

Written Statement of

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**“Earthquake Preparedness—What the United States can Learn
from the 2010 Chilean and Haitian Earthquakes”**

Before the

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Subcommittee on State, Local, and
Private Sector Preparedness and Integration
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I. Introduction

Good morning Chairman Pryor, Ranking Member Ensign, and distinguished Members of the Subcommittee. Thank you for inviting me to appear before you today on behalf of the Department of Homeland Security (DHS) and the Federal Emergency Management Agency (FEMA). It is my privilege to discuss preparation for a whole community response to and recovery from a catastrophic earthquake in the United States. We appreciate your leadership and commitment to working together as a nation to build, sustain, and improve our capability to prepare for, protect against, respond to, recover from, and mitigate all hazards.

I am Bill Carwile, FEMA's Associate Administrator for Response and Recovery. As a retired U.S. Army Colonel and Defense Coordinating Officer who has also served as a Federal Coordinating Officer and in other senior emergency management positions, I am well aware of the immense response and recovery challenges that face survivors of a major incident like an earthquake. I recognize that such an event requires immediate, massive, and sustained support from not only the whole community and federal, state and local governments, but also from our many private sector and volunteer agency partners. The enormous scale and complexity of a catastrophic disaster environment requires us to focus on our number one priority - saving and sustaining lives - during the first 72 hours.

In my testimony today, I will discuss how we are using the New Madrid Seismic Zone (NMSZ) Catastrophic Planning Project as a model for how we work with our partners at every level of government, the private sector, voluntary organizations, non-governmental organizations, academia, and members of the critical infrastructure sectors. Collaborating with our partners, we are identifying high-risk areas, developing loss estimates, assessing response capabilities and any accompanying shortfalls, and augmenting our comprehensive planning strategies with our Regions and state partners to enhance capabilities. I will also discuss how FEMA is integrating preparedness efforts into response and recovery planning by working from the grassroots level up to carry out all aspects of planning for a catastrophic earthquake event of the scope and size of the NMSZ. I will discuss our involvement in the Chile and Haiti earthquakes, as well as our domestic efforts.

II. Catastrophic Earthquake Preparedness in the U.S.

A. Planning for a Catastrophic Event

Whole Community Approach to Catastrophic Preparedness

An incident of catastrophic proportions has the potential to imperil millions of people, devastate multiple communities, and have far-reaching economic and social effects. Time is of supreme importance, and the imperative to take immediate action begins in the communities where people live and work, where businesses and industries operate, and where local governments and government institutions reside. The national emergency management, public health, security, law enforcement, critical infrastructure, and medical communities – as well as government at the federal, state, local and tribal level as well as the private sector make up the “whole community”

– we all must be prepared to respond in ways that extend beyond the normal paradigms in which we each traditionally operate. The whole community approach to catastrophic preparedness addresses the fundamental pillars of the entire emergency management spectrum: prevention, protection, response, mitigation and recovery.

One of FEMA Administrator Fugate’s top priorities is a focus on developing and implementing a catastrophic preparedness, response and recovery strategy designed to quickly stabilize communities and support their timely recovery and return to municipal self-sufficiency.

We at FEMA are only one part of the emergency management team – we build on and supplement the strengths of local communities and citizens and integrating the public. The faith-based communities, fraternal and trade associations, and the broader marketplace are all important to this process and are included in the planning efforts as well. We recognize that only through close cooperation and collaboration with all partners can we begin to close gaps and meet key objectives.

To begin this change in national preparedness practices and doctrine, we are enlisting the active participation of the whole community to heighten awareness, plan, train, and organize as a practiced team. We have identified the highest priority tasks necessary to save and sustain lives and stabilize a catastrophic incident during the crucial first 72 hours, and have begun to work across all segments of society to identify how we can collectively achieve these outcomes. While the initial 72 hours after an incident are the most critical in saving and sustaining life, our approach spans not only response operations following a disaster, but also recovery, prevention, protection, and mitigation activities that occur before, during and after a catastrophic event. Changing outcomes will require public engagement and public action, which means fully embracing “two way exchanges” between our public safety and emergency services institutions and the communities they serve. The whole community approach to catastrophic preparedness is embodied in our mission: “Working together as a nation to prepare for, protect against, respond to, recover from, and mitigate all hazards.”

