WSSPC
WESTERN STATES
SEISMIC POLICY
COUNCIL

Western States Seismic Policy Council

2019 Meetings Notebook

April 25-26, 2019

Salt Lake City, Utah

Acknowledgments

The Western States Seismic Policy council is grateful for the financial support we receive from the Federal emergency Management Agency (FEMA) and our Affiliate members.

We are funded by a Cooperative Agreement with the Department of Homeland Security, federal Emergency Management Agency in the current fiscal year. The agreement, EMW-2018-CA-00001, is in effect from August 1, 2018 to August 31, 2019.

Our Affiliate members help defray the costs not covered by FEMA's Cooperative Agreement. WSSPC Affiliate members for 2019 are:

- Applied Technology Council
- California Earthquake Authority
- City of Las Vegas, Department of Building and Safety
- Clark County (Nevada) Department of Building and Fire Prevention Bureau
- Dominic Sims
- Saunders Construction, Inc.

Image on Front Cover: Salt Lake City Skyline, Source: smcslc.org

Section 1

WSSPC Meetings Schedule

2019 WSSPC Annual Meeting Schedule*

Marriot Hotel Salt Lake City, Utah

Thursday, April 25th, 2019

2:15 – 4:00 p.m. NEMA Earthquake Subcommittee (By Invitation)
Meeting Room: TBA

WSSPC Committee Meetings

Draft Policy Recommendation 19-1: Rapid and Effective Tsunami Identification and Response
Draft Policy Recommendation 19-3: Post-Earthquake Technical Clearinghouses
Draft Policy Recommendation 19-4: Seismic Provisions in the 2018 International Building Codes
Draft Policy Recommendation 19-10: Joint Policy for the Evaluation and Seismic Remediation of School Buildings
Draft Policy Recommendation 19-11: Reliability of Lifeline Services
Draft Policy Recommendation 19-12: Earthquake Actuated Automatic Gas Shutoff Devices

5:00 – 6:00 p.m. WSSPC Basin and Range Province Committee Meeting
Chair: Richard Koehler
Meeting Room: TBA
Toll Free: 866-730-7514 PIN 875415#
Toll: 916-558-7514

5:00 – 6:00 p.m.. WSSPC Engineering, Construction & Building Codes Committee Meeting
Chair: Peter McDonough
Meeting Room: TBA
Toll Free: 866-730-7514 PIN 491619#
Toll: 916-558-7514

5:00 – 6:00 p.m. WSSPC Tsunami Hazard Mitigation Committee Meeting
Chair: Maximilian Dixon
Meeting Room: TBA
Toll Free: 866-730-7514 PIN 374697#
Toll: 916-558-7514

* https://www.wsspc.org/programs-events/conferencesworkshops-board-meetings/upcoming-events/

Friday, April 26th, 2019

12:00 – 1:00 p.m. WSSPC Awards Luncheon

Meeting Room: TBA

WSSPC Lifetime Achievement Award – Laura Kelly

2019 Overall Award in Excellence: Mitigation Efforts – Utah Division of Emergency Management for "Fix the Bricks"

2019 Award in Excellence: Outreach Efforts – Washington Emergency Management Division for "Be Tsunami Siren & Evacuation Map Aware"

1:00 p.m. - 2:00 p.m. – WSSPC Board Meeting

Chair: Peter McDonough

Meeting Room: TBA

2:15 p.m. - 4:15 p.m. – WSSPC Annual Business Meeting

Chair: Peter McDonough

Vice Chair: Karen Berry

Meeting Room: TBA

All Draft Policies:

https://www.wsspc.org/public-policy/2019-wsspc-draft-policy-recommendations/

2018 Annual Report:

https://www.wsspc.org/wp-content/uploads/2019/04/FINAL-2018-Annual-Report.pdf

* https://www.wsspc.org/programs-events/conferencesworkshops-board-meetings/upcoming-events/

Section 2

WSSPC Board Meeting

Agenda and Minutes

WSSPC Board Meeting
Marriot University Park
Salt Lake City, Utah
Room: TBA

Friday April 26th, 2019
1:00 p.m. – 2:00 p.m.

AGENDA

Time	Section	Item	Lead
1:00 p.m.		**Call to Order, Welcome, and Introductions**	**Karen Berry** WSSPC Vice Chair
1:05 p.m.	Section 2	**Approval of Minutes** WSSPC Board of Directors' Meeting of November 15-16, 2018	**Berry**
1:10 p.m.	Section 4	**WSSPC Executive Director's Report** • 4A-WSSPC Cash on Hand • 4B-WSSPC FY Income & Expense (December 2018 – February 2019) • 4C- FEMA FY18 Cooperative Agreement • 4D-FEMA FY18 Budget and Work Plan • 4E-FY18 State Support Projects • 4F-Draft Logic Model	**Matthew Wall** WSSPC Executive Director
1:30 p.m.		**WSSPC Board of Directors Slate for Terms December 2019 – November 2021**	**Berry**
1:35 p.m.	Section 5	**Review of 2019 Policy Recommendations** DRAFT_PR_19 - 1_Tsunami_Evacuation_Version3_111518 DRAFT_PR_19-3_Clearinghouses_Version3_111518 DRAFT_PR_19-4_Bldg_Codes_Version3_111518 DRAFT_PR_19- 10_Schools_Joint_Policy_Version3_111518 DRAFT_PR_19- 11_Lifeline_Infrastructure_Version3_111518	**Berry**

		DRAFT_PR_19-12_Gas_Shutoff_Devices_Version3_111518	
1:55 p.m.		**Status of Future Meetings** • 2019 Board Meeting Sacramento (November 2019) • 2020 WSSPC Annual Meeting and 2020 Earthquake Program Managers Meeting (National Earthquake Conference)	**Wall**
2:00 p.m.		**Adjournment**	**McDonough**

Questions? Matthew Wall 804-418-1456 (cell)

WESTERN STATES SEISMIC POLICY COUNCIL
BOARD OF DIRECTORS' MEETING
801 K Street, Suite 1200
Sacramento, California
November 15-16, 2018

MINUTES

November 15, 2018

Present:
Karen Berry, Colorado Geological Survey
Lara Brodetsky, WSSPC
Caleb Cage, Nevada Division of Emergency Management & Homeland Security
Robert Feeley, Idaho Office of Emergency Management
Keith Knudsen, U.S. Geological Survey
Steve Masterman, Alaska Division of Geological and Geophysical Surveys (on speakerphone)
John Metesh, Montana Bureau of Mines and Geology
Peter McDonough, Utah Seismic Safety Commission
Kevin Miller, California Governor's Office of Emergency Services
Patti Sutch, WSSPC

Welcome and Introductions – Peter McDonough

All present introduced themselves. Acting California State Geologist Bill Short stopped by to introduce himself.

USGS Report – Keith Knudsen

Keith made the following points:

- Bill Leith, Senior Advisor for Earthquake and Geologic Hazards, is retiring.
- USGS has a new Ground Failure product which is incorporated into PAGER.
- Operational Aftershock Forecasts (OAF) – There is a new process for aftershock forecasts for M>5.
- 2PAGER product takes estimates from HAZUS and incorporates into PAGER.
- Earthquake Early Warning – There is a new implementation and research plan for the west coast. Phase 1 is rolling out in the Fall of 2018.
- Haywired scenario commemorates the 150th anniversary of the 1868 Hayward earthquake.
- The USGS Menlo Park office plans to move to Moffett Field in the spring of 2019.
- Joan Gomberg is heading up the Subduction Zone Initiative.
- Core USGS funding has stayed about the same; about 10% of the budget comes from other organizations.
- USGS Regional Coordinators are shown on the slide.

Approval of Minutes – Peter McDonough

MOTION: To approve the Board of Directors' Meeting minutes of May 4, 2018 (Peter McDonough).
SECOND: Karen Berry.
VOTE: Berry, Feeley, Masterman, McDonough, Metesh, Miller in favor. Caleb Cage abstained.

Review of Annual Business Meeting Minutes – Peter McDonough

MOTION: To accept the minutes of the Annual Business Meeting May 4, 2018 (Peter McDonough).
SECOND: Karen Berry.
VOTE: Unanimously in favor.

Executive Director Report – Patti Sutch

Tab 3 in the Meeting Materials notebook has the financial data. Our cash on hand at the end of September is $ 188,114.90, down slightly from March.

The Income & Expense statement shows we currently have a net of $2652 through September. This Board meeting will use up some if not all of that amount as well as the year end entries.

Last year's FEMA cooperative agreement reporting is shown next. For our FY17 grant we added the outcomes logic model and reporting and this year we are using the reporting tools that were developed when reporting our quarterly results. We have received no feedback on any of it, although our FY17 final report was approved.

The FY18 FEMA cooperative agreement was obligated August 17th and backdated to Aug 1. We received an increase of $2000 to our base plan to $227,000 and we were assigned 5 state projects: Guam, Hawaii, Idaho, Nevada, and Wyoming. State projects and NEPM travel reimbursements total $176,547. The total cooperative agreement is $403,547.00.

Consulting fees are higher than expected for several reasons: First, we purchased a new server and backup system with more storage and retired the 6-year old server. We also learned from some members that they are blocking our emails because our email host was using servers in other countries. We added Microsoft Exchange so that that emails are now sent from U.S. Servers. Finally, as we were transitioning to the new server, the Executive Director's computer went into hibernation unexpectedly. Since it was under warranty, we installed a new mother board, reinstalled programs but Windows would not install. We were sent 2 new motherboards but the Windows problem persisted so we were sent a new computer and then had to reinstall everything again.

Other updates:

- We added the https security certificate to the website.
- We prepared pre-scripted messages for our social media.
- We completed the office inventory and everything is labeled as shown on the "Assets" sheet (Tab 7).
- The Executive Director was invited to join the FLASH Resiliency Council and accepted. There have been two meetings to date that have been hurricane-centric.

- The Executive Director reviewed a hospital document for NEMA EQ Subcommittee.
- The Executive Director has nearly 200 hours of PTO left which will be paid out in March.
- The Executive Director will be out of the country from March 1-21. February 28 is the last date for being available for the transition.

Steve Masterman asked about Membership Dues and who pays them? Patti responded that these are actually donations since state, territory, and province members do not pay dues. She wants to clarify the language in the financial statements to reflect that these are the Affiliate member donations.

Steve also asked about having enough operating funds. Patti said that in our Strategic Plan the Board has said that we want to have operating funds to carry us through 6 months; currently we have enough for at least 9 months. New non-profit accounting rules that go into effect this year will show $100,000 as a line item called Reserves (reflecting operating expenses for 6 months).

Conflict of Interest Policy (Tab 4) – Patti Sutch

The policy was developed last year and requires an annual renewal. Page 5 has the statement that each Board member is required to file. Steve recommended that that page needs a logo or something to identify WSSPC on it.

MOTION: To approve the Conflict of Interest Policy (Peter McDonough).
SECOND: Kevin Miller.
VOTE: Unanimously in favor.

