



## e-Newsletter

Summer 2013 Edition

July 29, 2013

### Western States Seismic Policy Council

801 K Street, Suite 1236  
Sacramento, CA 95814  
Phone: 916-444-6816  
Fax: 916-444-8077

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### In This Issue

WSSPC News.....	2
News.....	4
Hazard Mitigation & Preparedness.....	9
Research .....	12
Resilience & Recovery .....	16
Publications & Resources.....	19
People & Transitions .....	21
Conferences, Workshops, & Events .....	22

## NEHRP Reauthorization Introduced



On May 23, 2013, Representative Frederica Wilson (D-FL) introduced H.R. 2132 *Natural Hazards Reduction Act of 2013*; the bill would amend the Earthquake Hazards Reduction Act of 1977 to revise and reauthorize the National Earthquake Hazards Reduction Program (NEHRP), which expired at the end of federal fiscal year 2009, through FY 2017. In June, Representative Wilson made comments regarding NEHRP during the House Science, Space and Technology Subcommittees joint hearing on federal efforts to reduce the impacts of windstorms, as her bill also addresses the reauthorization of the National Windstorm Impact Reduction Program (NWIRP). H.R. 2132 now is pending consideration by the new Research and Technology Subcommittee, which recently approved a separate bill seeking reauthorization of NWIRP.

NEHRP reauthorization would allow the four partner agencies — the National Science Foundation, the National Institute of Standards and Technology, the U.S. Geological Survey and FEMA — to continue their efforts to develop and promote earthquake mitigation measures. For those not as familiar with this effective and proactive federal program, NEHRP's most recent annual report — issued in September 2012 — gives background and an overview of the year's accomplishments in earthquake hazards reduction across the nation.

### References:

<http://beta.congress.gov/bill/113th-congress/house-bill/2132/actions>

<http://democrats.science.house.gov/press-release/ranking-member-wilson-introduces-legislation-advance-research-mitigate-impact-natural>

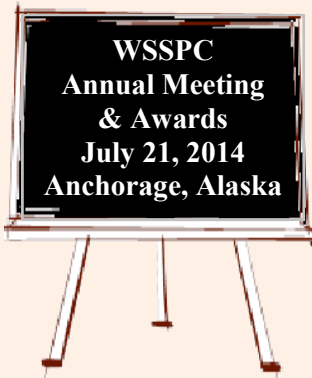
<http://www.nehrp.gov/pdf/2012NEHRPAnnualReport.pdf>

## The Great ShakeOut!



Fifteen WSSPC states, provinces or territories will hold Great ShakeOut Earthquake Drills this year: Alaska, American Samoa, Arizona, British Columbia, California, Guam, Hawaii, Idaho, Nevada, Oregon, Utah and Washington; Colorado, Montana and Wyoming have combined together as the "Rocky Mountain ShakeOut".

Most will participate on October 17 along with 25 other states and territories, though Montana's drill will be on October 23 and Utah held their event on April 17th (with over 840,000 participants). The official ShakeOut website has information to help individuals, businesses and public agencies develop a site-specific drill. If you have not already registered, sign up now at [www.shakeout.org](http://www.shakeout.org).



## WSSPC NEWS



### **WSSPC Agencies Conduct Preparedness Training for Senior Officials**

American Samoa Department of Homeland Security (ASDHS) and Washington State Department of Military, Emergency Management Division (EMD) each held emergency preparedness briefings for high-level state officials recently.

American Samoa's two-day event — *Senior Officials Workshop for All-Hazard Preparedness* — was held at the Tauese P.F. Sunia Ocean Center in Utulei.

Lieutenant Governor Lemanu Peleti Mauga (at right) attended the session, in addition to other senior leaders. Topics included roles and responsibilities and preparedness challenges; Homeland Security Strategic Planning as it relates to risk and needs assessment and the Emergency Operations Plan; and executive-level incident response and recovery. In a letter to government agencies prior to the workshop, ASDHS Director Iuniasolua T. Savusa wrote “[d]isasters are occurring around the globe at an alarming rate and as such our efforts to keep ahead and be prepared have never been more urgent.”



#### **Pacific Earthquake**

USGS reported a M7.3 earthquake 71 miles northeast of Papua New Guinea on July 7, 2013. Fortunately, the undersea earthquake was at a depth of over 240 miles, too deep to generate a tsunami. If it had caused a tsunami, WSSPC members CNMI, Guam, American Samoa and Hawaii could have been impacted.

Washington cabinet members and state officials, many of whom were appointed to their positions after Governor Jay Inslee took office in January, participated in emergency preparedness briefings and observed exercises at several training facilities. They discussed various disaster scenarios, as well as the plans and procedures for how a given state agency would become involved in an emergency. Major General Bret D. Daugherty, who heads the Washington Military Department, indicated there will be additional training opportunities for Cabinet members this year, including one on earthquakes.

#### References:

[http://www.samoanews.com/?q=node/74097&quicktabs\\_1=1](http://www.samoanews.com/?q=node/74097&quicktabs_1=1)

<http://www.kirotv.com/ap/ap/defense/wash-officials-undergo-national-disaster-training/nYSWg/>



### **British Columbia Research Confirms Cascadia Risk**

A multi-disciplinary team of Canadian university and government scientists have completed a first-ever paleoseismic study documenting twenty-two large and megathrust earthquakes along the south coast of British Columbia over the last 11,000 years, with an average recurrence interval of 500 years. The team used a new high-resolution age model to date disturbed sedimentary layers in a 40-meter marine sediment core raised from Effingham Inlet; the findings support the paleoseismic data published in a USGS study released in 2012.

#### References:

Enkin, R.J., Dallimore, A., Baker, J., Southon, J. R., Ivanochko, T. (2013). *A new high-resolution radiocarbon Bayesian age model of the Holocene and Late Pleistocene from core MC02-2494 and other, Effingham Inlet, British Columbia, Canada; with an application to the paleoseismic event chronology of the Cascadia Subduction Zone*, Canadian Journal of Earth Sciences, 12 June 2013.

<http://www.nrcresearchpress.com/doi/pdf/10.1139/cjes-2012-0150>

[http://www.science20.com/news\\_articles/preparing\\_next\\_megathrust\\_earthquake-114620](http://www.science20.com/news_articles/preparing_next_megathrust_earthquake-114620)

## WSSPC Committees Working on Draft Policies for 2014

Western States Seismic Policy Council (WSSPC) maintains three standing policy committees:

- The Basin and Range Province Committee (BRPC) seeks to promote the understanding and study of seismic hazards in the Basin and Range Province (BRP) of the western U.S., and to provide advice and recommendations to policy-making bodies regarding seismic hazards and risk in that region.

*Chair: Bill Phillips, Idaho Geological Survey*

- The Engineering, Construction and Building Codes Committee considers the need for and requirements of seismic building codes and incentives for building owners to retrofit older buildings.

*Chair: Ron Lynn, Clark County Department of Building & Nevada Earthquake Safety Council*

- The Tsunami Hazard Mitigation Committee coordinates and implements tsunami hazards mitigation plans and focuses on developing policies based on the current technology and science.

*Chair: Vicki McConnell, Oregon Department of Geology and Mineral Industries*

The following draft policy recommendations (Draft PR) are scheduled for adoption in 2014. The committee deadline for first draft edits is October 15, 2013, after which the Draft PR will be presented to the WSSPC Board at the November Board meeting, and voted upon by the general membership at the Annual Business Meeting in July 2014. The first drafts can be downloaded from <http://www.wsspc.org/policy/drafts.shtml>

Draft PR 14-1: *Improving Tsunami Public Education, Mitigation, and Warning Procedures for Distant and Local Sources*

Draft PR 14-2: *Definitions of Fault Activity for the Basin and Range Province*

Draft PR 14-3: *Earthquake Monitoring Networks*

Draft PR 14-4: *Identification and Mitigation of Unreinforced Masonry Structures*

Draft PR 14-5: *Earthquake Emergency Handbook for First Responders and Incident Commanders*

Draft PR 14-6: *Basin and Range Province Earthquake Working Group(s)*

The committees welcome new members who are interested in their subject matter. If you are interested in joining, please contact Executive Director Patti Sutch at [psutch@wsspc.org](mailto:psutch@wsspc.org)

### 2013 National Earthquake Program Managers Meeting

FEMA NEHRP Program Manager Ed Laatsch (on left) with committee members who planned the 2013 NEPM meeting. Special recognition went to John Schelling, Washington Emergency Management Division, and Heidi Kandathil, CREW Executive Director, (2nd and 3rd from left), for coordinating and facilitating the successful meeting. <http://eqprogram.net/2013-nepm-meeting/>



## NEWS

### **New Studies Identify Earthquake Triggers**

Two new studies published in the July 2013 edition of *Science* — one involving oil and gas drilling operations, and the other reviewing geothermal operations — have found that both activities can lead to increased seismicity. *Enhanced Remote Earthquake Triggering at Fluid-Injection sites in the Midwestern United States*, found that deep wastewater injection may lead to critically loaded faults and potentially high fluid pressures that are more susceptible to stresses generated by the surface waves of large remote earthquakes. They believe triggering in induced seismic zones could be an indicator that fluid injection has brought the fault system to a critical state. They found three cases where large, distant earthquakes — the 2011 M9 Japan Earthquake and the 2010 M8.8 Chile Earthquake — triggered earthquakes at sites in Oklahoma, Colorado and Texas.

