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Dr. Marcia McNutt, Director
U.S. Geological Survey
12201 Sunrise Valley Drive, Mail Stop 100
Reston, VA 20192

Dear Director McNutt:

On behalf of the members of the Scientific Earthquake Studies Advisory Committee (SESAC), I present the committee's combined annual report for 2008-2009 on the U.S. Geological Survey (USGS) Earthquake Hazards Program for transmission to Congress, the Department of the Interior, and USGS's federal partner agencies in the National Earthquake Hazards Reduction Program (NEHRP).

The committee met three times during the period of this report, hearing presentations from USGS staff, partners and stakeholders. As stated in our report, the USGS Earthquake Hazards Program faces significant challenges and opportunities. Meeting these challenges, and capitalizing on these opportunities, should be the highest priorities for the program. The SESAC has four primary recommendations:

1. As stated in past Committee reports, the SESAC strongly recommends to the Director of USGS that full funding of the ANSS at the level authorized in the current NEHRP legislation be appropriated. The USGS must make a commitment to work through the Department of the Interior and the Office of Management and Budget to ensure that this objective is met. In addition, SESAC continues to recommend that the USGS support research and development on Earthquake Early Warning (EEW) systems. Implementation of a state-of-the-art national earthquake monitoring capacity (ANSS) will benefit all aspects of earthquake information collection and dissemination and is essential for deployment of EEW systems.

2. The Great Southern California ShakeOut preparedness exercise and subsequent expansion as a statewide annual exercise represent a key achievement of the USGS Multi-Hazards Demonstration Project, which generated a scientifically credible scenario that made the consequences of a major Southern San Andreas Fault earthquake real enough to drive action. The scenario approach and exercise should serve as a model for future earthquake scenarios in other at-risk US cities. SESAC is pleased to see USGS expand its multi-hazard initiative to the Pacific Northwest and encourages further expansion to include other high-risk areas of the Nation.

3. It is imperative for the USGS to develop a comprehensive monitoring, analysis and research program to study the significance of ETS events and understand their significance with respect to changes of earthquake probability and the constraints on probable characteristics of future megathrust earthquakes in Cascadia.

4. The ability of the USGS to meet a number of critical mission components are seriously threatened by the steady decrease in the number of research scientists actively engaged in the Earthquake Hazards Program. Hence, through hiring and direct support, it is essential for the USGS to be able to fulfill its mission for providing critical earth science research within NEHRP.

Although the attached report covers the committee's activities in 2008-2009, developments in the new year underscore the tremendous need for these investments. The extraordinary string of damaging and, in the case of Haiti, catastrophic earthquakes is a grim reminder of the work that remains to reduce losses from future events in the US and worldwide.

As you prepare your budget for fiscal year 2012, the committee hopes that you will focus on building this tremendously important program. The USGS has a great opportunity to seize.

Best regards,

Mark D. Zoback
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cc: Scientific Earthquake Studies Advisory Committee members
     Linda Gundersen, Acting Associate Director for Geology
     Brenda Pierce, Chief Scientist for Geology
     David Applegate, USGS Earthquake Hazards Program