FEMA Reorganization – Focus on Catastrophic Planning

On Oct. 1, 2009, the Response, Recovery and Logistics Management Directorates were combined under the new Office of Response and Recovery to better align the organizational structure with FEMA’s mission and core competencies. This reorganization has enhanced FEMA’s ability to perform its mission of coordinating and providing an immediate federal disaster response and recovery capability with state partners in anticipation of, or immediately following, a major disaster. Under the new Office of Response and Recovery, we have a dedicated Planning Division focused on national, regional and chemical, biological, radiological, nuclear and explosive (CBRNE) catastrophic planning efforts. The Planning Division is responsible for developing and coordinating joint state/FEMA Regional catastrophic incident plans, leading the development and alignment of national-level interagency efforts, and coordinating with FEMA’s National Preparedness Directorate on Regional grant planning initiatives to align all catastrophic planning efforts.

Reenergizing the Emergency Support Functions Leaders Group (ESFLG)

FEMA has also expanded its coordination with other federal agencies to ensure the smooth and responsive coordination of federal support when it is needed. A key component of the National Response Framework (NRF) is the Catastrophic Incident Annex (NRF-CIA), which establishes the context and overarching strategy for implementing and coordinating an accelerated, proactive national response to a catastrophic incident. Recognizing that federal and/or national resources are required to augment state, tribal, and local response efforts, the NRF-CIA establishes protocols to pre-identify and rapidly deploy key essential resources (e.g., medical teams, search and rescue teams, transportable shelters, medical and equipment caches, etc.) that will be urgently needed – and even required – to save lives and contain incidents.

Under the NRF, federal departments and agencies are grouped by capabilities and types of expertise into 15 Emergency Support Functions (ESFs) to provide the planning, support, resources, program implementation, and emergency services needed during a disaster. The ESFs serve as the primary operational-level mechanisms supporting state efforts, coordinated by FEMA in providing disaster assistance in functional areas such as transportation, communications, public works and engineering, firefighting, mass care, housing, human services, public health and medical services, search and rescue, agriculture, and energy. The signatories to the NRF provide substantial disaster response assistance in their areas of expertise, as well as provide operational support when assigned missions to support the disaster response.

FEMA coordinates ESF emergency management resources and collaborates with the ESFs through the Emergency Support Function Leadership Group (ESFLG). FEMA has recently reenergized coordination within the interagency through the ESFLG, and is in the final stages of revising its charter to more clearly identify and share leadership responsibilities in coordinating interagency activities related to the ongoing management of the NRF. FEMA is also working to provide national interagency planning oversight and approval authority, and elevate issues not resolved at the ESFLG level to the National Security Staff Domestic Resiliency Group. The ESFLG members have begun to work more closely together by conducting monthly meetings and work groups as required. Routine coordination with the Regional Interagency Steering Committees in each FEMA Region has also been increased to gain a better regional and state perspective and to identify grass roots issues for resolution.

All Hazards Catastrophic Planning

FEMA is coordinating and facilitating the development of detailed, horizontally and vertically-integrated state and regional catastrophic response plans for earthquakes, hurricanes, improvised nuclear device attacks and other threats. Our planning assumptions for catastrophic disasters are based on worst-case scenarios and are designed to challenge preparedness at all levels, forcing innovative, non-traditional solutions as part of the response strategy to such events. To more effectively carry out operational planning, our Response Directorate has aligned existing federal response planning initiatives into a more holistic and coordinated planning approach that will incorporate activities such as catastrophic planning, evacuation and transportation planning and emergency communications planning.

National earthquake planning currently includes developing a Federal Interagency Operations Plan for Earthquakes. This plan is response and short-term recovery-oriented, and will address federal capabilities supporting response efforts to a catastrophic earthquake occurring anywhere in the United States and its territories. The FEMA Regions are also partnering directly with their states for joint state/federal planning efforts with the focus on specific fault zones within those Regions. The overarching Federal Interagency Operations Plan ties all of these efforts together in a capstone document to address the means by which the federal interagency will prepare for and respond to a catastrophic earthquake anywhere. This plan is closely linked to the development of the National Level Exercise (NLE) 2011.