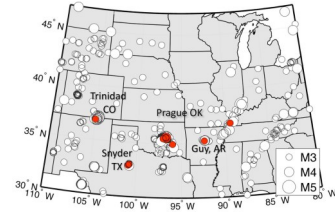


Image: Science/AAAS

The second study — *Anthropogenic Seismicity Rates and Operational Parameters at the Salton Sea Geothermal Field* — investigated the link between seismicity and geothermal energy production at a power plant in Southern California. The authors found a strong correlation between the earthquake frequency and the amount of water moved for production of geothermal power, which involves pumping water into and out of an underground reservoir. The findings are important because they indicate it might be possible to predict earthquakes generated by human activities. The plant is on the southern tip of the San Andreas fault; although co-author Brodsky believes it's unlikely the plant could induce a major quake on the fault, she agreed it is theoretically possible. Their next step will be to try and define that risk.

#### References:

- van der Elst, N.J., Savage, H.M., Keranen, K.M., & Abers, Geoffrey A., 2013. *Enhanced Remote Earthquake Triggering at Fluid-Injection Sites in the Midwestern United States*, *Science* 12 July 2013: 164-167.
- Brodsky, E.E. & Lajoie, L.J., 2013. *Anthropogenic Seismicity Rates and Operational Parameters at the Salton Sea Geothermal Field*, *Science* 11 July 2013, Online.  
<http://news.ucsc.edu/2013/07/geothermal-earthquakes.html>  
<http://www.npr.org/2013/07/11/200515289/wastewater-wells-geothermal-power-triggering-earthquakes>

### **Report Says Earthquake Could Cause Los Alamos Plutonium Facility Collapse**

The U.S. Department of Energy's (DOE) inspector general has released an audit report — *Mitigation of Natural Disasters at Los Alamos National Laboratory* — finding that the laboratory's plutonium facility (PF-4) lacks the structural resilience and redundancy required by modern building codes, making it susceptible to structural failure if subjected to strong seismic ground motions. The Los Alamos National Laboratory (LANL) is a part of DOE's National Nuclear Security Administration (NNSA), and although LANL field officials concur that the mitigated offsite dose consequence of a seismic event at the facility is high, they also note the probability of a large earthquake that would cause a significant plutonium release is low, and that the decision process regarding allocation of resources for upgrades is based on risk in accordance with Department policy. The audit is the latest in a series of reports and recommendations addressing safety and seismic issues at LANL, and

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urging NNSA to execute both immediate and long-term actions to reduce the radiation risk to the public posed by a seismic event, including a seismically-induced fire, affecting PF-4. Although management concurred with the recommendation to ensure that the PF-4 seismic upgrades are completed in a timely manner, they reiterated their belief that the existing 2-3 year schedule of seismic upgrades is adequate, and responded that “NNSA considers this recommendation closed.”

References:

<http://www.hss.energy.gov/deprep/2012/FB12U18A.PDF>

<http://www.koat.com/news/new-mexico/albuquerque/ig-pushes-los-alamos-to-do-more-on-safety/-/9153728/20747088/-/1chhwuz/-/index.html>

<http://www.dnfsb.gov/board-activities/recommendations/los-alamos-national-laboratory-plutonium-facility-seismic-safety>

**Rare Opportunity to Study Hayward Fault**

One way to gather seismic data is to use an energy source, such as explosives or an air gun, to send sound waves into the earth’s subsurface strata; when the waves are reflected back, they are captured by instruments, digitized and converted into underground images of formations. The practice has become more and more difficult in urban areas because of the potential impact of various energy sources on people, wildlife, infrastructure and buildings. However, USGS recently announced it is being given a chance to gather data on the Hayward fault as California State University, East Bay (CSUEB) demolishes its landmark building Warren Hall, which has been deemed seismically unsafe. By placing 500 temporary seismographs within a one-mile radius of the building, the scientists will be able to monitor the ground response to a small, simulated earthquake in the Hayward fault zone. They hope to learn the depth of the fault at that location, whether it joins with any other faults, and if so, how this affects the seismic hazard of the area, an understanding which will contribute to improved building codes and other mitigation options for a more resilient community.



*Top: Groundbreaking for the CSU East Bay campus in 1961.*

*Bottom: Warren Hall overlooks San Francisco Bay Area’s east bay.*

*Credit: CSUEB*

References:

<http://www.usgs.gov/newsroom/article.asp?ID=3623&from=rss>

<http://www.livescience.com/37617-building-demolition-hayward-fault-study.html>

**Civil GPS Funding Cuts Could Jeopardize Modernization Timetable**

Once again, Congress has made deep cuts to the budget for the Global Positioning System (GPS). Created by the U.S. Air Force, and jointly funded by the Departments of Defense (DOD) and Transportation (DOT), GPS consists of a network of U.S. government satellites providing positioning, navigation, and timing services to civilian and military users on a continuous, worldwide basis. Civilian (non-military) users have adopted the technology for use in numerous sectors, such as agriculture, aviation, maritime, financial, weather, disaster relief and emergency response, to name a few. Commercially, GPS is estimated to create tens of millions of dollars in revenue and up to five million jobs annually.

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The GPS system is going through a modernization process, including the development of new satellite technology and additional civilian bands. The civil GPS budget hit a snag a few years ago when Congress cut funding to DOT because DOD had “a significant unobligated balance” in the program; in other words, the money was not yet needed based on the completion timetable. At the time, it was understood that the funding would be made up at a later date. However, that has not been the case; the President’s request for FY14 was \$20 million, a fraction of the up to \$80 million shortfall currently being projected; the Senate Appropriations Committee reduced the requested amount by 25%, and the House totally removed it. If the budget is not restored, the new satellites currently being built will not be able to be launched as scheduled in 2014 because the controlling operating system will be left unfinished.

**References:**

<http://insidegnss.com/node/3615>

<http://www.gps.gov/>

<http://www.youtube.com/watch?v=chNQW22vVNI>

**Changes for the Pacific Tsunami Warning Center**

Changes are on the horizon for the Pacific Tsunami Warning Center (PTWC). In response to concerns expressed by countries in the Pacific region, the United Nations Educational, Scientific and Cultural Organization’s Intergovernmental Oceanographic Commission has agreed the PTWC will remove warning terminology from its bulletins and leave the responsibility for evacuation decisions with the individual national tsunami warning centers. At the same time, PTWC will be adding new products to its existing text bulletin. It will include color-coded graphs and images portraying the nature and extent of threat; in addition to including estimated tsunami arrival times, it also will categorize the forecasted levels of tsunami heights — minimal or no threat (less than 0.3 meters), low to medium threat (1-3 meters), and major threat (over 3 meters). The enhanced PTWS products were tested during the Pacific-wide tsunami exercise “PacWave13”, held May 1-14, 2013. Involved agencies hope the changes will contribute towards a reduction in unnecessary evacuations.

As another major change, NOAA is moving PTWC to the new \$331 million Daniel K. Inouye Regional Center, but the decision has generated some controversy. The new complex is located on Ford Island, in the middle of Pearl Harbor; it is only accessible by a pontoon bridge that will be shut down — and possibly rendered inoperable — by a hurricane or tsunami. Public Employees for Environmental Responsibility (PEER), a public employee advocacy group, believes the location will compromise tsunami responsiveness in the event of a major event, and is advocating for the center to be housed in a less-vulnerable setting.



*Ford Island, Hawaii. Credit: Wikipedia Commons, PHI Janver, USN, U.S. Defense*

**References:**

<http://www.islandsbusiness.com/news/fiji/1728/major-changes-to-tsunami-warnings-issued-by-the-pa/>

<http://www.radioaustralia.net.au/international/radio/program/pacific-beat/pacific-tsunami-alerts-focus-on-accurate-information/1156498>

<http://www.ioc-tsunami.org/index.php?>

[option=com\\_oe&task=viewDocumentRecord&docID=10590&lang=en](http://www.ioc-tsunami.org/index.php?option=com_oe&task=viewDocumentRecord&docID=10590&lang=en)

<http://www.staradvertiser.com/s?action=login&f=y&id=210738681&id=210738681>

<http://www.peer.org/news/news-releases/2013/06/10/noaa%E2%80%99s-big-storm-problem-in-hawaii/>

## GovDelivery Discontinues Weather Alert Service

GovDelivery — a private self-subscription service used by public sector clients to deliver e-mail and SMS/text notifications to the general public — had continued issuing National Weather Service (NWS) weather alerts for free through a similar e-subscription service after NWS had discontinued its contract with them in November 2012 due to budget constraints. However, the company recently announced it will be unable to continue disseminating NWS weather alerts after July 31, 2013, due to the substantial costs of providing a messaging service at the scale required with high reliability. According to a NWS news release, other options for receiving NWS products, including alerts of hazardous weather, will remain available directly from NWS through the following channels: NOAA Weather Radio, Web/Internet, Internet RSS/XML/REST formats and NOAA Weather Wire (satellite-based delivery system of NWS products.)