Financial Policies and Procedures (Tab 5) – Patti Sutch

This is another document we are required to update annually. Caleb asked if an audit was required? Patti answered that it was if we had income over $750,000, and our FEMA cooperative agreement is just over $403,000. We do however prepare annual financial statements and have a financial review.

MOTION: To accept the Financial Policies and Procedures document (Caleb Cage).
SECOND: Kevin Miller.
VOTE: Unanimously in favor.

Personnel and Benefits Policies (Tab 6) – Patti Sutch

This document contains the policies used to administer the benefits, and is approved annually.
MOTION: To approve the Personnel and Benefits Policies document (Caleb Cage).
SECOND: Karen Berry.
VOTE: Unanimously in favor.

Inventory (Tab 7) – Patti Sutch

Patti maintains a list of furniture, computers, and some software. Everything on the list in the office is labeled. Karen asked why low value items were listed. Patti responded that many of these items initially were not able to be expensed and had to be carried over 5 years or more. Items purchased recently are usually not listed because they can be expensed now. The exception is if they were part of a larger purchase.

Peter McDonough expressed his appreciation for Patti's work.

BREAK

Policy Recommendations Review– Peter McDonough

PR 19-1: Rapid and Effective Tsunami Identification and Response

Kevin Miller was on the committee call that reviewed the policy and described the rationale for the changes. There were a lot of changes to it but Track changes was not used, so the original and revised policies were included in the meeting materials.

Recommended changes to the policy were:

- Policy Recommendation statement: 2 sentences maximum. First sentence - emergency management agencies may be 2 restrictive because other agencies do this.
- Executive Summary: Separate sentences in Executive Summary - sentences are too long. Consider putting the warning methods for distant tsunamis back in the Background. It emphasizes distant-source tsunami response over near-source tsunami response.

PR 19-3: Post-Earthquake Technical Clearinghouses
EERI should be included.

PR 19-4: Seismic Provisions in the 2018 International Building Codes
The Board agreed to accept as revised.

PR 19-10: WSSPC/EERI Joint Policy for the Evaluation and Seismic Remediation of School Buildings
The Board agreed to accept as revised.

PR 19-11: Reliability of Lifeline Services
Peter McDonough explained that there are no state mandates. WSSPC should encourage mutual relationships and examine interdependencies.

Kevin Miller asked if ports should be included? The consensus was no.

PR 19-12: Earthquake Actuated Automatic Gas Shut-Off Devices
Caleb asked if we should consider adding tribes to the policies? Or as WSSPC members?
John Metesh said Montana has 7 tribes, California has over 500 tribes (Note: 107 federally recognized tribes). After a discussion, the Board suggested adding tribes to Policy Recommendation 19-1.

Patti said that a reference to the standard was added.

Steve asked if we should also recommend devices on oil pipelines. Peter said that they don't have simple devices to shut off the flow of oil.

Keith asked if we had coordinated with the EERI Policy Committee. Patti said that she has, and that the EERI policies were distributed to WSSPC members for review. They are also linked from the WSSPC policy recommendation webpage.

Executive Director Job Interview Process – Peter McDonough

Patti received 16 resumes from both the professional/technical and non-profit tracks. The job was advertised in 15 locations over several months.

The Board narrowed the list down to the top 6 candidates. Interview questions were developed in areas of Knowledge, Management, Leadership, and Personal. Peter will talk more about the process after the Lunch break. Steve will participate in the interviews via telephone.

LUNCH BREAK

Peter announced that Rick Allis (State Geologist of Utah) is retiring.

John asked if we should explore the issue of working with the tribes? Caleb said Nevada has 27 tribes. Robert said Idaho has diversity and numbers of tribes as members of The Affiliated Tribes of Northwest Indians which includes Washington and Oregon as well as Idaho, and there is a Northwest Tribal Emergency Management Council in Washington. Steve said Alaska has the Alaska Federation of Natives; perhaps tribes could be Affiliate members.

The topic should be further explored.

Future Meetings – Patti Sutch

The next Board and Annual Business Meeting will be in Salt Lake City April 26, 2018, in conjunction with the National Earthquake Program Managers Meeting. Peter will not be there and asked Karen to Chair the meeting in his absence.

WSSPC Vision – Peter McDonough

The Board then turned to discuss what changes, if any, they could envision going forward. Patti said it is an opportunity to increase the capacity of WSSPC and use the strengths of the new Executive Director.

There could be more outreach, especially to state legislative bodies. Patti cautioned that this type of outreach could not be done using the FEMA cooperative agreement, but a person independently funded could be a possibility.

Caleb said each state could take the Annual Report back to their state. Karen said the policies could be mailed out as an educational effort. Patti mentioned that WSSPC has re-established a relationship with CSG-West, and as a result, Peter McDonough, Barry Welliver, and Bob Carey made presentations to the Transportation and Infrastructure Committee at their annual meeting in September. CSG-West is our target audience, as well as the Western Governors Association.

Karen said there is a gap or need to develop educational tools. Caleb said there could be a state by state analysis. Patti mentioned we do a policy survey adoption every few years. John Metesh said that a vehicle for large funding could be a clearinghouse. WSSPC could build a data system. The Board should define what skills are needed to put together a clearinghouse database – someone with good writing skills to pursue cooperative grants and be able to work with the other consortia and partners.

BREAK

Closed Session – Interviews

MINUTES

November 16, 2018

Closed Session – Interviews

Discussion and Next Steps – Peter McDonough

Peter directed Patti to ask each candidate for 3 references. Kevin Miller supplied a form with questions that could be adapted for reference checking. John Metesh also promised to send a few questions. The Board decided their next conference call to decide on the successful candidate would be Thursday December 6 at 9 a.m.

Adjournment – Peter McDonough

The meeting was adjourned.

Respectfully submitted,

Patricia L. Sutch

WSSPC Secretary

Section 3

WSSPC Annual Business Meeting

Agenda and Minutes

WSSPC Annual Business Meeting
Marriot University Park
Salt Lake City, Utah
Room: TBA

April 26th, 2019
2:15 p.m. – 4:15 p.m.

AGENDA

Time	Section	Item	Lead
2:15 p.m.		**Call to Order and Welcome**	**Karen Berry** WSSPC Vice Chair
		Roll Call and Establishment of Quorum	**Matthew Wall** WSSPC Executive Director
	Section 3	**Approval of Minutes of WSSPC Annual Business Meeting May 4, 2018**	**Berry**
2:30 p.m.		**USGS Update**	**USGS Representative**
2:45 p.m.		**FEMA Update**	**David Javier, FEMA**
3:05 p.m.	Section 4 & Annual Report	**WSSPC Executive Director's Report** • 2018 Annual Report (separate, and on website) https://www.wsspc.org/wp-content/uploads/2019/04/FINAL-2018-Annual-Report.pdf with last FY Financial Statements • WSSPC Current year financial status • FEMA Grant 2018 • State Projects • 2019 Affiliate members • Other Updates	**Wall**
3:20 p.m.		**WSSPC Board of Directors Nominations for Terms from 2019-2021 and Member Vote**	**Berry**

3:25 p.m.		**WSSPC Committee Reports:** • Basin & Range Province Committee • Engineering, Construction, and Building Codes Committee • Tsunami Hazard Mitigation Committee	**Committee Chairs:** • Richard Koehler • Peter McDonough • Maximilian Dixon
3:40 p.m.	**Section 5**	**Proposed 2019 Policy Recommendations – Discussion and Adoption** *DRAFT_PR_19 - 1_Tsunami_Evacuation_Version3_111518* *DRAFT_PR_19-3_Clearinghouses_Version3_111518* *DRAFT_PR_19-4_Bldg_Codes_Version3_111518* *DRAFT_PR_19-10_Schools_Joint_Policy_Version3_111518* *DRAFT_PR_19-11_Lifeline_Infrastructure_Version3_111518* *DRAFT_PR_19-12_Gas_Shutoff_Devices_Version3_111518*	**Berry**
4:00 p.m.		**2017 Policy Recommendations For Renewal in 2020 and Assignment to Committees** *Policy Recommendation 17-1: Improving Tsunami Public Education and Warning Procedures for Distant and Local Sources* *Policy Recommendation 17-3: Earthquake Monitoring Networks* *Policy Recommendation 17-4: Identification and Mitigation of Unreinforced Masonry Structures* *Policy Recommendation 17-7: Earthquake Early Warning Systems* *Policy Recommendation 17-8: Seismic Design and Construction of New Schools*	**Berry**
4:10 p.m.		**2019 WSSPC Annual Meeting Location (Results from NEPM meeting)**	**Wall**
		New Business	**Berry**
4:15 p.m.		**Adjournment**	**Berry**

Western States Seismic Policy Council
Annual Business Meeting
Crowne Plaza Hotel
Seattle, Washington
May 4, 2018

MINUTES

Present, + indicates Member and/or Proxy:

+Mulivanu Aimu, American Samoa Department of Homeland Security
++Ryan Arba, California Governor's Office of Emergency Services (and proxy for California Geological Survey)
+Dan Belanger, Alaska Division of Homeland Security and Emergency Management
+++Karen Berry, Colorado Geological Survey (and proxy for Colorado Division of Homeland Security & Emergency Management and Colorado Earthquake Hazard Mitigation Council)
++Bob Carey, Utah Division of Emergency Management (and proxy for Utah Geological Survey)
+Michael Conway, Arizona Geological Survey
John Crofts, Utah Division of Emergency Management
++Maximilian Dixon, Washington Emergency Management Division (and proxy for British Columbia Emergency Management)
+Leo Espia, Guam Homeland Security / Office of Civil Defense
++Melinda Gibson, Wyoming Office of Homeland Security (and proxy for Wyoming State Geological Survey)
Joan Gomberg, U.S. Geological Survey
David Javier, Federal Emergency Management Agency
++Andy Jochems, New Mexico Bureau of Geology & Mineral Resources (and proxy for New Mexico Department of Homeland Security & Emergency Management)
+Rich Koehler, Nevada Bureau of Mines & Geology
+Peter McDonough, Utah Seismic Safety Commission
Erin Mommsen, Western States Seismic Policy Council
+Kevin Richards, Hawaii Emergency Management Agency
++Brad Richy, Idaho Office of Emergency Management (and proxy for Idaho Geological Survey)
++Althea Rizzo, Oregon Office of Emergency Management (and proxy for Oregon Department of Geology and Mineral Industries)
+Barrett Salisbury, Alaska Division of Geological and Geophysical Surveys
Patti Sutch, Western States Seismic Policy Council

Call to Order and Welcome
Peter McDonough called the meeting to order and welcomed everyone.

Establishment of a Quorum – Patti Sutch
Patti called the Roll of 39 members and 25 members or proxies were present, establishing a quorum.

Approval of Minutes – Peter McDonough

MOTION: To approve the minutes of the Annual Business Meeting April 28, 2017 (Bob Carey).
SECOND: Maximilian Dixon.
VOTE: Unanimously in favor.

