

January 9, 2006

The Honorable Commissioners and The Executive Director  
Little Hoover Commission  
Sacramento

Dear Commissioners and Executive Director,

Thank you very much for your letter of December 12, 2005, inviting me to testify before your Commission. I consider this an honor and am very happy to comply with your request.

As per your request, please consider this letter as my written testimony. I would like to restrict my testimony to: (a) the importance of hazard mitigation, (b) the effectiveness of partnerships, and (c) lessons that can be learned from our Japanese colleagues.

**Hazard Mitigation:** While we might never be able to eliminate the disastrous consequences of major disasters, it is within our means to reduce the consequences. In order to do this we need to place greater emphasis on hazard mitigation, namely, the steps that we can take ahead of time so that our society is more resilient to disasters. There already exists a great body of knowledge regarding hazard mitigation. What is lagging far behind is its practice, especially among the general population. As an example, it is well known that items like tall bookshelves will tip over easily during earthquakes, with the potential for causing bodily harm and injuries. It is also well known, at least within the hazard mitigation community that by anchoring these bookshelves to the studs in the wall, the probability of their tipping over can be drastically reduced. Nevertheless, anchoring bookshelves to the studs in the wall is still not common practice in California. Examples like these abound.

We need to make a concerted effort to make sure that the hazard mitigation knowledge that exists today is utilized to the fullest extent possible, by the general population of California. In order to attain this goal a number of different measures will most likely be necessary, including some or all of the following:

1. Provide appropriate education to the public so that they are aware that mitigation is possible and feasible and very much “do-able”.
2. Work on making the public realize that mitigation pays off in the long run and that it is cost-effective.
3. Provide motivation for the public to practice and implement mitigation. An example of “motivation” could be some form of economic incentive.
4. Work towards making mitigation “common sense”, similar to how most reasonable people would consider carrying automobile insurance as being “common sense”.

**Partnerships:** Partnerships are essential for building disaster resistant communities. The term that is generally used is “public-private partnership”. I would like to take this opportunity to encourage the Commission to consider a four-way partnership, namely

among the public sector, private sector, academia and residents of California. The public and private sectors alone are insufficient for building a disaster resistant society. The residents of California need to be active participants in this effort. The K~12 and college systems can be important allies in improving disaster resistance. The K~12 system can be a vibrant conduit via which disaster preparedness and mitigation efforts can be disseminated to not just current generations but also future generations. The college system contains within it the multi-disciplinary knowledge base that is essential for such efforts and by using avenues such as service learning, this knowledge can be utilized very effectively.

Natural disasters are not deterministic events; they embody within them a chaotic nature. As such, while the general scope of damage can be envisioned and modeled, the exact nature of the damage that will be caused is always very difficult to predict. In creating and disseminating SEMS as the basic framework for responding to disasters the California Governor's Office of Emergency Services has done a very commendable job. SEMS provides the overall framework necessary for responding to a variety of disasters without taking a deterministic approach.

Our Japanese colleagues have been faced with earthquake damage for a very long time, including two predictions of major earthquakes – one in the Tokyo region and one in the Shizuoka region. I have been fortunate enough to be able to maintain close ties with our Japanese colleagues and have been following a lot of their work. Some of their efforts are particularly noteworthy and I would like to take this opportunity to bring them to your attention. They include:

1. Public assistance for earthquake assessment of private homes and assistance for seismic retrofit for low income homeowners. This is practiced by several prefectures including Kanagawa and Shizuoka.
2. Shizuoka Prefecture relied on junior high school students to get their parents to do a very basic structural assessment of their homes so that the Prefecture could reliably assess the seismic safety of the homes in the Prefecture.
3. The City of Kobe has enlisted gas stations to serve as repositories of emergency preparedness and rescue equipment, contained in tool sheds. Participating gas stations are given special recognition which they use for marketing purposes. At times of disasters public vehicles have priority in getting gas at these stations. This program came about after the finding that the Kobe Earthquake and ensuing conflagration did not cause major damage to gas stations because of the standards employed by the cognizant authorities and the effectiveness of fire walls which are also required by code.

Such examples abound.

The California Seismic Safety Commission has long been a proponent of hazard mitigation, especially for seismic hazards. They have also been a proponent of offering incentives to California residents for implementing mitigation. The California

Earthquake Loss Reduction Plan and the Tracking Document that they have developed represents very clearly the multi-disciplinary manner in which hazard mitigation and loss reduction needs to be addressed, and could serve as a model for addressing the risks posed by other natural and man-made calamities as well.

Respectfully submitted by,

Guna Selvaduray, Ph.D.  
Professor  
College of Engineering  
San Jose State University  
and  
Executive Director  
Collaborative for Disaster Mitigation

## **GUNA SELVADURAY**

**Executive Director, Collaborative for Disaster Mitigation, and  
Professor of Materials Engineering  
San Jose State University**

### **Brief Biography:**

Dr. Guna Selvaduray earned his M.S. and Ph.D. degrees from Stanford University and his B. Eng. degree from Tokyo Institute of Technology. His research has focused on nonstructural hazard mitigation, hazardous materials problems caused by earthquakes, and protection of building contents and plant equipment from earthquake damage. He has been the recipient of research grants from the National Science Foundation, the Department of the Interior and the California State Government. At San Jose State University, Dr. Selvaduray created the Collaborative for Disaster Mitigation (CDM), a public-private-academic partnership that has focused on implementing hazard mitigation in order to achieve loss reduction. Under his leadership the CDM has become widely recognized as a model of successful partnership which Japanese and Taiwanese researchers have been interested in duplicating as well. He has taught special short courses on earthquake hazard reduction for public and private sector professionals. He has also been the organizer of the US-Japan Conference on Corporate Earthquake Programs series, the Business Continuity Planning Conference series, and was the Co-Chair of the Disaster Resistant California Conference series for the 2003 through 2005 time period. He also consults for several high-tech industries in Silicon Valley and in Japan. Prior to joining SJSU he spent approximately 12 years in the private sector, in manufacturing and consulting, and in government research. Dr. Selvaduray has 100 publications, has made well over 100 technical presentations, most of which are invited presentations, and is also fluent in five languages, including Japanese and German.