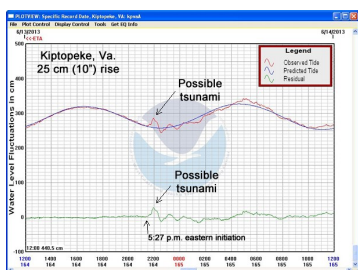
### References:

[http://www.nhc.noaa.gov/news/20130702\\_pa\\_govdelivery.pdf](http://www.nhc.noaa.gov/news/20130702_pa_govdelivery.pdf)

<http://www.govdelivery.com/about-us/>

## East Coast Tsunami!!

Although it has not received a lot of press, the United States' Atlantic seaboard has experienced two tsunamis this year. The first event occurred on April 11, 2013, and is as yet unexplained. The second tsunami was recorded on June 13th by a DART buoy and over 30 tide gauges between Massachusetts and North Carolina; two people suffered serious injuries after being swept off of the rocks in New Jersey by a 6-foot wave. Although the second tsunami has been initially categorized as a meteotsunami — a tsunami propagated by severe weather — scientists have not ruled out slumping

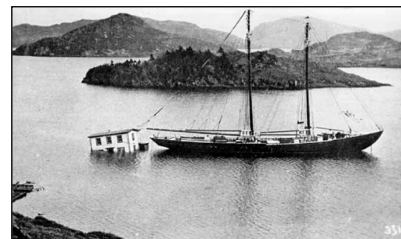


Above: Tide gauge chart from Kiptopeke, Va. on Virginia's eastern shore. Credit: NOAA

Below right: The Atlantic tsunami propagated by the 1929 M7.3 Grand Banks earthquake in Newfoundland killed 29 people and left thousands of people homeless. Credit: Provincial Archives of Newfoundland and Labrador

at the continental shelf east of New Jersey as a contributor. The National Oceanic and Atmospheric Administration has diverted its Okeanos Explorer ship from its current mission to collect data in order to determine if there has been any change in Hudson Canyon, about 100 miles off the coast.

At the same time, at the Seismological Society of America's (SSA) April 2013 Annual Meeting, John Ebel from Boston College made a presentation regarding the tsunami risk to the northeast U.S. coast. According to SSA's release, "Ebel's preliminary findings suggest the possibility that an earthquake-triggered tsunami could affect the northeast coast of the U.S. The evidence he cites is the similarity in tectonic settings of the U.S. offshore earthquakes and the major Canadian earthquake in 1929."



### References:

<http://oldwcatwc.arh.noaa.gov/previous.events/06-13-13/index.php>

<http://www.washingtonpost.com/blogs/capital-weather-gang/wp/2013/06/26/did-t>

<http://news.discovery.com/earth/oceans/east-coast-tsunamis-whats-the-danger-130628.htm>

<http://oceanexplorer.noaa.gov/okeanos/>

[http://www.eurekalert.org/pub\\_releases/2013-04/ssoa-ctr041113.php](http://www.eurekalert.org/pub_releases/2013-04/ssoa-ctr041113.php)

<http://thesandpaper.villagesoup.com/p/tsunami-s-moment-of-impact-letter-from-jetty-survivors/1023113>

<http://www.theatlanticcities.com/neighborhoods/2013/04/east-coast-cities-risk-future-tsunamis/5351/>



## **Youth Council Representatives Bring Value to Whole Community**

The Federal Emergency Management Agency’s National Youth Preparedness Council (YPC) — now in its second year — has fifteen members representing FEMA’s ten regions. Five of the youth are from WSSPC states: California (two members), Hawaii, Idaho and Utah. YPC members will be participating in this summer’s Youth Preparedness Summit in Washington D.C., where they will advise and ask questions on youth disaster preparedness with the leadership of national organizations. Team members have been working successfully to increase the reach of the national preparedness message, as demonstrated by the following profiles from FEMA:

- Ashley Houston, Hurricane, UT (Region VIII) — Ashley is an outstanding student and, as a member of the Health Occupation Students of America program, has completed the Teen Student Emergency Response Training at her high school. She worked with her family to put together 72-hour packs for each household member, and to create an escape plan in case of fire, flood or other disaster. Currently, she is working with a neighborhood response team where people would be assigned to identify problems and check on neighbors in the event of a disaster.
- Divya Saini, Palo Alto, CA (Region IX) — Divya participates in the Block Preparedness Coordinator Program (BPCP) and volunteers at local neighborhood events to encourage preparedness and teach individuals what they should do before, during and after an event. She has developed a Facebook site for emergency preparedness and is the founder of Movers and Shakers, a teen club designed to keep Palo Alto resilient and to form a stronger bond between adults and teens through earthquake preparedness. Divya received a grant from the Palo Alto School Board to further her efforts, and was awarded a “Disney Friends for Change” grant for her BPCP work. She has published three articles in the *Palo Alto Weekly Newspaper*.
- Tiffany Espensen, Burbank, CA (Region IX) — Tiffany is a Teen CERT graduate from one of the first classes held by the Julian/Cuyamaca CERT Organization. She has been active in the program, participating in numerous drills and classes, helping teach skills to other youth and promoting CERT in interviews. She stars on Nickelodeon’s “Bucket and Skinner” show, and developed “Tiffany’s Tip Tuesday” to relay disaster preparedness tips via her Twitter account, which has over 16,000 followers.
- Christian Chowen, Laie, HI (Region IX) — Christian has participated in two community evacuations in Hawaii because of tsunami warnings. After discovering that the family’s go-packs were insufficient, he updated the family’s packs and kits. Christian is a trainer for Hawaii’s “Feeling Safe, Being Safe” program, working with individuals with disabilities to prepare for emergencies. As a trainer, he helps people to build an emergency backpack and explains why each item is important. He is considering combining his “Feeling Safe, Being Safe” work with the needs of his local high school, which has a significant population of students with disabilities. Christian is a Life Scout who has completed the Emergency Preparedness Merit Badge.
- Cayman Kirkhart, Hayden, ID (Region X) — For his Eagle Scout leadership project, Cayman designed, planned, organized and publicized “Be Prepared Day,” a community-wide disaster preparedness event that featured a series of classes and demonstrations to educate families about disaster preparedness. This four-hour event required nearly eight months of planning and coordination with personnel from 13 organizations, including: local fire, rescue and police units; the American Red Cross; the National Guard; the Coast Guard Auxiliary; the Health Department; and the Office of Emergency Management. “Be Prepared Day” was featured in *Boy’s Life*.

### **References:**

<http://www.ready.gov/youth-preparedness-council>

<http://www.fema.gov/news-release/2013/06/20/fema-announces-new-members-join-youth-preparedness-council>



## HAZARDOUS MITIGATION & PREPAREDNESS



### **Montana's Capital Receives FEMA Funding for Earthquake Hazard Mitigation Project**

The city of Helena, Montana, was awarded a FEMA Hazard Mitigation grant in the amount of \$334,800 (federal share) to install seven automated isolation (shut-off) valves on existing water storage tanks and reservoirs. The valves will be operated by a telemetry system connected to a seismic sensor, and they will close when the sensor detects pre-designated ground acceleration and vibration indicating a seismic event. The work is part of the city's efforts to mitigate seismic risk; Helena suffered a series of destructive earthquakes in 1935, and according to the Montana Bureau of Mines & Geology, could experience up to a M7.5 earthquake in the future.

#### References:

<http://letsmitigatemontana.com/2013/06/334800-city-of-helena-award-seismic-shut-down-valves/>  
<http://helenapublic.novusagenda.com/>



### **SF Partners with Collaborative Consumers to Increase Resiliency**

The City and County of San Francisco is often at the forefront of social change, so it is natural to see it turning to the rapidly growing sector of sharing economy companies when it comes to planning for disaster preparedness and resiliency. Its most recent initiative is a partnership with BayShare, a collaborative of sharing economy stakeholders who use technology and social media to promote the sharing and reusing of assets like cars, bikes, rooms and beds. "The growing 'sharing economy' is leveraging technology and innovation to help our City become more prepared and resilient against disaster," said Mayor Edwin Lee. "The sharing economy was born here, and partnering with BayShare, we



*Left: Mayor Edwin Lee announces the disaster preparedness partnership with BayShare. Credit: City of San Francisco*

are committed to ensuring that San Francisco supports this emerging sector's success and nurturing even greater civic involvement." The Mayor has offered BayShare a seat on the city's Disaster Council, and the company will likely be a valuable resource when the city launches its new disaster preparedness website — SF72.org — this fall.

#### References:

<http://www.shareable.net/blog/san-francisco-mayor-launches-sharing-economy-partnership-for-disaster-response>  
<http://www.sfmayor.org/index.aspx?recordid=333&page=846>



### **Coast Guard Proposes Tsunami Staging Areas for Honolulu Harbor**

In the past, tsunami warnings in Hawaii have created potentially dangerous offshore traffic congestion in Honolulu Harbor, which has between 50 and 100 vessels in it at any given time. The U.S. Coast Guard (USCG) has devised a regulated navigation plan (image below) — which includes separate staging areas for commercial and recreational vessels — to mitigate the congestion and ensure safe and orderly evacuation of ships and boats. The staging areas will be located approximately a half mile off Oahu's South Shore; once



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evacuated, vessels would not be allowed to re-enter the harbor until the emergency situation has passed. USCG was accepting public comments on the plan through June 15, 2013, and hopes to make it effective in July or August 2013.