FEMA Update – David Javier

David thanked WSSPC and Patti for the opportunity to speak. He explained that there are 4 NEHRP agencies including FEMA. Six new states were added to the FEMA NEHRP program for a total of 39 states in the program. The entire NEHRP program is funded at $8.5 M. The funding process started early this year with the goal of increasing transparency and decreasing complexity (goals of FEMA's new Strategic Plan). Next year there is an anticipated increase of about $404,000 to the program. In the future the funding distribution information will be available on the FEMA website. FEMA Grants is on track for a mid- May release of the Notice of Funding Opportunity (NOFO), and there will be 30 days to submit the documents. Awards will be made by the end of July for an August 1 start. He said WSSPC's funding would be $403,457 for the FY18 year, with a base plan funding of $227,000. FEMA hopes to have NEHRP reauthorization within the year. FEMA has had conversations with each consortia, partner and state to help prioritize actions that FEMA should take. (Several states said they hadn't had a conversation). David left the meeting.

USGS Update – Joan Gomberg

Joan Gomberg filled in for Keith Knudsen. The USGS released its one year forecast for Central U.S. seismicity and just released the second report of three on the Hayward fault (Haywired scenario). The rest of Joan's presentation focused on her Subduction Zone Initiative efforts outlined in USGS Circular 1428. Studies of the earthquake recurrence of the Cascadia Subduction Zone are being funded by the Powell Center and work starts in October 2018. Earthquake Early Warning has $12 M earmarked and two years to spend the money but overall the USGS budget has a 21% reduction in FY19 as compared with FY17. Bill Leith is the head of the Earthquake Program.

Executive Director Report – Patti Sutch

Patti reviewed the WSSPC financial status as presented in the Meetings Notebook. A new requirement this year is to prepare a Logic Model showing inputs, outputs, and outcomes. A final report is due at the end of July. We solicited new Affiliate members but none joined, and all but one existing member (State Farm) renewed.

Election of Board of Directors – Peter McDonough

Steve Masterman (AK-GS), John Metesh (MT-GS), and Brad Richy (ID-EM) have offered to re-run for a two year term starting December 1, and Caleb Cage (NV-EM) has agreed to add his name to the proposed slate.
MOTION: To approve the slate of Directors (Ryan Arba).
SECOND: Bob Carey.
VOTE: Unanimously in favor.

Basin & Range Province Committee – Richard Koehler

The committee has 12 members; 4 were on the conference call. Members are working on LiDAR acquisition. Quaternary fault mapping will no longer be added to the USGS Fault and Fold Database. State maps are now a state responsibility. Eight states are competing for USGS funding and they are looking for other funding sources. The Seismic Hazards Workshop held in February had about 50 participants and resulted in published articles and a poster session. Planning for an Intermountain West URM Summit / Workshop is being led by Craig dePolo and Bob Carey. The committee has no additional comments on the policy recommendations but have some ideas for potential new policies.

Engineering, Construction, and Building Codes Committee – Peter McDonough

Last year the Committee reviewed one policy recommendation on non-ductile concrete buildings and incorporated all of the comments, and no further comments or changes resulted from their committee meeting yesterday.

Tsunami Hazard Mitigation Committee – Maximilian Dixon

The Committee made changes to 3 of the 4 policy recommendations (18-1, 18-2, and 18-4). Maximilian asked if we have a guide to help local communities create scenarios? He also asked how the policies are being used and what are we trying to achieve? Pete McDonough said they are used by different Utah agencies; Bob Carey said they used the URM policy to try to secure funding for fixing schools, and an earlier policy was used to retrofit the University of Utah Library; Rich Koehler said the policies are used by the Nevada Earthquake Safety Council to motivate local jurisdictions; Bob Carey added that the seismic monitoring policy supported the University of Utah Seismograph Stations to expand their network; and Pete added the Utah Building Codes Committee referred to the policy that advocated jurisdictions should adopt the seismic provisions of the building codes.

Adoption of Policy Recommendations – Peter McDonough

Policy Recommendation 18-1: Earthquake and Tsunami Planning Scenarios

Maximilian Dixon suggested adding First Nations and tribes.
MOTION: To accept the policy recommendation with the suggested changes (Richard Koehler).
SECOND: Kevin Richards.
VOTE: Unanimously in favor.

Policy Recommendation 18-2: Developing Earthquake and Tsunami Risk-Reduction Strategies

Maximilian Dixon added links to the NOAA Strategic Plan.
MOTION: To accept the policy recommendation with the changes (Bob Carey).
SECOND: Brad Richy.
VOTE: Unanimously in favor.

Policy Recommendation 18-3: Definitions of Recency of Surface Faulting for the Basin and Range Province

No additional changes were suggested.
MOTION: To accept the policy recommendation (Barrett Salisbury).
SECOND: Maximilian Dixon.
VOTE: Unanimously in favor.

Policy Recommendation 18-4: Identification and Mitigation of Non-Ductile Concrete Buildings
Maximilian's Committee suggested adding First Nations and tribes.
MOTION: To accept the policy recommendation with changes (Maximilian Dixon).
SECOND: Brad Richy.
VOTE: Unanimously in favor.

Policy Recommendations and Committee Assignments for 2019
16-1: Rapid and Effective Tsunami Identification and Response (Tsunami Committee)
16-3: Post-Earthquake Technical Clearinghouses (All)
16-10: Joint Policy for the Evaluation and Seismic Remediation of School Buildings (All + EERI)
16-11: Reliability of Lifeline Services (Engineering, Construction & Building Codes Committee with Utah Seismic Safety Commission)
16-12: Earthquake Actuated Automatic Gas Shutoff Devices (Engineering, Construction & Building Codes Committee and Basin & Range Province Committee)

Patti will send out an email with these assignments.

Policy Survey
The policy survey results are linked from the WSSPC website homepage. Pete McDonough said they will incorporate the information into the Utah Seismic Safety Commission's strategy.

Next Meetings
2019 location for the NEPM is undecided and 2020 is the National Earthquake Conference year. Salt Lake City was mentioned for 2019 but no decision has been made at this time.

New Business
There being no new business, Pete thanked the WSSPC staff for the meetings.

Adjournment
MOTION: To adjourn the meeting (Ryan Arba).
SECOND: Maximilian Dixon.
VOTE: Unanimously in favor.

Respectfully submitted,

Patricia L. Sutch, Secretary

Section 4 A

CASH ON HAND

WSSPC
WESTERN STATES
SEISMIC POLICY
COUNCIL

Cash on Hand as of February 28, 2019

Checking	$22,099.56
Money Market	$132,093.25
CD	$10,167.68
Petty Cash	$32.21
	$164,301.70

Second half of February 2018 FEMA Expenses

billed February 28, 2019 $13,007.85

Total $177,309.55

Section 4 B

WSSPC FY Income & Expense

December 2018 – February 2019

Accrual Basis

Western States Seismic Policy Council
Income & Expense
November 2018 through February 2019

	Nov '18 - Feb 19
Ordinary Income/Expense	
Income	
401.0 · Interest Inc	
401.1 · Money Mkt Interest Income	72.48
401.2 · CD Interest Income	9.27
Total 401.0 · Interest Inc	81.75
410.0 · Membership Dues	1,675.00
450.0 · Grants Earned	
460.0 · FEMA Grants Earned	
460.14 · 2018 FEMA Grants Earned	98,319.18
Total 460.0 · FEMA Grants Earned	98,319.18
Total 450.0 · Grants Earned	98,319.18
Total Income	100,075.93
Gross Profit	100,075.93
Expense	
500.0 · P/R Expenses	
500.1 · Salary	46,044.70
500.2 · Benefits	
500.7 · Employee IRA Contribution	
500.701 · Employer IRA Contrib-forSutch	900.96
500.7 · Employee IRA Contribution - Other	775.00
Total 500.7 · Employee IRA Contribution	1,675.96
500.2 · Benefits - Other	7,596.63
Total 500.2 · Benefits	9,272.59
500.3 · Employer Contrib/Taxes	4,451.96
500.4 · Workers' Comp	498.93
500.5 · Payroll Service	746.63
Total 500.0 · P/R Expenses	61,014.81
506.0 · Prof Fees Accounting	5,625.00
507.0 · Prof Fees Consulting	1,746.25
510.0 · Office Supplies	674.91
515.0 · Telephone	871.60
520.0 · Printing	453.58
522.0 · Postage and Delivery	22.00
525.0 · Internet Services	1,114.70
530.0 · Staff Expenses	
530.2 · Staff Mileage	25.64
530.3 · Staff Transportation	100.00
Total 530.0 · Staff Expenses	125.64
535.0 · Executive Committee Expense	
535.1 · Meals Exec Comm	770.13
535.2 · Mileage Exec Comm	28.08
535.3 · Transportation Exec Comm	1,492.05
535.4 · Hotel Exec Comm	1,287.90
Total 535.0 · Executive Committee Expense	3,578.16

Western States Seismic Policy Council
Income & Expense
November 2018 through February 2019

	Nov '18 - Feb 19
550.0 · Workshops/Projects	
550.10 · State Support - NV Billboards	15,000.00
550.14 · State Support - ID Outreach	310.92
550.2 · EQ Program Managers Meeting	747.94
550.4 · State Support-HI	4,166.18
550.6 · State Support-GU	6,451.56
550.9 · State Support - WY	1,494.93
550.0 · Workshops/Projects - Other	200.00
Total 550.0 · Workshops/Projects	28,371.53
575.0 · Rent	8,260.00
580.0 · Bank Service Charges	180.90
583.0 · Miscellaneous Expenses	-64.64
Total Expense	111,974.44
Net Ordinary Income	-11,898.51
Net Income	**-11,898.51**

Section 4 C

FEMA Grant 2018

August 1, 2018 – February 28, 2019

Western States Seismic Policy Council
FEMA Grant 2018
August 2018 through February 2019

	Aug '18 - Feb 19
Ordinary Income/Expense	
Income	
450.0 · Grants Earned	
460.0 · FEMA Grants Earned	
460.14 · 2018 FEMA Grants Earned	181,211.78
Total 460.0 · FEMA Grants Earned	181,211.78
Total 450.0 · Grants Earned	181,211.78
Total Income	181,211.78
Gross Profit	181,211.78
Expense	
500.0 · P/R Expenses	
500.1 · Salary	78,537.92
500.2 · Benefits	
500.7 · Employee IRA Contribution	
500.701 · Employer IRA Contrib-forSutch	1,576.68
500.7 · Employee IRA Contribution - Other	775.00
Total 500.7 · Employee IRA Contribution	2,351.68
500.2 · Benefits - Other	10,272.41
Total 500.2 · Benefits	12,624.09
500.3 · Employer Contrib/Taxes	7,032.30
500.4 · Workers' Comp	875.41
500.5 · Payroll Service	1,845.74
Total 500.0 · P/R Expenses	100,915.46
506.0 · Prof Fees Accounting	5,625.00
507.0 · Prof Fees Consulting	6,618.90
510.0 · Office Supplies	1,940.08
515.0 · Telephone	1,388.39
520.0 · Printing	476.00
522.0 · Postage and Delivery	55.52
525.0 · Internet Services	2,425.76
530.0 · Staff Expenses	
530.2 · Staff Mileage	25.64
530.3 · Staff Transportation	130.00
Total 530.0 · Staff Expenses	155.64
535.0 · Executive Committee Expense	

