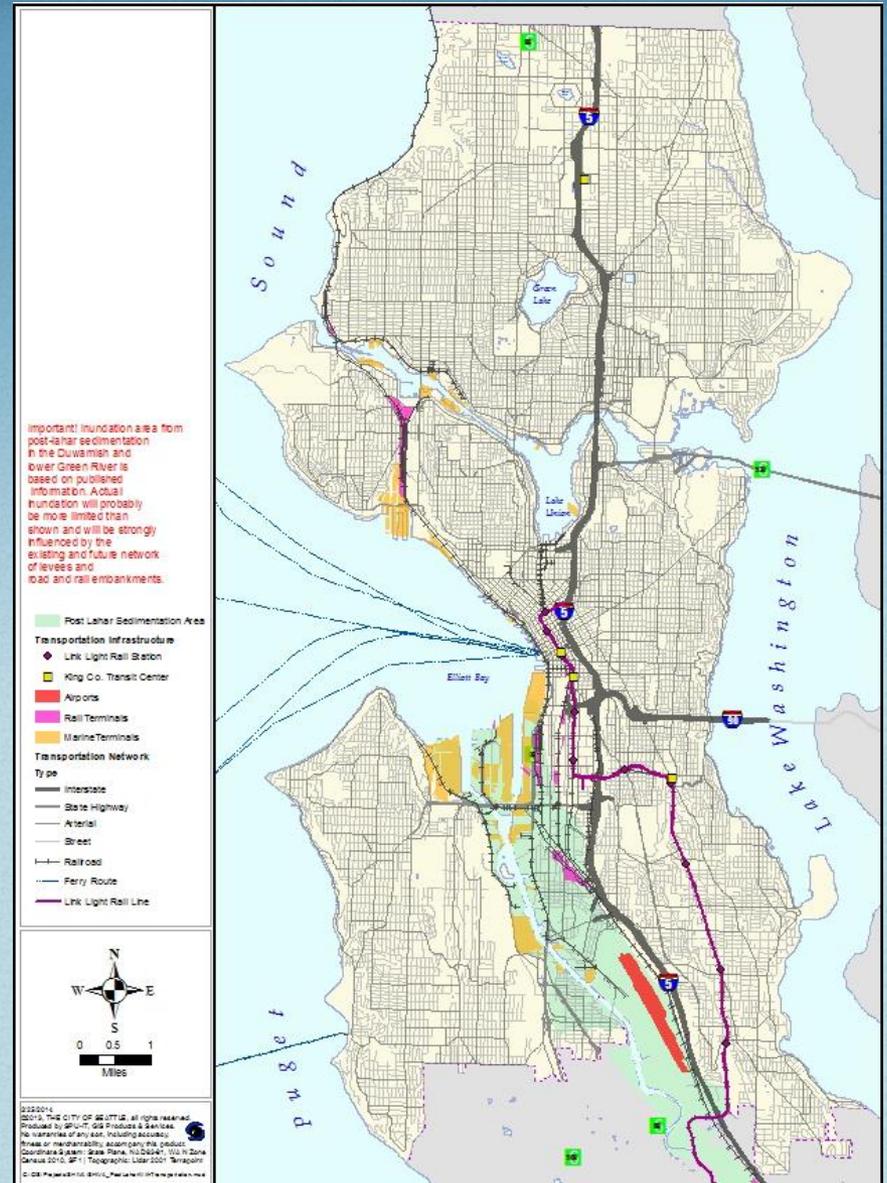


## VOLCANO HAZARDS

Seattle's major risk is massive amounts of debris flooding the Sodo area after a lahar (mudslide) on Mt. Rainier.

### Major Risks

- **Ash** – volcanoes as far as California could cause ashfall here in Seattle.
- **Weather patterns** - Seattle is west of the Cascade volcanoes. **Most** of the time prevailing winds blow ash east.
- **Mt. Rainier Lahar** – Massive mudslides (AKA lahars) can occur on Mt. Rainier with or without eruption.
  - Seattle is connected to Mt. Rainier via river systems.
  - No evidence that a lahar has reached Seattle.
  - Biggest risk: lahar dams river then bursts.
  - Burst could flood Sodo.





# VOLCANO HAZARDS EXPOSURE

Lots of unknowns, but most of Sodo considered exposed. 7% of Seattle area.

## Statistics

- Biggest land use by area: major institutions (airport, marine terminals) and industrial.
- Estimated exposed population: 3240.
- Assessed value: \$5 billion.
- 15 major hazardous materials storage sites.
- 3 child care centers (no schools or nursing homes).
- 23 bridges.
- 54% of Industrial Center in this area.
- 73% of hazard area zoned Industrial.

## LAND USE



[Mt. Meager Landslide / Lahar](#)



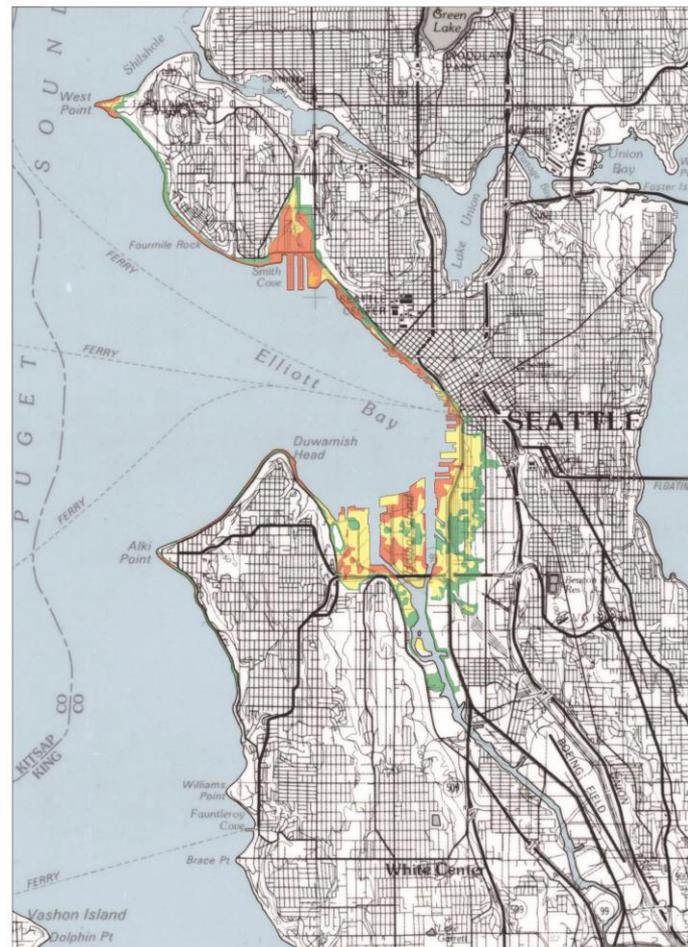
## TSUNAMI / SEICHE

Seattle's shores exposed to tsunami and seiche waves. Harbor area most vulnerable.

### In a nutshell

- Puget Sound's shape protects Seattle from tsunamis rolling in from the Pacific Ocean.
- Landslide most likely cause of tsunami.
- Most dangerous would be tsunami caused by Seattle Fault earthquake.
  - Little warning,
  - Would strike low-lying areas already massively damaged from quake.
  - Seattle's shoreline heavily populated, especially during the day.
  - Seattle Fault quake rarest type of quake and not all would cause a tsunami.
- Seiche is sloshing in water body. Wave move mostly vertically.
- Usually not as serious as tsunami.
- Lake Union most prone.

Mitigation Work Group Meeting #2



Depth of inundation: 0-5 meters 1-2 meters 2-5 meters

SCALE 1:50,000

0 1 2 3 MILES

0 5000 10000 15000 FEET

0 1 2 3 4 KILOMETERS



MAP LOCATION



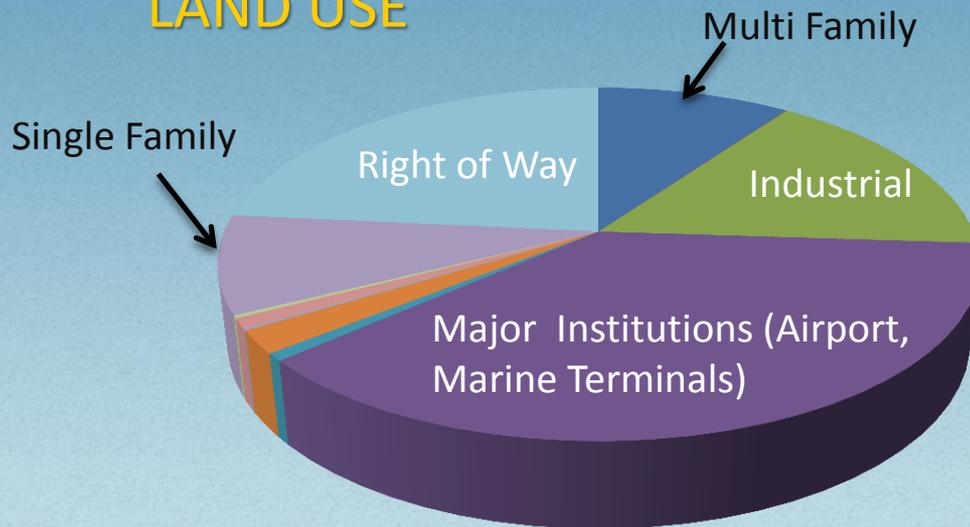
# TSUNAMI EXPOSURE

Major parts of Seattle coast and harbor exposed.

## Statistics

- Caveat: alignment issues between tsunami and other layers many #s approximate.
- 2234 acres in inundation area.
- 835 acres are major institutions, mostly the Port of Seattle.
- 362 acres are industrial.
- Residential population: About 6400.
- Vulnerable population facilities: 2 (child care).
- Assessed value: \$8.7 billion.
- Stadiums and other high population facilities: 4.
- Bridges: 37.
- GMA Industrial Center in zone: 31%.

## LAND USE



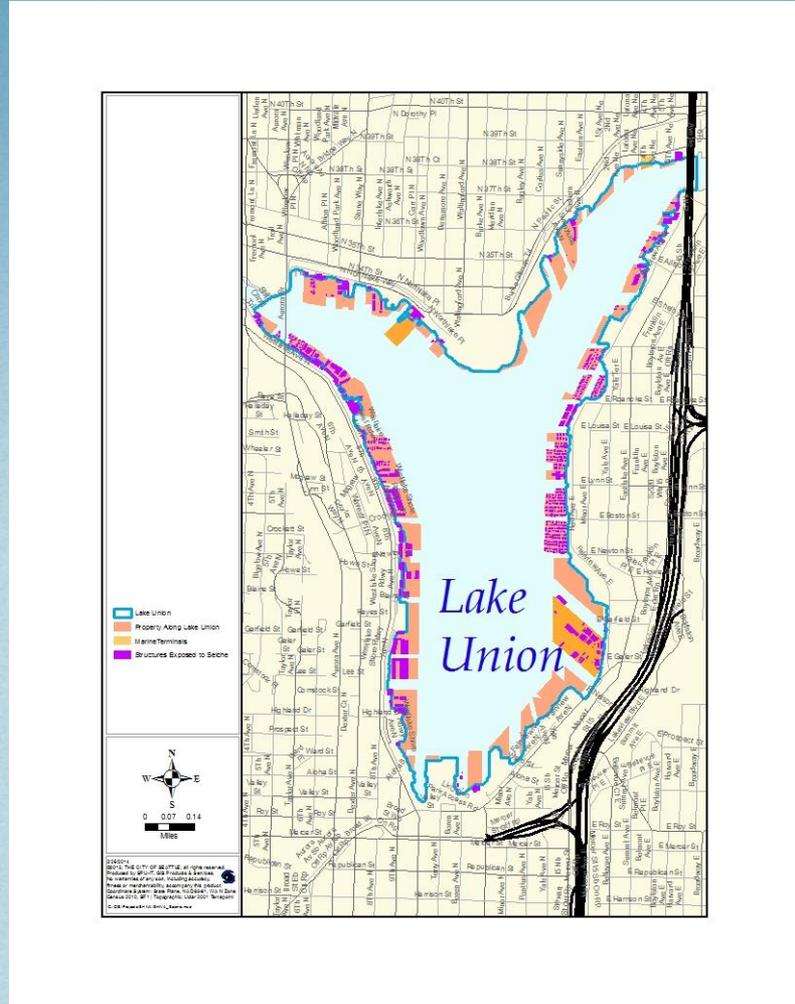


## SEICHE EXPOSURE

Seiches are a hazard mostly to over-water infrastructure because seiche waves are ‘up and down’ not ‘side to side’.

### Statistics

- Lake Union only scientifically studied area.
- Area: 144 acres.
- Land Use: Mostly commercial, 85 acres or 60%.
- Number of buildings: 530. Includes 77 single family and 100 multi-family *units*.
- Not all houseboats are included. Don't know total number. Tax status differs.
- Assessed value: \$700 million. Doesn't include vessels.
- One bridge and one government building in area.
- No facilities that serve vulnerable populations in area.



# DISEASE OUTBREAK

New diseases whether naturally occurring or bioterrorism have the potential to be the deadliest of disasters and paralyze our community for weeks or months.

## In a nutshell

- Seattle's deadliest disaster was the 1918 influenza.
- Air travel enables rapid disease spread.
- More human contact with new diseases (expansion into wilderness areas and proximity to livestock).
- Bioterror has limited history but catastrophic potential.
- Social distancing can slow disease but has social costs.
- Effects of social paralysis increase with time.





# SOCIAL UNREST

Covers range of social conflict: strikes, mass civil disobedience, civil disorder and riots.

## In a nutshell

- Like other social hazards, very hard to predict due to behavioral element.
- Varies in lawfulness, level of violence and targets of violence.
- WTO (1999) was Seattle's longest EOC full activation.
- Conflict between social groups often more violent than conflict between social group and government.
- Activity occurs in public spaces especially symbolic and contested ones.
- Recovery can be difficult because of corrosive effects on community.



# TERRORISM

Western Washington has not had a 9-11 or Oklahoma sized terrorist event, but has had serious incidents. Modern weapons give small groups the ability to do major harm.

## In a nutshell

- 2006 attack on Jewish Federation takes one life and injures 6.
- 2001 arson attack on the UW Center for Urban Horticulture cost \$6 million.
- 2011 foiled attack on recruiting center.
- Potential for high casualties.
- Usually have limited geographic scope.
- Use of nuclear, biological, chemical and radiological agents a possibility.
- A lot of activity from lone actors or small groups.
- Difficult to estimate probability.



# ACTIVE SHOOTER

An active shooter incident happens when a gunman is still shooting when police arrive.

## In a nutshell

- Seattle has had three active shooter incidents since 2006.
- Most incidents can be handled with law enforcement resources.
- When the location involves a large population, jurisdictional issues, extended social disruption or media attention, an EOC activation may help bring resources to bear.
- Terrorist groups have used active shooter tactics in India and Kenya, blurring the line between active shooter and terrorism.
- An attack by a trained, well-resourced group would be much more challenging to respond to than a purely criminal attack.



Credit: Dean Rutz / Seattle Times





# FIRES

This hazard covers structural fires, ship fires, transportation fires and urban wildfires.

## In a nutshell

- Number of structural fires has been decreasing but property loss has not.
- Fewer small fires, but same number of big ones. Total losses concentrated in a few huge fires.
- Downward trend in casualties, but this data varies more and one bad fire could reverse the trend.
- Marine fires are major risk in Seattle. Large port, hard to fight, can block port, hazmat.
- Fires that would cause Seattle to activate its EOC would probably involve a secondary hazard (hazmat, infrastructure failure).
- Fires following earthquakes are the biggest cause of earthquake fatalities.