References:

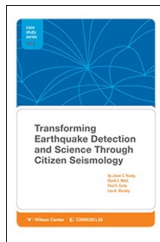
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<http://www.kitv.com/news/hawaii/coast-guard-proposes-tsunami-evacuation-zones/-/8905354/20353070/-/c4jcm0/-/index.html?absolute=true>

**USGS Recognized for Groundbreaking Citizen Science Projects**

The Commons Lab at the Woodrow Wilson International Center for Scholars has released a new report — *Transforming Earthquake Detection and Science Through Citizen Seismology* — that outlines the innovative ways the U.S. Geological Survey (USGS) and other scientific institutions are engaging the public and advancing earthquake monitoring and knowledge of seismic events. Using social media and crowdsourcing to learn more about earthquakes has provided inexpensive and rapid data to augment and extend the capabilities provided by traditional monitoring techniques. The report reviews current efforts and looks at how future efforts could be improved. According to USGS, “the ultimate goal is to provide more rapid earthquake detection and generate more real-time hazard and impact information.”



References:

<http://www.wilsoncenter.org/publication/transforming-earthquake-detection-and-science-through-citizen-seismology>

Have you noticed the WSSPC logo appearing next to articles in the newsletter? This is to let you know at a glance that the article relates to a WSSPC member agency.



**Collecting Seismic Data with Smartphones**

This year’s annual Lawson Lecture by the University of California Berkeley’s Seismological Laboratory gave an overview on the algorithms, challenges and collaborative science involved in rolling out a public earthquake early warning system for California. Dr. Richard Allen talked about the ways scientists can use technology to mitigate the threats of an earthquake, including the use of ShakeAlert, a prototype app that can send out earthquake alerts via computers and smartphones up to 30 seconds before users feel the shaking. Another possibility he mentioned would be to tap into the capability of smartphones’ built-in accelerometers, gyroscopes and GPS to detect motion and pinpoint the location of a quake. The lecture is available for viewing on YouTube.

References:

<http://www.dailycal.org/2013/04/08/professor-speaks-about-smartphone-use-earthquake-mitigation/>

[http://seismo.berkeley.edu/news/lawson\\_lecture.html](http://seismo.berkeley.edu/news/lawson_lecture.html)

<http://www.youtube.com/watch?v=ov7dz2twl6Q>

**Red Cross Launches Digital Training Program**

With financial support from AT&T, the American Red Cross has developed a mobile technology-based training model that will allow volunteers to remotely access Red Cross training courses through mobile and other digital devices. The new model includes self-paced, online training, live webinars and mobile learning opportunities, and will have as many as 80 trainings available. The new platform will be available to the public in early 2014; the organization believes it will expand the number of trained volunteers available to assist in disaster preparedness and relief activities.



References:

<http://www.redcross.org/news/press-release/Red-Cross-Launches-Digital-Training-Program>

### **Google Launches Pilot Program to Provide Web Access Via Balloons**



Yes, they know it sounds a little eccentric; maybe that is why they named it “Project Loon.” But Google believes a network of solar-powered, high altitude, constantly-replaced balloons can create hotspots for web access — an important consideration for regions devastated by a natural disaster. Floating twice as high as commercial aircraft, the balloons cover approximately 25 square miles; so far, testers have confirmed the signal is unaffected by satellite delay or terrain.

*Above: Google launches a Project Loon balloon.  
Credit: Tim Rayward/The Press, Christchurch*

If it proves successful, Project Loon could significantly decrease the high cost of installing and replacing permanent infrastructure — which is more vulnerable to natural and man-made threats — and bring Internet access to areas still years away from broadband. Google deployed 30 balloons over New Zealand in June; other countries, including India, are interested in being next on their list.

#### **References:**

<http://www.google.com/loon/>  
[http://www.emergencymgmt.com/emergency-blogs/campus/emergency\\_management-project\\_loon-space\\_elevators-063013.html](http://www.emergencymgmt.com/emergency-blogs/campus/emergency_management-project_loon-space_elevators-063013.html)  
<http://googleblog.blogspot.com/2013/06/introducing-project-loon.html>  
<http://readwrite.com/2013/06/19/a-handly-guide-to-google-project-loon#awesm=~ob3byJ4ds5dzcF>  
[http://www.memphisshelbyinform.com/wp-content/uploads/2013/06/062413\\_-Christchurch-Press.pdf](http://www.memphisshelbyinform.com/wp-content/uploads/2013/06/062413_-Christchurch-Press.pdf)

### **Google Broadens Public Alerts Service**

Google is partnering with public safety contractor Nixle to provide emergency alerts at the top of the search page if someone performs a Google search or Google Maps search in an area with an active emergency alert in effect. Nixle currently contracts with 6,500 police agencies to provide alerts to subscribers within specific communities; by partnering with Google, the alerts will reach a much broader audience.

#### **References:**

<http://www.usatoday.com/story/tech/2013/03/28/google-alerts-nixle-emergency/2028799/>  
<http://www.forbes.com/sites/larrymagid/2013/04/12/google-and-nixle-team-up-for-public-safety-alerts/>

### **Japan to Allow Private Sector to Forecast Tsunamis**

Japan has revised its Meteorological Service Law to allow private companies to issue tsunami forecasts, including the forecasted height and arrival time for specific locations. The companies will be required to obtain permission from the Japan Meteorological Agency (JMA) to engage in the forecasting, and must have the required techniques and equipment to qualify for approval. It is expected they will only be able to provide information to contracted clients, such as municipalities, ports, factories and power plants in coastal areas. Although JMA believes the private forecasts will help those who live and work in coastal areas be better prepared, it will remain the only authority able to issue tsunami warnings and advisories.

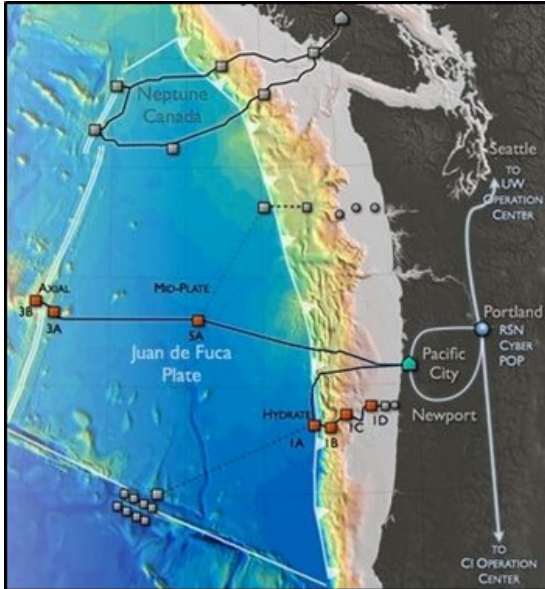
#### **References:**

<http://the-japan-news.com/news/article/0000351778>

***Did you know FEMA offers text subscription services? They range from disaster-specific bi-monthly safety tips to finding the closest shelter or disaster recovery center. They also can text you the link to FEMA's smartphone app for your specific mobile device. [www.fema.gov/text-messages](http://www.fema.gov/text-messages)***



## RESEARCH



Above: Placing seismometers near the Axial volcano on the Juan de Fuca Ridge may help forecast tsunami-causing earthquakes. Credit: portlandwiki.org

### Forecasting Earthquakes and Tsunamis

Scientists have known for some time that there is a correlation between small earthquakes and the flow of tides in mid-ocean ridge locations which are geologically active and the site of volcanic eruptions which contribute to seafloor spreading. A geophysicist at Lamont-Doherty Earth Observatory believes placing seismometers in these and other seismically active areas on the ocean's floor could help scientists forecast big, tsunami-causing earthquakes.

Previously, data could only be collected over a few months because of physical limitations on the amount of data that could be stored by the seismometer. Developments in storage capability now allows data collection of up to a year before the seismometer needs to be retrieved, giving scientists a better look at how the ocean floor changes over time. One complication of the longer time period, however, is the increased amount of time the

seismometers remain in the active region makes them more likely to become stuck in the lava, making retrieval difficult.

### References:

- Tolstoy, M, Vernon, F.L., Orcutt, J.A. & Wyatt, F.K. (2002). *Breathing of the seafloor: Tidal correlations of seismicity at Axial volcano*, *Geology*, June 2002, v. 30, no. 6, p. 503-506  
<http://www.livescience.com/34820-earthquake-forecast-tidal-triggering.html>  
<http://www.youtube.com/watch?v=dhMoQrLEJe0>  
[http://portlandwiki.org/Cascadia\\_subduction\\_zone](http://portlandwiki.org/Cascadia_subduction_zone)

### Earth's Crust Not Always Resilient

A Cornell University geologist and his colleagues have found that earthquakes of M7 or greater can cause the planet's surface to permanently crack. Based on research conducted in the Atacama Desert in northern Chile, the researchers discovered the Earth's crust may not be as elastic as previously thought. They found that between 1 to 10 percent of the surface of South America that overlies the subduction zone has permanent upper-plate deformations caused by the estimated 2,000 - 9,000 major quakes over the past 1 million years. The findings may necessitate changes to the models currently used by geophysicists.

