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SCIENCE
APPLICATION
FOR RISK
REDUCTION

Flooding in Reno, NV in 2005



ARkStorm@Tahoe applies the SAFRR ARkStorm Scenario to the Tahoe basin, with downstream impacts to Reno, Sparks, and Carson City.

An update on USGS SAFRR team's fall-winter 2013 activities

Our USGS SAFRR team has continued working with partners to advance several of our projects this fall, despite delays introduced during the October federal government shutdown.

The SAFRR Tsunami Scenario was released in September and shared with stakeholders in a series of workshops held at venues along the Californian coast. The ARkStorm scenario is now also being used and expanded through the ARkStorm@Tahoe project.

We have continued work with partners to prepare public awareness activities for the 50th anniversary of the 1964 Great Alaskan tsunami as well as supporting the Earthquake Science Center in getting ready for the 20th anniversary

of the Northridge earthquake and the 25th for Loma Prieta.

Work with communities to improve tools and understanding of hazard vulnerability has continued as part of the LACCDR project. Sustained collaborations with the Art Center and Kentucky's school of risk communication have continued to be key in intertwining social science and design in enhancing effectiveness of communicating science.

Details and updates on our projects are below and on our SAFRR website.

SAFRR Website Now Live at:

http://www.usgs.gov/natural_hazards/safrr/

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Fall-Winter



2013

The mission of the USGS SAFRR (Science Application for Risk Reduction) Project is to innovate the application and development of hazards science to protect the safety, security and economic well-being of the Nation. SAFRR is available to work with interested USGS colleagues to enhance applications of their science. SAFRR offers a wide range of experience in user-focused research, targeted messaging, and partnerships with social and behavioral sciences relevant to hazards science.



Participants listen as Kevin Miller, head of the tsunami program for CalOES, presents at the San Diego workshop describing the SAFRR Tsunami Scenario.

The SAFRR Tsunami Scenario: Report Release and Workshops

September 4, 2013 marked the release of the Tsunami Scenario report. A collaboration between the USGS, National Oceanic and Atmospheric Administration, California Geological Survey, and other entities, the document depicts a single realistic outcome of a hypothetical but likely large tsunami affecting the west coast of the US, including Alaska and Hawaii. The scenario includes modeling of the earthquake source and tsunami waves, damage and restoration of the built environment, and social and economic impacts. Like the earlier ShakeOut and ARkStorm disaster scenarios, the purpose of the Tsunami Scenario is to apply science to explain and understand impacts of natural disasters.

The release was accompanied by a series of workshops held along the Californian coast, with members of the SAFRR Tsunami Scenario team presenting study results to stakeholders in coastal communities. The workshops were hosted by the Los Angeles Sector of the US Coast Guard (Sept. 4th), Santa Barbara County Office of Emergency Management (Sept. 5th), San Diego County Office of Emergency Management (Sept. 6th), Santa Cruz County Office of Emergency Management (Sept. 9th), and the Port of San Francisco (Sept. 10th), and in total reached more than 350 interested attendees including legislative representatives, first responders, emergency managers, and those involved in hazard outreach and

awareness efforts. According to a questionnaire completed by attendees, 80% of those for whom the information is applicable to their decision-making efforts will use the information provided in the workshop to change their approach to tsunami hazards. Several scientists involved in the scenario also shared results at the fall annual AGU meeting in San Francisco.

For a copy of the report and related Tsunami Scenario resources, go to:

http://www.usgs.gov/natural_hazards/safrr/projects/tsunamiscenario.asp

ARkStorm@Tahoe

The Tahoe Science Consortium, together with the USGS, has been convening a series of workshops with stakeholders and interested communities such as federal, state, and local agencies, tribal representatives, natural resource managers, non-governmental organizations, business leaders, and scientists to discuss impacts of an ARkStorm in the Reno-Tahoe region. These workshops aim to incorporate ARkStorm threats into emergency response exercises and planning in the region and to identify social and environmental vulnerabilities. The community will be encouraged and facilitated to discuss preparations that can reduce these vulnerabilities. Overall, the ARkStorm@Tahoe exercise will help the communities of Tahoe and surrounding areas to better prepare for extreme storms, increasing both social and ecological resilience to Atmospheric River (AR) storms like ARkStorm.

Northridge Earthquake 20th Anniversary planning

The SAFRR team has been helping coordinate plans for the upcoming 20th Anniversary of the Northridge Earthquake on January 17th, 2014. Discussions and proposed ideas from earlier coordination meetings have since developed into planned events and new resources.