Regional planning and the development of operational plans is underway for several different geographic areas with earthquake hazards: the Southern California Catastrophic Earthquake Plan; the Joint Region/State Catastrophic Plans for NMSZ for Regions IV, V, VI, and VII; the Wasatch Fault Earthquake Plan for Utah; the Caribbean Earthquake and Tsunami Plans for Puerto Rico and the U.S. Virgin Islands; and the Cascadia Subduction Zone Plan for the Pacific Northwest. All of these plans are being developed by our Regions – with support from FEMA Headquarters – and in partnership with federal, state, and local agencies through the five phases of the planning process, as outlined in our recently published Regional Planning Guide. Specifically:

- The San Francisco Bay Area Earthquake Readiness Response Concept of Operations Plan (approved 2008) is based on the threat posed by a recurrence of the Mw 7.7 to 7.9 earthquake that occurred in 1906 on the San Andreas Fault, under current population and land use conditions. The CONPLAN focuses on the Bay Area's ten counties. The Southern California Catastrophic Earthquake Response Plan (final plan due in January 2011) represents the second incident specific plan developed under the California Catastrophic Incident Base Plan. This project is a collaborative planning effort between local governments, private and non-profit groups, state and federal agencies, and will produce a unified scenario-based response operations plan for Southern California. The Project Team selected the US Geological Survey's "The Great Southern California Shake Out Scenario" as the earthquake scenario for the plan. The same scenario was also used during the Golden Guardian Exercise of 2008. The Response Plan focuses on eight counties in Southern California.
- NMSZ Regional/State plans: FEMA Regions IV, V, VI, VII, FEMA headquarters and the states of Alabama, Mississippi, Tennessee, Kentucky, Indiana, Illinois, Missouri, and Arkansas and the Central United States Earthquake Consortium (CUSEC) are working together to develop joint Region-State catastrophic earthquake plans addressing an earthquake occurring along the New Madrid Seismic Zone in the central United States. The plans are currently in the writing and plan approval phase and are nearing completion.
- Wasatch Fault Earthquake Plan: FEMA Region VIII, FEMA headquarters and the state of Utah are working together to develop a joint catastrophic earthquake plan, which is currently in the research and analysis phase. The focus of the plan addresses the impact of an earthquake along the Wasatch Fault. The information and analysis brief is scheduled

to be presented to FEMA headquarters in March 2012 and the final plan is scheduled to be delivered in June 2012.

- FEMA Region II, Puerto Rico, and the U.S. Virgin Island Catastrophic Earthquake and Tsunami Plan: this is a joint commonwealth and regional effort to address the impact of an earthquake striking on or near the islands. Region II is leading this project. The plan is currently in the plan preparation phase, to be developed over 18 months starting in October 2010. Implementation is scheduled for 2012.
- Cascadia Subduction Zone Plan: FEMA Regions IX, X, FEMA headquarters and the states of Washington, Oregon, California, Alaska, Idaho and British Columbia, Canada, will work together to develop joint catastrophic earthquake and tsunami plans addressing an earthquake and resulting tsunami occurring in the Cascadia Subduction Zone in the Pacific Northwest. The plan is currently in the preparation phase, with planning scheduled to begin in FY2011 and the estimated completion in 2012.

We are also coordinating catastrophic response planning efforts with the Department of Defense (DOD). During a meta-catastrophic event like an NMSZ earthquake, the FEMA-sponsored 28 Urban Search and Rescue Task Forces will need to be augmented by DOD personnel as a force multiplier. We are working with them to develop plans for training and exercises to ensure that DOD support is available when requested.

New Madrid Seismic Zone (NMSZ)

One of the best examples of our robust planning efforts is in national, regional, and state framework for a potential catastrophic earthquake impacting the eight states in the NMSZ, which integrates plans at all levels of government and provides the basis for a fundamental re-tooling of all-hazards catastrophic incident guidance. The experience from this planning effort is being applied to other key planning activities.