### References:

- Baker, A., Allmendinger, R.W, Owen, L.A., & Rech, J.A. (2013). *Permanent deformation caused by subduction earthquakes in northern Chile*, *Nature Geoscience* 6, 28 April 2013, p. 492-496  
<http://www.nature.com/ngeo/journal/vaop/ncurrent/full/ngeo1789.html>  
[http://science.nbcnews.com/\\_news/2013/04/28/17958565-how-earthquakes-in-chile-have-permanently-deformed-earth?lite](http://science.nbcnews.com/_news/2013/04/28/17958565-how-earthquakes-in-chile-have-permanently-deformed-earth?lite)  
<http://phys.org/news/2013-04-frozen-reveal-earthquake-history.html>

Surface cracks in northern Chile. Credit: Rick Allmendinger, Cornell University



### **New Subduction Zone Forming**

New research led by Monash University in Australia has detected the beginnings of an active margin off of the coast of Portugal — an “embryonic subduction zone” according to lead author Dr. Joao Duarte — that will bring continental Europe closer to America over approximately 220 million years. While mapping the southwest Iberia margin, which was responsible for the massive 1755 Lisbon earthquake, the team found active thrust faults through the supposedly passive margin. They believe the tiny Gibraltar subduction zone will merge with the Iberian zone to create an even bigger trench. Little is known about the creation of subduction zones; the scientists hope data from this transitional site will provide new insights in plate tectonics.

#### **References:**

- Duarte, J.C., Rosas, F. M., Terrinha, P., Schellart, W.P., Boutelier, D., Gutscher, M-A, & Ribeiro, A. (2013). *Are subduction zones invading the Atlantic? Evidence from the southwest Iberia margin*, *Geology*, 6 June 2013  
<http://geology.gsapubs.org/content/early/2013/06/05/G34100.1.abstract>  
[http://esciencenews.com/articles/2013/06/17/new\\_embryonic\\_subduction\\_zone\\_found](http://esciencenews.com/articles/2013/06/17/new_embryonic_subduction_zone_found)  
<http://www.livescience.com/37418-subduction-zone-forming-off-spain.html>

### **Sumatra Earthquake’s Calming Effect Studied**

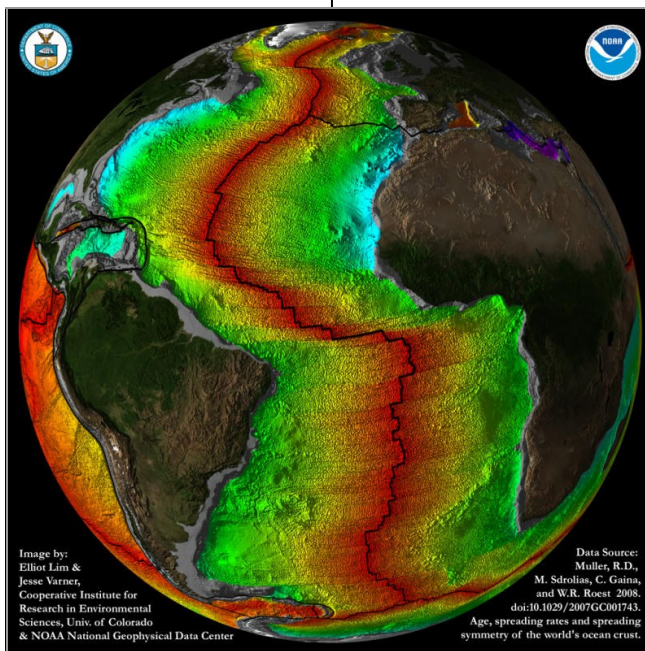
After the M8.6 earthquake in Sumatra in 2012, scientists noted a flurry of  $M \geq 4.5$  earthquakes around the globe for up to six days. However,

Fred Pollitz, a geophysicist at USGS, says that once those subsided, seismic monitors detected no earthquakes bigger than magnitude 6.5 for the next 95 days, a rare occurrence. A statistical model of global seismicity showed that while transient dynamic stresses can encourage short-term triggering of additional earthquakes, paradoxically, they also can inhibit

earthquakes temporarily, regardless of how close the fault is to rupture, until background tectonic loading restores the system to its pre-mainshock stress levels. The results are anticipated to trigger additional reviews of other significant earthquakes to see if a similar pattern of a temporary increase and a longer-term decrease in earthquakes emerges.

#### **References:**

- Pollitz, F.F., Burgmann, R., Stein, R.S., & Sevilgen, V. (2013) *The Profound Reach of the M8.6 11 April 2012 Indian Ocean Earthquake: Short-term Global Rate Increase Followed by a Long-term Global Rate Drop*. *Seismology Society of America 2013 Annual Meeting*, 19 April 2013  
<http://www.livescience.com/28874-big-earthquakes-might-calm-earth.html>  
[http://articles.economictimes.indiatimes.com/2013-04-21/news/38710206\\_1\\_earthquakes-triggered-qaues-jeremy-lin](http://articles.economictimes.indiatimes.com/2013-04-21/news/38710206_1_earthquakes-triggered-qaues-jeremy-lin)  
[http://www.eurekalert.org/pub\\_releases/2013-04/ssoa-agm041113.php](http://www.eurekalert.org/pub_releases/2013-04/ssoa-agm041113.php)



*Above: NOAA/NGDC image of the Atlantic crustal age of the ocean floor. Credit: Mr. Elliot Lim and Mr. Jesse Varner, CIRES & NOAA/NGDC)*

## Tōhoku's Sound Waves Traveled into Outer Space

French and Dutch scientists have discovered evidence that the seismic sound waves generated by the Tōhoku M9.0 earthquake in March 2011 traveled at least 161 miles from Earth. The waves, which fall into the category of “infrasound” because their deep pitch is too low to be heard by humans, were found by analyzing data from the European Space Agency’s Gravity Field and Steady-State Ocean Circulation Explorer (GOCE) satellite, which is designed to monitor tiny variations in gravity using accelerometers. The researchers found that the satellite captured two clear signals from the Tōhoku quake, one about a half-hour after the quake, and the second one about an hour after the quake.

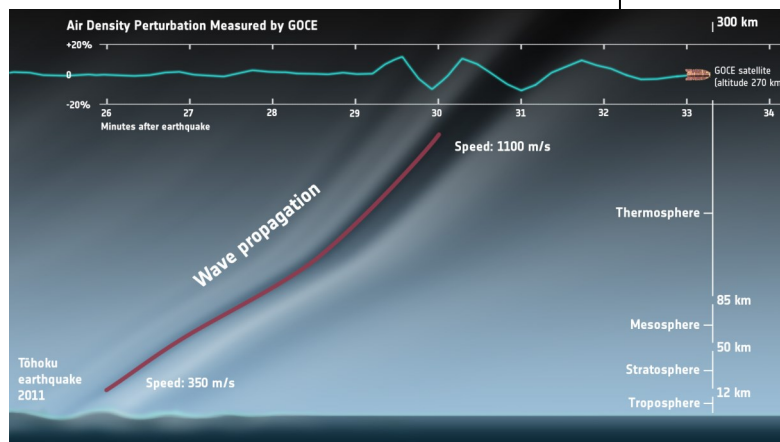
Although the findings relate to an extreme event, the discovery opens up the possibility that seismometer satellites could be used to monitor earthquakes that occur in the middle of an ocean or in other remote places.

### References:

Garcia, R.F., Bruinsma, S, Lognonne, P, Doornbos, E & Cachoux, F (2013). *GOCE: the first seismometer in orbit around the Earth*, Geophysical Research Letters, Volume 40, Issue 5, p. 1015–1020, 16 March 2013

<http://www.nature.com/news/earthquake-detected-from-space-1.12545>

*Below: A European satellite captured Tōhoku quake seismic sound waves. Credit: European Space Agency*



## Sound Wave Analysis Could Speed Tsunami Warnings

Sound waves travel through water faster than tsunami waves, and based on computer simulations performed by Stanford scientists to better understand the earthquake rupture, the sound from the March 2011 Tōhoku Earthquake probably reached land 15-20 minutes before the tsunami did. However, in a surprise finding, the scientists discovered that earthquakes that cause tsunami produce higher amplitude ocean acoustic waves than earthquakes that do not cause tsunami. "We've found that there's a strong correlation between the amplitude of the sound waves and the tsunami wave heights," co-author Eric Dunham said. "Sound waves propagate through water 10 times faster than the tsunami waves, so we can have knowledge of what's happening a hundred miles offshore within minutes of an earthquake occurring. We could know whether a tsunami is coming, how large it will be and when it will arrive."

Identifying the specific acoustic signature of tsunami-producing earthquakes would enhance early warning capability because it would lead to earlier notifications of an incoming tsunami and allow people more time to evacuate than existing systems. Implementation would also require deployment of hydrophones -- underwater microphones -- to detect the specific signal and transmit it for analysis.

