Brent Woodworth's Testimony
on the Value of Pre-disaster Mitigation
before the
U.S. House Committee on Transportation and Infrastructure's
Subcommittee on Economic Development, Public Buildings, and Emergency Management
April 30, 2008
Hearing on Saving Lives and Money Through the Pre-disaster Mitigation Program

Madam Chairman, members of the subcommittee, distinguished guests – thank you for inviting me to speak with you today concerning a very important subject -- the need for, and the benefits of, investing in pre-disaster mitigation.

My name is Brent Woodworth and I am the President / CEO of Global Crisis Services, Inc., an international risk and crisis management consulting firm. My experience in crisis management includes the development of an international Crisis Response Team that has responded to over 70 major crisis events in 49 countries. I have often seen the tragedy that results when known risks from natural hazards go unmitigated and disasters strike.

I also am chair of the Multihazard Mitigation Council (MMC), a voluntary advisory council of the Congressionally authorized, nonprofit National Institute of Building Sciences (NIBS). The MMC was established to help reduce the total costs of natural and other hazards by promoting consistent and improved multihazard risk mitigation strategies and by providing the federal government with sage counsel on this subject. Given the MMC's independent status and its ability to enlist contributions of time and effort from national experts, the Federal Emergency Management Agency (FEMA) asked the MMC to conduct a Congressionally

mandated independent study[1] to quantify the future savings from mitigation efforts.

The study of mitigation activities was conducted under FEMA's natural hazard grant mitigation program and included a review of FEMA grants from 1993 through 2003. The study was completed in 2006 and clearly shows that FEMA's mitigation grants have been extremely effective in reducing future losses from earthquake, wind, and flood.

The study used a statistically representative sample of FEMA grants for both project and process-type mitigation activities. Project mitigation typically includes brick and mortar efforts such as elevating a house above flood levels, installing hurricane clips, or bolting down a foundation. Process-type activities are aimed at increasing awareness and fostering mitigation action including: stimulating communities to adopt up-to-date building codes, purchasing flood insurance, or updating disaster recovery plans.

A number of hazard models were utilized when conducting our study. When reviewing seismic risk-mitigation, for example, the HAZUS®MH software tool was used to model the overall hazard vulnerability risks and to estimate expected annualized property losses and casualties. The MMC researchers then supplemented the estimates generated by the models with analyses of losses that are difficult to quantify or model. These include historic and environmental damage and the cost of indirect business interruption.[2]

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[1] The Senate Appropriations Committee, Subcommittee for the Veterans Administration, Department of Housing and Urban Development, and Independent Agencies of the 106th Congress (Senate Report 106-161) stated: "The Committee recognizes that investing in mitigation will yield reductions in future disaster losses, and that mitigation should be strongly promoted. However, an analytical assessment is needed to support the degree to which mitigation activities will result in future 'savings.' Therefore, the Committee directs FEMA to fund an independent study to assess the future savings from the various types of mitigation activities."

[2] Casualties were valued using dollar amounts the federal government considers to be an acceptable expenditure to prevent future statistical deaths and injuries.

The present value of these potential future losses was calculated and the difference between the losses with and without mitigation investment was treated as the benefit of the mitigation effort.[3] The total mitigation investment expenditure during the study period was $3.5 billion. The financial benefit to the population from investing in mitigation efforts during the study period was valued at approximately $14 billion (2004 constant dollars). Dividing the mitigation benefit by the mitigation expenditure yields a benefit-cost ratio (BCR) of 4 to 1.

While the timing of our study was such that we could not include any Disaster Mitigation Act grants, there is no reason to believe that these grants are not equally cost-effective.

In a second part of the study, we conducted an in-depth examination of eight selected communities. Our findings showed that the FEMA mitigation grant funds utilized by each of these communities was cost-effective and led to additional nonfederally funded mitigation activities. Communities having the greatest benefit were those with institutionalized hazard mitigation programs. We observed, time after time, that federal mitigation activities truly inspire local and private mitigation activities.

Finally, we found that a dollar spent on mitigation potentially saves the U.S. Treasury an average of $3.65 in avoided post-disaster relief costs and increased federal tax revenues.

This brings me to our conclusions:

1. Mitigation is cost-effective and warrants federal funding on an ongoing basis – both before disasters strike and during post-disaster recovery efforts. The nation will always be vulnerable to natural hazards; therefore,

[3] A range of discount rates was considered in the present value calculations.

it is only prudent to invest in mitigation. “An ounce of prevention is worth a pound of cure.” (Henry de Bracton, 1240)

2. We send out a word of caution that pre-disaster mitigation grant programs should NOT rely solely on benefit cost ratios as the selection criteria for investment. Not all benefits can be easily measured. For example, the benefit of moving structures out of a known flood plain can be quantified, but it is difficult to measure the benefit of this same land being reclaimed as naturalized wetlands or converted into a community recreation area. Even more difficult to measure is the benefit of reducing the stress people feel when constantly threatened by a disaster event. For example, think about families who now worry far less about tornados because their apartment complex has a community safe room.

3. Mitigation is most effective when it is carried out on a comprehensive, community-wide, long-term basis. Single projects help, but carrying out a coordinated set of mitigation activities over time is the best way to ensure that communities will be physically, socially, and economically resilient in coping with future hazard events.

Based on our conclusions, we recommend the following actions be considered:

1. Invest in natural hazard mitigation as a matter of policy. This should be done on an ongoing basis both before disasters occur and through federally funded disaster recovery and rebuilding activities and programs. We hope the subcommittee will keep this recommendation in mind as they debate reauthorization of the Pre-Disaster Mitigation Act.

2. Give those responsible for evaluating grant requests the ability to consider benefits to society in the broadest possible sense.

3. Support mitigation activities that will build the resilience of communities by helping to fund programs that increase knowledge on the benefits of mitigation, promote public and private sector investment, and motivate community members to engage in collaborative preparedness efforts.

CLOSING COMMENTS

In conclusion, I'd like to add that this MMC study has been widely cited and well received. For example, it has been cited in recent reports issued by both the Congressional Budget Office (*Potential Cost Savings from the Pre-disaster Mitigation Program*, Publication 2926, September 2007) and the Government Accountability Office (*Various Mitigation Efforts Exist, But Federal Efforts Do Not Provide a Comprehensive Strategic Framework,* GAO-07-403, http://www.gao.gov/cgi-bin/getrpt?GAO-07-403).