Western States Seismic Policy Council
FEMA Grant 2018
August 2018 through February 2019

	Aug '18 - Feb 19
535.2 · Mileage Exec Comm	28.08
535.3 · Transportation Exec Comm	1,492.05
535.4 · Hotel Exec Comm	1,287.90
Total 535.0 · Executive Committee Expense	2,808.03
550.0 · Workshops/Projects	
550.10 · State Support - NV Billboards	15,000.00
550.14 · State Support - ID Outreach	310.92
550.2 · EQ Program Managers Meeting	747.94
550.4 · State Support-HI	4,166.18
550.6 · State Support-GU	6,451.56
550.9 · State Support - WY	26,986.52
550.0 · Workshops/Projects - Other	200.00
Total 550.0 · Workshops/Projects	53,863.12
575.0 · Rent	16,450.00
580.0 · Bank Service Charges	180.90
Total Expense	192,902.80
Net Ordinary Income	-11,691.02
Net Income	**-11,691.02**

Section 4 D

FEMA Grant 2018

Expenses Tracked to Work Plan

August 1, 2018 – February 28, 2019

Western States Seismic Policy Council
FEMA FY 2018 Cooperative Agreement
August 1, 2018 - July 31, 2019
Cooperative Agreement # EMW-2018-CA-00001

PLANNED TASKS / EXPENSES	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019
SUMMARY PLANNED COSTS												
Total Cooperative Agreement Amount	227,000.00											
Amt Budgeted Per Month	16,249.00	16,549.00	16,379.00	19,923.00	18,309.00	19,279.00	20,713.15	18,123.02	17,410.00	30,829.85	16,549.00	16,686.98
Cumulative Amount Budgeted	16,249.00	32,798.00	49,177.00	69,100.00	87,409.00	106,688.00	127,401.15	145,524.17	162,934.17	193,764.02	210,313.02	227,000.00
Cumulative Budget Remaining	210,751.00	194,202.00	177,823.00	157,900.00	139,591.00	120,312.00	99,598.85	81,475.83	64,065.83	33,235.98	16,686.98	0.00
SUMMARY ACTUAL COSTS												
Amt Expended Per Month												
Amount Expended to Date												
Cumulative Funds Remaining												
PLANNED MONTHLY COSTS - BASE PLAN $225,0(	**16,249.00**	**16,549.00**	**16,379.00**	**19,923.00**	**18,309.00**	**19,279.00**	**20,713.15**	**18,123.02**	**17,410.00**	**30,829.85**	**16,549.00**	**16,686.98**
TASK 1.0 DEVELOP SEISMIC POLICIES	**1,100.00**	**1,237.26**	**2,249.21**	**2,798.50**	**6,572.80**	**2,560.21**	**2,800.00**	**2,800.00**	**2,304.20**	**9,386.65**	**2,497.00**	**2,821.00**
1.1 Develop & Encourage Adoption of Policy Recommendatio	600.00	800.00	749.21	1,198.50	480.00	800.00	900.00	900.00	1,004.20	900.00	1,297.00	1,100.00
1.2 Conduct Board Meetings	500.00	437.26	1,500.00	1,600.00	6,092.80	1,760.21	1,900.00	1,900.00	1,300.00	8,486.65	1,200.00	1,721.00
TASK 2.0 PROVIDE FORUMS	**1,500.00**	**1,002.89**	**2,446.25**	**2,097.00**	**1,300.00**	**3,350.06**	**4,215.00**	**3,696.85**	**3,630.93**	**11,802.50**	**2,300.00**	**1,996.00**
2.1 Hold WSSPC Annual Meeting (including Awards)	1,355.00	762.89	2,096.25	1,747.00	800.00	1,550.06	1,815.00	1,848.42	1,630.93	6,302.50	1,700.00	1,196.00
2.2 Earthquake Program Managers Meeting	145.00	240.00	350.00	350.00	500.00	1,800.00	2,400.00	1,848.43	2,000.00	5,500.00	600.00	800.00
TASK 3.0 PROVIDE OUTREACH AND EDUCATION	**5,357.39**	**5,642.50**	**4,285.00**	**4,219.56**	**5,518.00**	**4,499.98**	**4,096.39**	**5,397.49**	**4,597.70**	**4,342.43**	**4,792.39**	**4,647.38**
3.1 Website	1,362.00	1,600.00	1,200.00	1,500.00	1,500.00	1,200.00	1,000.00	1,000.00	1,400.00	1,442.43	1,400.00	1,800.00
3.2 Quarterly Electronic Newsletter & Monthly Bulletins	2,960.39	3,142.50	2,185.00	2,719.56	3,018.00	2,199.98	2,296.39	3,097.49	2,700.00	2,900.00	3,392.39	2,847.38
3.3 Annual Report	0.00	0.00	0.00	0.00	1,000.00	1,100.00	800.00	1,000.00	497.70	0.00	0.00	0.00
3.4 Conduct Community Education and Outreach	1,035.00	900.00	900.00	0.00	0.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00
TASK 4.0 MAINTAIN & ENCOURAGE PARTNERSH	**1,038.00**	**1,478.04**	**502.60**	**830.00**	**1,230.00**	**510.20**	**761.06**	**313.75**	**342.19**	**301.29**	**499.90**	**1,081.06**
4.1 Maintain & Encourage Partnerships	52.00	986.00	300.00	330.00	230.00	100.00	381.06	213.75	242.19	201.29	399.90	581.06
4.2 Affiliate Member Program	986.00	492.04	202.60	500.00	1,000.00	410.20	380.00	100.00	100.00	100.00	100.00	500.00
TASK 5.0 FINANCIAL AND GRANTS MANAGEMENT	**7,150.02**	**6,559.70**	**6,467.39**	**6,200.39**	**7,872.45**	**7,985.00**	**7,468.00**	**5,914.91**	**4,065.43**	**3,886.88**	**5,431.16**	**5,150.00**
5.1 Manage Cooperative Agreement	1,850.00	1,200.00	1,138.00	810.39	1,372.45	1,000.00	800.00	800.00	950.00	800.00	1,200.00	1,200.00
5.2 Manage WSSPC Finances	1,700.00	1,959.76	1,329.39	890.00	1,500.00	2,085.00	2,650.00	2,277.55	1,000.00	1,200.00	1,800.00	1,650.00
5.3 Maintain Office and Support Personnel	3,600.02	3,000.00	3,000.00	4,500.00	5,000.00	4,900.00	4,018.00	2,837.36	2,115.43	1,886.88	2,431.16	2,300.00
TASK 6.0 OUTCOMES REPORT	**0.00**	**625.00**	**250.00**	**0.00**	**625.00**	**1,250.00**	**625.00**	**0.00**	**1,250.00**	**0.00**	**625.00**	**1,250.00**
6.1 Prepare quarterly Outcomes Reports	0.00	625.00	1,250.00	0.00	625.00	1,250.00	625.00	0.00	1,250.00	0.00	125.00	0.00
6.2 Prepare final Outcomes Report	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	500.00	1,250.00
	16,145.41	**16,545.39**	**16,200.45**	**16,145.45**	**16,145.45**	**20,155.45**	**19,965.45**	**18,123.00**	**16,190.45**	**29,719.75**	**16,145.45**	**16,945.44**

* Indicates Contracts are included in these tasks

Western States Seismic Policy Council
FEMA FY 2018 Cooperative Agreement
August 1, 2018 - July 31, 2019
Cooperative Agreement # EMW-2018-CA-00001

ACTUAL TASKS / EXPENSES	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019
ACTUAL MONTHLY COST - BASE PLAN												
TASK 1.0 DEVELOP SEISMIC POLICIES	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1.1 Develop & Encourage Adoption of Policy Recommendations												
1.2 Conduct Board Meetings												
TASK 2.0 PROVIDE FORUMS	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
2.1 Hold WSSPC Annual Meeting (including Awards)												
2.2 Earthquake Program Managers Meeting												
TASK 3.0 PROVIDE OUTREACH/PUBLIC EDUCATION	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
3.1 Website												
3.2 Quarterly Electronic Newsletter & Monthly Bulletins												
3.3 Annual Report												
3.4 Conduct Community Education and Outreach												
TASK 4.0 MAINTAIN & ENCOURAGE PARTNERSHIPS	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
4.1 Maintain & Encourage Partnerships												
4.2 Affiliate Member Program												
TASK 5.0 FINANCIAL AND GRANTS MANAGEMENT	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
5.1 Manage Cooperative Agreement												
5.2 Manage WSSPC Finances												
5.3 Maintain Office and Support Personnel												
TASK 6.0 OUTCOMES REPORT	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.1 Prepare quarterly Outcomes Reports												
6.2 Prepare final Outcomes Report												

Western States Seismic Policy Council
FEMA FY 2018 Cooperative Agreement
August 1, 2018 - July 31, 2019
Cooperative Agreement # EMW-2018-CA-00001

CONTRACTS / TOTAL	Aug 2017	Sep 2017	Oct 2017	Nov 2017	Dec 2017	Jan 2018	Feb 2018	Mar 2018	Apr 2018	May 2018	Jun 2018	Jul 2018
Task 1.0												
Task 2.0												
Task 3.3 Copy, assemble, print tabs, bind Annual Report $600								600.00				
Task 4.0												
Task 5.0												
Task 7.2 Contract for Hawaii workshop meeting space $14,000		1,000.00					13,000.00					

Western States Seismic Policy Council
FEMA FY 2018 Cooperative Agreement
August 1, 2018 - July 31, 2019
Cooperative Agreement # EMW-2018-CA-00001

227,000.00		
39,126.83		17.2%
	10,728.91	
	28,397.92	
39,337.48		**17.3%**
	22,804.05	
	16,533.43	
57,396.21		**25.3%**
	16,404.43	
	33,459.08	
	4,397.70	
	3,135.00	
8,888.09		**3.9%**
	4,017.25	
	4,870.84	
74,151.33		**32.7%**
	13,120.84	
	20,041.70	
	39,588.85	
6,500.00		2.9%
	5,750.00	
	1,750.00	
218,427.14	225,000.00	

Section 4 E

FEMA Grant 2018

State Support Projects

State Support Projects in WSSPC Fiscal Year December 2018 – March 2019

FY18 State Support Projects

Nevada: Run 2 "Nevada is Earthquake Country" billboard campaigns

WSSPC contracted with Lamar for a billboard campaign in Las Vegas valley. Eleven digital billboards, 4 static billboards, and 7 posters were displayed in October 2018 and April 2019. The static and poster billboards were created on a heavier weight vinyl to be stored and re-used for the spring 2019 campaign.

Funding: $35,123.00

Status: Completed as of May 1st, 2019.

Wyoming: Provide earthquake preparedness branded materials

Wyoming requested promotional items for their ShakeOut outreach. WSSPC oversaw the production of 1700 pop sockets, 1800 Smartphone wallets and stands, and 1620 portable power banks. The larger items displayed the "Drop, Cover, Hold On logo" on them, while the pop sockets had "The Great Wyoming ShakeOut" imprinted. Items were shipped to Wyoming by the end of September.