Credit: Seattle Times

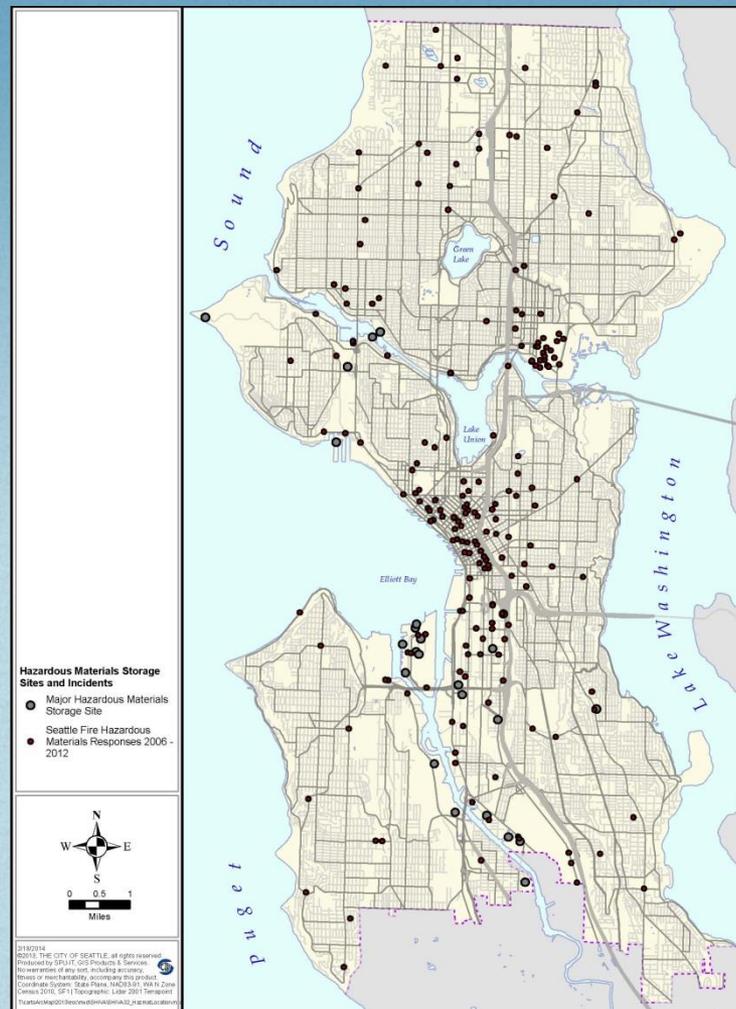


## HAZARDOUS MATERIALS

Hazardous materials include chemical, explosive, biological and radiological substances. So far Seattle has avoided a major incident but has the potential for one given amounts stored and transported through the City.

### In a nutshell

- Seattle Fire tracks its hazmat responses and major storages sites.
- The greatest concentration of major hazardous materials sites is in industrial area.
- The greatest concentration of responses is at the University of Washington.
- Oil by rail is a major risk to emerge in the last three years.
- Biolabs are a major concern.
- Rail cars transporting dangerous material to Alaska often parked on Harbor Island.
- Hazardous materials releases are a common secondary hazard.



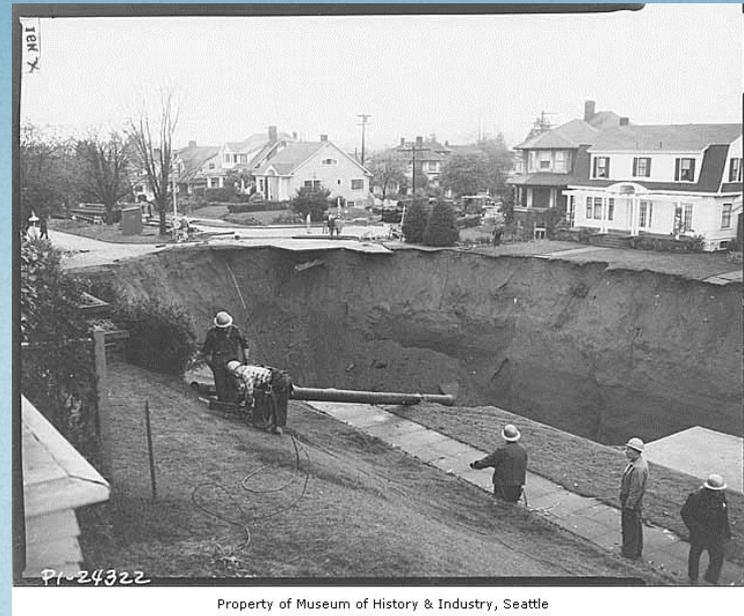


# INFRASTRUCTURE FAILURE

Covers service outages caused by structural collapse and computer failure. Power outages are treated as special case.

## In a nutshell

- Urban areas cannot exist without a complex network of services that allow high density.
- Seattle has had major incidents but none has been disastrous: I-90 bridge, Husky Stadium, Howard Hanson Dam.
- As more infrastructure becomes computer controlled it becomes exposed to sudden and widespread failure. 2014 911 outage.
- Computer failure is an emerging threat but hard to quantify.
- Most failures are limited to a single site or system. Consequences grow exponentially as multiple sites or systems involved. (U Bridge Sinkhole).

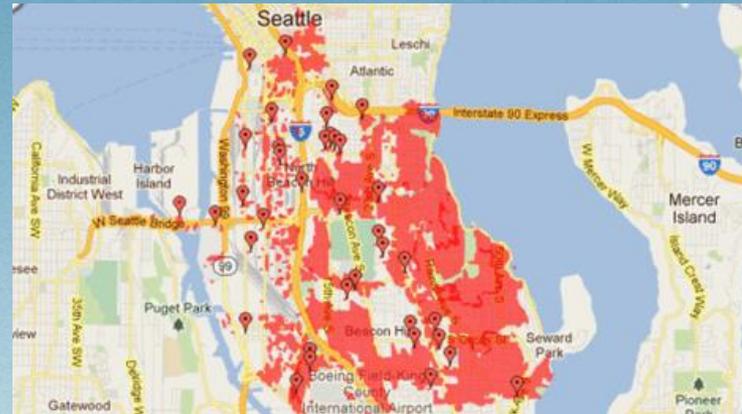


# POWER OUTAGES

Cities run on electrical power. Massive outages on the east coast and near misses on the west coast highlight this vulnerability.

## In a nutshell

- Seattle generates about half of its own electricity and purchases the rest. Having own generation reduces vulnerability.
- Purchased power runs over the Bonneville Power Administration system which has vulnerabilities (2005 – grid limit exceeded).
- 2006 – major storm cuts power for up to a week for some customers. New energy management system and tree trimming program have mitigated risk.
- Vault fires can produce extended outages if fire suppression fails.
- Climate change may shift annual load cycle. Extreme heat in 2009 challenge for some W. Washington power providers.



Credit: West Seattle Blog

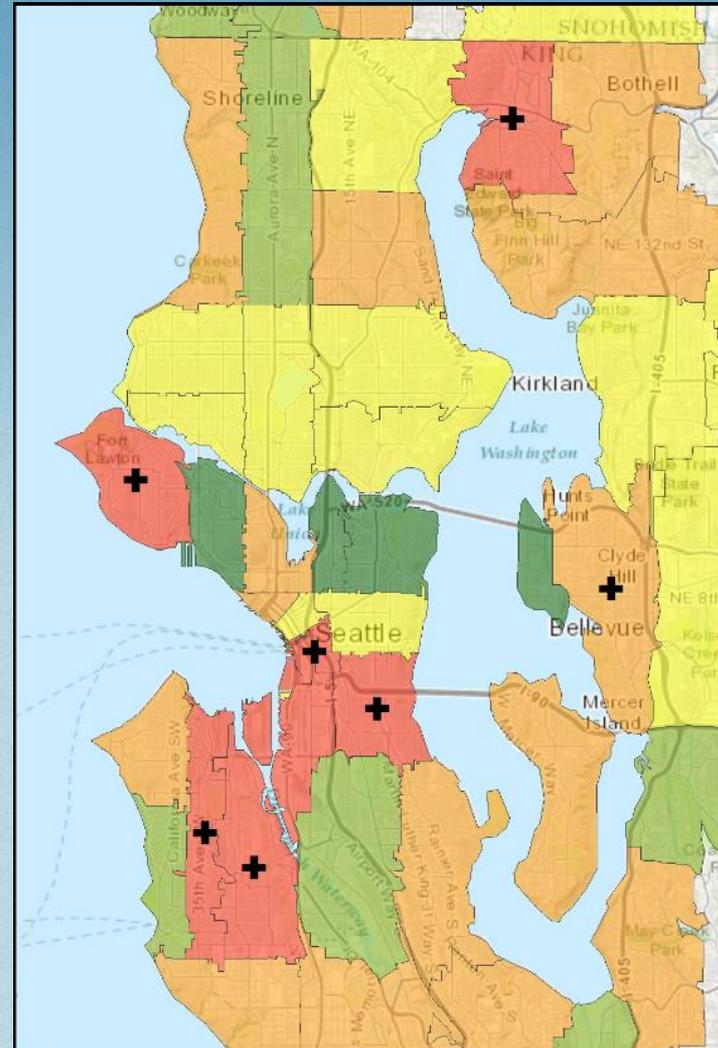


## EXTREME HEAT EVENTS

Heat is one of the deadliest disasters. It also affects infrastructure and resource consumption.

### In a nutshell

- In 2009 Sea-Tac set an all time heat record of 103°.
- Seattle’s mild climate makes residents more vulnerable to extreme heat.
- Many Seattle homes lack air conditioning.
- Factors that make heat events worse are duration, humidity and lack of nighttime cooling.
- The elderly, very young and homeless are most vulnerable.
- Social isolation and fear of crime make heat events worse.
- The number of extreme heat events is projected to increase due to climate change.
- Bridges and roadways can expand and crack in extreme heat.





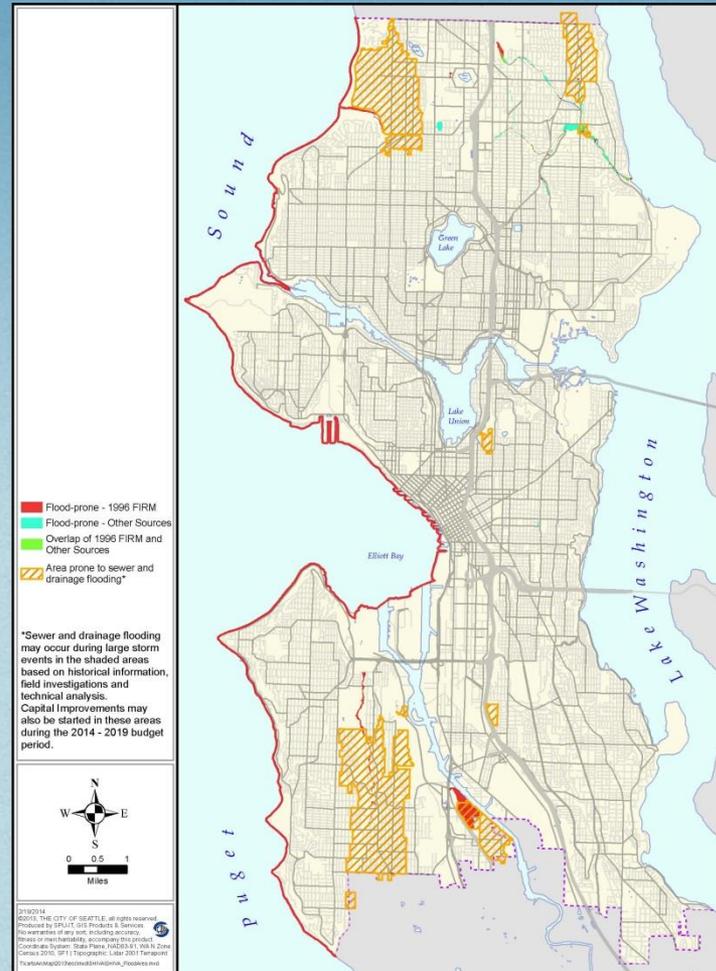
## FLOODING

Seattle's creeks, river and coast can flood. Inland areas are subject to water backups known as urban flooding when rainfall exceeds the drainage system's capacity.

### In a nutshell

- The worst flooding in Seattle is driven by 'atmospheric rivers', narrow bands of moist air currents that cause extended heavy rain.
- Seattle does not have large flood zone along its waterways.
- Seattle's coast can flood, especially when a storm occurs during an extremely high tide (AKA 'King Tide').
- Urban flooding is a problem where intense rainfall can overwhelm drainage systems.
- There is some evidence that rainfall intensity is increasing with climate change.
- Seattle has fewer than 10 structures that have been damaged more than once by floods.

Mitigation Work Group Meeting #2





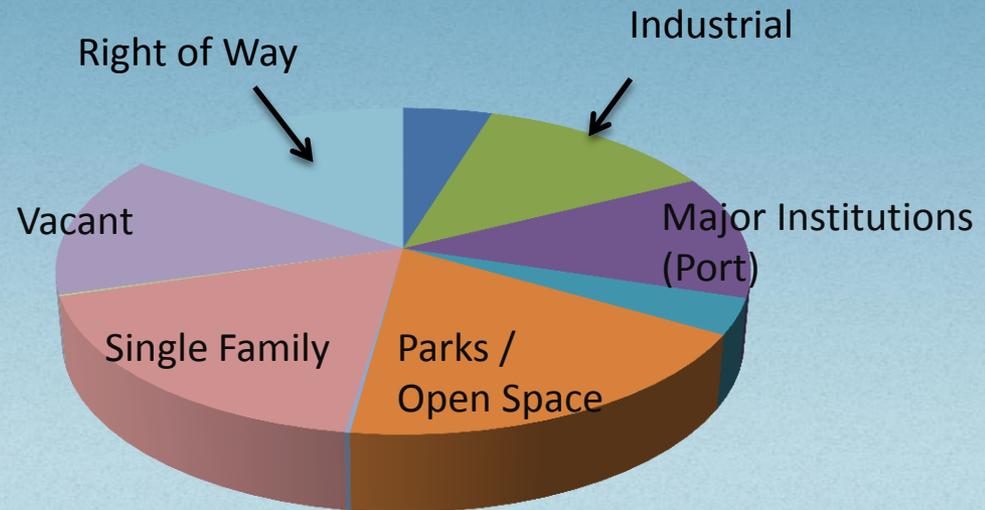
# 'TRADITIONAL' FLOOD EXPOSURE

Two major parts: coastal and riverine.

## Statistics

- Issue: Flood zone often covers only small part of a property.
- 388 acres in flood area.
- Parks (73 acres) and single family (70 acres) are most common land uses.
- Residential population: At most 6633 but probably a lot lower. (Counted all property intersecting flood zone).
- Critical facilities: 1 school, 1 community center, 1 water system support building.
- Assessed value: \$3.6 billion but probably lower.
- No vulnerable populations facilities in flood area.
- 120 acres of GMA Industrial area in flood zone

## LAND USE





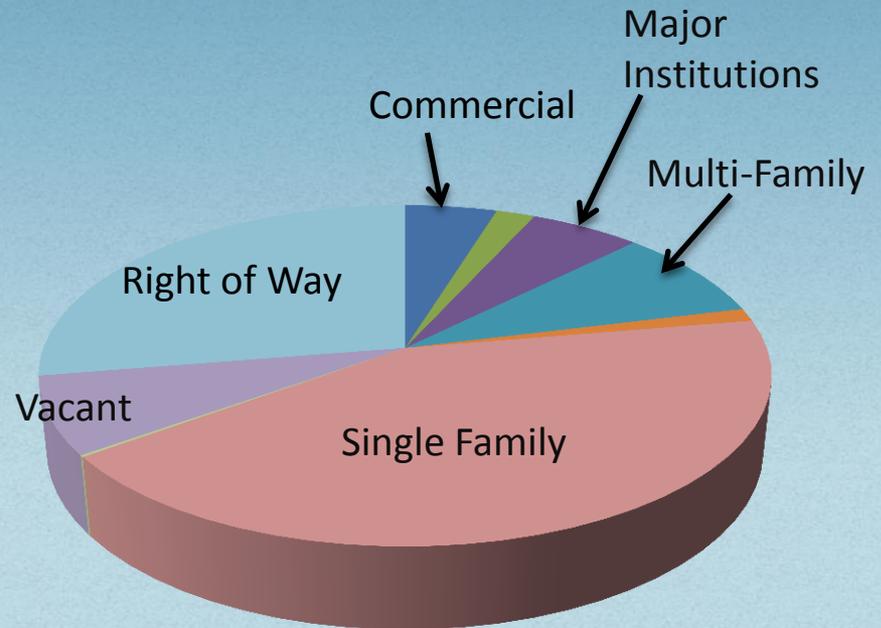
# URBAN FLOOD EXPOSURE

Larger exposure than traditional flood.

## Statistics

- 3312 acres in urban flood area.
- Exposure profile differs from many other hazards: heavily residential.
- 42% is single family.
- Residential population: About 39,000.
- Critical facilities: 29. Greatest number are schools: 9.
- Assessed value: \$5 billion.
- 36 facilities serving vulnerable populations in area.
- 8.35% of Seattle’s Hub and Residential Urban Villages in urban flood zone. Indicator of higher density in future.
- Urban Centers, the densest areas in the city have little exposure.