The NMSZ is a fault system in the Central U.S. that includes FEMA Regions IV, V, VI and VII and eight of the states that make up those regions: Alabama, Mississippi, Tennessee, Kentucky, Illinois, Indiana, Arkansas and Missouri. The geological characteristics in this zone increase the potential for an earthquake to cause greater damage, in amount and size, than other earthquake-prone areas in the U.S. Historically, the series of earthquakes in the NMSZ with the greatest magnitude took place between 1811-1812. During this time, the NMSZ was struck by four major quakes within three months, ranging from approximately 7.0 to 8.0 in magnitude on the Richter Scale. Due to the cyclical nature of these earthquakes and possible resulting catastrophic effects, FEMA is working on an NMSZ planning project with regional, state, local and tribal-level government and non-governmental entities.

If an earthquake were to occur, the impact to infrastructure and the ability to provide supplies and relief to survivors, would be immense. FEMA, along with CUSEC, the Mid-America Earthquake Center (MAEC), and the United States Geological Survey (USGS), has completed modeling the potential impacts of an earthquake in the NMSZ, which consists of three fault segments: the northeast segment, the reelfoot thrust or central segment, and the southwest segment.

Each segment is assumed to generate a deterministic magnitude 7.7 ($M_w7.7$) earthquake caused by a rupture over the entire length of the segment.

The results of the October 2009 MAEC Report Number 09-03, titled “Impact of New Madrid Seismic Zone Earthquakes on the Central USA,” indicate that Tennessee, Arkansas, and Missouri could be the most severely impacted. Illinois and Kentucky could also be impacted to a lesser extent. A rough estimate of the damage estimate would include the following: nearly 715,000 buildings could be damaged in the eight-state study region. Approximately 42,000 search and rescue personnel working in 1,500 teams may be required to respond to an earthquake. Damage to critical infrastructure (essential facilities, transportation and utility lifelines) could be substantial in the 140 impacted counties, including 3,500 damaged bridges and nearly 425,000 breaks and leaks to both local and interstate pipelines. Approximately 2.6 million households could be without power. Nearly 86,000 injuries and fatalities could result – and nearly 130 hospitals may be damaged, most located in the impacted counties. There could be extensive damage and substantial travel delays in both Memphis, Tennessee, and St. Louis, Missouri, hampering search and rescue activities as well as evacuation. Roughly 15 major bridges could be rendered unusable. Three days after the earthquake, 7.2 million people could be displaced, with 2 million seeking temporary shelter. Direct economic losses for the eight states could total nearly \$300 billion, while indirect losses at least twice that amount.

The NMSZ Catastrophic Planning Project is designed to create an integrated response across the impacted FEMA Regions and states and identify planning solutions which maximize existing capabilities. Specifically, this planning project is being accomplished through the development of joint Region/State Operational Plans, which address operational issues resulting from an NMSZ earthquake through Courses of Action supported by both FEMA and the states. The project emphasizes collaboration from all levels of government, non-government organizations, tribal and private sector stakeholders. The Courses of Action are intended to address the catastrophic nature of the incident and apply creative thinking to solutions that meet the scenario-driven resource requirements.

The catastrophic response plan development process uses a grass roots approach. In coordination with the planners, those who would have a role in an actual operational response participate in the planning process through integrated working groups, which involve local, State, Regional and Federal representatives, the private sector, non-profit organizations, non-governmental organizations, and other stakeholders. This will ensure that all available resources are considered. The joint Region/State Operational Plans focus on developing objectives to address major threats caused by the event in each state. Objective-based vertical and horizontal planning such as this ensures cooperation across the entire community and increases operational efficiency in meeting the requirements generated by a catastrophic event.

Additional partners in the NMSZ Catastrophic Planning Project include the U.S. Department of Health and Human Services, DOD, U.S. Army Corps of Engineers, American Red Cross, and more than 200 local governments. While the joint Region/State Operational Plans identify objectives, the overall goal is to establish a unified response approach that integrates emergency management at all levels of government, private sector, and critical infrastructure communities into a single, coordinated response.