Funding: 27,000.00

Status: Completed.

Guam: Support Earthquake Mitigation Workshop

The Guam Homeland Security/Office of Civil Defense (GHS/OCD) in collaboration with WSSPC, FEMA, and, the Guam Seismic Advisory Council (GSAC) hosted a two day workshop on "Mitigating Guam's Earthquake Risk." WSSPC coordinated with Guam on logistical components such as hotels, location, meeting space, and catering, as well as aiding in the organization and creation of the meeting. Executive Director Matthew Wall providing input through speaking on both days of the meeting, one of which was during a plenary session on a panel.

Funding: $30,000.00

Status: Completed.

Idaho: Support Earthquake exercise in March 2019

The creation and implementation of a clearinghouse exercise that organizes post-earthquake reconnaissance efforts. WSSPC provided support to Idaho by providing financial support to those traveling to the meeting, acting as a facilitator for the teleconferences, clearinghouse plan, and the clearinghouse exercise, as well as writing an After Action Report (AAR).

Funding: $30,424.00

Status: Completed.

Hawaii:

1. **Support Hawaii's Public Outreach and Education Program**
   Hawaii requested the funding for development and distribution of Public Service Announcements for the local market, design and production of marketing material, and fees associated with participation in community preparedness events. WSSPC supported Hawaii's Public Outreach and Education program, which proposes to reduce loss of life and property resulting from natural hazards through education of hazards and individual community risk. Measures taken to meet this goal include the development and distribution of Public Service Announcements for the local market, design and production of marketing material, and fees associated with participation win community preparedness events.

   Funding: $15,000.00

   Status: Completed. Hawaii used their state support funding to print 3,500 Natural Hazards Preparedness Wheels, a popular item used in their outreach. The colorful front of the wheel describes nine natural hazards, including earthquakes and tsunamis, and the actions to take when they occur. The reverse side describes the hazard and provides a list of item to have available in the event of an emergency.

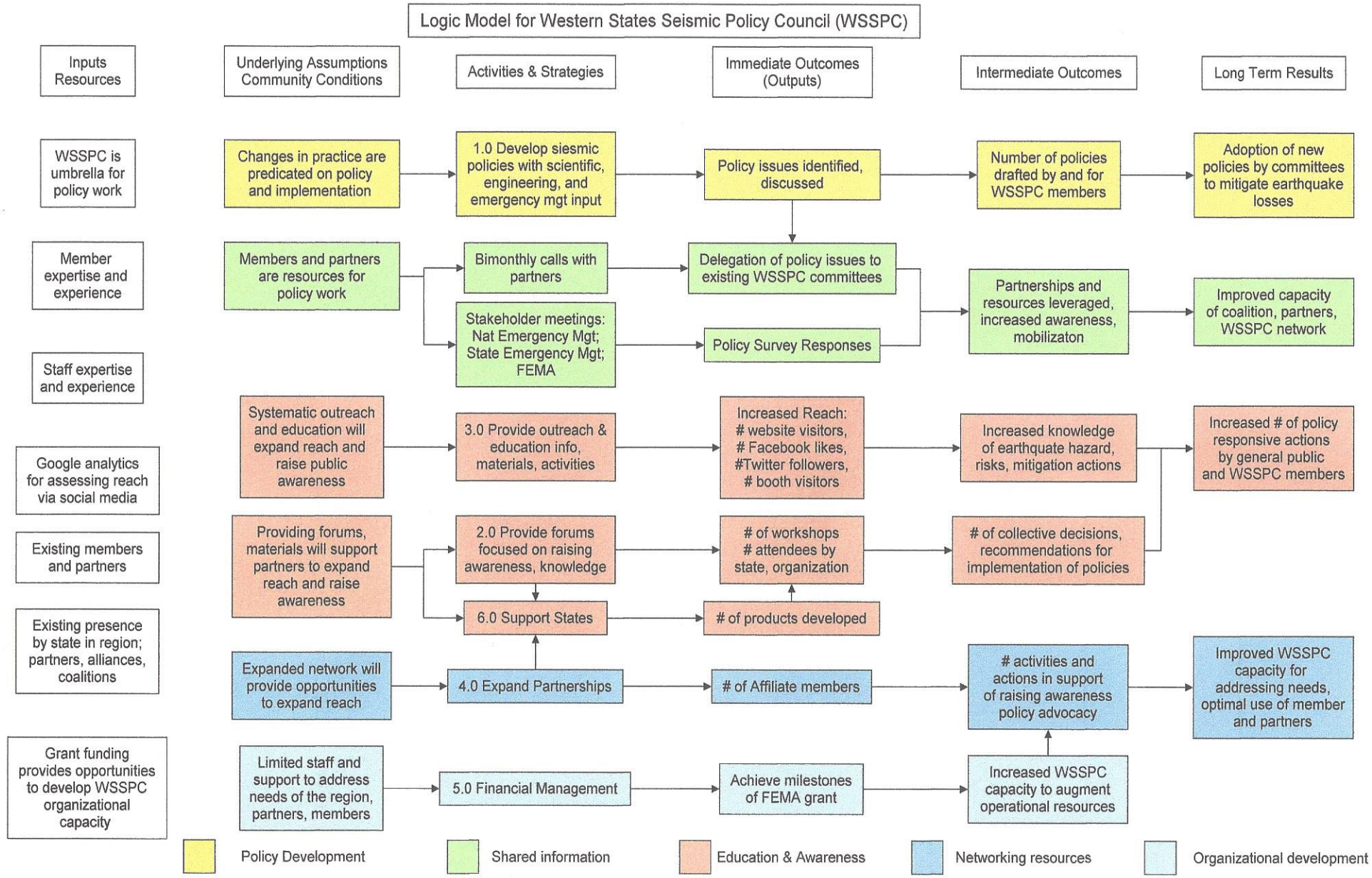
2. **Support the Hawaii Emergency Tsunami Earthquake Advisory Committee (HETAC)**
   HETAC meets quarterly. Typical expenses for WSSPC to reimburse include the meeting space, catering, and travel expenses.

   Funding: $15,000.00

   Status: In Progress. Two meetings will have been held by November 30th, 2019.

Section 4 F

DRAFT Logic Model


Logic Model for Western States Seismic Policy Council (WSSPC)
Inputs Resources
Underlying Assumptions Community Conditions
Activities & Strategies
Immediate Outcomes (Outputs)
Intermediate Outcomes
Long Term Results
WSSPC is umbrella for policy work
Member expertise and experience
Staff expertise and experience
Google analytics for assessing reach via social media
Existing members and partners
Existing presence by state in region; partners, alliances, coalitions
Grant funding provides opportunities to develop WSSPC organizational capacity
Changes in practice are predicated on policy and implementation
1.0 Develop siesmic policies with scientific, engineering, and emergency mgt input
Policy issues identified, discussed
Number of policies drafted by and for WSSPC members
Adoption of new policies by committees to mitigate earthquake losses
Members and partners are resources for policy work
Bimonthly calls with partners
Delegation of policy issues to existing WSSPC committees
Stakeholder meetings: Nat Emergency Mgt; State Emergency Mgt; FEMA
Policy Survey Responses
Partnerships and resources leveraged, increased awareness, mobilizaton
Improved capacity of coalition, partners, WSSPC network
Systematic outreach and education will expand reach and raise public awareness
3.0 Provide outreach & education info, materials, activities
Increased Reach: # website visitors, # Facebook likes, #Twitter followers, # booth visitors
Increased knowledge of earthquate hazard, risks, mitigation actions
Increased # of policy responsive actions by general public and WSSPC members
Providing forums, materials will support partners to expand reach and raise awareness
2.0 Provide forums focused on raising awareness, knowledge
# of workshops # attendees by state, organization
# of collective decisions, recommendations for implementation of policies
6.0 Support States
# of products developed
Expanded network will provide opportunities to expand reach
4.0 Expand Partnerships
# of Affiliate members
activities and actions in support of raising awareness policy advocacy
Improved WSSPC capacity for addressing needs, optimal use of member and partners
Limited staff and support to address needs of the region, partners, members
5.0 Financial Management
Achieve milestones of FEMA grant
Increased WSSPC capacity to augment operational resources
Policy Development
Shared information
Education & Awareness
Networking resources
Organizational development

Section 5 A

WSSPC 2019 Policy Recommendations

WESTERN STATES SEISMIC POLICY COUNCIL
DRAFT POLICY RECOMMENDATION 19-1

Rapid and Effective Tsunami Identification and Response

DRAFT Policy Recommendation 19-1

WSSPC recommends that each coastal state, province, and territory emergency management agency work with coastal jurisdictions to develop evacuation plans for both *near-source* and *distant-source tsunamis*, and supplement these emergency plans with a preparedness education campaign focusing on instructions to evacuate based on ground shaking, that ensures all populated coastal areas in the WSSPC coastal states, territories and provinces are guided by at least one type of system, appropriate to local conditions. Strong coordination should also occur between and among federal partners, such as the U.S. Geological Survey (USGS), National Oceanic and Atmospheric Administration (NOAA), and the Federal Emergency Management Agency (FEMA) and state/academic institutions developing earthquake early warning system (EEW) technologies, expanding upon the WSSPC Policy Recommendation on Earthquake Early Warning, to ensure appropriate community response to both earthquake and tsunami alerts.

Executive Summary

Coastal jurisdictions should develop emergency response plans that ~~which~~ incorporate both *near-source tsunamis*, where there may be only minutes to evacuate, and *distant-source tsunamis*, where there may be hours to evacuate. For near-source tsunamis, a robust education and preparedness campaign should focus on the importance of "natural" warnings, such as earthquake ground shaking felt at the coast as precursor to an incoming tsunami. For distant-source tsunamis, emergency response plans should use redundant alert and warning notification and communication systems (standardized across the nation) which, in addition to standard evacuation and re-entry protocols, could include evacuation instructions. The warning systems should include:

- Emergency Alert System (EAS) to television and radio broadcast participants;
- Automated telephone notification systems (e.g. reverse-911) and implementation of cell phone notification capabilities.
- Wireless Emergency Alerts (WEA) to the public on their cell phones via the Integrated Public Alert and Warning System (IPAWS).
- Social media;
- Phone trees;

Commented [MD1]: Need include a mention of EEW and how it fits/benefits the tsunami alerting and evacuation procedures/systems.

- NOAA weather radios;
- Satellite and cable television;
- Door to door notification;
- Coastal sirens; and,
- Notification via aircraft (e.g. Civil Air Patrol) on-board notification systems, for remote coastlines as available during emergencies.

These warning and notification systems should be tested on a consistent basis (e.g. annually) for confirmation of performance and improved efficiency during an event. WSSPC will work with its federal partners (USGS, NOAA, FEMA, etc.) and the National Tsunami Hazard Mitigation Program (NTHMP) to help maintain a coordinated, consistent and effective, top-to-bottom earthquake and tsunami warning system and public preparedness strategy.

