

# MAKING CALIFORNIA SAFER: CRP PREPARES THE 2007 STATE HAZARD MITIGATION PLAN

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*For a little over a year, a Cal Poly team--led by these featured authors--was engaged in preparing California's Hazard Mitigation Plan, which was officially adopted in December 2007. This important work proves the capacity of Cal Poly and, specifically, the CRP Department in engaging in community outreach. The plan will facilitate mitigation planning and actions by the various federal, state, and local agencies and stakeholders, leading the way towards a safer California.*

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The City and Regional Planning Department has helped the State of California become a leader in planning for safety and long-term community sustainability in the face of ongoing earthquakes, floods, wildfires and other natural and human-caused disasters. In a partnership with the Governor's Office of Emergency Services (OES) a faculty-student team from Cal Poly prepared the *2007 State of California Multi-Hazard Mitigation Plan*, which was adopted on October 8, 2007 by OES Director Henry Renteria.

The *2007 Plan* was designated as an Enhanced State Mitigation Plan on December 17, 2007, after being initially approved in October 2007 as a Standard Plan, meeting minimum legal requirements. The *Enhanced Plan* designation is good for the next three years, until the *2010 Plan* is submitted for FEMA approval

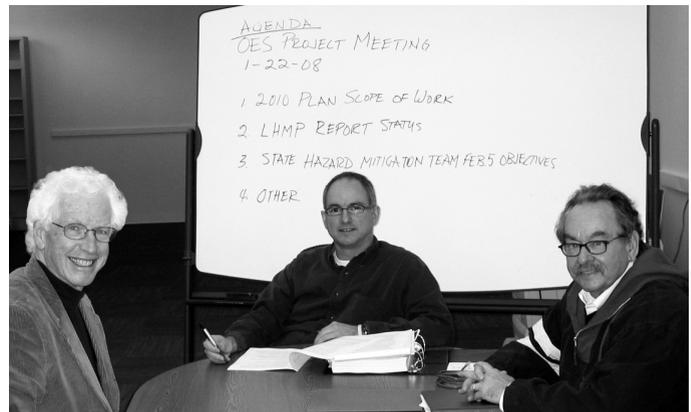
An Enhanced Plan designation assures eligibility for substantially greater amounts of mitigation funding than a Standard Plan. This means that, after future disasters, California will get federal mitigation grant funding amounting to tens of millions of mitigation dollars for disasters the size of the October 2007 wildfires and hundreds of millions for mitigation after a catastrophic disaster. Only 11 other state plans have such designations.

## About the Plan

The *2007 State of California Multi-Hazard Mitigation Plan (SHMP or Plan)* tells the story of how California has successfully organized to implement hazard mitigation programs to strengthen the state's resilience in the face of future disasters.<sup>1</sup> The *Plan* describes past and current hazard mitigation activities and outlines future disaster loss reduction goals, strategies, and actions. It provides guidance for hazard mitigation activities, highlighting partnerships among local, state, and federal organizations as well as the private sector.

An overall purpose of the *2007 Plan* is to facilitate mitigation planning and actions by state agencies, local governments, private businesses, and citizens. *Plan* goals are to:

- Significantly reduce life loss and injuries;
- Minimize damage to structures and property from disasters, as well as disruption of essential



**Figure 1**  
Ken Topping, Michael Boswell, and William Siembieda.

<sup>1</sup> The Plan can be retrieved from [http://hazardmitigation.oes.ca.gov/plan/state\\_multi-hazard\\_mitigation\\_plan\\_shmp](http://hazardmitigation.oes.ca.gov/plan/state_multi-hazard_mitigation_plan_shmp).



**Figure 2**  
La Conchita Landslide,  
Ventura County, 2005.

- Protect the environment; and
- Promote hazard mitigation as an integrated public policy.

human services and human activities;

Innovative features include assessment of new issues such as climate change, levee failures, landslides, and tsunamis, as well as a GIS risk assessment, strategic mitigation action list, and detailed accounts of how OES manages federal mitigation funds.

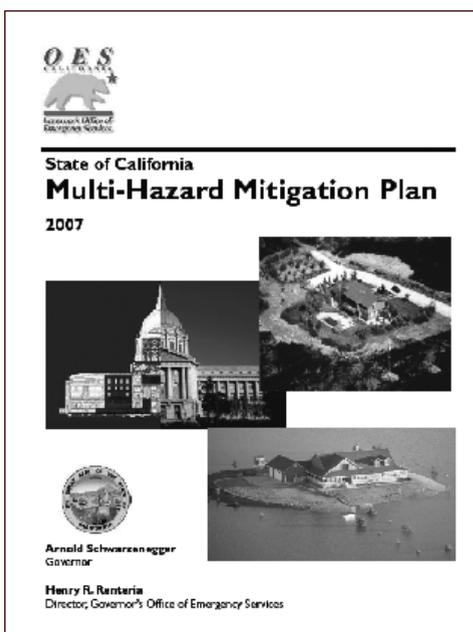
### What is Hazard Mitigation?