## LAND USE



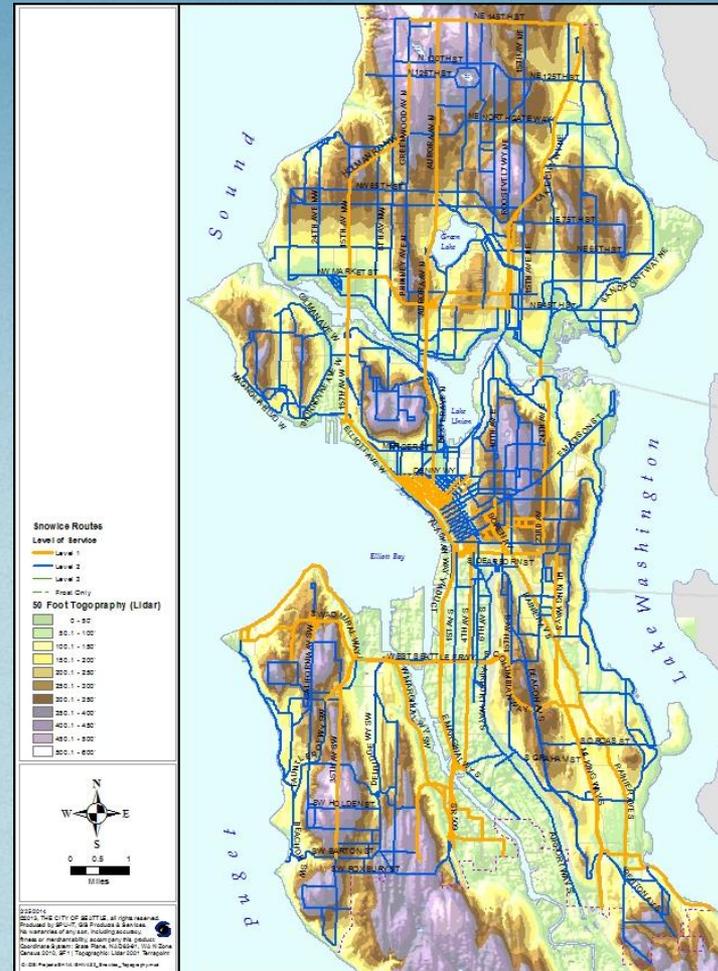


## SNOW, ICE AND EXTREME COLD

Seattle is subject to occasional heavy snowfall. When cold air from the continental interior pushes through to Seattle temperatures can drop into single digits and snow and ice can linger for weeks.

### In a nutshell

- Seattle’s hilly topography makes driving conditions more difficult.
- Snow loads have caused structural collapse in Seattle.
- The 19<sup>th</sup> century seems to had more extreme snow and cold. Possible to get similar storms in the future?
- The consequences of snow increase the longer it is on the ground.
- Seattle lacks the resources to clear residential streets.
- Seattle is now more aggressively treating roadways.





# WATER SHORTAGES

Seattle heavily dependent on mountain snowpack. Low snowpack causes prolonged water shortages. Infrastructure failure can cause short-term outages.

## In a nutshell

- Total water consumption in Seattle has decreased despite an increase in population.
- Three supply lines bring water into Seattle. At any time other than summer, Seattle can lose one line and meet demand.
- Seattle has a water shortage plan with phased curtailments.
- Shortages impact businesses most heavily.
- Impacts greatly increase if area has several back to back low snowpack years.
- Occasionally, water service is totally cut for an area. Increases public health and fire risk.
- Unlike power, many critical facilities lack backup water supplies.



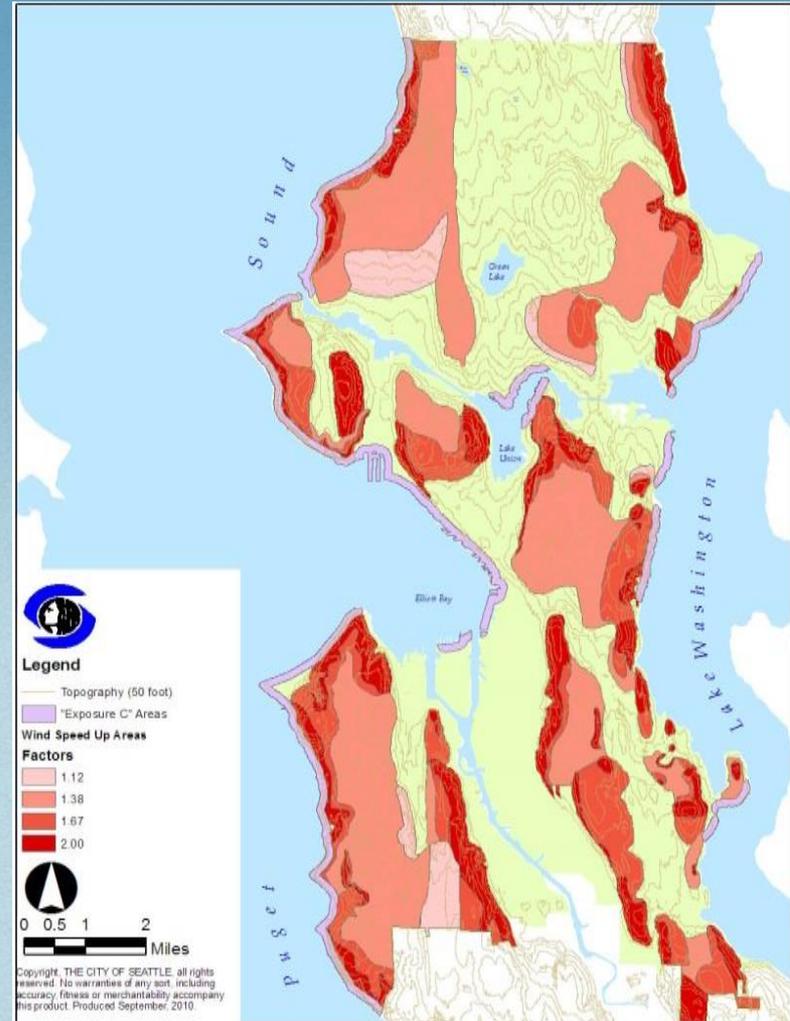


## WIND STORMS

Storms with wind speeds equal to hurricanes can strike Seattle. This causes power outages and structural damage.

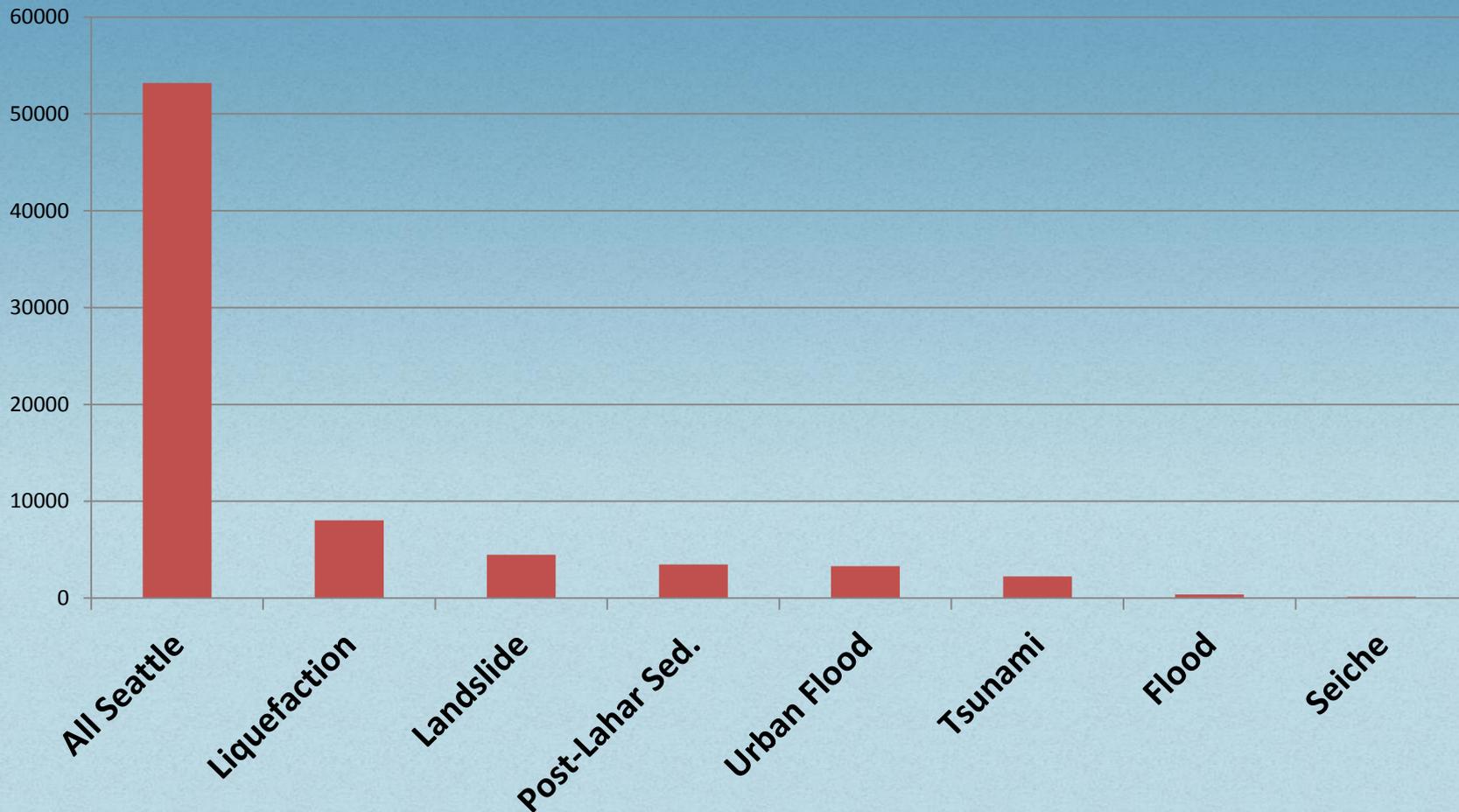
### In a nutshell

- The Seattle area can get winds of 60-70 mph with gusts up to 90 mph.
- Structural damage can occur at wind speeds as low as 32 mph.
- Hills increase wind speed.
- Power outages due to falling trees, debris and structural damage are the greatest consequence of wind.
- Wind driven waves can damage floating bridges and coastal structures.
- Fall and winter are the most common time for large storms. Fall storms are more damaging because tree still are in leaf.





# SEATTLE HAZARD ZONE SIZE COMPARISON



# CONTACT INFORMATION

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*Office of Emergency Management*

*City of Seattle*

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**206-233-5073**

# PUBLIC OUTREACH AND ENGAGEMENT RESULTS

*Incorporating Public Input into the Planning Process*



# PUBLIC MEETING (APRIL 8)

- **Hazards of concern:**
  - *Earthquake identified as the most threatening hazard*
  - *Floods, hazard materials incidents and an active shooter were also considered to be important hazards*
- **Hazard mitigation priorities:**
  - *Prevention as the most popular sector to allocate mitigation resources*
  - *Public education and awareness of hazards was identified as an area of opportunity to inform people about potential risks*





# SURVEY RESPONSES (708)

Location	Responses
Northwest Seattle	112
Northeast Seattle	70
Magnolia and Queen Anne	32
Central Seattle	74
Downtown Seattle	68
West Seattle & Delridge	255
Southeast Seattle	90

*Most respondents (87%) identified themselves as members of the Public.*



Source:  
[www.seattlehousing.org/housing/images/NeighborhoodGuide\\_map\\_lg.png](http://www.seattlehousing.org/housing/images/NeighborhoodGuide_map_lg.png)



# HOW CONCERNED ARE YOU ABOUT THE FOLLOWING HAZARDS?

Top 10 Hazards (all respondents)	Responses (Very Concerned)
Earthquake	497
Infrastructure/Cyber	199
Transportation Incidents	198
Landslide	176
Power Outages	170
Active Shooter	163
Hazardous Materials Incident	134
Wind Storms	128
Disease Outbreaks	107
Snow and Ice Storms	106

## Responses for select vulnerable populations:

- Respondents 65 years and older (79) identified earthquake, infrastructure/ cyber, and landslides as the primary hazards of concern
- Respondents who identified themselves as having a disability (46) identified earthquake, power outage, and infrastructure/ cyber as the primary hazards of concern
- Respondents who speak a language other than English at home (65) identified earthquake, infrastructure/ cyber, and power outages as the primary hazards of concern



# HOW IMPORTANT IS EACH CATEGORY TO YOUR COMMUNITY?

Responses for select vulnerable populations:

- Respondents 65 years and older (79) identified prevention, emergency services, and structural projects as very important categories
- Respondents who identified themselves as having a disability (46) identified emergency services, structural projects, and prevention as very important categories
- Respondents who speak a language other than English at home (65) identified prevention, emergency services, and structural projects as very important categories

Category (all respondents)	Responses (Very Important)
Prevention	651
Emergency Services	619
Structural Projects	589
Public Education and Awareness	519
Natural Resource Protection	500
Property Mitigation	447



# WHERE DO YOU LOOK FOR INFORMATION?

Information Source (all respondents)	Responses
Internet	656
Public Workshops/Neighborhood Meetings	342
Friends/Relatives	186
Newspaper	154
Television	152
Social Media	133
Radio	129
Other (Church, Library, Fire Dept.)	118
Mail	98
School Meetings	40
Don't Know	9

## Responses for select vulnerable populations:

- Respondents 65 years and older (79) identified internet, public workshops/ neighborhood meetings, and the newspaper as primary information sources
- Respondents who identified themselves as having a disability (46) identified internet, public workshops/ neighborhood meetings and the television as primary information sources
- Respondents who speak a language other than English at home (65) identified internet, public workshops/ neighborhood meetings, and social media as primary information sources



# WRITE-IN COMMENTS

- *Greater public education and awareness to help communities prepare for a potential hazard*
  - *SNAP and other community programs praised often*
  - *Lack of hazard preparedness is a hazard*
  - *Not enough information publicly available that is up-to-date and easy to understand*
- *Access to critical services in the aftermath of a disaster (e.g. healthcare, potable water, electricity )*
- *Use science-based methods to identify and mitigate hazards*
- *Thanks for asking for input!*

# MITIGATION GOALS AND OBJECTIVES REVIEW AND REVISION

# CITY-WIDE VISION, MISSION AND GUIDING PRINCIPLES



## Vision

*Disaster ready...prepared people, resilient community*

## Mission

*We partner with the community to prepare for, respond to, mitigate the impacts of, and recover from disasters.*

## Guiding Principles

- Comprehensive: We consider and take into account all hazards, all phases, all stakeholders and all impacts relevant to disasters.
- Progressive: We anticipate future disasters and take preventive and preparatory measures to build disaster-resistant and disaster-resilient communities.
- Risk-Driven: We use sound risk management principles (hazard identification, risk analysis, and impact analysis) in assigning priorities and resources.
- Integrated: We ensure unity of effort among all levels of government and all elements of the community.
- Collaborative: We create and sustain broad and sincere relationships among individuals and organizations to encourage trust, advocate a team atmosphere, build consensus, and facilitate communication.
- Flexible: We use creative and innovative approaches in solving disaster challenges.
- Professional: We value a science and knowledge-based approach based on education, training, experience, ethical practice, public stewardship and continuous improvement

# MITIGATION WORKING GROUP MISSION

*It is the mission of the Mitigation Work Group to develop a comprehensive disaster mitigation program that increases community resilience, expands upon existing mitigation programs, increases knowledge of all hazards to which the City is at risk, and implements mitigation measures that reduce vulnerability for the most amount of people.*

# GOALS

1. *Protect public health and safety*
2. *Safeguard critical public facilities and infrastructure*
3. *Protect public and private property*
4. *Maintain Seattle's economic vitality*

## 2012 Snow Activation



Courtesy of Seattle Office of Emergency Management



# 1. PROTECT PUBLIC HEALTH AND SAFETY

- A. *Partner with agencies serving vulnerable populations to minimize harm in the event of an emergency*
- B. *Promote disaster contingency planning and facility safety among institutions that provide essential services such as food, clothing, shelter and health care to vulnerable populations*
- C. *Educate individuals and communities about disaster preparedness and mitigation*
- D. *Improve disaster warning systems*

## Ballard Prepares Event 2013



Courtesy of Seattle Office of Emergency Management

## 2. SAFEGUARD CRITICAL PUBLIC FACILITIES AND INFRASTRUCTURE

### SW Myrtle Tanks #1 and #2 Seismic Upgrade



Courtesy of Seattle Municipal Archives, Item 166651

- A. *Implement mitigation programs that protect critical city facilities and services and promote reliability of lifeline systems to minimize impacts from hazards, to maintain operations, and to expedite recovery in an emergency*
- B. *Consider known hazards when siting new facilities and systems*
- C. *Create redundancies for critical networks such as water, sewer, digital data, power and communications*
- D. *Formalize best practices for protecting systems and networks*



# 3. PROTECT PUBLIC AND PRIVATE PROPERTY

- A. *Adopt and enforce public policies to minimize impacts of development and enhance safe construction in high hazard areas*
- B. *Integrate new hazard and risk information into building codes and land use planning mechanisms*
- C. *Educate public officials, developers, realtors, contractors, building owners and the general public about hazard risks and building requirements*
- D. *Promote appropriate mitigation of all public and privately-owned property within the city’s jurisdiction, including but not limited to, residential units, commercial structures, educational institutions, health care facilities, stadiums, and infrastructure systems*
- E. *Incorporate effective mitigation strategies into the city’s Capital Improvement Projects*
- F. *Promote mitigation of historic buildings*
- G. *Promote post-disaster mitigation as part of repair and recovery*