Background

Tsunamis have caused considerable damage and over 440,000 casualties worldwide over the last 150 years. Recent events such as the 2004 Indian Ocean and 2011 Tōhoku tsunamis are a sobering reminder of the magnitude of the problem coastal communities will face. For example, the 2011 Tōhoku tsunami killed ~15,800 people, while the economic impact is estimated to be ~$335 billion, making it the most expensive disaster in history. Most often, tsunamis are created by the rapid uplift of the sea floor offshore during subduction zone earthquakes, and by localized landslides triggered in response to the earthquake shaking. Tsunamis not only affect nearby coastlines within minutes following an earthquake, but can travel long distances and impact distant shorelines several hours after the event. As a result, a clear and immediate distinction must be made between educational outreach campaigns directed at near-source and distant-source tsunamis; effective public education and communication is paramount both preceding as well as following an event.

It is important to eliminate unnecessary coastal evacuations, which can be costly in terms of human risk and lost commerce. Ongoing education is crucial for informing coastal residents and visitors of the procedures to evacuate coastal areas. For example, for a near-source tsunami, upon feeling strong or prolonged ground shaking, residents and visitors should instinctively move rapidly to high ground or inland and not wait for official notices. In contrast, a distant earthquake and tsunami can be detected by a tsunami warning system, which can determine quickly if evacuation is necessary.

Distant-source Tsunamis

Distant tsunamis are caused by earthquakes far from the affected coast. The public will not necessarily feel the earthquake and there will generally be time for an official warning and evacuation to safe areas. Tsunami preparedness and response plans for a distant tsunami should account for all NOAA alert levels in order to help ensure appropriate evacuation of coastal areas. Evacuation strategies, both on-shore evacuation and offshore maritime evacuation, should also consider evaluation of tidal and/or weather-related conditions. The use of redundant warning systems would increase the immediacy and the coverage of the evacuation notification (see executive summary for a list of what warning systems should include).

Warning and notification systems should be tested on a consistent basis (e.g. annually) for confirmation of performance and improved efficiency during an actual event. Only with multiple systems can the best and most immediate coverage be obtained, thereby potentially minimizing the

number of injuries and loss of life from a distant tsunami. Education programs should emphasize that tsunami evacuees should only return to coastal areas in accordance with local plans and guidance~~directions~~, which differ from cancellation of tsunami alerts by the Tsunami Warning Centers.

Near-source Tsunamis

A near-source tsunami will most likely be triggered by a major earthquake on a nearby subduction zone, such as the Cascadia subduction zone (CSZ) or Aleutian subduction zone. The earthquake would be characterized by several minutes of strong ground shaking and a tsunami would arrive at the shore within 10-30 minutes after the start of the earthquake. In the case of a near-source tsunami, the only effective warning system is the realization by the public that when strong or prolonged ground shaking is felt (in some cases when any shaking is felt), they must be trained to ~~instinctively~~ move rapidly away from the shoreline to reach high ground and safety. In the case of a near-source event, a Tsunami Warning Center may not be able to broadcast the message in time for the public to respond, and as such would mainly be providing a warning to other distant localities. For a near-source tsunami, continued education is crucial to inform coastal residents and visitors of procedures to evacuate coastal areas upon feeling strong or prolonged ground shaking and not wait for official notices. Evacuation drills in at-risk communities where residents practice evacuating to safe ground will help improve the speed and effectiveness of evacuation during an event.

Education and Outreach

There are a variety of ways to educate the public about tsunami hazards and what to do to reduce their risk. Education and outreach could include exercises, campaigns and signage etc. Placement of tsunami warning signs is an important aspect of educating the public about how to reach safety upon receipt of a warning. Signs are a proven education tool in recent tsunamis and should be implemented as determined appropriate by local authorities, with possible assistance from the NTHMP in order to maintain coordination ~~continuity~~ between coastal jurisdictions and states. Coastal jurisdictions should be encouraged to adopt standardized tsunami signs.
(See also: *http://www.dot.ca.gov/hq/traffops/engineering/control-devices/tsunami.htm*)

Regular and frequent testing of warning systems by conducting drills and outreach campaigns is essential to refine ~~identify~~ mitigation strategies for a more resilient and effective system. It is important to know that the system will work as intended should public safety officials ever need to

send an alert or warning to a large region of the United States. Only frequent and~~,~~ rigorous testing can provide an accurate ~~appropriate~~ diagnosis of the system's expected performance.

Communities are encouraged to conduct ~~run~~ notification and response exercises and public evacuation drills in order to ensure that the evacuation plans are appropriate and well understood by the coastal population. The state and federal NTHMP partners should offer assistance to these communities in developing and running these exercises and drills.

Earthquake Early Warning

A new public alerting system is being developed to provide advance notification of earthquake shaking once an earthquake begins; for more information see WSSPC Policy Recommendation on Earthquake Early Warning. This technology allows people to take protective action and secure critical infrastructure before damaging shaking arrives. WSSPC will work with its federal partners (USGS, NOAA, FEMA, etc.) and the NTHMP, including state/academic institutions, to help maintain a coordinated, consistent and effective, top-to-bottom earthquake and tsunami warning system and public preparedness strategy.

Internal Section:

Facilitation and Communication

1. Encourage representatives from state agencies to use Policy Recommendation 16-1 with their legislative delegations to develop rapid, multiple tsunami education and notification systems in their respective states, territories and provinces. In addition, education and evacuation planning as well as exercises and drills are the most critical components of overall tsunami risk reduction and, therefore, should be promoted along with tsunami notification systems.

2. Forward Policy Recommendation 16-1 to the National Oceanic and Atmospheric Administration (NOAA), United States Geological Survey, the Federal Emergency Management Agency, and other Federal and State organizations as appropriate, for their budget and technical support.

3. Work with the National Tsunami Hazard Mitigation Program to support development of guidance on various rapid identification and notification systems to help supplement on-going, essential coordinated tsunami and earthquake preparedness, awareness, and response efforts.

Assessment

The assessment of this policy can be measured by: 1) the adoption of tsunami and earthquake hazard policies by state, territorial and provincial, as well as local governments on warning dissemination and evacuation; 2) comprehensiveness of notification systems adopted by state, territorial, provincial and local jurisdictions; 3) regular tests of operational capability of notification, evacuation and response; 4) reauthorization and continued implementation of Public Law 109-424 (the Tsunami Warning and Education Act) that requires improvement in tsunami detection, forecasting, warning, notification, outreach, and mitigation in tsunami jurisdictions; 5) communities being designated by NOAA/National Weather Service (with state assistance) as a TsunamiReady™ Community; and 6) number of public education workshops and surveys completed in at-risk tsunami jurisdictions.

History

Policy Recommendation 16-1 was revised and adopted by unanimous voice vote of the WSSPC membership at the Annual Business Meeting May 6, 2016. Policy Recommendation 16-1 was first adopted as Policy Recommendations 01-1 and 01-2 by unanimous vote of the WSSPC members at the Annual Business Meeting October 24, 2001. PR 01-1 was revised and adopted as PR 04-1 by unanimous vote of the WSSPC membership at the Annual Business meeting September 30, 2004. PR 01-2 was re-adopted as PR 04-2 by unanimous vote of the WSSPC membership at the Annual

Business meeting September 30, 2004. The Assessment section was revised and Policy Recommendations 04-1 and 04-2 were re-adopted as PR 07-1 and PR 07-2 by unanimous vote of the WSSPC membership at the Annual Business Meeting October 3, 2007. PR 07-1 and PR 07-2 were revised and re-adopted as PR 10-1 and 10-2 by unanimous vote of the WSSPC membership at the Annual Business Meeting July 9, 2010. Policy Recommendations 10-1 and 10-2 were combined into one policy recommendation: PR 13-1, and adopted by voice vote of the WSSPC membership at the Annual Business Meeting May 3, 2013; Montana Emergency Management abstained from voting.

WESTERN STATES SEISMIC POLICY COUNCIL
DRAFT POLICY RECOMMENDATION 19-3

Post-Earthquake Technical Clearinghouses

DRAFT Policy Recommendation 19-3

WSSPC recommends that each member state, province, and territory establish a plan for a post-earthquake technical clearinghouse to be activated if possible within 24 hours after each major earthquake within its jurisdiction. WSSPC also recommends that multijurisdictional agreements between and among WSSPC members and Federal agencies be established to enable development ~~in place that would allow for the establishment~~ of a single comprehensive technical clearinghouse in the event of a large earthquake, preferably driven by the states involved.

Executive Summary

Post-earthquake technical clearinghouses for earthquake and related hazards (tsunamis, landslides, etc.) have been an important component of emergency response, recovery, and mitigation following large earthquakes. A technical clearinghouse, either established in a physical location or web based ~~(virtual)~~, can serve to coordinate real-time and post-earthquake hazard investigations to provide timely hazards observations for use by local, state, and federal emergency managers, scientific communities, and the public. This information is then used to improve assessments of earthquake hazards, earthquake engineering, mitigation strategies, economic losses, and emergency response to damaging earthquakes. The clearinghouse also serves to integrate, manage, disseminate and archive information so that it is available to emergency management, policy, and earthquake science practitioners~~decision-makers~~.

Multijurisdictional cooperation is especially important in the event of a large earthquake that affects multiple states. ~~Previously established~~Pre-event Memoranda of Agreements (MOA) between and among WSSPC members and Federal agencies would allow for the establishment of a single comprehensive technical clearinghouse for such an event.

Background

Post-earthquake technical clearinghouses have been an important component of emergency response, recovery, and mitigation following large earthquakes. Seismologists deploy instruments that measure aftershocks and investigate the mechanics of earthquakes. Geologists and geotechnical engineers document ground failures, including fault displacements, fissures, landslides, rock falls, and liquefaction. Geodesists investigate ground deformation and related strain. Structural engineers evaluate the effects of the earthquake on various types of buildings, bridges, dams, utilities, and other structures. Social scientists study direct and indirect impacts to people and businesses. Scientists and engineers also collect inundation and damage information if a tsunami is generated. This information is then used to improve our assessments of earthquake hazards, earthquake engineering, mitigation strategies for nonstructural hazards, and emergency response to damaging earthquakes.

The data collected in the days immediately following a major earthquake can be critical during emergency response and recovery. Scientists and engineers can determine the likelihood that landslides will move (from rain or aftershocks), and can assess the susceptibility of structures to collapse. Some data are perishable and must be collected as soon as possible, before erosion or ~~bulldozers~~ recovery/rebuilding efforts eliminate the evidence ~~or~~ and before aftershocks die out.

Data collected through clearinghouses help us to be better prepared for future large earthquakes. In addition, data on strong ground motion and damage to buildings helps to calibrate loss-estimation models, such as the Federal Emergency Management Agency's (FEMA) HAZUS program, and can be an important component of a Governor's or the President's disaster declaration as well as provide useful information for response, recovery and hazard mitigation.