### References:

Kozdon, J.E. & Dunham, E.M. (2013). *Rupture to the Trench: Dynamic Rupture Simulations of the 11 March 2011 Tōhoku Earthquake*, Bulletin of the Seismological Society of America, May 2013 vol. 103 no. 2B, p. 1275-1289

<http://news.stanford.edu/news/2013/june/quake-acoustics-tsunami-060413.html>

<http://www.youtube.com/watch?v=4rWDrZlucAQ>

### **Island Protection Challenged**

Mainland coastal communities often develop behind a nearby island because it can provide greater protection from waves and wind. But an international group of scientists, including the director of University of Southern California's Viterbi School of Engineering, has shown that a small island, rather than acting as a natural barrier for an approaching tsunami, will amplify the severity of the wave by up to 70%. The scientists ran two hundred computer simulations and found that in none of the situations did the small island offer protection to the coastal area behind it. In fact, they discovered it acted as a focusing lens of wave energy; as the tsunami wave wrapped around it, the wave split into two separate fronts that collided on its lee (sheltered) side. Depending on the distance from the island to the mainland, the increased destructive power can lead to additional run-up in the region behind the island. The findings will be instrumental in helping coastal communities improve hazard assessments in specific regions.

#### **References:**

- Stefanakis, T. S., Contal, E., Vayatis, N., Dias, F., & Synolakis, C.E. (2013). *Can Small Islands Protect Nearby Coasts from Tsunamis? An Active Experimental Design Approach*, arXiv: 1305.7385v1 [physics.flu-dyn] 31 May 2013.  
<http://www.popsoci.com/science/article/2013-06/could-presence-nearby-islands-make-tsunamis-worse>  
<http://arxiv.org/abs/1305.7385>

### **Psychology Behind Post-Disaster Giving**

Psychologists intrigued as to why some natural disasters trigger significantly larger charitable donations than others found a correlation between the death toll and the total amount collected, regardless of the number of survivors in need of assistance. For example, an

earthquake in Iran, which killed 27,000 people and affected 270,000 people, generated \$10 million in donations, as opposed to an earlier earthquake in China, which killed only 7 but affected 1.8 million people – and generated only \$94,000 in donations. The scientists developed a theory that people respond to deaths more decisively than other, undefined suffering, and then analyzed a decade's worth of actual natural disaster relief. They discovered that while donors gave an additional \$9,000 for each additional person killed in a natural disaster, there was no correlation between donations and the number of affected survivors. The researchers believe this disproportionate behavior relates to “cognitive cues”; a death toll is easy to validate, and therefore easier to use as a basis for a decision to donate, whereas, the number of “affected people” is vaguer and less trustworthy as a method for determining need. After running additional studies, they found that potential donors became more sensitive to the needs of the survivors – what the scientists call the “true human need” – when relief workers identified the number of “homeless” resulting from a disaster rather than the number of those “affected”. They hope their findings can be used by disaster responders to help improve the correlation between donations and those in greatest need.



#### **References:**

- Evangelidis, I. & Van den Bergh, B. (2013). *The number of fatalities drives disaster aid: Increasing sensitivity to those in need*. Psychological Science, 30 April 2013  
<http://www.psychologicalscience.org/index.php/news/were-only-human/a-cognitive-earthquake-whos-really-in-need.html>  
[http://www.huffingtonpost.com/wray-herbert/cognitive-earthquake-whos\\_b\\_3186432.html](http://www.huffingtonpost.com/wray-herbert/cognitive-earthquake-whos_b_3186432.html)



### **Western States Seismic Policy Council Affiliate Membership**

The mission of the Western States Seismic Policy Council is to develop seismic policies and share information to promote programs intended to reduce earthquake-related losses. We invite members of the professional community who are involved in addressing and reducing seismic hazards to join our non-profit organization as an affiliate member. For further information, please contact our office at (916) 444-6816 or download a membership application at [http://www.wsspc.org/members/affiliate\\_cc.shtml](http://www.wsspc.org/members/affiliate_cc.shtml)

## RESILIENCE & RECOVERY

### **Information Portability Crucial to Supply Chain Resiliency**

The March 2011 Tōhoku Earthquake created a massive international impact on supply chains — most notably in the automotive and semiconductor industries — and the impact is still being felt. In July 2013, Chrysler was forced to recall over 400,000 vehicles with a “potentially faulty microcontroller” — an anti-injury device — that entered the supply chain when tsunami damage to factories caused a worldwide shortage.

Although many companies now attempt to diversify plant locations or suppliers to avoid this type of impact, a new study found that the ability to quickly disseminate design and operations data along the supply chain also is crucial to bouncing back from a natural disaster. The authors focused on four Japanese manufacturers who either had substantial operations in the tsunami-stricken region or were reliant on suppliers there. The goal was to understand the impact of the disasters on the companies, their level of preparedness, and the lessons they learned. The study found that developing ways to capture and share information throughout an existing or expanding supply chain can benefit the overall manufacturing process in addition to mitigating risk. Some of the lessons learned by the manufacturers as a result of the 2011 event were:

- Temporarily flattening the organizational structure can help spread recovery information more quickly.
- GPS trackers and electronic sensors already used to monitor production, shipping and sales status proved valuable and helped monitor real-time recovery and better allocate resources and response efforts.
- Increased usage of generic components can speed production recovery.

- Stockpiled inventory can help bridge production delays or gaps.

#### References:

Park, Y, Hong, P & Roh, J.J (2013). *Supply chain lessons from the catastrophic natural disaster in Japan*, Business Horizons, Volume 56, Issue 1, January-February 2013, p. 75-85.

<http://www.strategy-business.com/article/re00226?gko=5282d&tid=27782251&pg=all>

<http://media.chrysler.com/newsrelease.do?id=14526&mid=2>



### **Developer Hopes to Restore HI Beach**

At Anaehoomalu Bay on the island of Hawaii, the 2011 Tōhoku tsunami displaced an estimated 9,000 cubic yards of sand from the beach through a 100-foot-wide gap left in the 690-foot rock wall separating the Kuualii fish pond from the bay. Although the U.S. Army Corps of Engineers (the Corps) authorized emergency repairs to close the breach to stabilize it from further erosion, Waikoloa Development Co. has developed a permanent restoration plan and seeks approval to replace the entire rock wall, dredge 800 cubic yards of sand from within the 3- to 4-foot deep pond, and bring in 5,600 cubic yards of sand from Oahu. In addition to the Corps permit, the developer also will need to secure approvals from a variety of state agencies, including the Department of Land and Natural Resources, the Department of Health Clean Water Branch, the Coastal Zoning Management Program, and the State Historic Preservation Division (for protection of the Ala



*Above: Satellite images show tsunami damage to the rock wall on the island of Hawaii. The left image was taken November 10, 2010; the right, March 11, 2011. Credit: U.S. Army Corps of Engineers Public Notice*

*(Continued on page 17)*



*(Continued from page 16)*

Loa Foot Trail), in addition to securing Special Management Area use permits from Hawaii County. When completed, the project will restore the beach to its pre-tsunami condition.

References:

- <http://www.poh.usace.army.mil/Portals/10/docs/publicnotices/POH-2012-00271.pdf>
- <http://bigislandnow.com/2013/05/31/resort-seeks-approval-to-repair-tsunami-damage-to-beach/>
- <http://hawaiiitribune-herald.com/sections/news/local-news/permit-sought-repair-fish-pond.html>

**New Zealand and Japan Strengthen Earthquake Partnership**

Two countries who suffered massive earthquake disasters less than a month apart have pledged increased cooperation on earthquake engineering and disaster recovery. Foreign ministers Hon Murray McCully (New Zealand) and H.E. Fumio Kishida (Japan) issued the joint statement following strategic cooperative partnership talks in Auckland. One of the commitments made was to “expanding collaboration in areas such as earthquake engineering and geothermal energy, and to explore new areas for collaboration including tsunami prevention and early warning systems in the Pacific Island region. With their recent experience of natural disasters in East-Japan and Christchurch, both sides will seek further opportunities to work together to enhance disaster recovery and resilience.” To ensure coordination and implementation, the countries plan to have more frequent political-level visits and dialogues, as well as regular consultations between officials. They also emphasized the importance of non-governmental dialogues to deepen understanding and cooperation.

References:

- <http://www.national.org.nz/Article.aspx?articleId=41213>
- [http://www.mofa.go.jp/region/page6e\\_000087.html](http://www.mofa.go.jp/region/page6e_000087.html)

**Japan Overhauling Nuclear Guidelines**

The Fukushima Daiichi nuclear disaster was the largest since Chernobyl in 1986, and only the second such disaster rated as a 7 — the highest level — on the International Nuclear Event Scale, a logarithmic scale similar to the moment magnitude scale used to compare earthquakes. Since the disaster, all but two of Japan’s remaining facilities have been offline, and there were indications public pressure — up to 58% of the population is opposed to restarting the reactors — would lead to a phase-out of the country’s nuclear power program. In June, however, Japan’s Nuclear Regulation Authority (NRA) announced new rules that will allow idle plants to begin applying to restart operations. A significant difference in these rules is that they are no longer voluntary guidelines, but instead legally binding upon the operators.