## Seattle Recommendations for Unreinforced Masonry Policy



Courtesy of Seattle Department of Planning and Development



## 4. MAINTAIN SEATTLE'S ECONOMIC VITALITY

### Downtown Seattle



Courtesy of Seattle Municipal Archives, Item 110387

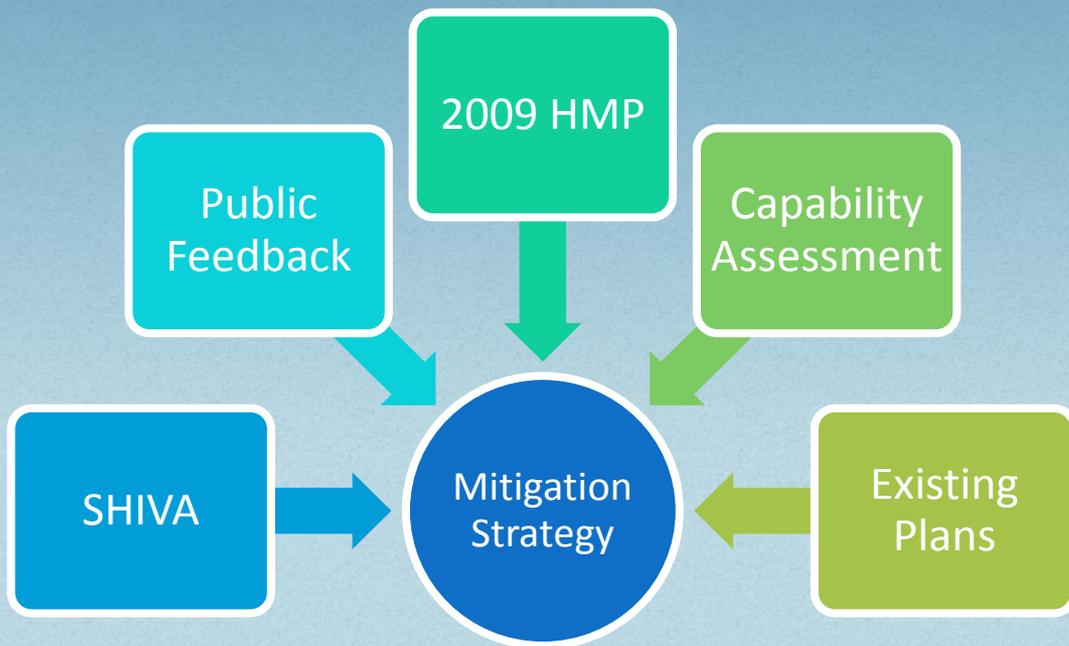
- A. *Partner with private sector, including small businesses, to promote structural and non-structural hazard mitigation as part of standard business practice*
- B. *Educate businesses about contingency planning citywide, targeting small businesses and those located in high risk areas*
- C. *Partner with private sector to promote employee education about disaster preparedness while on the job and at home and conservation*

# HAZARD MITIGATION PROJECT EXAMPLES

*Bringing resources together to achieve the Mitigation Goals and Objectives*



# MITIGATION STRATEGIES



## Resources:

- ✓ *SHIVA*
- ✓ *Public Feedback*
- *2009 HMP*
- *Capability Assessment*
- *Existing Plans*



# 2009 HAZARD MITIGATION PLAN

What actions are incomplete from the 2009 Plan? Are these actions still high priorities?

## Excerpt:

Proposal/Action	Responsible Department	Status			Notes
		Complete	Incomplete	Ongoing	
A-1 Conduct vulnerability analysis of shelters and traditional housing serving vulnerable populations	HSD/Public Health		<b>Public Health - X</b>		<b>Public Health -</b> Not part of Public Health’s work.
B-5 Implement phase II Bridge Seismic Retrofits	SDOT			Y	All bridges within the Phase II seismic retrofit program are anticipated to be completed by the end of summer 2014.
16 Ross Dam – Abutment Rock Stabilization	SCL	Completed			

# CAPABILITY ASSESSMENT

Implementing Mitigation Actions through existing programs and polices.

## ***Examples:***

1. *Seattle Public Utilities*
  - *Backbone Pipeline Program*
  - *Dam Safety Program*
2. *Office of Emergency Management and Department of Planning and Development*
  - *Home Retrofit Program*
3. *Seattle Department of Transportation*
  - *Areaways Program*
  - *Landslide Mitigation Program*

# EXISTING PLANS

Mitigation Actions are identified in existing plans. Are these actions City Wide Priorities?

## *Examples:*

1. *Seattle City Light Continuity of Operations Plan, Mitigation Plan (2013)*
  - *2013 Project Priorities*
    - *System Operations Center Seismic retrofit design*
    - *Seismic review of vaults and substations to update 1993 study*
2. *Earthquake Preparedness: Activities Completed and Future Efforts – A Brief Summary of Progress and Planning at the City of Seattle (2010)*
  - *Department of Planning and Development identified:*
    - *Need for legislation to allow mutual aid in Washington*
    - *Post-earthquake communication devices needed*
    - *Explorations beginning on using other social media to collect damage reports*
    - *Early design for the seawall replacement*



# ADDITIONAL CONSIDERATIONS

**Mitigation Actions** are specific projects and activities that help achieve goals and objectives (e.g. sponsor community fairs to promote retrofit of unreinforced masonry structures)

Mitigation Strategies should :

- Be SMART (specific, measurable, achievable, relevant, time-bound)
- Identify a responsible agency and partners



# MITIGATION REVIEW CRITERIA



# ASSESSING BENEFIT

<b>Life Safety</b>			
Will the Project protect people from serious injury or death?	<input type="checkbox"/> No  0	<input type="checkbox"/> Yes, less than 25 people will be protected from serious injury or death  20	<input type="checkbox"/> Yes, more than 25 people will be protected from serious injury or death  40
<b>Vulnerability Reduction</b>			
Does the Project protect critical infrastructure?	<input type="checkbox"/> No  0	<input type="checkbox"/> Yes, moderately important to lifeline services  15	<input type="checkbox"/> Yes, critical to the provision of lifeline services  30
Does the Project reduce vulnerability?	<input type="checkbox"/> No  0	<input type="checkbox"/> Yes, moderate vulnerability reduced to low  15	<input type="checkbox"/> Yes, high vulnerability reduced to low  30
Does the Project reduce risks to hazards?	<input type="checkbox"/> No  0	<input type="checkbox"/> Yes, SHIVA combined rating less than 34  15	<input type="checkbox"/> Yes, SHIVA combined rating greater than 34  30
<b>Economic Benefit</b>			
Will the project reduce impacts to the economy?	<input type="checkbox"/> No  0	<input type="checkbox"/> Yes, individual businesses protected  15	<input type="checkbox"/> Yes, business sector protected  30
<b>Political Support</b>			
Does the public support the Project?	<input type="checkbox"/> No  0	<input type="checkbox"/> Yes, somewhat  15	<input type="checkbox"/> Yes  30
<b>Sub Totals:</b>	0		
<b>Grand Total (Benefit):</b>			



# ASSESSING COST (OPTION 1)

Economic Cost						
What is the Cost Estimate for the project including regulatory review	<input type="checkbox"/> Very low	<input type="checkbox"/> Low	<input type="checkbox"/> Low-moderate	<input type="checkbox"/> High-moderate	<input type="checkbox"/> High	<input type="checkbox"/> Very high
	less than \$25,000	25,001 - \$75,000	\$75,001- \$300,000	\$300,001- \$1M	\$1M-3M	greater than \$3M



# ASSESSING COST (OPTION 2)

STAPLEE			
<b>Social</b> – Does the Project adversely affect a segment of the population?	<input type="checkbox"/> No 0	<input type="checkbox"/> Yes, relocation not required 5	<input type="checkbox"/> Yes, requires relocation of population 10
<b>Technical</b> – Does the Project require recurring investments or additional improvements to prevent losses?	<input type="checkbox"/> No 0	<input type="checkbox"/> Yes, minimal ongoing investment 5	<input type="checkbox"/> Yes 10
<b>Administrative</b> – Is additional staff and funding required to accomplish the Project?	<input type="checkbox"/> No 0	<input type="checkbox"/> Yes, staff or funding 5	<input type="checkbox"/> Yes, staff and funding 10
<b>Political</b> – Is public outreach required to increase support?	<input type="checkbox"/> No 0	<input type="checkbox"/> Yes, prioritized by department with public involvement 10	<input type="checkbox"/> Yes, outreach strategy required 20
<b>Legal</b> – Are there liability risks to implement the Project?	<input type="checkbox"/> No 0	<i>n/a</i>	<input type="checkbox"/> Yes 10
<b>Environmental</b> – Does the project have an adverse effect on the environment?	<input type="checkbox"/> No 0	<input type="checkbox"/> Yes, requires an Environmental Assessment 5	<input type="checkbox"/> Yes, requires an Environmental Impact Statement 10
<b>Economic</b> – Cost Estimate including regulatory review	<input type="checkbox"/> low, less than \$100,000 0	<input type="checkbox"/> moderate, \$100,001 - \$1M 25	<input type="checkbox"/> High, greater than \$1M 50
<b>Sub Totals:</b>	0		
		<b>Grand Total (Cost):</b>	

# NEXT STEPS

- *Public Outreach and Engagement*
  - *Compile Documentation from the Public Comment Period*
- *Planning Support*
  - *Provide feedback on the Capability Assessment*
  - *Mitigation Work Group Meeting #3: **June 23rd***
    - Topic: **Mitigation Strategy Session***
    - *Come Prepared with ideas for Mitigation Projects*
    - *Resources:*
      - *SHIVA*
      - *Public Feedback*
      - *2009 HMP*
      - *Capability Assessment*
      - *Existing Plans*



## **B-3 Mitigation Work Group Meeting #3**



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### Meeting Summary

Project Management    Mitigation Working Group    Other:

**Date:** June 23, 2014

**Time:** 11:00 a.m. to 1:00 p.m.

**Location:** Seattle Municipal Tower, Room 2450

**Attendees:**

	Name	Organization	Department
1	Erika Lund	City of Seattle	Office of Emergency Management
2	Jerry J. Koenig	City of Seattle	Seattle City Light
3	Sam Ripley	City of Seattle	Seattle City Light
4	Julie Matsumoto	City of Seattle	Finance and Administrative Services
5	Sarah Sodt	City of Seattle	Department of Neighborhoods
6	Jill Watson	City of Seattle	Human Services Department
7	J.M. Havner	City of Seattle	Fire Department
8	Lawrence Eichhorn	City of Seattle	Department of Transportation
9	Patti Petesch	City of Seattle	Department Parks and Recreation
10	Maureen Traxler	City of Seattle	Department of Planning and Development
11	Ned Worcester	City of Seattle	Public Utilities
12	Matthew Lieuallen	Ecology and Environment, Inc.	
13	Dennis Lawlor	Ecology and Environment, Inc.	
14	Aoife Blake	Envirolssues	
15	Elenka Jarolimek	City of Seattle	Finance and Administrative Services



**Agenda:**

	<b>Meeting Items</b>	<b>Duration</b>	<b>Presenter/Facilitator</b>
1	Opening remarks and time tracking	5 minutes	Erika Lund, Office of Emergency Management, City of Seattle
2	Review of HMP Goals and Objectives	10 minutes	Matthew Lieuallen, Ecology and Environment
3	Review of Mitigation Action Worksheet	30 minutes	Dennis Lawlor, Ecology and Environment
4	Worksheet Case Studies	15 minutes	All
5	Mitigation Action Workshop	50 minutes	All
6	Next steps	10 minutes	Matthew Lieuallen, Ecology and Environment

**Attachments:**

1. Meeting agenda
2. 2014 Hazard Mitigation Goals and Objectives
3. Mitigation Action Worksheet and Instructions
4. PowerPoint presentation
5. Sign-in sheets

**Summary:**

The Seattle Hazard Mitigation Plan (HMP) Update project team hosted the third of five Mitigation Work Group (MWG) meetings on Monday, June 23, 2014. The MWG meeting was intended to review the Hazard Mitigation Plan Goals and Objectives; review the Mitigation Action Worksheet and apply the Mitigation Action Worksheet to hazard mitigation actions relevant to their departments. Ten members of the MWG and five members of the project management team participated in the meeting.

***Opening Remarks and Introductions***

Erika Lund, Project Lead, Office of Emergency Management (OEM), welcomed the group and thanked them for attending and participating in the Seattle Hazard Mitigation Plan Update process. Erika reminded the MWG to track and report the number of hours they or their staff spend on the project as the hours can be applied toward the in-kind contribution needed for OEM’s grant requirements.

Matthew Lieuallen, Ecology and Environment, provided a brief overview of the meeting, aimed to identify mitigation actions and review the Mitigation Action Worksheet. Matthew reminded the group of the last MWG meeting where they explored the City of Seattle Hazards Identification and Vulnerability Assessment (SHIVA) results. Since the last meeting, the project team has reworked the worksheet to capture goals, actions and timelines. Matthew thanked the group for their feedback on the



Capability Assessment, and noted there will be more opportunities to provide feedback on mitigation actions and identify gaps when the draft HMP is released.

### **Review of HMP Goals and Objectives**

Matthew pointed the MWG to the City's vision, mission and guiding principles (*see Attachment A*). He noted that these have been incorporated into the planning efforts of the HMP update to aid consistency across City departments. He also noted that the MWG mission has been modified to reflect the latest standards in the Federal Emergency Management Agency's (FEMA) accreditation program.

*"It is the mission of the Mitigation Work Group to develop a comprehensive disaster mitigation program that 1) increases community resilience; 2) builds upon existing mitigation programs; 3) increases knowledge of all hazards to which the City is at risk; and 4) implements interim and long-term mitigation actions that maximize loss reduction."*

Matthew directed the MWG to the 2014 HMP goals and noted that two new goals have been added to enhance collaboration and coordination across City departments. The two new goals are:

- Protect the natural environment and cultural and historic resources.
- Promote a collaborative and integrated mitigation program.

Matthew provided a brief overview of the 2014 Mitigation Action Worksheet and Instructions (*see Attachment B*) and introduced Dennis Lawlor, Ecology and Environment, who explained how to apply the worksheet to hazard mitigation actions.

### **Review of Mitigation Action Worksheet**

Dennis introduced the Mitigation Action Worksheet and noted that it is a fundamental tool for identification and prioritization of mitigation actions. Dennis outlined the process to submit a mitigation action to FEMA to secure funding. Matthew referred the MWG to the actions outlined in the 2009 worksheet, as actions that would require assessment / ranking using this tool.

Dennis highlighted that FEMA is interested in knowing and understanding the thought process behind each mitigation action and how it ranks compared with other mitigation actions, not only in terms of cost, but in terms of timeline, goals and the hazard(s) it addresses. Firstly, he noted that a mitigation action must be identified. He stressed that an action should be specific, measurable or quantifiable, assignable, realistic, and have a time-related component. A MWG member asked about measuring a policy-related action. Dennis advised using a progress indicator when analyzing mitigation actions that are difficult to measure. Dennis explained and provided examples for each question on the worksheet.

Dennis reminded the MWG that FEMA is interested in the thought processes behind the mitigation action, for example, what you are going to do, why you are doing it and how it will support hazard mitigation. Dennis pointed to the list of goals on the worksheet, adding that a mitigation action may



cover a couple of different goals. For example, the seismic retrofit of historic buildings could be applicable to Life and Safety, Critical Infrastructure Protection, and Resilient Economy.

A MWG member sought clarification about identifying a lead department on the worksheet. Dennis explained that this helps FEMA understand who is leading the action and if there is support for other agencies to carry out this effort. He encouraged the MWG to think about opportunities to collaborate with other agencies or departments and noted that it could help with applications to FEMA.

Another MWG member asked how to categorize the lifespan of an action. Dennis specified that these would be typically categorized as one year for short-term actions and greater than one year for long-term actions. A MWG member noted that a policy action would be considered a long-term action as it could take three years to get approval by City Council.

Dennis gave a brief overview of the Social, Technical, Administrative, Political, Legal, Economic, and Environmental (STAPLEE) criteria used to evaluate mitigation actions. Dennis walked through the STAPLEE criteria and explained how to determine an action relates to each criterion. He noted that the STAPLEE method is a standard FEMA procedure. Matthew noted that there were some comments at the last meeting relating to scalability. In order to address this, the project team decided to use the STAPLEE method as it offers a consistent analysis of priorities. Dennis encouraged all MWG members to use this tool to evaluate mitigation actions to better understand where actions rank and how they relate to each other. He noted that there may be cases where a policy mitigation action does not rank highly but may align with the City's goals and objectives. The policy action could still receive FEMA funding, but Dennis stressed that it must be included in the HMP to receive any consideration from FEMA. A MWG member asked for clarification surrounding funding versus reimbursement. Erika noted that the HMP allows us to apply for hazard mitigation grant funding from FEMA, as opposed to looking to receive reimbursement for disaster response and repair costs.

Dennis provided two examples of mitigation actions and worked through the worksheet with the MWG. Some questions surfaced about cost in relation to a policy action. Dennis noted that the cost of a policy mitigation action relates to the cost of getting the policy passed, not of implementing it. The MWG discussed the interpretation of "implemented quickly." Dennis acknowledged that "quickly" would be anything less than one year, and noted that this would probably not typically be identified for policy-related actions.