A technical clearinghouse, either physical or web based ~~(virtual)~~, can serve to coordinate post-earthquake investigations and to share resources and information among investigators. The clearinghouse also serves to integrate and disseminate information so that it is available to decision makers and the media.

Post-earthquake technical clearinghouses were successfully implemented following the Landers, California (1992); Northridge, California (1994); Nisqually, Washington (2001); Wells, Nevada (2008); and Napa, California (2014) earthquakes. Additionally, clearinghouses have been established for other major international earthquake events and have been archived at the Earthquake

Engineering Research Institute (http://www.eqclearinghouse.org/). A clearinghouse provides a reliable place for scientists and engineers to report on their findings each day. In some post-earthquake situations, a clearinghouse may serve as one of the chief mechanisms for relaying critical information from scientists and engineers investigating the earthquake to emergency managers.

Only California and, ~~and Nevada~~ have developed plans for post-earthquake technical clearinghouses; California and Hawaii have created clearinghouses for real-time tsunami observation and post-event information collection. Few WSSPC members have the resources to fully staff and operate a clearinghouse. Opportunities exist for members to collaborate with one another and to coordinate with the U. S. Geological Survey (USGS), FEMA, Earthquake Engineering Research Institute (EERI), university researchers, and other groups. The National Earthquake Hazards Reduction Program (NEHRP) agencies (USGS, FEMA, National Institute for Standards and Technology, and National Science Foundation) developed *The Plan to Coordinate Post-Earthquake Investigations* in 2003 (~~USGS Circular 1242~~Holzer et al., 2003) that includes provisions for cooperating with states to establish post-earthquake technical clearinghouses. Under this plan, the NEHRP agencies can step in and take the lead if WSSPC members are not prepared to establish a clearinghouse. A response and recovery plan developed for Utah (Solomon, 2001) may provide valuable information for other WSSPC states as they plan to integrate response and recovery with technical clearinghouse plans. An 'After action report' for the 2014 South Napa earthquake describes successes, lessons and recommendations from the California Earthquake Clearinghouse South Napa Earthquake Activation and serves as a valuable resource for WSSPC member states considering clearinghouse plans (http://www.eqclearinghouse.org/2014-08-24-south-napa/files/2015/04/California_Earthquake_Clearinghouse_After_Action_Report-South_Napa_Earthquake-2015.04.17.pdf).

Commented [r1]: I cannot verify Nevada's plan. Each plan should be referenced in the reference section. Can Utah and California people fill in a reference for their plan. I recommend deleting Nevada, because we do not seem to have a easily accessible plan.

Commented [r2]: Steve Bowman notes that this document is a bit old and is in need of updating.

State and federal partners through the National Tsunami Hazard Mitigation Program have also developed post-tsunami protocols to guide post-tsunami science surveys (Wilson et al., 2015). These include pre- and post-field coordination recommendations which could also be applied to earthquake clearinghouses.

Multijurisdictional cooperation is especially important in the event of a large earthquake that affects multiple WSSPC members. ~~Previously established~~Pre-event Memoranda of Agreements (MOA)

between and among WSSPC members and Federal agencies would allow for the establishment of a single comprehensive technical clearinghouse for such an event.

Reference

Holzer, T.L. and others, 2003, The plan to coordinate NEHRP post-earthquake investigations, Circular 1242, U.S. Department of the Interior, U.S. Geological Survey, Menlo Park, CA.

Solomon, B.J., 2001, Utah Geological Survey earthquake-response plan and investigation field guide, Utah Department of Natural Resources, Utah Geological Survey Open-File Report 384.

Wilson, R., Wood, N., Kong, L., Shulters, M., Richards, K., Dunbar, P., Tamura, G., and Young, E., 2016, A protocol for coordinating post-tsunami field reconnaissance efforts in the USA: Natural Hazards 75, p. 2153-2165; doi 10.1007/s11069-014-1418-7, 2015.

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Internal Section:

Facilitation and Communication

WSSPC recommends that its members establish a plan for a post-earthquake technical clearinghouse (physical or virtual as circumstances dictate) to be activated if possible within 24 hours after a major earthquake within its jurisdiction. WSSPC further encourages its members to form MOAs to facilitate the operation of clearinghouses, including sending employees from one jurisdiction to another to assist in collection of field data and in staffing a clearinghouse. WSSPC will construct a roster of experts who are willing to participate and disseminate information on clearinghouses that are established after an earthquake.

The NEHRP agencies' post-earthquake investigations plan specifies coordination with states to operate clearinghouses. WSSPC members should develop MOAs with NEHRP agencies to facilitate clearinghouse staffing and operations, and to specify whether a member wishes the NEHRP agencies to take responsibility for establishing a clearinghouse. These MOAs could include triggers, such as USGS or EERI deployment only if moment magnitude or earthquake intensity exceeds certain values for an urban epicenter or for a rural earthquake. WSSPC members may wish to activate clearinghouses at lower triggers for purposes of training or when sufficient resources exist to respond to the earthquake. Any MOA should recognize the considerable role and interest of FEMA in post-earthquake technical clearinghouses.

To achieve the above goals, WSSPC will establish a Post-Earthquake Technical Clearinghouse Committee (PTCC) to update the WSSPC model post-earthquake technical clearinghouse plan, create a model virtual clearinghouse template for use by WSSPC members, and develop model MOAs for use among members and between members and NEHRP agencies for post-earthquake technical clearinghouse operation and assistance. PTCC should conduct workshops and use other means to help members establish individual post-earthquake technical clearinghouse plans and implement clearinghouse MOAs.

Commented [r3]: Have these goals been achieved? Does WSSPC have a PTCC? Has WSSPC developed a template? While these are all good ideas, if none of these items have been done, then suggest deleting this paragraph.

Commented [r4R3]: Steve Bowman also suggests deleting as these goals have not been achieved.

WSSPC recommends that the USGS provide mirrored or parallel access to its post-earthquake website. One ultra-high volume portal should be available to the general public. A second, password-protected site should be maintained. State emergency management agencies, state geological surveys, state seismic safety commissions and councils, earthquake consortia, university seismological laboratories, and engineering-research centers should have access to the password-

protected site. Protocols for coordination with outside field scientists and engineers should be developed.

WSSPC recommends that emergency response and recovery plans, such as the one developed by the Utah Geological Survey, incorporate and refer to post-earthquake technical clearinghouse plans. There should be links between the technical clearinghouse and emergency management operations. Because the clearinghouse can provide vital information during emergency response and recovery, FEMA should work with emergency managers to assure that appropriate federal funding and FEMA staff support are provided for the clearinghouse, whenever a clearinghouse is established following an earthquake.

Once members have established post-earthquake technical clearinghouse plans, WSSPC recommends that they hold regular training sessions and exercises to ensure readiness and compatibility with other emergency response functions. WSSPC also recommends that those responsible for mobilizing post-earthquake clearinghouses participate in large-scale earthquake exercises sponsored by states or local jurisdictions to test procedures that link research activities with emergency operations centers.

Funding will be required to pay travel to update WSSPC's model post-earthquake technical clearinghouse plan, create a virtual clearinghouse template, prepare model MOAs, and hold workshops. WSSPC and the PTCC should take the lead in developing a proposal to acquire the necessary funding if work cannot be performed at WSSPC annual meetings and by electronic means.

Assessment

Measures of the success of this Policy Recommendation will be (1) the number of additional WSSPC members that develop post-earthquake technical clearinghouse plans, and (2) the number of MOAs established to facilitate clearinghouse operation, pending expansion of Emergency Management Assistance Compacts (EMAC) for clearinghouses. A periodic assessment should be made to determine the number of functioning clearinghouse plans and supporting MOAs. Regular exercising of plans and training should occur. WSSPC will periodically update its model post-earthquake technical clearinghouse plan, and will post this and individual member plans on the WSSPC website.

History

Policy Recommendation 16-3 was adopted by unanimous vote of the WSSPC membership at the Annual Business Meeting May 6, 2016. Policy Recommendation 16-3 was first adopted as Policy Recommendation 01-3 by unanimous vote of the WSSPC membership at the Annual Business meeting October 24, 2001. PR 01-3 was revised and re-adopted as PR 04-3 by unanimous vote of the WSSPC membership at the Annual Business meeting September 30, 2004. The Background section was revised and PR 04-3 was re-adopted as PR 07-3 by unanimous vote of the WSSPC membership at the Annual Business Meeting October 3, 2007. PR 07-3 was re-adopted as PR 10-3 by a majority voice vote of the WSSPC membership with Hawaii voting against the policy recommendation at the Annual Business Meeting July 9, 2010. An Executive Summary was added to Policy Recommendation 10-3 and the policy was re-adopted as Policy Recommendation 13-3 by unanimous vote of the WSSPC membership at the Annual Business Meeting May 3, 2013.

WESTERN STATES SEISMIC POLICY COUNCIL
DRAFT POLICY RECOMMENDATION 19-4

Seismic Provisions in the 2018 International Building Codes

DRAFT Policy Recommendation 19-4

WSSPC endorses the prompt adoption and enforcement of the seismic provisions of the 2018 *International Existing Building Code*, the 2018 *International Building Code*, and the 2018 *International Residential Code* (and the 2018 National Building Code of Canada, where applicable) as minimum standards by states, territories, provinces and/or local jurisdictions. Further, WSSPC discourages modifications or amendments that would weaken the Code or its required inspections. WSSPC also encourages Code organizations to continue the development and refinement of building codes and consensus standards to remain substantially equivalent to the National Earthquake Hazards Reduction Program (NEHRP) Recommended Seismic Provisions for New Buildings and Other Structures (FEMA 1050) and encourages authorities having jurisdictions to focus on seismic education, purpose, incentives, lifelines and the business/industry and residential sectors.

Executive Summary

The *International Existing Building Code*, the *International Building Code* and the *International Residential Code* identify the minimum standards for the protection of life, limb and property. These consensus documents, which are supported by every major construction organization in the United States, provide the means for local jurisdictions, states and territories to protect their citizens, safeguard the economic vitality of their communities and provide for a sustainable environment. Amending seismic provisions out of the Code that are essential to the structural integrity of buildings compromises the effectiveness of the document and the safety of the community. Coinciding with Code adoptions is the need for appropriate training so the seismic-resistance provisions may be consistently enforced and maintained. It is only through the adoption of the unamended code or applying more stringent provisions to the International Code that a community has a legitimate expectation to be resilient in the event of earthquakes for its citizens, businesses and homes.

Background

Some states and many jurisdictions have not adopted the International Building Code, potentially leaving their citizens at continued risk. States should be encouraged to remove obstacles that hinder adoption, and to motivate local jurisdictions to diligently update existing codes. It is recognized that some jurisdictions that have adopted the International Codes have drastically modified or omitted the seismic provisions of the Codes. This action not only jeopardizes their structures by not providing for earthquake resistant structures, but provides a false sense of security to their communities. Once adopted, the Codes must be uniformly and consistently enforced if they are to be effective. This will necessitate the training of building inspectors to established and required standards for certification. Partnerships with the homeowners, residents, builders, insurers, owners, elected officials, scientific groups, and others with focused concerns on lifelines and public safety will be required to overcome any lack of commitment to meet the desired outcomes.