A Media Summit is planned for January 7th on the Caltech campus to provide the media with potential story ideas and experts to interview on Northridge science, engineering, and history.

A website currently under construction will provide resources including event and lessons-learned timelines, facts, modeled Northridge-sized earthquakes on other faults, and interviews of experts and those who experienced groundshaking in the Northridge quake.

The USGS has also joined in the planning of a two-day symposium (Jan. 16-17) coordinated by Pacific Earthquake Engineering Research (PEER) members. The symposium will bring together policy makers, government officials, building officials, engineers, earth scientists, emergency managers, building owners, neighborhood and community leaders, and financial services industry professionals to share impacts of, accomplishments since, and steps forward from the 1994 Northridge earthquake. Details and registration for the symposium can be found at <http://www.northridge20.org>.



Over 120 emergency, resource, and environmental managers attend the ARkStorm@Tahoe meeting at the Washoe County Regional Emergency Operations Center in Reno, Nevada on December 5th.



Tsunami Awareness Pamphlet created in collaboration between USGS and the Art Center College of Design: <http://network.artcenter.edu/gallery/The-Next-Wave/9449467>

Tsunami WalkOuts planned

March, 2014 brings the 50th anniversary of the 1964 Alaskan "Good Friday" earthquake and tsunami, which caused destruction in many parts of the Pacific basin. To help plan commemoration of this disaster and increase tsunami awareness, SAFRR assembled tsunami awareness professionals from the USGS, National Oceanic and Atmospheric Administration, California Office of Emergency Services (CalOES), California Geological Survey, and the counties of Los Angeles, San Diego, Orange, and Ventura to discuss the staging of public events around southern California during the week surrounding March 27, 2014.

This preliminary discussion launched months of planning and collaboration with grassroots and other organizations, including steps to encourage public "WalkOut" events in which participants walk a route that begins in a tsunami danger zone and leads to a tsunami safe zone.

SAFRR Participates in LEAP Symposium

September 19th-21st, in the hills overlooking Pasadena, the Art Center College of Design hosted the first LEAP symposium

(<http://leapsymposium.org>) an international conference to discuss future partnerships and career directions related to design for social causes. SAFRR's Lucy Jones, Sue Perry, and John Bwarie were invited to participate in a succession of thought-provoking sessions focused on collaborations, networks, cross-disciplinary pollination, and applications of design to scientific problems.

Natural Hazard Information for Community Resilience

The USGS is a partner in the Los Angeles County Community Disaster Resilience (LACCDR) project, which is developing an open source software tool called Sahana to enable community members to juxtapose views of their hazards, vulnerabilities, and assets. SAFRR scientist Sue Perry is working with the software developers to add hazard datasets from USGS, FEMA, and California Geological Survey. In late October she attended software training sessions in the LACCDR pilot communities. User questions and misunderstandings about hazard maps will help to guide Perry's development of metadata descriptions.

As part of this project, Perry also provides information to local communities about their natural hazards. On September 14th she presented and answered questions at the Hollywood Police Station, where about 40 community organizers, police officers, and safety fair attendees spent their Saturday working toward disaster resilience. In October, she gave a similar talk for Sony Pictures.

Earthquake Early Warning plans continue

We continue to work with the Earthquake Program and Earthquake Science Center to support the development of Earthquake Early Warning (EEW) for the western United States. Lucy Jones and

Doug Given, Earthquake Early Warning coordinator, served on a California working group to advise the state legislature which has completed its work. The next step will be a series of working groups to complete planning for the California system. SAFRR has also funded University of Kentucky's school of risk communication to provide focus group testing of possible early warning messages.

Staff changes

Dale Cox, the first Project Manager for the Multi-Hazards Demonstration Project (MHDP) 2007-2010, and now Regional Hazards Coordinator with the Pacific Regional Director's office, rejoined SAFRR on December 1st as the Project Manager. He is taking over some of the logistical functions and developing partnerships with USGS Science Centers and local governments. He will be based in Sacramento at CalOES and help facilitate interactions with the Regions and Science Centers.

Kristin Ludwig, last year's AAAS Fellow in the NHMA Office, is continuing with the USGS, working primarily on the response to Hurricane Sandy. She is joining SAFRR part-time, with a special interest in communication and partnerships with designers. She will remain in Reston and help to facilitate interactions with the Programs and other Mission Areas.

Contact us:

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The SAFRR staff are:

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Erin Burkett, Staff Scientist

Dale Cox, Project Manager

Kristin Ludwig, Staff Scientist

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