The MWG was tasked with filling out the worksheet with some mitigation actions and working through the STAPLEE criteria. Matthew asked the MWG to identify any issues or gaps with the worksheet. He reminded the MWG that this worksheet is a tool to quickly check how a project ranks and to use the best information available at the time of assessment.

Questions and comments heard from the MWG on the worksheet addressed:



- Identifying one umbrella action over a number of actions.
- Assigning value to the “implemented quickly” question in the STAPLEE criteria.
- Scalability using the STAPLEE criteria.
- Including external partners.

**Next Steps**

Matthew discussed the next steps in the HMP update process. He explained that the completed 2014 Mitigation Action Worksheets are due by July 25. He encouraged each MWG member to work within their department to complete the worksheets and suggested convening a departmental working group to (1) look at actions from 2009, (2) identify which actions could be carried over, (3) identify any new mitigation actions proposed, and (4) work through the STAPLEE criteria for each action to understand how they rank and compare.

Matthew noted that the draft HMP Update is due August 18 and reminded the group that the next MWG is on August 26, 1-3 pm. At this meeting, the draft plan will be presented, and actions that have been identified will be confirmed and ranked in a matrix. The MWG will see how the mitigation actions are being prioritized. He also reminded the MWG of the second public comment period and public meeting. He encouraged the MWG to start thinking about the type of information to present to the public, how to tie the content of the draft plan to actual scenarios, and how to disseminate information. He thanked the MWG for their participation in the meeting.

**Action Items:**

	<b>Action Items</b>	<b>Responsibility</b>	<b>Timeline</b>
1	Complete 2014 Mitigation Action Worksheets	MWG	July 25
2	Draft HMP Update	Project Team	August 18



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## 2014 SEATTLE HAZARD MITIGATION PLAN UPDATE

### Mitigation Work Group Meeting #3

**Date:** Monday, Jun 23, 2014  
**Time:** 11:00am to 1:00pm  
**Location:** Seattle City Light Department Operations Center  
Seattle Municipal Tower Room 2450

**Agenda:**

Meeting Items		Duration	Presenter/Facilitator
1	Opening Remarks and Time Tracking	5 minutes	Erika Lund, City of Seattle
2	Review of HMP Goals and Objectives	10 minutes	Matthew Lieuallen, E & E
3	Review of Mitigation Action Worksheet	30 minutes	Dennis Lawlor, E & E
4	Worksheet Case Studies	15 minutes	All
5	Mitigation Action Workshop	50 minutes	All
6	Next Steps	10 minutes	Matthew Lieuallen, E & E

**Handouts:** 2014 HMP Goals and Objectives  
Mitigation Action Worksheet and Instructions

**Project Contact Information:**

**City of Seattle**  
Erika Lund, Project Lead  
Seattle OEM  
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**Ecology and Environment**

Matthew Lieuallen, Project Manager  
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Dennis Lawlor, Mitigation Planner  
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**2014 SEATTLE HAZARD MITIGATION PLAN UPDATE**  
**MITIGATION WORK GROUP MEETING #3**  
**JUNE 23, 2014**



# AGENDA

1. *Opening Remarks and Time Tracking*
2. *Review of HMP Goals and Objectives*
3. *Review of Mitigation Action Worksheet*
4. *Worksheet Case Studies*
5. *Mitigation Action Workshop*
6. *Next Steps*



# TIME TRACKING



- *Match – grant requirement*
- *Match eligibility – non-grant funded or grant match hours*
- *Tracking*

# CAPABILITY ASSESSMENT

- *Second opportunity for review during draft review*
- *Provide information on existing programs and capabilities (particularly things that are new since 2009 or that are no longer in existence)*
- *Identify gaps – these should drive new mitigation actions for the 2014 plan update!!!*

# REVIEW OF MITIGATION GOALS AND OBJECTIVES

Mitigation Work Group Mission Statement, Goals and Objectives Handout		
2014 MWG Mission	Proposed 2014 Goals	Proposed 2014 Objectives
<p>It is the mission of the Mitigation Work Group to develop a comprehensive disaster mitigation program that 1) increases community resilience; 2) builds upon existing mitigation programs; 3) increases knowledge of all hazards to which the City is at risk; and 4) implements interim and long-term mitigation actions that maximize loss reduction.</p>	<p><b>1. Protect life and safety and promote community preparedness</b></p>	<ul style="list-style-type: none"> <li>A. Conduct inclusive education and outreach activities to raise public awareness of hazards and how they can better prepare and partner with the City in reducing vulnerability.</li> <li>B. Partner with agencies serving vulnerable populations to minimize harm in the event of an emergency.</li> <li>C. Enhance the City's emergency response capabilities.</li> </ul>
	<p><b>2. Safeguard critical infrastructure and ensure continuity of service</b></p>	<ul style="list-style-type: none"> <li>A. Implement mitigation actions that protect critical City facilities and services and promote reliability and continuity of lifeline systems.</li> <li>B. Consider known hazards when siting new facilities and systems.</li> <li>C. Create redundancies for critical systems including water, sewer, digital data, power and communications.</li> <li>D. Utilize and formalize best practices for protecting systems and networks.</li> </ul>
	<p><b>3. Protect public and private property</b></p>	<ul style="list-style-type: none"> <li>A. Adopt and enforce public policies to minimize impacts of development and enhance safe construction in high hazard areas.</li> <li>B. Integrate new hazard and risk information into building codes and land use planning mechanisms.</li> <li>C. Educate public officials, developers, realtors, contractors, building owners and the general public about hazard risks and building requirements.</li> <li>D. Promote appropriate mitigation of all public and privately-owned property within the City's jurisdiction.</li> <li>E. Incorporate effective mitigation strategies into the City's Capital Improvement Projects.</li> <li>F. Promote post-disaster mitigation as part of repair and recovery with a focus on building back better.</li> </ul>
	<p><b>4. Protect the natural environment and cultural and historic resources.</b></p>	<ul style="list-style-type: none"> <li>A. Develop hazard mitigation policies and actions that protect the environment.</li> <li>B. Promote climate adaptation strategies that protect against long-term effects on the environment</li> <li>C. Promote mitigation of historic buildings and key cultural assets</li> </ul>
	<p><b>5. Ensure a resilient economy</b></p>	<ul style="list-style-type: none"> <li>A. Partner with private sector, including small businesses, to promote structural and non-structural hazard mitigation as part of standard business practice</li> <li>B. Educate businesses about mitigation activities and continuity planning citywide, targeting small businesses and those located in high risk areas</li> <li>C. Partner with private sector to promote employee education about disaster preparedness while on the job and at home.</li> </ul>
	<p><b>6. Promote a collaborative and integrated mitigation program</b></p>	<ul style="list-style-type: none"> <li>A. Incorporate hazard mitigation elements into other City planning efforts, as appropriate.</li> <li>B. Build on existing, and identify potential new, inter-jurisdictional and multi-jurisdictional mitigation efforts.</li> </ul>

# CITY-WIDE VISION, MISSION AND GUIDING PRINCIPLES



## Vision

*Disaster ready...prepared people, resilient community*

## Mission

*We partner with the community to prepare for, respond to, mitigate the impacts of, and recover from disasters.*

## Guiding Principles

- Comprehensive: We consider and take into account all hazards, all phases, all stakeholders and all impacts relevant to disasters.
- Progressive: We anticipate future disasters and take preventive and preparatory measures to build disaster-resistant and disaster-resilient communities.
- Risk-Driven: We use sound risk management principles (hazard identification, risk analysis, and impact analysis) in assigning priorities and resources.
- Integrated: We ensure unity of effort among all levels of government and all elements of the community.
- Collaborative: We create and sustain broad and sincere relationships among individuals and organizations to encourage trust, advocate a team atmosphere, build consensus, and facilitate communication.
- Flexible: We use creative and innovative approaches in solving disaster challenges.
- Professional: We value a science and knowledge-based approach based on education, training, experience, ethical practice, public stewardship and continuous improvement



## MITIGATION WORK GROUP MISSION

*It is the mission of the Mitigation Work Group to develop a comprehensive disaster mitigation program that 1) increases community resilience; 2) builds upon existing mitigation programs; 3) increases knowledge of all hazards to which the City is at risk; and 4) implements interim and long-term mitigation actions that maximize loss reduction.*



# UPDATED 2014 HMP GOALS

1. *Protect life and safety and promote community preparedness*
2. *Safeguard critical infrastructure and ensure continuity of service.*
3. *Protect public and private property.*
4. *Protect the natural environment and cultural and historic resources. **NEW!***
5. *Ensure a resilient economy.*
6. *Promote a collaborative and integrated mitigation program. **NEW!***

## 2012 Snow Activation



Courtesy of Seattle Office of Emergency Management

# 2014 MITIGATION ACTION WORKSHEET



City of Seattle Hazard Mitigation Plan – 2014 Mitigation Action Worksheet

**1. Mitigation Action**  
Click here to enter text.

2. Action Status:  New  Existing  Complete

3. Type of Action:  
 Plans and Regulations  Infrastructure/Capital Project  Natural Systems Protection  
 Education and Awareness  Preparedness and Response

4. Goals Supported:  
 Life and Safety  Critical Infrastructure Protection  Property Protection  
 Natural Resource Protection  Resilient Economy  Integrated Planning

5. Lead Department/Organization: Click here to enter text.

6. Timeline:  Immediate  < 1 year  1 – 3 years  3 – 5 years

7. Life of Action:  Temporary  Short-Term (Interim)  Long-Term

8. Hazards Addressed (Check all that apply):

<input type="checkbox"/> All Hazards	<input type="checkbox"/> Floods	<input type="checkbox"/> Terrorism
<input type="checkbox"/> Active Shooter	<input type="checkbox"/> <b>Heat/Water Incidents</b>	<input type="checkbox"/> Transportation Incident
<input type="checkbox"/> Civil Disorder	<input type="checkbox"/> Infrastructure/Cyber	<input type="checkbox"/> Tsunami/Seiches
<input type="checkbox"/> Disease Outbreaks	<input type="checkbox"/> Landslides	<input type="checkbox"/> Volcanic Eruption/Lahars
<input type="checkbox"/> Earthquakes	<input type="checkbox"/> Power Outages	<input type="checkbox"/> Water Shortages
<input type="checkbox"/> Excessive Heat	<input type="checkbox"/> Snow and Ice Storms	<input type="checkbox"/> Wind Storms
<input type="checkbox"/> Fires		

NOTE: Hazards in bold are ranked as the highest risk in the Seattle Hazard Identification and Vulnerability Analysis

9. Anticipated Cost (if known): Click here to enter text.

10. Funding Available?:  Yes  Anticipated  No

11. Funding Source:  Existing Budget  Grant  Bond/Levy  No/minimal cost

Other: Click here to enter text.

# 1. IDENTIFY THE ACTION

## **SMART ACTIONS!!!**

- **Specific** – target a specific area for improvement.
- **Measurable** – quantify or at least suggest an indicator of progress.
- **Assignable** – specify who will do it.
- **Realistic** – state what results can realistically be achieved, given available resources.
- **Time-related** – specify when the result(s) can be achieved.

## 2. ACTION STATUS

- ***New*** – *The action is new and will be included for the first time in the 2014 plan update.*
- ***Existing*** – *The action was implemented prior to the 2014 plan update, but is ongoing and additional or ongoing action is required for completion.*
- ***Complete*** – *The action has been completed.*

## 3. TYPE OF ACTION

- ***Plans and Regulations*** – Regulatory actions or planning processes that result in reducing vulnerability to hazards.
- ***Infrastructure/Capital Project*** – Actions that involve the modification of existing buildings or structures to protect them from a hazard, or removal from the hazard area.
- ***Natural Systems Protection*** – Actions that, in addition to minimizing hazard losses, also preserve or restore the functions of natural systems.
- ***Education and Awareness*** – Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them.
- ***Preparedness and Response*** – Actions that protect people and property during and immediately after a disaster or hazard event.

## 4. GOALS SUPPORTED

- ***Life and Safety*** – Action protects life and safety and promotes community preparedness.
- ***Critical Infrastructure Protection*** – Action safeguards critical infrastructure and ensures continuity of service.
- ***Property Protection*** – Action protects public and private property.
- ***Natural Resource Protection*** – Action protects the natural environment and/or cultural and historic resources.
- ***Resilient Economy*** – Action ensures a resilient economy.
- ***Integrated Planning*** – Action promotes a collaborative and integrated mitigation program.

# 5. LEAD DEPARTMENT ORGANIZATION





## 6. TIMELINE FOR IMPLEMENTATION

## 7. LIFE OF ACTION

- **Temporary** – Action is a time limited, one time activity.
- **Short-Term (Interim)** – Actions are usually considered to be those that can be accomplished within one year of the plan adoption.
- **Long-Term** – Actions are usually considered to take longer than a year or are an on-going action each year.



# 8. HAZARDS ADDRESSED





# 9. ANTICIPATED COST/10. FUNDING AVAILABLE?/ 11. FUNDING SOURCE





## 12A. STAPLEE CRITERIA

- *S: Is it Socially acceptable?*
- *T: Is it Technically feasible and potentially successful?*
- *A: Does the responsible state agency/department have the Administrative capacity to execute this action?*
- *P: Is it Politically acceptable?*
- *L: Is there Legal authority to implement?*
- *E: Is it Economically beneficial?*
- *E: Will the project have either a neutral or positive impact on the natural Environment? (score a 3 if positive impact, 2 if neutral impact)*
- *Will historic structures or key cultural resources be saved or protected?*
- *Could it be implemented quickly?*



## 12B. MITIGATION EFFECTIVENESS

- *Will the implemented action result in lives saved?*
- *Will the implemented action result in a reduction of disaster damage?*



# WORKSHEET CASE STUDY #1 – SEISMIC RETROFIT PROGRAM





# WORKSHEET CASE STUDY #2 – SEISMIC RETROFIT



# MITIGATION ACTION WORKSHOP





## NEXT STEPS

- *Mitigation Actions (completed worksheets) Due by July 25*
- *Draft Mitigation Plan Due August 18*
- *MWG Meeting #4 – Tuesday, August 26, 1-3pm*
- *Public Meeting #2 – Early September (Date TBD)*



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# QUESTIONS?



# CONTACT INFORMATION

*Matthew Lieuallen*

*503.248.5600 x 4632*

*[mlieuallen@ene.com](mailto:mlieuallen@ene.com)*

*Dennis Lawlor*

*716.684.8060*

*[dlawlor@ene.com](mailto:dlawlor@ene.com)*



**ecology and environment, inc.**

Global Environmental Specialists



**THANK YOU FOR YOUR  
PARTICIPATION!!!**







## **B-4 Mitigation Work Group Meeting**



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### Meeting Summary

Project Management     Mitigation Working Group     Other:

**Date:** September 16, 2014

**Time:** 1:00 p.m. to 3:00 p.m.

**Location:** Seattle Municipal Tower, Room 2450

**Attendees:**

	<b>Name</b>	<b>Organization</b>	<b>Department</b>
1	Erika Lund	City of Seattle	Office of Emergency Management
2	Barb Graff	City of Seattle	Office of Emergency Management
3	Laurel Nelson	City of Seattle	Office of Emergency Management
4	Jerry J. Koenig	City of Seattle	Seattle City Light
5	Sam Ripley	City of Seattle	Seattle City Light
6	Julie Matsumoto	City of Seattle	Finance and Administrative Services
7	Sarah Sodt	City of Seattle	Department of Neighborhoods
8	Jill Watson	City of Seattle	Human Services Department
9	Jill Crary	City of Seattle	Seattle Center
10	Lawrence Eichhorn	City of Seattle	Department of Transportation
11	Patti Petesch	City of Seattle	Parks and Recreation
12	Becky Rufin	City of Seattle	Parks and Recreation
13	Maureen Traxler	City of Seattle	Department of Planning and Development
14	Ned Worcester	City of Seattle	Seattle Public Utilities
15	Tracy Morgenstern	City of Seattle	Office of Sustainability and Environment
16	Matthew Lieuallen	Ecology and Environment, Inc.	
17	Zack Ambrose	Envirolssues	



**Agenda:**

	<b>Meeting Items</b>	<b>Duration</b>	<b>Presenter/Facilitator</b>
1	Opening remarks and time tracking	5 minutes	Erika Lund, Office of Emergency Management, City of Seattle
2	Presentation of Draft Seattle HMP	20 minutes	Matthew Lieuallen, Ecology and Environment
3	Mitigation Strategy Review and Improvement	30 minutes	Erika Lund, Office of Emergency Management, City of Seattle
4	Stakeholder Outreach Update	10 minutes	Matthew Lieuallen, Ecology and Environment
5	Review of 2009 Mitigation Actions, Current Capabilities, and Proposed 2014 Actions	30 minutes	All
6	Strategies for Engagement of Community Partners	20 minutes	All
7	Next Steps	5 minutes	Matthew Lieuallen, Ecology and Environment

**Attachments:**

1. Meeting agenda
2. Seattle HMP Update Draft Plan Jump Start Presentations
3. Comment tracking sheet
4. Sign-in sheets
5. Completed comments

**Summary:**

The Seattle Hazard Mitigation Plan (HMP) Update project team hosted the third of five Mitigation Work Group (MWG) meetings on Tuesday, September 16, 2014. The MWG meeting was intended as an opportunity for participants to review the Draft Seattle HMP and provide comments about Mitigation Actions, Current Capabilities, and proposed 2014 Actions relevant to their departments. Thirteen members of the MWG and three members of the project management team participated in the meeting.