Internal Section:

Facilitation and Communication

Incentive measures will need to be developed that involve federal, state, territorial, provincial and local funding to "encourage" adoption of building codes that recognize earthquake hazards. Education of the public on the need and purpose for codes must work towards a mindset to mitigate damage from earthquakes before they happen. Local building code inspectors will require training and certification in the new codes.

Assessment

A measure of the acceptance of this policy recommendation is the number of states, provinces, territories and local jurisdictions that have adopted seismic provisions that meet or exceed the seismic provisions in the 2018 editions of the International Existing Building Code, the International Building Code, and the International Residential Code.

History

Policy Recommendation 16-4 was adopted by unanimous vote of the WSSPC membership at the Annual Business Meeting May 6, 2016. Policy Recommendation 16-4 was first adopted as Policy Recommendation 01-4. PR 01-4 was revised and re-designed as PR 04-4 and re-adopted by unanimous vote of the WSSPC membership at the Annual Business Meeting September 30, 2004. The Policy Recommendation statement was revised and PR 04-4 was re-adopted as PR 07-4 by unanimous vote of the WSSPC membership at the Annual Business Meeting October 3, 2007. PR 07-4 was revised and re-adopted as PR 10-4 by unanimous voice vote of the WSSPC membership at the Annual Business Meeting July 9, 2010. Policy Recommendation 10-4 was updated and re-adopted as Policy Recommendation 13-4 by a unanimous vote of the WSSPC membership at the Annual Business Meeting May 3, 2013.

WESTERN STATES SEISMIC POLICY COUNCIL
DRAFT POLICY RECOMMENDATION 19-10

Joint Policy for the Evaluation and Seismic Remediation of School Buildings

DRAFT Policy Recommendation 19-10

The Western States Seismic Policy Council, with the support of the Earthquake Engineering Research Institute, recommends that each member state, province and territory establish as a goal that all school buildings be seismically resilient. Seismically vulnerable school buildings should be retrofitted or replaced by new earthquake resilient school buildings as an important part of a nationwide school earthquake resiliency goal.

Commented [DM(1)]: Why is only EERI mentioned and not any other consortia/organizations?

Executive Summary

Our elementary and secondary school buildings contain the future of our country. Parents send their children to school every day with the belief that their children will be safe. However, many of the schools located in WSSPC's states, provinces and territories are older structures vulnerable to severe damage and even collapse in future earthquakes. This policy recommendation provides needed support for efforts to evaluate and remediate these hazards.

Background

The 1933 Long Beach, California M6.4 earthquake is well known for collapsing or severely damaging thousands of unreinforced masonry (URM) buildings, including over 230 school buildings. Fortunately, schools were not in session at the time of the earthquake. Had that been the case, thousands of children would have been injured or killed.

The outcry from this poor performance of school buildings directly led to the State of California passing the Field Act which mandated earthquake resistant construction requirements for future school buildings, and the Garrison Act which established the requirements for the seismic safety of existing school buildings.

Schools are increasingly used to shelter students in place during natural ~~all~~ hazards, including floods, ~~and~~ hurricanes, ~~a~~earthq~~s well as earthq~~uakes, and other hazardous events. In addition, schools are often used as emergency shelters ~~refuge zones~~ for citizens within their communities. Thus school building resilience is a key to protecting the local population under diverse hazardous conditions.

There ~~have been~~ notable ~~efforts by some WSSPC member states~~ and provinces, ~~including~~ Idaho, ~~Washington, Oregon, California, Alaska, and Utah~~ and British Columbia, to identify at-risk school buildings and to begin the process of addressing the risk they present.

Internal Section:

Facilitation and Communication

This policy recommendation will be sent to WSSPC representatives in the member states, who will then be able to distribute it to policy and decision makers, elected officials, school districts, parent/teacher associations, teacher unions, school administrators, building departments and elected leaders.

Assessment

A measure of the acceptance and implementation of this policy recommendation is the number of states, provinces and territories as well as individual school districts that adopt a seismic retrofit evaluation and remediation plan for their school buildings.

History

Policy Recommendation 16-10 was adopted by unanimous vote of the WSSPC membership at the Annual Business Meeting May 6, 2016. Policy Recommendation 16-10 was first adopted as Policy Recommendation 13-10 which was adopted by unanimous vote of the WSSPC membership at the Annual Business Meeting May 3, 2013.

WESTERN STATES SEISMIC POLICY COUNCIL
DRAFT Policy Recommendation 19-11

Reliability of Lifeline Services

DRAFT Policy Recommendation 19-11

WSSPC encourages utility regulatory bodies and utility service providers to implement best practices and seismic design in the construction and maintenance of their infrastructure in order to assure satisfactory performance in future earthquakes.

Executive Summary

Lifelines form a critical segment of the nation's infrastructure. Disruption can significantly affect the resiliency of a community. Use of existing guidelines as well as development of new guidelines can serve as an effective method of identifying and reducing risk.

Background

Lifeline infrastructure including, but not limited to, electricity, gas, telecommunications, water, and waste water are critical to a community's wellbeing. Some lifelines are still being constructed using old methods and technologies that are known to be inadequate by seismic experts.

Much of the nation's existing infrastructure has not been designed to perform satisfactorily under extreme conditions produced by major earthquakes, including severe ground shaking, earthquake-induced tsunamis, fault rupture, large landslides and liquefaction. Lifelines should be designed to provide reliable performance under expected earthquake loading conditions to ensure that the region can withstand future earthquake damage without crippling consequences. Critical infrastructure requires system and component vulnerability studies in order to understand potential damages and operational consequences. Mitigation of infrastructure with a high likelihood of failure with extreme loss-of-service consequences should be addressed. This policy recommendation is a reinvigorated effort to follow through on resolving infrastructure liabilities originally identified in FEMA 271 "Plan for Developing and Adopting Seismic Design Guidelines and Standards for Lifelines" (1995).

Internal Section:

Facilitation and Communication

Implementation

WSSPC recommends that member states, provinces and territories encourage both public and private lifeline operators in their areas to utilize available seismic design and performance guidelines in the construction and operation of their facilities.

A consideration in the continued evolution and development of guidelines should be their potential use in ongoing maintenance, rehabilitation and risk mitigation to existing lifelines to decrease infrastructure seismic vulnerability. Implementation can be accomplished by working with state agencies and regulators, such as public works, energy and water resource departments. Additional stakeholders include public and private utility commissions and drinking water programs.

Assessment

The effectiveness of this policy can be determined by the implementation of industry recognized guidelines by regulators and utilities.

History

Policy Recommendation 16-11 was adopted by unanimous vote of the WSSPC membership at the Annual Business Meeting May 6, 2016. Policy Recommendation 16-11 was first adopted as Policy Recommendation 13-11 which was approved unanimously by vote of the WSSPC membership at the Annual Business Meeting May 3, 2013.

WESTERN STATES SEISMIC POLICY COUNCIL
DRAFT Policy Recommendation 19-12

Earthquake Actuated Automatic Gas Shutoff Devices

DRAFT Policy Recommendation 19-12

WSSPC recommends that each state, province or territory that is considering implementing requirements for installing earthquake-actuated automatic gas shutoff devices in schools, industrial, commercial and/or residential applications assure that shutoff valves meet the provisions of the most currently available revision of ANSI/ASCE/SEI Standard 25 (Earthquake-Actuated Automatic Gas Shutoff Devices) and be installed in conformance with the manufacturer's installation instructions. The cost versus benefit of turning gas on after an event or the analysis of false activation is left to the authority having jurisdiction. The policy only advocates that if a decision is made to proceed with earthquake actuated automatic gas shutoff devices that the current standard be utilized.

Commented [r1]: Should be added to reference list. My online search indicates that multiple book chapters are related to Standard 25. If anyone knows the proper book reference, please add it to the reference list. As it is now, readers will have difficulty finding this document.

Executive Summary

Natural gas piping and appliances may be damaged during earthquakes, causing gas leaks. These leaks, if ignited, can result in fires and explosions that may result in significant damage to structures and/or jeopardize personal safety ~~as well as resulting in significant damage to structures~~.

Fires and explosions may be more destructive to buildings than the earthquake itself. The ability to manually shut off a gas valve after an earthquake may be difficult or impossible due to debris or ground movement. Risk of gas–related damage is further exacerbated if structures are unoccupied, thus placing the burden of shutting off gas service upon utilities or government agencies. Several types of devices or systems are available to automatically shut off gas flow within structures if leakage occurs. These include excess flow valves and methane detectors connected to solenoid valves. Hybrid detection systems are available that can combine vibration sensing, excess gas flow and the presence of methane to cause valve closure. Earthquake actuated

automated gas shutoff valves rely on ground motion to initiate closure. The reliability of automatic gas shutoff valves has been greatly improved with the adoption of ANSI/ASCE/SEI Standard 25.

Background

The number of post-earthquake fire ignitions related to natural gas can be expected to be between 20% and 50% of the total post-earthquake fire ignitions. (California Seismic Safety Commission, 2002).

While the installation of excess flow valves is currently mandated by Federal Code on new or replacement natural gas service lines serving single family residences, these valves alone may not detect leakage within structures caused by damaged or overturned appliances or equipment. The value of these may be enhanced by the addition of an automatic gas shutoff valve. Earthquake-activated automatic gas shutoff devices are relatively inexpensive and a proven method to prevent the loss of gas, resultant fires, and ~~possible~~ potential community conflagrations ~~that might result from an errant spark~~. However, these valves may close in situations where no gas leakage has occurred, leading to increased gas system restoration time since operators must visit each customer where gas service has been interrupted.

Reference

Commented [r2]: Add appropriate reference for ANSI/ASCE/SEI Standard 25

ANSI/ASCE/SEI 25-2016, 2016, Earthquake-Actuated Automatic Gas Shutoff Devices, *https://webstore.ansi.org/standards/ASCE/ANSIASCESEI252016*

California Seismic Safety Commission, 2002, *Improving Natural Gas Safety in Earthquakes*

Internal Section:

Facilitation and Communication

• Encourage communication with various jurisdictions that currently mandate the use of earthquake automated gas shutoff devices ~~devises~~ to ascertain the value of their programs.

• Commence an ongoing evaluation ~~education~~ program demonstrating the benefits of installing~~both the pros and cons of~~ automatic gas shutoff valves~~ installation~~.

• Target utility companies, homeowners, and policy makers.

Assessment

The success of the policy may be measured by voluntary use of the ANSI/ASCE/SEI Standard 25 in selecting qualified Earthquake-Actuated Automatic Gas Shutoff Devices automatic shutoff valves as well as in meeting mandatory requirements established in states, provinces, territories and local jurisdictions.

History

Policy Recommendation 16-12 was adopted by unanimous vote of the WSSPC membership at the Annual Business Meeting May 6, 2016. Policy Recommendation 16-12 was first adopted as Policy Recommendation 13-12 which was adopted by unanimous vote of the WSSPC membership at the Annual Business Meeting May 3, 2013.