FEMA and the General Services Administration (GSA), as co-leads for Logistics Management and Resource Source Support (ESF #7) are developing a New Madrid Earthquake-specific resource support concept plan. To test our capabilities, FEMA and DOD's U.S. Northern Command (USNORTHCOM) will co-host a Defense Support of Civil Authorities (DSCA) exercise in February 2011 to test the specified and implied logistics tasks for the first 72 hours following a catastrophic earthquake in the NMSZ incident.

The NMSZ Catastrophic Planning Project in its entirety will ultimately produce a number of highly beneficial products including all hazards concept of operations plans for Regions IV, V, VI and VII, and Joint Region/State NMSZ Operational Plans. The Joint Region/State NMSZ Operations Plan for Arkansas has been published in final draft and will be exercised in NLE 2011.

NLE 2011

The National Level Exercise 2011 (NLE 11) is a congressionally mandated series of building block exercise activities designed to educate and prepare participants for a catastrophic earthquake incident in the NMSZ. NLE 11 will test and evaluate the federal government's ability to implement catastrophic incident response and recovery plans in support of state, local, tribal, nongovernmental and private sector NMSZ earthquake response and recovery activities, as well as for individuals, families, and communities. The year 2011 is the bicentennial anniversary of the 1811 New Madrid earthquake, for which the NMSZ is named. NLE 2011 will be the first NLE to simulate a natural hazard and will provide the framework for the eight impacted states and four FEMA Regions to test and evaluate regional earthquake response and recovery plans. The NLE 11 capstone functional exercise (NLE 11 FE) will occur May 16 – 20, 2011, with targeted exercise play focusing on interaction between state emergency operations centers, FEMA Regional Response Coordination Centers, FEMA's National Response Coordination Center, and federal departments' and agencies' national and regional emergency operations centers. NLE 11 will also examine how these entities interact with and support the broader homeland security enterprise. We have set NLE 11 as a proof of concept for our whole community catastrophic planning construct.

As part of NLE 11, the states will test their response capabilities in the following exercise objectives: communications, critical resource logistics and distribution, mass care, medical surge, citizen evacuation and shelter-in-place, emergency public information and warning, emergency operations center management, and long term recovery. The Rehearsal of Concepts (ROC) Drill was conducted on September 28-30 in North Little Rock, Arkansas, and served as an excellent opportunity for all state and federal stakeholders to come together to rehearse and discuss Concept of Operations to the FEMA Region 6/Arkansas Earthquake Operations Plan. The ROC Drill used the NLE 2011 planning scenario to rehearse the plan.

Evacuee Support Planning

Evacuations are a state or local responsibility – the role of FEMA is to provide support and resources to ensure the safety and well-being of those evacuated. For that reason, FEMA has been developing guidance, gathering resources, and providing planning support to states for

potential evacuations. An example of the tools being developed is the Evacuee Support Planning Guide – FEMA P-760 – as well as reimbursement policies for states to host evacuees and tools such as the National Mass Evacuation Tracking System (NMETS).

As part of the planning process, and at the request of the states, FEMA has been:

- Assisting states in identifying potential host states for evacuees.
- Providing technical assistance for the implementation of the NMETS. This system is both manual and computer-based, and is designed to assist states in tracking the movement of transportation-assisted evacuees, their household pets, luggage and medical equipment during evacuations.
- Coordinating with state government-assisted transportation providers to provide manifests.
- Supporting evacuees throughout the evacuation process, both in reception areas as well as host states.
- Coordinating with household pet service providers to ensure that adequate sheltering and services are available during the evacuation.
- Activating and deploying the National Emergency Family Registry and Locator System and activating and deploying the National Emergency Child Locator Center to facilitate the reunification of displaced families and unaccompanied minors affected by an evacuation.
- Coordinating with partner agencies to plan for and provide mass care support to evacuees as they return home and enter permanent housing.
- Addressing the requirements of the whole community, including children, older individuals, people with disabilities, and individuals with limited English proficiency, as well as the groups and organizations that support these groups.
- Activating, at the request of States, the Disaster Case Management program through our Inter-Agency Agreement with the Department of Health and Human Services' Administration for Children and Families, to connect impacted community members to human services resources that can promote families' self-sufficiency and recovery from the disaster.