***Opening Remarks and Introductions***

Erika Lund, Project Lead, Office of Emergency Management (OEM), welcomed the group and thanked them for attending and participating in the Seattle HMP Update process. Erika reminded the MWG to



track and report the number of hours they or their staff spend on the project as the hours can be applied toward the in-kind contribution needed for OEM's grant requirements.

Matthew Lieuallen, Ecology and Environment, provided a brief overview of the meeting, aimed to present the Draft Seattle HMP and provide comments about mitigation actions relevant to each department.

### ***Presentation of Draft Seattle Hazard Mitigation Plan***

Matthew walked the group through the Draft Seattle HMP, which included the following sections:

- i. **Front Matter:** This section includes adoption and administrative matters.*
- 1. Introduction:** The introduction provides a brief overview of mitigation planning and describes the HMP as a cohesive approach that directs mitigation efforts. Additionally, this section presents the authorities on which the plan is based and summarizes what has been updated since the last plan was adopted in 2009.
- 2. Planning Process:** This section explains how the plan has been developed and how the process links other plans within the Office of Emergency Management and the City as a whole. The public engagement process is also summarized.
- 3. Community Profile:** This summary chapter explains the context for creating the HMP within Seattle and the surrounding area.
- 4. Hazard Identification and Vulnerability Analysis:** This summary chapter explains the Seattle Hazard Identification and Vulnerability Analysis (SHIVA) document.
- 5. Capability Assessment:** This chapter identifies the City's current and future mitigation capabilities based on each department.
- 6. Mitigation Strategy:** This chapter illustrates a comprehensive strategy based on a series of goals and actions that support these goals, to address all hazards.
- 7. Program Implementation:** This chapter identifies implementation strategies to ensure the HMP is a usable, living document.
- 8. Appendices**

A MWG member asked how they could make edits to specific sections of the plan. Matthew explained that by using the comment tracking sheet, each department can review and provide edits to the Draft HMP.



### **Mitigation Strategy Review and Improvement**

Erika explained to the group that the management team is seeking feedback on the proposed goals, objectives, and projects that form the Mitigation Strategy. Erika proposed restructuring the projects in a new way to tell this story differently. Matthew explained that currently, the goals are presented and resulting mitigation projects are discussed. These are then grouped in a table that identifies which goals and objectives are fulfilled by each project. Matthew asked the group for suggestions to tell this story more effectively.

Barb Graff emphasized the need to identify specific projects and goals as a way to track accomplishments and encouraged the group to think strategically about the plan. A MWG member asked how to incorporate funding information for each project in the plan. Erika stated that the Federal Emergency Management Agency (FEMA) has extensive requirements for projects to receive funding and, by using assessments, the need for each project is explicitly stated even though funding may not be available.

A MWG member asked if a five-year timeline was a reasonable assumption. Erika stated that this assumption was correct and by using SMART criteria, a project is given context and its status is understood. A MWG member asked whether dedicated funding sources should be included in the goals and objectives. Matthew stated that funding is not currently included in this section but this broader point could be included in the Strategic Plan.

Matthew explained the capability assessment chapter, noting that it should reflect the current capacity to mitigate hazards, existing plans and programs, and accomplishments since the previous planning cycle. This provides a baseline for updating the HMP. The following chapter, Mitigation Strategy, provides direction for the future and Matthew noted that the narrative will be improved and connections between these two chapters would be made clearer. Matthew reiterated that the goal is to make this plan clear and useful. A MWG member mentioned that in the City's climate plan, it was useful to explicitly state how each section of the plan would be monitored and include questions throughout. Matthew noted that leading off each chapter with an introduction or question could be included.

### **Stakeholder Outreach Update**

Matthew provided an overview of the process so far and a sample of public comments received to date. The public is able to comment on the Draft HMP until October 3 by sending comments via email. Matthew explained that general comments will be addressed by the management team but will defer technical or department-specific comments to the respective departments.

### **Review of 2009 Mitigation Actions, Current Capabilities, and Proposed 2014 Actions**

Matthew also asked the group to make comments on the Draft HMP by using the comment sheets. Specifically, Matthew asked the group to focus on the 2009 Mitigation Actions, Current Capabilities and



Proposed 2014 Actions. Matthew also asked the group to verify the 2009 Mitigation Actions to understand the status of each project.

### **Strategies for Engagement of Community Partners**

Matthew explained that the management team would like to collect initial feedback about external partners and explained how the MWG would engage community partners in future plan updates. The HMP will include language that identifies partners and strategies identified by the Office of Emergency Management to develop a more robust strategy for engagement. A MWG member asked if the engagement component was occurring parallel to the recovery planning process. Erika responded that there needs to be a balance so members are not tasked with too many meetings about similar topics, and that the engagement component will continue to be refined. Matthew stated that one concept in the HMP is to use the MWG to act as monitors and continue to update and refine the plan.

### **Next Steps**

Matthew discussed the next steps in the HMP update process. He explained that the revised draft of the HMP will be sent for department review on September 22 and that all public and department comments must be received by October 3. The plan will then be reviewed by the Disaster Management Committee on October 23, presented to the Emergency Executive Board on November 3, and will be adopted by City Council at a date to be determined. The conclusion of the MWG process will occur with a public event. He thanked the MWG members for their participation in the meeting.

### **Key Action Items:**

	<b>Action Items</b>	<b>Responsibility</b>	<b>Timeline</b>
1	Complete Comment Tracking Sheets	MWG Members	September 19
2	Prepare revised Draft HMP Update	Project Team	September 22



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## 2014 SEATTLE HAZARD MITIGATION PLAN UPDATE

### Mitigation Work Group Meeting #4

**Date:** Tuesday, September 16, 2014  
**Time:** 1:00pm – 3:00pm  
**Location:** Seattle City Light Department Operations Center  
Seattle Municipal Tower Room 2450

**Agenda:**

Meeting Items		Duration	Presenter/Facilitator
1	Opening Remarks and Time Tracking	5 minutes	Erika Lund, OEM
2	Presentation of Draft Seattle HMP	20 minutes	Matthew Lieuallen, E & E
3	Mitigation Strategy Review and Improvement	30 minutes	Erika Lund, OEM
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6	Strategies for Engagement of Community Partners	20 minutes	All
7	Next Steps	5 minutes	Matthew Lieuallen, E & E

**Project Contact Information:**

**City of Seattle**  
Erika Lund, Project Lead  
Seattle OEM  
206.233.5089  
[erika.lund@seattle.gov](mailto:erika.lund@seattle.gov)

**Ecology and Environment, Inc.**  
Matthew Lieuallen, Project Manager  
Ecology and Environment, Inc.  
503.248.5600 x4632  
[mlieuallen@ene.com](mailto:mlieuallen@ene.com)





### Mitigation Work Group Meeting #4, Tuesday, September 16, 2014

Please Print

Sign-In Sheet

Name	Organization	Phone	E-mail	Prep Hours *	Meeting Hours	Hours Travel	Total Hours	Miles Travel
1. Sam Ripley	SCL		Sam.Ripley@seattle.gov		2			
2. JULIE MATSUMOTO	FAS	206-684-0357	julie.matsumoto@seattle.gov	3	2	0	5	0
3. Sarah Sodd	DoN	5-1786	sarah.sodd@seattle.gov		2			
4. Jill Cray	Seattle Center	4-7107	jill.cray@seattle.gov		2			
5. Jill Watson	HSID		jill.watson@seattle.gov		2			
6. Maureen Traxler	DTSD	3-3892	maureen.traxler@seattle.gov		2			
7. LA. Eichhorn	SPOT	684-7574	Lawrence.Eichhorn@seattle.gov	3	2		5	
8. PATTI PETERSCH	PARKS	684-1803	patti.petersch@seattle.gov		2		4	
9. Becky Rubin	PARKS				2			
10. Ned Worcester	SPU				2			
11. Jerry Koenig	SCL	684-3085	jerry.koenig@seattle.gov		2			
12. Tracy Morgenstern	OSE				2			
13. Laurel Nelson	OEM				2			
14. Barb Gray	OEM				2			
15. Matthew Licualanca	EHE	503.248.5600	mlicualanca@seattle.gov		2			
16. Erika Lund	OEM	237-5089	erika.lund@seattle.gov		2			





**2014 SEATTLE HAZARD MITIGATION PLAN UPDATE**  
**MITIGATION WORK GROUP MEETING #4**  
**SEPTEMBER 16, 2014**



# AGENDA

1. *Opening Remarks and Time Tracking*
2. *Presentation of Draft Seattle HMP*
3. *Mitigation Strategy Review and Improvement*
4. *Stakeholder Outreach Update*
5. *Review of Capabilities and Mitigation Actions*
6. *Strategies for Engagement of Community Partners*
7. *Next Steps*



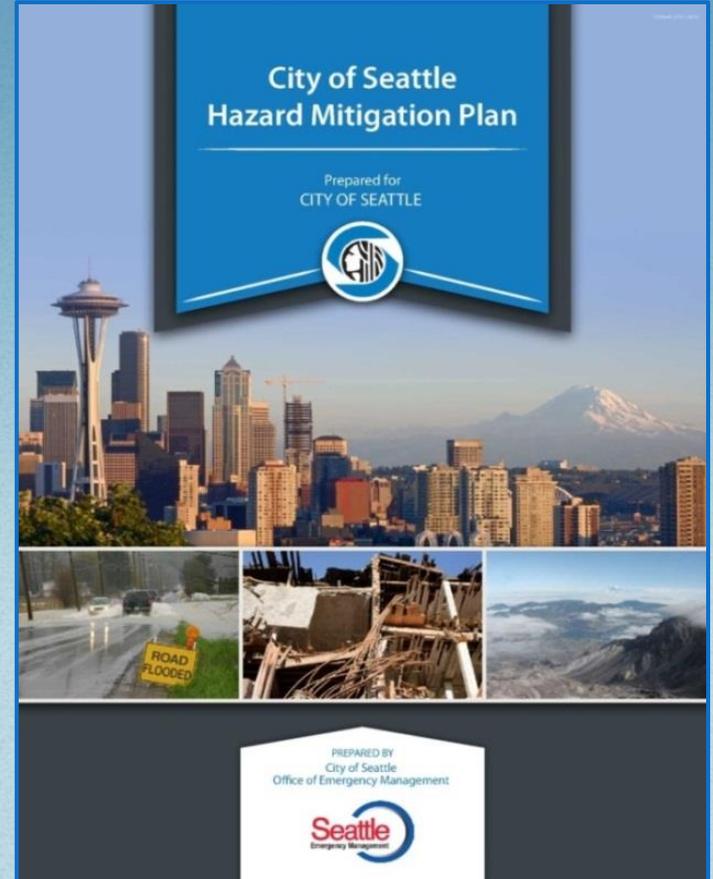


# TIME TRACKING



- *Match – grant requirement*
- *Match eligibility – non-grant funded or grant match hours*
- *Tracking*

# PRESENTATION OF DRAFT SEATTLE HMP



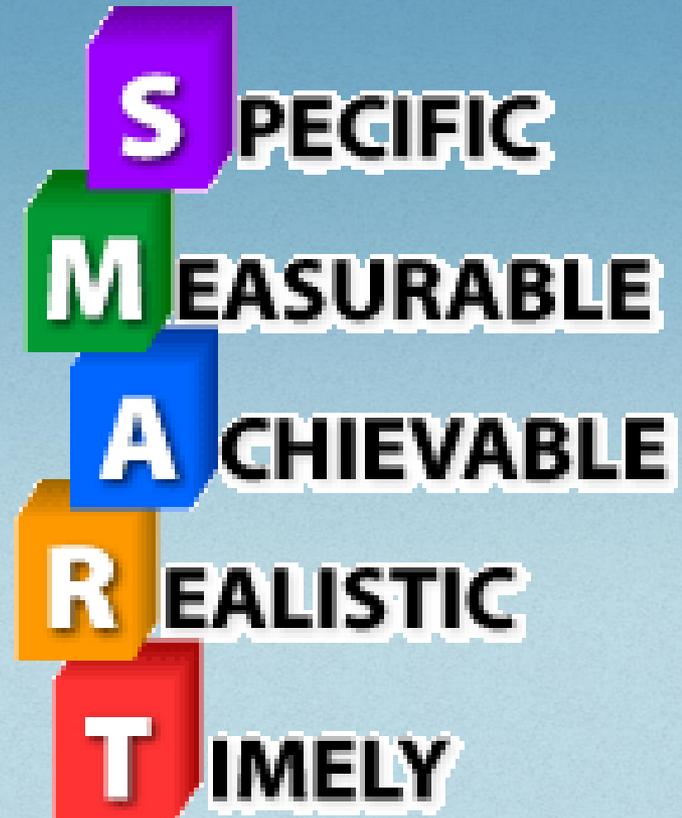
# CHAPTERS

- *Front Matter*
- *1. Introduction*
- *2. Planning Process*
- *3. Community Profile*
- *4. Hazard Identification and Vulnerability Analysis*
- *5. Capability Assessment*
- *6. Mitigation Strategy*
- *7. Program Implementation*

# APPENDICES

- *A. Seattle Hazard Identification and Vulnerability Analysis (SHIVA)*
- *B. Planning Process Documentation*
- *C. Public Outreach and Stakeholder Engagement Documentation*
- *D. Mitigation Action Worksheets*
- *E. FEMA Local Mitigation Plan Crosswalk*
- *F. NFIP Data*

# MITIGATION STRATEGY REVIEW AND IMPROVEMENT



# PUBLIC OUTREACH AND STAKEHOLDER ENGAGEMENT UPDATE



# PUBLIC COMMENT PERIOD #1

- *Public Comment Period held from March 25 to April 23*
- *Materials included a poster, project brochure and social media text for re-posting*
- *Press release sent to Seattle's Office of Immigrant and Refugee Affairs (targets 80 ethnic media outlets) and other media outlets*
- *Letters submitted to Tribal Nations*
- *Information posted on OEM website*



# PUBLIC COMMENT PERIOD #1

- *Public meeting held on Tuesday, April 8, 2014 at Rainier Community Center*
- *Community Survey submitted with 708 responses received*
- *Public Comment Summary submitted for review on May 2, 2014*
- *Will be included as Appendix C to the updated Seattle HMP*



# PUBLIC COMMENT PERIOD #2

- *Plan posted for review and comment on September 5*
- *Public comment period through October 3*
- *“Jump-Start Presentation”*

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Disaster ready...prepared people, resilient community Barb Graff, Director

Hazards Preparedness Programs & Services Training & Events Recovery Publications

**snap**  
Seattle Neighborhoods Actively Prepare  
Click to find out more

**Tiếng Việt**  
(Vietnamese)

Join our Mailing List

**Disaster Preparedness 17-Minute Video**

**HOT LINKS**  
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[Emergency Resources](#)  
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**Welcome to the Seattle Office of Emergency Management!**

The Seattle Office of Emergency Management partners with the community to prepare for, respond to, and recover from disasters. Explore our [Preparedness](#), [Recovery](#), [Programs & Services](#), and [Hazards](#) sections for up-to-date information and news. For a schedule of classes and other preparedness activities, see our [event calendar](#).

We want to [hear](#) your comments, complaints, and any commendations so we can make this a better site.

[Sign up](#) to be on our monthly distribution list for the latest in emergency preparedness news and information.

**Hot Topics**

**Draft Hazard Mitigation Plan Release**

The Office of Emergency Management has just released a draft update to the Seattle All-Hazards Mitigation Plan. This plan has incorporated community input collected this spring to help identify hazards, assess risks, and select mitigation strategies. The resulting 'blue print' will help guide future mitigation planning in the city. Click here to access the [plan](#) (PDF) and a [jump-start presentation](#) (PDF) to help guide your review.