Hazard mitigation is sustained action to reduce or eliminate long-term risk to human life and property from natural and human-caused hazards. A “hazard” is an event or physical condition that has the potential to cause fatalities, injuries, property and infrastructure damage, agricultural losses, environmental damage, business interruptions, or other loss.

Hazard mitigation involves making physical changes to communities to permanently reduce risk of disaster losses, whereas, emergency preparedness concentrates on improving readiness to respond to a disaster, such as assembling emergency equipment, food, shelter, and medicine. Common hazard mitigation examples include:

- Strengthening seismically vulnerable buildings against earthquakes;
- Elevating homes above flood levels;
- Clearing flammable vegetation from around structures to reduce wildfire risk;
- Avoiding development in hazard prone areas.

**Figure 3**  
The Plan’s cover page.



One successful example of hazard mitigation documented by CRP researchers is a flood barrier wall erected around two mobile home parks in Yountville after floods had twice damaged the parks and forced evacuations of many elderly residents in the mid-1990s. On December 31, 2005, floodwaters from the nearby Napa River reached a maximum height of four feet from the top of the barrier wall, but no floodwater entered the mobile home parks. The flood wall project cost approximately \$4.2 million with \$3.2 million funded from FEMA hazard mitigation funds. The Cal Poly team estimated a cost savings of approximately \$1.6 million for this single event, a savings which will be multiplied many times over by future floods in the area.

A generally preferred mitigation approach is to mitigate hazard risk *before* disasters happen through preventive community design strategies, which keep people and development out of harm’s way. It is much easier, cheaper for taxpayers, and less disruptive to normal human activity to *prevent* disaster damage or destruction through building more wisely in relation to natural hazards.

The *2007 Plan* provides a foundation for a variety of public and private sector stakeholders to identify key issues, challenges, and opportunities for making California more resilient and robust in the years to come. During the next three years, OES will be monitoring, evaluating, and updating this *Plan*. The State will work with a wide variety of public and private sector groups to focus on the implementation of key strategic actions identified in the *2007 Plan*.

Cal Poly is now in preliminary discussions with OES regarding a possible contract to implement portions of the *2007 Plan* and prepare the *2010 Plan*. Key items of work under discussion include continuation of local hazard mitigation plan review and implementation of the State Mitigation Assessment Resource Team (SMART) loss avoidance tracking system.

- In the preparation of the *2007 Plan*, a team of four CRP graduate students supervised by Mike Boswell assessed 436 FEMA-approved Local Hazard Mitigation Plans, leading to recommendations for the *2007 Plan* on how to strengthen local planning. This work is proposed to be continued to help build local government mitigation planning capacity throughout California.
- The SMART loss avoidance tracking system was successfully tested in the *2007 Plan* with the Yountville mitigation project. Cal Poly is proposing to help OES develop and implement the SMART system over the next three years. The system would field teams of faculty specialists from CSU system campuses after disasters to evaluate previously completed mitigation projects and determine the actual disaster losses avoided in relation to the initial costs of federal investment in projects. Cal Poly would help train and certify participating specialists under an MOU between OES and the CSU system.



**Figure 4**  
Mobile homes protected by barrier wall, December 2005. Source: City of Yountville

In recent years, Cal Poly has built up substantial expertise in hazard mitigation theory and practice. An International Symposium on Urban Disaster Risk Reduction and Regeneration, sponsored by the College of Architecture and Environmental Design in November of 2005, has led to significant interdisciplinary curriculum advancements.<sup>2</sup>

New courses include “Disaster-Resistant Sustainable Communities,” a lower-division University-wide offering currently qualifying for science credit, and “Community Safety Planning and Design,” an upper-division and graduate elective geared to students intent on design and natural resource management careers.

According to CRP Department head, Bill Siembieda, “Efforts to expand hazard mitigation knowledge across disciplinary boundaries has produced a foundation of know-how which adds real meaning to Cal Poly’s motto of ‘learn by doing.’”

<sup>2</sup> See *FOCUS Special Edition 2006 “Proceedings of the International Symposium on Urban Disaster Risk Reduction and Regeneration Planning”*. On CD-ROM format. Available from the CRP Department.

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*Note: The Cal Poly 2007 Plan project team included project director Ken Topping, and co-directors William J. Siembieda and Michael R. Boswell. Also participating were faculty advisors Professors Rakesh Goel and Robb Moss of the College of Civil and Environmental Engineering, Chris Dicus of the Natural Resources Management Department, and James Sena of the Orfalea College of Business, as well as Boykin Witherspoon, GIS director for Cal Poly Pomona. CRP graduate assistants participating in the research were Geof Chiapella, James David, Matt Maxwell, and Lily Schinsing.*