B. Mass Sheltering and Housing Assistance

Mass Sheltering

We are currently engaged in a wide variety of planning activities with state, local and tribal governments, as well as voluntary organizations and faith-and community-based partners to ensure national readiness for the mass care and emergency assistance missions following a catastrophic incident. FEMA has jointly developed numerous catastrophic planning products

with its many partners in order to enhance the nation's overall capability. Some of these products include the following:

- The Multi-agency Feeding Plan Template
- The Multi-agency Feeding Task Force Guidance
- Guidance on Planning for the Integration of Functional Needs Support Services in General Population Shelters.
- Inter-agency planning resources such as pre-scripted mission assignments that support:
 - mobilizing technical assistance teams to evaluate the special needs of communities post-disaster, focusing on people with disabilities, children, and older individuals;
 - deploying pharmaceuticals and durable medical equipment through the Emergency Prescription Assistance and Medical Equipment Replacement Program; and
 - deploying federal personnel from various agencies to support sheltering, feeding, emergency assistance, planning, and reporting activities.
- Blanket Purchase Agreements to ensure the immediate acquisition of food, commodities, equipment, and emergency supplies from national vendors.
- Established contracts to support the acquisition and distribution of durable medical equipment to be provided in congregated environments where individuals may require bariatric beds, wheel chairs and other specialized equipment that would allow them to sustain their independence in shelters.

FEMA also has a Transitional Sheltering Protocol that may be implemented when large numbers of evacuees are being housed in congregate shelters and will not be able to return to their homes for an extended period of time. In addition to the sheltering protocol, FEMA can reimburse the cost of evacuee return transportation when the federal government coordinates the out-of-state evacuation of state residents at the state's request.

III. Mitigation

National Earthquake Hazards Reduction Program (NEHRP)

Established by Congress in 1977, the National Earthquake Hazards Reduction Program (NEHRP) works to reduce risks to life and property resulting from earthquakes. Focusing on research, building codes and standards, technical guidance, and education, NEHRP is a

collaborative effort among FEMA, the National Institute of Standards and Technology, the National Science Foundation and the U.S. Geological Survey. The NEHRP agencies work together to reduce the nation's vulnerability to earthquakes, researching the causes and effects of earthquakes and producing technical guidance to develop earthquake resistant design and construction standards, and techniques to educate the public about earthquake hazards and mitigation. FEMA manages initiatives that reduce the risk of loss of life and damage to buildings and other structures as a result of earthquakes, including the following activities: (1) translating research into technical guidance publications and best practices on seismic safety, building design and construction, building codes and standards, and reducing economic losses; (2) assisting state and local governments in building capabilities for determining potential damage and reducing the effects of earthquakes before they occur; and (3) working with national codes and standards organizations to develop and improve seismic building standards.

One particular tool that was developed by the Federal Insurance and Mitigation Administration, supported by the FEMA NEHRP program, is the Hazards U.S. Multi-Hazard Earthquake Model also known as HAZUS. This tool is widely used by emergency managers and planners in high-seismic areas throughout the U.S. to assess their risk from earthquakes and to determine the potential losses that would result from earthquakes of various intensities to which each region is susceptible. The HAZUS-MH Earthquake model was used extensively to develop the scenarios for both the NMSZ Catastrophic Planning efforts as well as being used as part of the upcoming NLE 2011 exercise in May 2011.

Regional Earthquake Consortia (EQ Consortia)

One of the methods that FEMA uses to fulfill its NEHRP obligations is the utilization of earthquake consortia. Each year, FEMA enters into cooperative agreements for the purposes of developing, disseminating and promoting knowledge, tools, and practices for earthquake risk reduction. FEMA's four earthquake consortia partners in this endeavor are: the Central U.S. Earthquake Consortium (CUSEC); Northeast States Emergency Consortium; Western States Seismic Policy Council; and Cascadia Region Earthquake Workgroup. Our partners work to improve the understanding of earthquake processes and impacts, developing cost-effective measures to reduce earthquake impacts on individuals, buildings and infrastructure, as well as improving the earthquake resilience of communities nationwide.