**Emergency:**  
Dial 911  
**Non-Emergency Police:**  
206-625-5011  
**Non-Emergency Fire:**  
206-386-1400

**Emergency Prep**

[Fun Preparedness Videos](#)

**Upcoming Events:**

**Prepare your Pets for Disaster**  
Tue, Sep 16, 2014, 12pm  
Central Branch Library

**Prepare your Pets for Disaster**  
Sat, Sep 20, 2014, 1:30pm  
Broadview Branch Library

**Prepare your Pets for Disaster**  
Sat, Sep 20, 2014, 3pm  
Capitol Hill Branch Library

[See all >](#)



# JUMP-START PRESENTATION



**2014 SEATTLE ALL-HAZARDS MITIGATION  
DRAFT PLAN REVIEW PRESENTATION**



## ...WITH UNIQUE HAZARDS

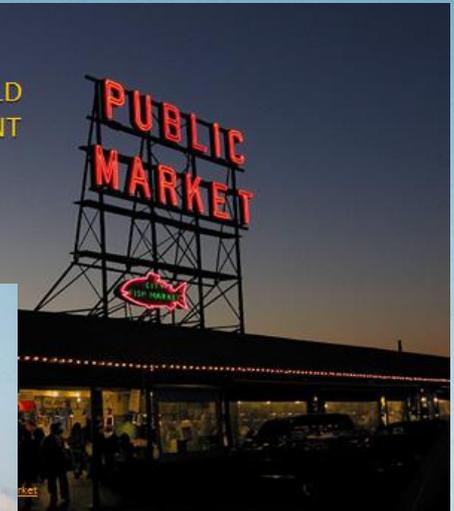
### The city's top 10 hazards are:

Ranking determined by a hazard's frequency and level of expected impact to the community.

1. Earthquakes
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3. Infrastructure/Cyber Incidents
4. Windstorms
5. Power Outages
6. Terrorism
7. Disease Outbreaks
8. Flooding
9. Excessive Heat
10. Fires

Photo Credit: [http://upload.wikimedia.org/wikipedia/commons/0/01/Mount\\_Rainier\\_over\\_Tacoma.jpg](http://upload.wikimedia.org/wikipedia/commons/0/01/Mount_Rainier_over_Tacoma.jpg)

THANK YOU FOR  
HELPING US BUILD  
A MORE RESILIENT  
COMMUNITY!





# ADDRESSING PUBLIC COMMENTS

- *“Proposed capital investment span departments, to what public or citizen advisory groups with oversight. Might you make a presentation integrating hazard mitigation updates into proposed capital plans?”*
- *“I did not find any reference about government relationship with the gas company. Since disruption of gas pipelines to areas of the city would increase other hazards such as fire, no heat, etc., I would think at least a relationship would be set up with the gas company.”*
- *“Please consider incorporating the Seismic Gas Shut Off Meters as a mandatory regulation.”*

# COMMENT TRACKING SHEET



## Draft Seattle All-Hazards Mitigation Plan

### Comment Tracking Sheet – Mitigation Work Group Meeting #4 – September 16, 2014

Name:

E-Mail:

Phone:

#	Page/Section	Comment	Response/Action Taken
01	Ex. Sec. 3.2 (third bullet) or p. 2-1 (2 <sup>nd</sup> paragraph)	Ex. Typo – fix spelling of [text] Ex. Addition – Add [text] Ex. Deletion – Remove [text]	To be completed by E & E



# REVIEW MITIGATION ACTIONS AND CAPABILITIES





## REVISE/CONFIRM 2009 ACTIONS AND CAPABILITIES

1. *Review your department's 2009 action status and capabilities and confirm/revise as needed.*
2. *Review and confirm 2014 actions and identify any new actions and complete a Mitigation Action Worksheet.*
3. *Use the comment tracking sheet for plan edits/comments.*





# REVIEW MITIGATION ACTIONS AND CAPABILITIES





# STRATEGIES FOR ENGAGEMENT OF COMMUNITY PARTNERS





## NEXT STEPS

- *Revised draft submitted for Department review – September 22*
- *Public Comment period concludes – October 3*
- *Department comments due – October 3*
- *Plan reviewed by Disaster Management Committee – October 23*
- *Plan reviewed by Emergency Executive Board – November 3*
- *Council Adoption - TBD*





# PLANNING PORTAL

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# QUESTIONS?





# CONTACT INFORMATION

*Erika Lund*

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*Matthew Lieuallen*

*503.248.5600 x 4632*

*[mlieuallen@ene.com](mailto:mlieuallen@ene.com)*



THANK YOU FOR YOUR  
PARTICIPATION!!!







**2014 SEATTLE ALL-HAZARDS MITIGATION PLAN UPDATE  
DRAFT PLAN REVIEW PRESENTATION**



### WHAT IS HAZARD MITIGATION?



- Actions to reduce, eliminate, redirect or avoid the effects of natural, manmade or technological hazards.
- Mitigation activities can start before, during or after a disaster happens to lessen its impact on people and property.
- Through planning, hazard mitigation can be a long-term, cost-effective way to reduce the risk of loss and help create a more disaster-resistant and sustainable community.

4



### WE WANT YOUR INPUT!

The City of Seattle is updating its All-Hazards Mitigation Plan and wants your input.

**Here's what you can do:**

1. Review the updated plan at <http://www.seattle.gov/emergency/library/2014SeattleHMPUpdateReviewDraft.pdf>
2. Look at proposed actions and projects
3. Consider if risks for your community are addressed
4. E-mail us your comments by October 3 at [HazardMitigationPlanUpdate@seattle.gov](mailto:HazardMitigationPlanUpdate@seattle.gov)



2



### WHY IS HAZARD MITIGATION IMPORTANT?

Mitigation planning allows the city to:

- Better understand and reduce the impact of identified hazards
- Protect the city's people, property, and the environment
- Be eligible for federal mitigation projects funds
- Strengthen relationships through planning together
- Improve coordination of hazard mitigation with comprehensive planning and zoning
- Develop more sustainable and disaster-resistant communities
- **Save lives and money!**



Courtesy of  
Seattle Parks & Recreation

5



### DO YOU KNOW ABOUT...

- Hazard mitigation and how it benefits the city?
- Hazards that pose the greatest risk to the city?
- The city's strategy to mitigate hazards?
- Actions the city has already taken to reduce risk?
- What the city wants to hear from you about the updated all-hazards mitigation plan?

**...KEEP READING AND YOU WILL!**

3



### CITY OF SEATTLE HAZARD MITIGATION PROGRAM

- Guides regular updates of the hazard mitigation plan
- Identifies effective, sustainable, and cost-effective mitigation projects, and realistic implementation strategies

**Everyone has a role...**

- **Citizens** provide input and take action to improve personal preparedness and safeguard homes from damage.
- **Elected officials** make policy and support mitigation by dedicating city resources
- **City departments** implement mitigation actions
- **Community partners** work together to reduce risk

6



City of Seattle Hazard Mitigation Plan Update

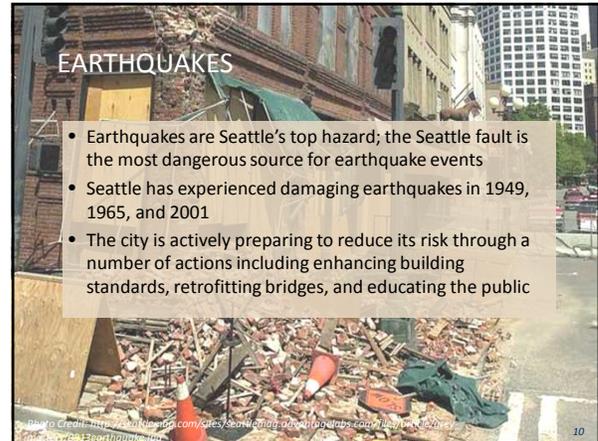
### MITIGATION PROGRAM GOALS

1. Protect life and safety and promote community preparedness
2. Safeguard critical infrastructure and ensure continuity of service
3. Protect public and private property
4. Protect the natural environment and cultural and historic resources
5. Ensure a resilient economy
6. Promote a collaborative and integrated mitigation program

**THINK  
SAFETY  
STARTS  
WITH YOU**



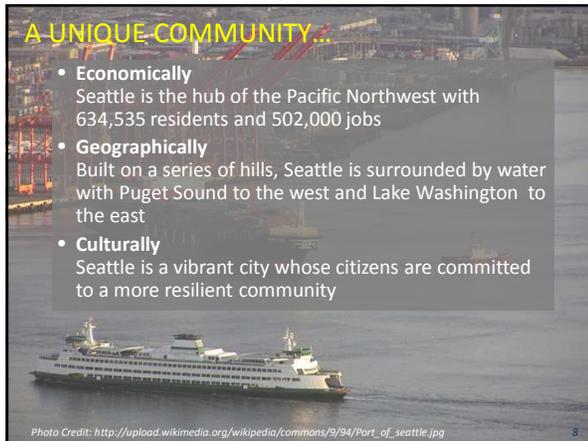
7



### EARTHQUAKES

- Earthquakes are Seattle's top hazard; the Seattle fault is the most dangerous source for earthquake events
- Seattle has experienced damaging earthquakes in 1949, 1965, and 2001
- The city is actively preparing to reduce its risk through a number of actions including enhancing building standards, retrofitting bridges, and educating the public

10



### A UNIQUE COMMUNITY...

- **Economically**  
Seattle is the hub of the Pacific Northwest with 634,535 residents and 502,000 jobs
- **Geographically**  
Built on a series of hills, Seattle is surrounded by water with Puget Sound to the west and Lake Washington to the east
- **Culturally**  
Seattle is a vibrant city whose citizens are committed to a more resilient community

Photo Credit: [http://upload.wikimedia.org/wikipedia/commons/9/94/Port\\_of\\_Seattle.jpg](http://upload.wikimedia.org/wikipedia/commons/9/94/Port_of_Seattle.jpg)

8

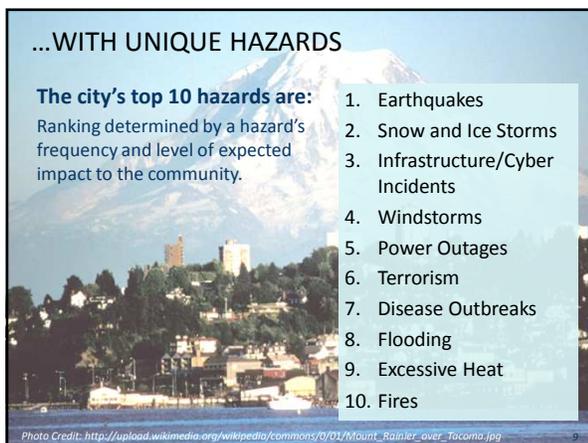


### SNOW AND ICE STORMS

- Seattle's weather is generally mild, but snow events can be large and have major impacts
- Hilly terrain and limited snow removal equipment increase Seattle's vulnerability
- Extended snow events can create health and safety issues and affect transportation

<http://media.oregonlive.com/pacific-northwest-news/photo/seattle-snowjpg-cf2567f573aa530a.jpg>

11



### ...WITH UNIQUE HAZARDS

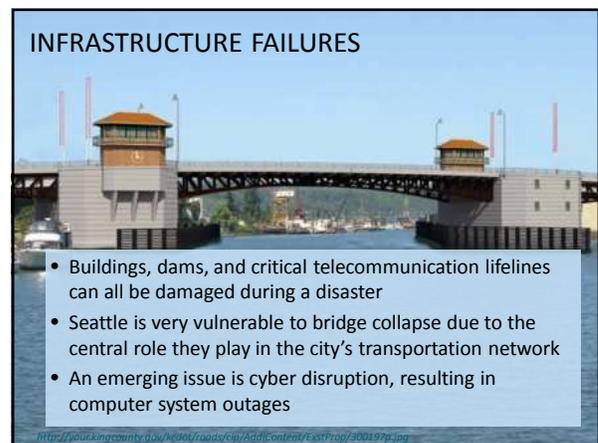
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9. Excessive Heat
10. Fires

Photo Credit: [http://upload.wikimedia.org/wikipedia/commons/0/01/Mount\\_Rainier\\_over\\_Tacoma.jpg](http://upload.wikimedia.org/wikipedia/commons/0/01/Mount_Rainier_over_Tacoma.jpg)

9



### INFRASTRUCTURE FAILURES

- Buildings, dams, and critical telecommunication lifelines can all be damaged during a disaster
- Seattle is very vulnerable to bridge collapse due to the central role they play in the city's transportation network
- An emerging issue is cyber disruption, resulting in computer system outages

<http://www.kingcounty.gov/Info/roads/cw/AddContent/ExstProp/300197p.jpg>

10

City of Seattle Hazard Mitigation Plan Update

### WHAT CAN WE DO IN SEATTLE TO PROTECT OURSELVES?

1. Set policy through regulations and planning processes
2. Modify buildings or structures to protect them from hazards
3. Protect the natural environment
4. Raise awareness of hazards and ways to mitigate them through outreach and education
5. Protect people and property during and immediately after a disaster through preparedness and response activities



13

City of Seattle Hazard Mitigation Plan Update

### THE PLANNING PROCESS SO FAR

	2014	Q1	Q2	Q3	Q4
Mitigation Working Group		↓	↓	↓	↓
Technical work and plan development		Updated Seattle Hazard Identification and Vulnerability Analysis (SHIVA)	Draft Seattle All-Hazards Mitigation Plan		Final plan
Community Input		Public input on values and priorities	Comment on draft plan (we are here)		Final workshop

16

City of Seattle Hazard Mitigation Plan Update

### WHAT HAVE WE DONE?

Mitigation projects completed recently:

- North Queen Anne Drive Bridge Seismic Retrofit
- Urban Flood Hazard Identification Project
- Jefferson and Queen Anne Community Centers Seismic Retrofit
- Duwamish Head Landslide Mitigation Project
- Unreinforced Masonry Building Public Education and Outreach (ongoing)

Photo Credit: <http://www.seattle.gov/parks/centers/images/jefferson.jpg>

14

City of Seattle Hazard Mitigation Plan Update

### WE WANT TO HEAR FROM YOU!

**From the public:**  
What projects would you like to see completed in your neighborhood that would reduce the impacts of hazards?

**From community partners:**  
What opportunities do you see to collaborate or coordinate with the city's mitigation efforts?

**From everyone:**  
What questions do you have about the city's mitigation program that the plan doesn't answer?



17

City of Seattle Hazard Mitigation Plan Update

### WHAT DO WE PLAN TO DO IN THE FUTURE?

Some projects identified in the updated plan:

- Performing seismic upgrades to key city facilities
- Installing emergency generators in key city facilities
- Surveying landmarks/historic resources that have had seismic upgrades
- Integrating hazard mitigation into the city's comprehensive plan

Photo Credit: Seattle Department of Transportation, image of North Queen Anne Bridge seismic retrofit

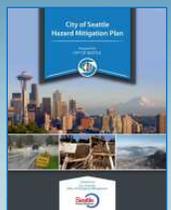
15

City of Seattle Hazard Mitigation Plan Update

### HOW CAN YOU PARTICIPATE?

**Review the plan at:**  
[www.seattle.gov/emergency/library/2014SeattleHMPUpdateReviewDraft.pdf](http://www.seattle.gov/emergency/library/2014SeattleHMPUpdateReviewDraft.pdf)

**Send comments by October 3 to:**  
HazardMitigationPlanUpdate@seattle.gov



18



City of Seattle Hazard Mitigation Plan Update

### ADDITIONAL RESOURCES



**Seattle Office of Emergency Management**  
[www.seattle.gov/emergency](http://www.seattle.gov/emergency)

**King County Regional Hazard Mitigation Plan**  
[www.kingcounty.gov/safety/prepare/EmergencyManagementProfessionals/Plans/RegionalHazardMitigationPlan.aspx](http://www.kingcounty.gov/safety/prepare/EmergencyManagementProfessionals/Plans/RegionalHazardMitigationPlan.aspx)

**Washington State Enhanced Hazard Mitigation Plan**  
[www.emd.wa.gov/plans/washington\\_state\\_hazard\\_mitigation\\_plan.shtml](http://www.emd.wa.gov/plans/washington_state_hazard_mitigation_plan.shtml)

**Federal Emergency Management Agency**  
[www.fema.gov](http://www.fema.gov)

Photo Credit:  
[http://www.visitseattle.org/images/News/Home\\_Visitors/Discover/Neighborhoods/Tremont/IMG\\_3691.jpg?width=940&height=529](http://www.visitseattle.org/images/News/Home_Visitors/Discover/Neighborhoods/Tremont/IMG_3691.jpg?width=940&height=529)

19



THANK YOU FOR  
HELPING US BUILD  
A MORE RESILIENT  
COMMUNITY!

**PUBLIC  
MARKET**

Photo Credit: <http://itsyow.com/tag/pike-place-market>



## **B-5 Disaster Management Committee**



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## Seattle Office of Emergency Management

### Disaster Management Committee (DMC) Meeting – March 27, 2014



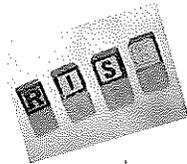
#### Office of Emergency Management (OEM) Director's Report – Barb Graff

As a new feature for this year's DMC meetings, we will kick-off each meeting with a 5 minute report-out by our OEM Director.