References:

- <http://www.nsr.go.jp/english/>
- [http://www.nsr.go.jp/english/data/new\\_regulatory\\_requirements2.pdf](http://www.nsr.go.jp/english/data/new_regulatory_requirements2.pdf)
- [http://www.nsr.go.jp/english/data/sr\\_0617.pdf](http://www.nsr.go.jp/english/data/sr_0617.pdf)

**Japanese Hill Built with Tsunami Debris**

The first of fifteen planned tsunami mitigation hills has been completed in Iwanuma, Miyagi Prefecture. The 26-foot high cone-shaped hill is 250 feet wide at its base and nearly 200 feet from front to back. It was constructed with a blend of tsunami sedimentary and regular soils placed over a foundation of tsunami debris; 4,500 people recently planted the hill with approximately 30,000 tree seedlings. Intended to blunt the force of tsunamis, the hill also will serve as an evacuation site, disaster-education location, and memorial park. The \$600,000 cost was paid for by private donations; the city intends to use restoration subsidies from the central government to fund the remaining hills.

References:

- <http://www.asiaone.com/News/AsiaOne+News/Asia/Story/A1Story20130616-430135.html>

### Tsunami Catalyst for Shift in Governance

Daniel P. Aldrich, associate professor at Purdue University and author of *Building Resilience: Social Capital in Post-disaster Recovery*, believes Japan's strong central government is evolving towards more local control as communities rebuild after the 2011 earthquake and tsunami. He cites three key reasons for the shift:

- The government has not been successful in alleviating fears or skepticism about its sharing of information as a result of the Fukushima nuclear power plant failure and fears of radiation contamination.
- Some populations are reacting to the bureaucratic barriers they have encountered at the local level.
- A new strength in local and community engagement often emerges during the rebuilding process.

According to Aldrich, who is in Japan on a yearlong Fulbright Fellowship, “[c]ommunities are pushing for more fiscal autonomy, and even the power behind philanthropic investing is shifting from the national level to local projects. The local civic voice that was once quiet is now loud and influential.”

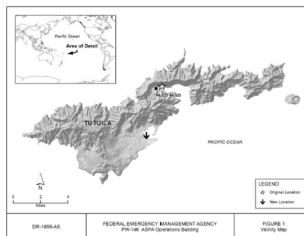
#### References:

<http://www.purdue.edu/newsroom/releases/2013/Q1/prof-on-japan-tsunami,-nuclear-disaster-popular-opinion-shifting-central-government-emphasis-to-local-control.html>



### Final Phase of American Samoa Power Plant Project Moving Forward

The Satala Power Plant, operated by American Samoa Power Authority (ASPA), was destroyed by the September 2009 Samoa Tsunami when waves reaching up to 11 feet submerged the building and its equipment in salt water; the



plant was a primary source of power for the shipyard, waterfront industrial area and power grid on the eastern end of the island. A public-

private task force developed a three-phased plan to restore the American Samoa power infrastructure to its pre-tsunami operational level. The first two phases were implemented by November 2009; in June 2013, ASPA awarded the contract to complete the third phase – rebuilding the power plant at a new location. Also in June, FEMA published a draft environmental assessment to fund a new ASPA operations building (image above), which also was destroyed in the tsunami. It will be co-located with the power plant.

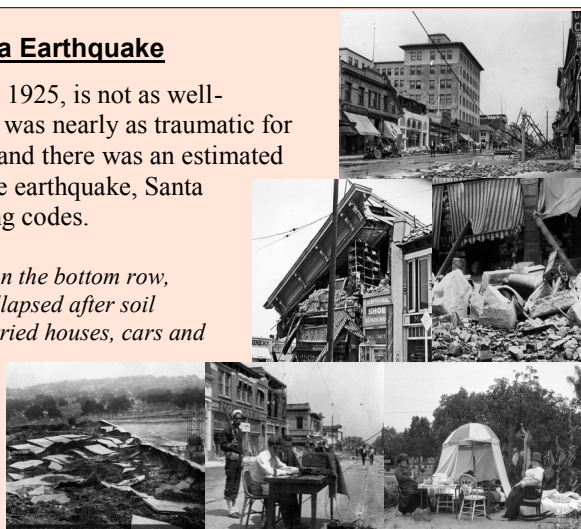
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[http://www.oig.dhs.gov/assets/Mgmt/OIG\\_11-03\\_Oct10.pdf](http://www.oig.dhs.gov/assets/Mgmt/OIG_11-03_Oct10.pdf)

### Anniversary of 1925 Santa Barbara Earthquake

The M6.8 earthquake that hit Santa Barbara on June 29, 1925, is not as well-remembered as the 1906 San Francisco Earthquake, but was nearly as traumatic for those who experienced it. Thirteen people were killed, and there was an estimated \$103 million (2013 USD) in damages. As a result of the earthquake, Santa Barbara became the first California city to adopt building codes.

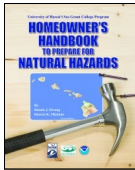
*Top three photos: damages to the business district. Photos on the bottom row, from the left, are: 1) the remains of Sheffield Dam, which collapsed after soil underneath it liquefied — its 30 million gallons of water carried houses, cars and trees into city streets and flooded some areas up to two feet until the water drained into the ocean; 2) LA Times reporter filing stories on an emergency line, watched over by a sailor enforcing martial law; and 3) two people living outside after the earthquake. Credit: Los Angeles Times archives <http://framework.latimes.com/2013/06/28/1925-santa-barbara-earthquake/#/0>*



## PUBLICATIONS & RESOURCES



### Preparing for Natural Disasters



University of Hawaii's Sea Grant College Program has both print and PDF copies available of *Homeowner's Handbook to Prepare for Natural Hazards*, which includes over 50 pages dedicated to protecting property. <http://seagrant.soest.hawaii.edu/homeowners-handbook-prepare-natural-hazards>

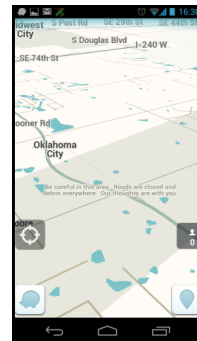


### DOGAMI Open-File Report O-13-06, Ground motion, ground deformation, tsunami inundation, coseismic subsidence, and damage potential maps for the 2012 Oregon Resilience Plan for Cascadia Subduction Zone Earthquakes

This Oregon Department of Geology and Mineral Industries (DOGAMI) publication contains definitive digital versions of the data and maps used by the Oregon Resilience Plan workgroups and OSSPAC as well as a description of the data sources and methods used to prepare the scenario maps. <http://www.oregongeology.org/pubs/nr/press-release-2013-06-21.pdf>

### Map App Helped Drivers Navigate After Recent Disasters

When a section of a bridge on I-5 collapsed into the Skagit River in Washington last month, editors at an innovative app called Waze updated their traffic map and re-routed users around the collapsed bridge. They also helped after the Oklahoma tornadoes by routing people driving through the state around the city, and flagging perilous roads inside the city for first responders and residents.



Waze is one of a handful of connection technologies, such as AirBnB and SeeClickFix, who have become digital responders during a crisis. Their value has not gone unnoticed; in June, Google made an offer of \$1.3 billion for Waze.

#### References:

<http://irevolution.net/2013/06/11/uber-waze-airbnb-seeclickfix-for-disaster-response/>  
<http://www.copypress.com/blog/google-buys-waze-for-1-3-billion/>

### The Rockefeller Foundation Launches Resilience Challenge

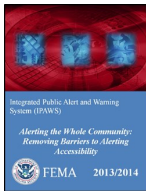


The Rockefeller Foundation is inviting cities from around the world to apply to be named one of 100 resilient cities. Applicants, which can be city government officials or major institutions within a city, will be asked to present a clear description of how their city is approaching and planning to build greater resilience at city-scale and in a way that addresses the needs of the poor or vulnerable. Winners will be announced in three rounds over the next three years, with the final round of winners named in 2015. Each winning city will receive three forms of support:

- Support to create a resilience plan, along with the tools, technical support, and resources for implementation.
- Membership in a new network The Rockefeller Foundation is creating, which will provide support to member cities and share new knowledge and resilience best practices.
- Support to hire a Chief Resilience Officer (CRO) to ensure resilience-building and coordination is the specific responsibility of one person in a city government, and to oversee the development of a resilience strategy for the city.

For more information, visit: [www.rockefellerfoundation.org](http://www.rockefellerfoundation.org)

## **Removing Barriers to Alerting Accessibility**

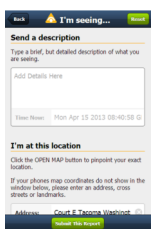


FEMA recently published *Alerting the Whole Community: Removing Barriers to Alerting Accessibility* to help guide agencies in addressing the challenges of reaching the whole

community when implementing an alert and warning system, including the 25% of the U.S. population who might need assistance or accommodation to receive the alerts.