The purpose of these agreements is to provide guidance and assistance to states and local communities by: developing seismic policies and sharing information to promote programs to reduce earthquake-related losses; providing forums for information exchange to develop, adopt, and promote policy recommendations; conducting outreach to local governments and the business community; maintaining and strengthening partnerships with other earthquake consortia; helping deliver professional training to local communities; educating citizens about the risks they face; developing public awareness and education tools and resources; and encouraging public and private partnerships that benefit local communities.

For example, the FY10 work plan submitted by CUSEC proposes raising the level of public awareness and education regarding the central U.S. earthquake hazard. In addition, CUSEC plans to promote the adoption of building codes, mitigation programs, tools and techniques designed to

reduce the vulnerability of the central U.S earthquake hazard. Further, CUSEC intends to foster multi-state coordination of mitigation programs while promoting the application of research and lessons learned to improve the level of mitigation and preparedness for earthquakes.

IV. Lessons Learned from 2010 Chilean and Haitian Earthquakes

Chile

The U.S. Agency for International Development (USAID) is the lead for international disaster response, and was requested by the Government of Chile to provide disaster assistance. Although FEMA's involvement was not requested in this operational response, FEMA did send a representative from the Mitigation Directorate to Chile as part of a scientific "reconnaissance team" deployed by the Earthquake Engineering Research Institute (EERI). EERI runs the Learning from Earthquakes program for the U.S. National Science Foundation. The Learning from Earthquakes program sends out multi-disciplinary reconnaissance teams to catastrophic earthquakes around the world to bring back major observations and scientific lessons learned for U.S. and global earthquake research and practice.

The large, multi-disciplinary EERI team included representatives from several federal agencies due to the significance of the event. They formed into small teams to conduct daily reconnaissance. This was a unique opportunity to document the impact of a large earthquake on buildings and infrastructure similar to our own in terms of the building code and how it is enforced. There is much we can learn from this event, and this information will be invaluable in directing FEMA's future earthquake mitigation guidance. A preliminary reconnaissance report was issued in July in the EERI Newsletter, with a complete report due in early 2012.

Haiti

On January 12, 2010, at 4:53 p.m. EST, a 7.0 magnitude earthquake occurred in the Atlantic Ocean approximately 15 miles southwest of Port-au-Prince, Haiti. The nation suffered massive damage in Port-au-Prince and in numerous other towns and cities. According to the Government of Haiti, the earthquake collapsed 100,000 structures and damaged another 200,000 across Haiti, resulting in over 220,000 deaths, 300,000 injuries, and 1.1 million displaced people.

The U.S. government, along with other nations, international organizations, and nongovernmental organizations, rushed to provide critical life-saving and other assistance to Haiti. President Barack Obama affirmed USAID as the lead for disaster response and directed the USAID to lead the coordination of the U.S. government assistance to Haiti. USAID worked with other federal agencies to organize and deliver assistance to the victims of the earthquake. Under the terms of an interagency agreement that USAID negotiated with FEMA, and at USAID's request, DHS deployed over 1,000 personnel from various components to support U.S. assistance in Haiti over the course of the relief response (including replacements).

On January 14, 2010, FEMA activated the NRCC to Level II operations, which included ESFs 6 (Mass Care, Emergency Assistance, Housing, and Human Services) and 9 (Search and Rescue) as well as logistics, operations, planning, and external affairs sections. FEMA Administrator