#### ACTION – Regional Coordination Framework Member Vote – Barb Graff

King County regional public, private and nonprofit partners have completed the transition of the former Regional Disaster Plan to a new and updated 'Regional Coordination Framework for Disasters and Planned Events in King County.' This Framework is ready for partnering organizations and agencies to sign-on. We would like DMC endorsement to recommend Mayor Murray's signatory to this Framework and associated Agreement. You can view and download these key documents at: <http://www.kingcounty.gov/safety/prepare/EmergencyManagementProfessionals/Plans/RegCoordFramework.aspx>



#### Risk Analysis Project Brief – TJ McDonald

Over the last several months, TJ has been focused on a 'Risk Analysis' project critical to the work to update the Hazard Mitigation Plan and be incorporated into the SHIVA – Seattle Hazard Identification & Vulnerability Analysis document. TJ will provide us an overview of this work.



#### Hazard Mitigation Plan Update Process – Donna Voss

Donna will introduce the Hazard Mitigation Plan Update process the City is embarking on. She will also be seeking input for the planning process from the DMC participants through the completion of a brief survey. \*\*EOC position computers will be setup and available for participants to complete the online survey.\*\*

Please join us on **Thursday, March 27<sup>th</sup> at 10:30 AM to 12:00 PM** (at the Seattle EOC, 105 5<sup>th</sup> Avenue South).



#### What's Coming Up in future DMCs... (Mark your calendars!)

- April 24<sup>th</sup>
- May 24<sup>th</sup>
- June 22<sup>nd</sup>



**Seattle Office of Emergency Management  
Disaster Management Committee (DMC) Meeting**

City of Seattle	Name	SIGN - IN
City Light (SCL)	Jerry Koenig	
City Budget Office (CBO)	Candice Livingston	
Office of Economic Development (OED)	Karl Stickel	
Finance & Admin Services (FAS)	Elenka Jarolimek	
	Margaret Cesena	Margaret Cesena
Seattle Fire Dept. (SFD)	J. Havner	
Office of Housing (OH)	Joanne Quinn	
Human Services Department (HSD)	Jill Watson	
	Wendy Holman	
	Judy Summerfield	
	Bill Sanders	
Dept. of Info & Technology (DoIT)	Vicki Wills	
Office of Intergovernmental Relations (OIR)		
City Attorney (LAW).	Bill McGillin <i>Joe Grobler</i>	
	Marcia Nelson	
Legislative Department	<del>Monica Simmons</del> Christie Villa	
	Patti Petesch	
Parks & Recreation (DPR)		
Personnel (PER)		
Seattle Police Dept.	Bill Wolak	



**Seattle Office of Emergency Management**

**Disaster Management Committee (DMC) Meeting**

<b>Seattle Public Library (LIB)</b>		
<b>Dept. of Neighborhoods</b>	Bernie Matsuno	
	Sarah Sodt	
<b>Office of Sustainability &amp; Environment</b>	Tracy Morgenstern	
<b>Seattle Center</b>	Tony Lucero	
<b>Seattle Public Utilities</b>	Ned Worcester	<i>NW</i>
<b>Seattle Dept. of Transportation</b>	Lawrence Eichhorn	<i>[Signature]</i>
	Patti Quirk	
<b>Office of Emergency Management</b>	Barb Graff	<i>[Signature]</i>
	Laurel Nelson	
	Debbie Goetz	<i>[Signature]</i>
	JoAnn Jordan	
	Lise Kaye	
	Nancy Kodani-Lee	
	Donna Voss	<i>[Signature]</i>
	TJ McDonald	
	Michell Mouton	
	Ken Neafcy	
	Diane Newman	
	Grant Tietje	
Cathy Wenderoth		



**Seattle Office of Emergency Management  
Disaster Management Committee (DMC) Meeting**

AGENCIES / Businesses/and Organizations (NON-city dept).		
	Name	Signature
King County Emergency Management		
Public Health - Seattle/King Co.	Ashley Kelmore	
	Ali Jaffe-Doty	<i>Ali Jaffe-Doty</i>
	<i>Aaron Saperstein</i>	
Northwestern University	Stephanie Pure	
	Anne Marie Jacobson	<i>AM Jacobson</i>
Pemco	Brenda Oberto	
Seattle Public Schools	Pegi McEvoy	<i>Pegi McEvoy</i>
Seattle Steam		
Univ. of Washington	Steve Charvet	
Virginia Mason	Craig Gruber <i>NORTHEASTERN UNIV.</i>	<i>Craig Gruber</i>
	Chris Johnson	
	<i>Michael Mes</i>	
<i>Washington 1st/EGU</i>	<i>Mat McBride</i>	<i>Mat McBride</i>



Disaster Management Committee

Thursday, October 23, 2014

Attendees: Barb Graff, Laurel Nelson, Erika Lund, Karimah Edwards, Ken Neafcy, Diane Newman, Jerry Koenig, Candice Livingston, Melisse Lawrle, J. Havner, Marcia Nelson, Patti Petesch, Ashley Kelmore, Michael Ness, Deborah Witmer, Mike Maloy, Hans J. Scholl, Jon Sui,

Introductions were made.

Barb Graff updated the attendee's on a variety of topics including,

- Crude Oil traveling thru Seattle, Mayor Murray has sent his comments to US Department of Transportation with the cities concerns.
- Grant season is upon us; OEM is submitting UASI grants that could assist with upgrading some equipment for the EOC, this would be a three phase grant. OEM is also hopeful to get a Homeland Security grant that would be could be used for EOC upgrades.
- Erika Lund and Dianne Newman have been working together in addressing Recovery in Communities presentation – please contact either person if you'd like a copy.
- OEM is currently hiring for two vacant positions. The Emergency Preparedness Specialist position assessment will take place on October 30<sup>th</sup>. Operations and Planning Coordinator position will be held November 4<sup>th</sup> & 5<sup>th</sup>. Appreciation went out to folks from other agencies that are assisting us in these interviews.
- Possibility in the 2015 Budget that OEM will get an additional position that will be dedicated to Planning.
- Ebola Update: Great information being posted on King County Public Health, Center for Disease Control, and EOC web-sites with up to date information regarding Ebola facts and how the disease is passed. Please share with your co-workers and others this accurate information, the general public is very misinformed about this disease. *(Hand-outs attached)*

**City's Mitigation/Recovery Plan - Erika Lund, OEM**

Some of the best reasons for having a mitigation plan are to help be better prepared in other arenas of emergency management and to be eligible for FEMA funding.

The Seattle All Hazards Mitigation Plan was sent out to DMC members. All members were asked to read the plan.

Barb Graff motioned to the group to vote on the Seattle All Hazards Mitigation Plan. The motion was seconded. Motion to discuss the plan was made; there was no discussion. Motion for questions regarding the plan was made; there were no questions. The motion was made for opposition; there was

none. The motion was made in favor of the plan; all in attendance voted in favor. The motion to pass the Seattle All Hazards Mitigation Plan was passed unanimously.

**Pacific Northwest Earthquakes – Earthquake Early Warning (EEW) and other Recent & Future Developments – John Vidale & Bill Steele, Pacific NW Seismic Network**

Very informative presentation focus on Early Warning system, specific type of earthquake Seattle area would encounter vs. typical type of earthquakes taking place in Southern California area.

University of Washington has conducted a variety of survey's asking B=business owners, property owners, and resident's variety of questions regarding their experience with earthquakes, what they would do in the event of an earthquake, what they have done in the past when experiencing an earthquake. ***The information they have gathered is very relevant and will help in developing community education material.***

***Please visit the OEM web-site for a link to John & Bill's presentation.***

***<http://www.seattle.gov/emergency/library/UWEqHazardAndWarningSeattleDMC.pdf>***

**Preparing to Respond to the EOC – JoAnn Jordan**

Key things to keep in mind before heading to the EOC when it is activated:

- Take care of yourself and your family – be safe.
- Get to the EOC safely.
- Come prepared to stay at the EOC for a considerable amount of time; in doing so ensure that you have food, water, blanket, Rx, extra clothes and hygiene supplies.
- Have the conversation with your family regarding what they should do in the event of an emergency.

JoAnn encouraged all city agencies to contact OEM for educational materials. She also handed out some wonderful gift's to everyone in attendance.

**Next Meeting will be November 20<sup>th</sup>, 2014**



**2014 SEATTLE ALL-HAZARDS MITIGATION PLAN REVISION**  
**PLAN REVIEW PRESENTATION**  
**DISASTER MANAGEMENT COMMITTEE, OCTOBER 23, 2014**



# WHY IS HAZARD MITIGATION IMPORTANT?

Mitigation planning allows the city to:

- Better understand and reduce the impact of identified hazards
- Protect the city's people, property, and the environment
- **Remain eligible for federal mitigation projects funds**
- Strengthen relationships through planning together
- Improve coordination of hazard mitigation with comprehensive planning and zoning
- Develop more sustainable and disaster-resistant communities
- **Save lives and money!**



*Courtesy of  
Seattle Parks & Recreation*

# WHAT'S NEW IN THE 2014 REVISION?

- The Seattle Hazard Identification and Vulnerability Analysis (SHIVA) has been updated
- Expanded to include human-caused hazards
- Alignment with Emergency Management Accreditation Program (EMAP) standards
- Incorporates new FAS Seismic Risk Assessment methodology

# MITIGATION PLAN GOALS

1. Protect life and safety and promote community resiliency
2. Safeguard critical infrastructure and ensure continuity of service
3. Protect public and private property
4. Protect the natural environment and cultural and historic resources
5. Ensure a resilient economy
6. Promote a collaborative and integrated mitigation program



# RISK-BASED PLANNING

## The city's top 10 hazards are:

Ranking determined by a hazard's frequency and level of expected impact to the community.

1. Earthquakes
2. Snow and Ice Storms
3. Infrastructure/Cyber Incidents
4. Windstorms
5. Power Outages
6. Terrorism
7. Disease Outbreaks
8. Flooding
9. Excessive Heat
10. Fires

# WHAT HAVE WE DONE?

Mitigation projects completed recently:

- North Queen Anne Drive Bridge Seismic Retrofit
- Urban Flood Hazard Identification Project
- Jefferson and Queen Anne Community Centers Seismic Retrofit
- Duwamish Head Landslide Mitigation Project
- Unreinforced Masonry Building Public Education and Outreach (ongoing)

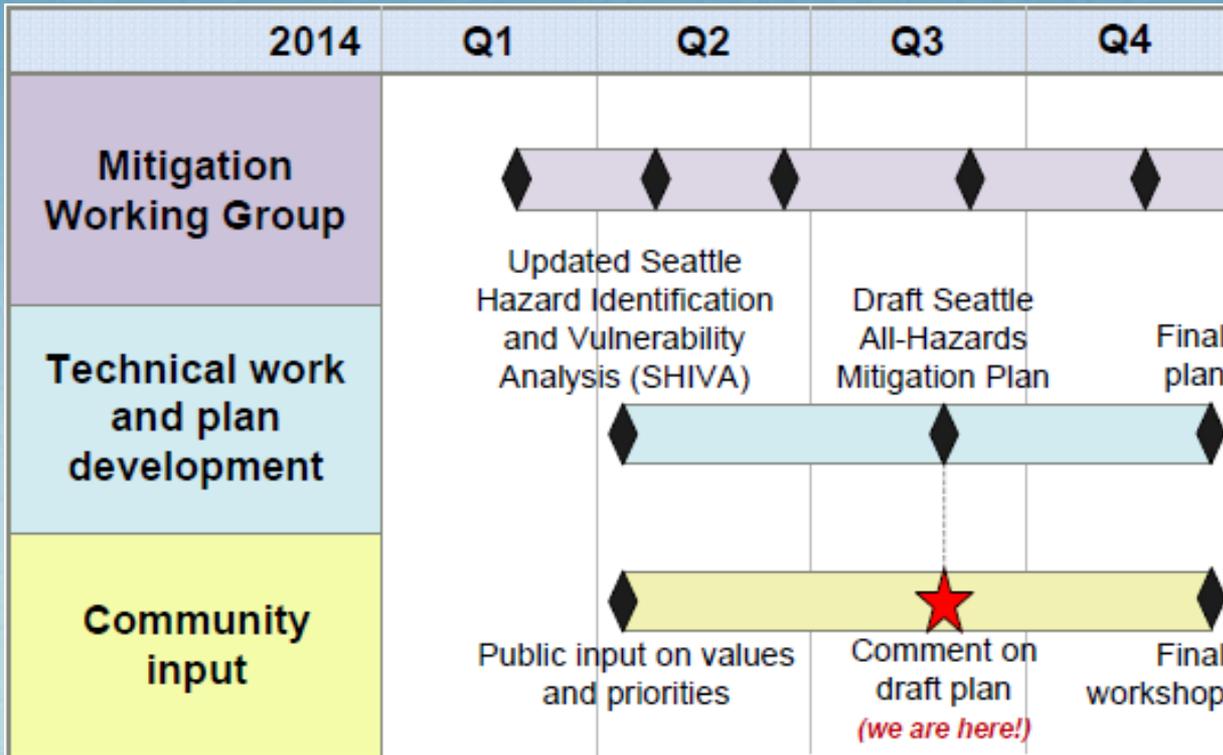
# WHAT DO WE PLAN TO DO IN THE FUTURE?

Some projects identified in the updated plan:

- Performing seismic upgrades to key city facilities
- Installing emergency generators in key city facilities
- Surveying landmarks/historic resources that have had seismic upgrades
- Integrating hazard mitigation into the city's comprehensive plan



# THE PLANNING PROCESS SO FAR



THANK YOU FOR  
HELPING US BUILD  
A MORE RESILIENT  
COMMUNITY!







## **B-6 Emergency Executive Board**



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# City of Seattle

## Emergency Executive Board

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### **AGENDA FOR NOVEMBER 3, 2014**

**3:45 – 4:45 P.M.**

Norman B. Rice Conference Room (City Hall)

The Mayor's Emergency Executive Board is composed of the Mayor's Senior Staff and key Department or Agency Heads that assemble to address policy related issues as a part of emergencies and disasters.

1. The city-wide Disaster Management Committee approved the 2014 update to the City's all-hazard Mitigation Plan and is presenting the Plan for the Mayor's Emergency Executive Board approval. A brief summary of the Plan and its 5-year revisions is attached as is a copy of the full Plan. The most important part of that plan is the Implementation Plan which I've attached separately (pages 6-13 through 6-27) for easier readability.
2. A matrix is attached indicating the progress to date on the development or update of Department's Continuity of Operations Plans. These plans are necessary as 1) a good business practice; 2) readiness to protect the city's most important business functions; and 3) as a condition for getting the city-wide emergency management program accredited. We discovered the value of these plans during our experience with the Bus B electrical repair work at SMT a year ago.
3. OEM will provide an update on Ebola: information shared, plans being developed and an opportunity to address any suggestions by the EEB.
4. Last weekend was our first real storm of the season. OEM will provide an overview of coordination before and during winter storms whether they involve wind-related power outages, traffic-snarling snow and ice, or urban flooding.



Revision to the Seattle All-Hazards Mitigation Plan  
Executive Summary for the Emergency Executive Board  
October 28, 2014

## **Background**

This is the five year revision to the Seattle All-Hazards Mitigation Plan (HMP). The plan was updated by the Office of Emergency Management (OEM) with input from an interdepartmental work group and with consultant support. This part of OEM's major suite of plans, which also includes the Emergency Operations Plan and the Recovery Framework (in development).

## **Purpose**

The Seattle HMP lays out mitigation goals, strategies, and an implementation plan to reduce the potential impact of identified natural and human-caused hazards. The overall purpose of the Seattle HMP is to strategically guide actions and investments in such a way as to reduce the impacts of natural and human-caused hazards on human life and property. The efforts that have contributed to the development of the Seattle HMP will lead to a safer, stronger, more survivable and resilient city.

A FEMA-approved plan allows the City to remain eligible to apply for state/federal mitigation grant funding.

## **Scope**

The Seattle HMP covers the jurisdiction of the City and its departments, with the intent of benefitting all residents, businesses, and government and non-governmental partners. It covers all areas within the City limits, as well as City department services and assets outside the City, such as municipal watersheds and dams.

## **Content**

The plan includes a description of the planning process, a community profile, a summary of hazards from the Seattle Hazard Identification and Vulnerability Analysis (SHIVA), a capability assessment, a mitigation strategy, and closes with a section on program implementation. The mitigation strategy includes goals, objectives, and actions. Because the HMP is risk-driven, there is a strong emphasis of earthquake mitigation. Mitigation actions identified include a range from capital projects to plans, regulations and outreach efforts. Some actions show as unfunded in the implementation plan; there is no penalty if the actions are not able to be completed prior to the next 5 year update

## **What's new in this revision?**

- The SHIVA, which drives all OEM planning, has been updated
- Expanded to include human-caused hazards

- Alignment with Emergency Management Accreditation Program (EMAP) standards
- Incorporates new FAS Seismic Risk Assessment methodology

### **Next Steps**

The Plan was approved by the City-wide Disaster Management Committee on October 23<sup>rd</sup> and recommends the plan now to the Mayor's Emergency Executive Board. Once approved by the Board, the Mayor endorses and forwards the plan to City Council for approval by resolution. The Plan is concurrently sent to the Washington State Emergency Management Division then FEMA for their approval. If any changes are suggested by the State or FEMA we will bring those to your attention separately. A close out workshop will be held in early 2015.