[www.fema.gov/library/viewRecord.do?id=7599](http://www.fema.gov/library/viewRecord.do?id=7599)

## **Pierce County Has an App for That!**



The FirstToSee mobile app offers a free, fast and confidential way to let emergency officials know something is happening in the Puget Sound area of the state of Washington. The application easily walks a user through

sending a photo, text observations map coordinates, and contact information. For more information, go to: <http://incident.co.pierce.wa.us/firsttosee/mobileapp/>

## **SmartPhone App to Unlock Your Emergency Information**



Mobile phone users are encouraged to add at least one "In Case of Emergency" (I.C.E.) contact in their phones so emergency responders can access the information. However, for those phones that require a password or other security device to access the

phone, the I.C.E. information is inaccessible. Acadian Ambulance Service out of Louisiana provides a free application that places your emergency contact name and phone number on your home and/or lock screen. It also allows users to store secure information regarding current medications, medication allergies and health conditions, accessible only if the phone is unlocked by the owner or the emergency contact. <http://www.acadian.com/site.php?pageID=803&newsID=336>

## **DHS Releases Social Media Report**

The United States Department of Homeland Security's Virtual Social Media Working Group (VSMWG) — created in 2010 to provide guidance and best practices to the emergency preparedness and response community on the safe and sustainable use of social media technologies before, during, and after emergencies — recently released its newest document, *Lessons Learned: Social Media and Hurricane Sandy*. The report not only provides an overview of how social media was used to prepare for, respond to and recover from the disaster, it also discusses processes identified by the first responder community as best practices; presents examples, themes in applications, and lessons learned; identifies gaps in technology, process, and/or policy; and offers points requiring further discussion.

VSMWG members are drawn from a cross section of subject matter experts from federal, tribal, territorial, state, and local responders from across the United States.

Included in the membership are representatives from six organizations who operate within WSSPC region boundaries:

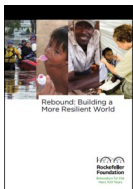
- Clark Regional Emergency Services Agency (Washington)
- Portland National Incident Management Organization, U.S. Forest Service (Oregon)
- Oregon Voluntary Organizations Active in Disaster
- San Francisco Department of Emergency Management (California)
- Show Low Fire (Arizona)
- University of Washington Office of Global Affairs

[https://communities.firstresponder.gov/DHS\\_VSMWG\\_Lessons\\_Learned\\_Social\\_Media\\_and\\_Hurricane\\_Sandy\\_Formatted\\_June\\_2013\\_FIN\\_AL.pdf](https://communities.firstresponder.gov/DHS_VSMWG_Lessons_Learned_Social_Media_and_Hurricane_Sandy_Formatted_June_2013_FIN_AL.pdf)

*Lessons Learned: Social Media and Hurricane Sandy* is a follow-up report to 3 previous DHS documents — *Social Media Strategy*, *Next Steps: Social Media for Emergency Response*, and *Community Engagement and Social Media Best Practices*.



### Lessons Learned in Resiliency



The Rockefeller Foundation asked leaders from various disciplines to share their lessons of what resilience means and what it requires of us. The resulting publication — *Rebound: Building a More Resilient World* — is designed to help us, through the lens of their experiences, begin to explore some of the ways we can help prepare for, withstand and emerge stronger from the acute shocks and chronic stresses of the 21st century. [www.rockefellerfoundation.org/news/news/rebound-building-more-resilient-world](http://www.rockefellerfoundation.org/news/news/rebound-building-more-resilient-world)

### Disaster Education for the Online Community

The International Strategy for Disaster Reduction has released a disaster simulation game that allows a player to change a community to reduce risk from five different potential disasters, including earthquake and tsunami. For example, the tsunami simulation allows gamers to upgrade or replace housing, choose types and locations for tree planting, provide training and/or develop other hazard mitigation options for a virtual island community. Players are educated on the value of their choices, and scored on how well they accomplish mitigation within the pre-established budget. <http://www.stopdisastersgame.org/en/playgame.html>

### *In Memorium*

Masao Yoshida, plant manager of the Fukushima power plant during the 2011 Japan Earthquake and Tsunami, died from cancer at the age of 58 on July 9, 2013. Mr. Yoshida is known for disobeying corporate orders to stop using seawater to cool the reactors; according to experts, his act of insubordination is the only thing that kept the cores from exploding. His doctors said the cancer was not caused by the nuclear accident. <http://www.telegraph.co.uk/news/obituaries/10171900/Masao-Yoshida.html>



*Kyodo News*

## PEOPLE & TRANSITIONS



### 2012 WSSPC Award Winner Receives National Honors

Jonathan Price, former State Geologist of Nevada and WSSPC Board Chair, and winner of a 2012 WSSPC Lifetime Achievement Award, has been recognized by two national organizations. In February 2013, Price received a Gold Medal — their highest honor — from the Mining and Metallurgical Society of America for his significant contributions to the mineral industry. This October, he will be presented with the Ben H. Parker Memorial Medal from the American Institute of Professional Geologists at their 50th Anniversary meeting in Colorado as an individual with a long record of distinguished and outstanding service to the profession.

#### References:

<http://www.unr.edu/nevada-today/news/2013/jon-price-gold-medal>

<http://www.aipg.org/>

### Future Basin & Range Committee Member?

Ali Sherman, a student at the University of Utah in Salt Lake City, received one of ten 2013 scholarships given by the American Institute of Professional Geologists. In her published essay, Ali wrote about her goal of helping people around the world to prepare for and survive natural disasters. She is concerned that Salt Lake residents don't understand the earthquake risk presented by the Wasatch fault, and wants to utilize her English degree "to write about geologic issues, such as the Wasatch fault, in a way that will effectively communicate the severity of the situation to the public."

#### References:

<http://aipg.org/Students/pdf/2013%20Scholarship%20essay%20winners.pdf>

<http://www.aipg.org/students/scholarship.htm>

## Nomination Period Opens in September for WSSPC Awards

Know an individual or organization that has made a significant contribution in the field of earthquake risk reduction? Nominations open on September 1, 2013, for the 2014 Awards in Excellence, Lifetime Achievement and WSSPC Leadership awards. Submit your nomination by December 2, 2013; nomination forms and instructions will be available at <http://www.wsspc.org/awards>

## CONFERENCES, WORKSHOPS & EVENTS

August 7-8, 2013

NEES Quake Summit 2013

Reno, Nevada

<http://nees.org>

September 8-15, 2013

Association of Environmental & Engineering Geologists  
Seattle, Washington

<http://www.aegweb.org/home>

September 9-12, 2013

NEMA 2013 Annual Emergency Management Policy and  
Leadership Forum

Anchorage, Alaska

<http://www.nemaweb.org>

September 23 - 25, 2013

Disaster Planning for California Hospitals  
Sacramento, California

[www.calhospitalprepare.org/dp\\_2013](http://www.calhospitalprepare.org/dp_2013)

October 14 - 17, 2013

Sixth International Marine Debris Conference  
Honolulu, Hawaii

<http://www.6imdc.org/>

October 15, 2013

WSSPC Committee edits of Policy Recommendations due  
in WSSPC office

October 17, 2013

ShakeOut

<http://www.shakeout.org/>

October 23-26, 2013

AIPG 50th Annual National Meeting  
Broomfield, Colorado

<http://www.aipg.org>

October 27 - 30, 2013

GSA 125th Anniversary Annual Meeting & Exposition  
Denver, Colorado

<http://community.geosociety.org/Home/>

November 20, 2013

WSSPC Board of Directors Meeting

Sacramento, California

[www.wsspc.org](http://www.wsspc.org)

April 23 - 25, 2014

2014 Partners in Emergency Preparedness Conference -  
Tacoma, Washington

[https://www.cm.wsu.edu/ehome/index.php?](https://www.cm.wsu.edu/ehome/index.php?eventid=25597&)

[eventid=25597&](https://www.cm.wsu.edu/ehome/index.php?eventid=25597&)

April 30 - May 2, 2014

2014 Seismological Society of America Annual Meeting  
Anchorage, Alaska

<http://www.seismosoc.org/meetings>

**July 21, 2014**

**WSSPC Annual Meeting and Awards Banquet**

**Anchorage, AK**

[www.wsspc.org](http://www.wsspc.org)

July 21 - 25, 2014

10th U.S. National Conference on Earthquake Engineering  
and EERI Annual Meeting

Anchorage, Alaska

<http://10ncee.org/>

### Past Meetings Update

April 30-May 2, 2013

2013 National Earthquake Program Managers  
Seattle, Washington

Meeting Sessions Included:

- State Earthquake Program Updates
- FEMA/NEHRP Earthquake Program Updates
- Lessons on Recovery – Canterbury/Christchurch Earthquakes
- Cross- Boundary Operations
- August 2011 Earthquake: Lessons from Louisa County School District
- Building Mission-Ready EMAC Requests for Post-Earthquake Building Inspections
- National EQ Prediction Evaluation Council
- FEMA P909 Training

Presentations and meeting notes are available at:

<http://eqprogram.net/2013-nepm-meeting/>

Publication of this e-Newsletter was funded through FEMA Cooperative Agreement EMW-2012-RC-00002-S01. If you have an item for the next e-Newsletter, please forward it to Stephanie Moreno, Program Manager, at [smoreno@wsspc.org](mailto:smoreno@wsspc.org) by October 15, 2013.