Fugate worked closely with DHS Secretary Janet Napolitano and USAID Administrator Rajiv Shah to ensure that FEMA provided prompt and effective support to response operations. In Haiti, the disaster response was coordinated under USAID's Disaster Assistance Response Team (DART). The interagency agreement addressed reimbursement and other funding issues. FEMA deployed liaisons to other agencies' operations centers to help coordinate the multi-agency relief effort. FEMA activated eight National Urban Search and Rescue (US&R) task forces to prepare for deployment to Haiti to join the two task forces deployed by USAID. FEMA activated and deployed the US&R Red IST to DOD's Homestead Air Reserve Base (HARB) in Homestead, Florida. Four additional task forces were deployed, bringing a total of six American US&R task forces consisting of 511 personnel to Haiti. FEMA deployed Assistant Administrator Damon Penn to lead a DHS Integrated Response Team, along with personnel from the Incident Management Assistance Team (IMAT) West and the USCG Deployable Operations Group to support command and control. A six-person FEMA US&R Red IST Advance Element deployed to Haiti from HARB to provide support and assist with the demobilization of the four FEMA US&R task forces. FEMA also deployed Mobile Emergency Response Support (MERS) personnel and equipment to provide tactical communications for the United States Embassy, USAID, and US&R task forces in Haiti.

On January 16, FEMA's Logistics Management Directorate established an Incident Support Base (ISB) at HARB. The ISB served as the main staging area for emergency supplies, equipment, and personnel en route to Port-au-Prince. FEMA partnered with DOD's Transportation Command to transport 220 containers of supplies to Haiti and the Dominican Republic to support disaster relief efforts. By February 10, FEMA, in coordination with DOD, delivered more than 1.42 million meals; 24,365 blankets; 767,164 liters of water; 7,645 cots; and 94,709 comfort kits to Haiti. Overall, through its support to USAID, FEMA delivered critical life-saving and life-sustaining resources to help the victims of the Haiti earthquake.

While FEMA's role in the Haiti earthquake was limited, we did learn several lessons that bear mention, including the following:

- Lives can sometimes be saved in rescues made after the initial 72 hours. However this is case-specific and should be determined by experts on the ground who are assessing the situation.
- In certain circumstances, dogs proved more effective than mechanical detection devices in the identification of buildings with survivors.
- We are reexamining the type and size of aircraft used to deploy teams in the U.S. as part of the urban search and rescue bottom-up review. For example, it might be more efficient to deploy teams in greater numbers of smaller aircraft, such as C-130s, than deploying fewer, larger aircraft such as C-17s.
- The Haiti earthquake response was greatly aided by the support of international teams. We continually work to develop and/or examine protocols for bringing teams in from other countries to augment response efforts in the United States, particularly into locations that may be logistically difficult to reach.

V. The Way Ahead

Private Sector Collaboration

The private sector is a key partner in our catastrophic planning efforts. Various companies and organizations have worked with FEMA at the state and Region level to collaborate and help develop catastrophic plans. Key corporate and academic experts have provided essential resources and input, and have established relationships to facilitate response and recovery.

At the national level we are working with the private sector on a host of issues that will benefit our catastrophic earthquake planning. We have invited associations to nominate corporate candidates to serve three-month rotations within our National Response Coordination Center (NRCC). We have included representatives in our no-notice “thunderbolt” response and recovery exercises, and we have shared ideas and lessons learned on a wide array of technology initiatives, including mobile applications, shared data feeds, and alert warnings through smart phones and other devices. Finally, we have dedicated one of our primary working groups – chaired by a member of the private sector – in support of National Level Exercise 2001 (NLE 11) to engaging the private sector. This working group has already begun planning at the state, region and national levels alongside DHS and FEMA planners. As we move forward with all aspects of planning for a catastrophic earthquake event, the private sector is collaborating with us every step of the way, and our progress is better for it.

VI. Conclusion

As I noted at the outset, Mr. Chairman, FEMA is not the entire team. We are only part of the team – one that includes all Americans. Effectively and rapidly responding to and recovering from the impact of a catastrophic earthquake is one of the greatest challenges faced by all levels of government. At FEMA, we recognize that our success depends on the collective and collaborative efforts of the whole community, and we will continue to cultivate this approach to provide stronger and more agile disaster response and recovery capabilities.

I look forward to working with you, distinguished Members of this Subcommittee, and other Members of Congress to communicate this message to the American people as we collaboratively work to become a more resilient nation.

I am prepared to answer any questions the Subcommittee may have.