

Landslide Hazards Program 5-Year Plan (2006-2010) - Appendix A

MEMORANDUM OF AGREEMENT ESTABLISHING A JOINT PROJECT BETWEEN

THE NATIONAL WEATHER SERVICE (NWS) AND THE OFFICE OF OCEANIC and
ATMOSPHERIC RESEARCH (OAR), NATIONAL OCEANIC AND ATMOSPHERIC
ADMINISTRATION (NOAA), U.S. DEPARTMENT OF COMMERCE
AND THE
U.S. GEOLOGICAL SURVEY (USGS), U.S. DEPARTMENT OF THE INTERIOR
Agreement No.052-49

I. **PARTIES**: This document constitutes an agreement between **NOAA's NWS** and **OAR** offices in the **Department of Commerce**, and the **USGS** in the **Department of the Interior**. This agreement is entered into pursuant to the comprehensive "Memorandum of Understanding between the U.S. Geological Survey of the Department of the Interior and National Oceanic and Atmospheric Administration of the U.S. Department of Commerce", dated February 4,2005.

II. **AUTHORITIES**: **NOAA** has authority to participate in the **Debris Flow Warning System Plan** with the **USGS** under:

(1) 15 U.S.C. Section 1525, the Department of Commerce's Joint Project Authority, states the Department may enter into joint projects with nonprofit, research, or public organizations on matters of mutual interest; any costs are to be equitably apportioned, and

(2) NOAA's programmatic authority for entering into the agreement includes 15 U.S.C. § 313, authorizing NOAA to collect and disseminate weather and climate observations; and, 33 U.S.C. §§ 883a-883d, authorizing NOAA to conduct hydrographic, topographic, and geodetic-control surveys; to compile and distribute nautical charts; and, to conduct investigations and research in geophysical sciences.

The authorities of the USGS to enter into this MOA include:

(1) Public Law 99-591--provides in Fiscal Year 1997 and thereafter that the USGS has permanent authority to prosecute projects in cooperation with other agencies, Federal, State, and private (43 U.S.C. 36c)

(2) The USGS Organic Act of March 3, 1879, as amended (43 U.S.C. 31 et seq.)

III. **PURPOSE**: Pursuant to this agreement, the parties will develop an implementation plan for a joint NOAA and USGS system for watches and warnings, covering areas deemed to be at risk of debris flows as a result of current or forecasted precipitation.

Debris flows, also referred to as mudslides, mudflows, or debris avalanches, are fast moving landslides that generally occur during intense rainfall on water-saturated soil. Debris flows

can travel at speeds greater than 35 miles an hour, and be powerful enough to carry away boulders, trees, and cars. An initial prototype will be developed and tested in Southern California using models and technologies currently available to NWS/OAR and the USGS. The prototype effort will include watches and warnings issued and disseminated to the public by the NWS, based on the application of geological science principles developed by the USGS.

This project is necessary and essential to further the mission of the Department of Commerce and the Department of the Interior. The mission of NOAA, and thus the Department of Commerce's, is to provide weather, hydrologic, and climate forecasts and warnings for the United States and territories for the protection of life and property, and the enhancement of the national economy. Further, OAR's research is the driving force behind environmental products and services that protect life and property and promote sustainable economic growth. The mission of the USGS, and thus the Department of the Interior's, is to provide the Nation with reliable, impartial information to describe and understand the Earth. This information is used to minimize loss of life and property from natural disasters; manage water, biological, energy, and mineral resources; enhance and protect the quality of life; and contribute to wise economic and physical development.

The NWS capabilities in atmospheric and land surface observations and its existing infrastructure for dissemination, and OAR's precipitation estimation and forecasting research capabilities, complement the USGS's expertise in hydrologic and geologic sciences. This project cannot be successfully completed without the participation of all the parties. This agreement is designed to make it easier for the USGS and NOAA scientists and managers to work together in addressing the Nation's need for accurate and timely information about when and where a debris flow will occur. This work is consistent with NOAA's Weather & Water strategic goal

IV. MUTUAL INTEREST OF THE PARTIES: This Debris Flow Warning System Plan is of mutual interest to the parties because each party provides complementary expertise in the areas of precipitation estimation, hydrologic and geologic sciences, and public dissemination of information. Collaborative research between the parties will result in greater scientific advances and forecast abilities for all parties.

V. RESPONSIBILITIES OF THE PARTIES: NOAA and USGS have created a team to perform the following FY 2005 activities and provide the following resources in support of the Debris Flow Warning System Plan:

- a. Document California State Emergency requirements.
- b. Review science in the published literature and internal to each of the agencies relevant to the problem of determining risks associated with the onset of debris flows.
- c. Identify the specific forecast lead times and supporting precipitation and soil moisture data for debris flow watches and warnings.

- d. Determine data formats, frequency of updating and technology to be used in data communications.
- e. Identify logistics for incorporating new technologies.
- f. Determine the organizational elements, processes and controls required to operate and maintain the system on a 24/7 basis. The system will only be run on a 24/7 basis when necessary.
- g. Develop an implementation plan to put a prototype in place in Southern California by October 1, 2005. Develop a deployment proposal for other locations and possibly for other types of landslides, also by October 1, 2005.
- h. Propose a validation methodology to allow California State Emergency Managers to give feedback to the USGS and NOAA, resulting in changes to the models.
- i. Identify additional collaborators that can bring additional expertise to this area, such as the National Aeronautics and Space Administration, Federal Emergency Management Agency, and local or state agencies.
- j. Conduct the research and development activities needed to test and evaluate the prototype system and to support future enhancements.

VI. EQUITABLE APPORTIONMENT OF COSTS: There will be no exchange of funds between the agencies under this Agreement. Fiscal year (FY) 2005 activities will commence upon execution of this agreement. Estimated costs of FY 2005 activities are attached. Additional FY activities will be authorized by separate amendments to this agreement. The amendments will include specific FY activities, estimated costs, and will be signed by both parties.

VII. CONTACTS: The contacts of each party to this agreement are:

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VIII. PERIOD OF AGREEMENT AND MODIFICATION/TERMINATION: This agreement will become effective when signed by all parties. The agreement will terminate on October 1, 2009, but may be amended at any time by mutual consent of the parties. The parties will review this agreement at least once every three years to determine whether it should be revised, renewed, or canceled. Any party may terminate this agreement by providing ~ days written notice to the other party. In the event this agreement is terminated, each party shall be solely responsible for the payment of any expenses it has incurred. This agreement is subject to the availability of funds.

IX. OTHER PROVISIONS: Should disagreement arise on the interpretation of the provisions of this agreement, or amendments and/or revisions thereto, that cannot be resolved at the operating level, the area(s) of disagreement shall be stated in writing by each party and presented to the other party for consideration. If agreement on interpretation is not reached within thirty days, the parties shall forward the written presentation of the disagreement to respective higher officials for appropriate resolution. Under the Inspector General Act of 1978, as amended, 5 USC App. 3, a review of this agreement may be conducted at any time. The Inspector Generals of the Department of Commerce and the Department of Interior, or any of their duly authorized representatives, shall have access to any pertinent books, documents, papers and records of the parties to this agreement, whether written, printed, recorded, produced, or reproduced by any mechanical, magnetic or other process or medium, in order to make audits, inspections, excerpts, transcripts, or other examinations as authorized by law.

Any materials or statements offered to inform the public of the nature of this joint project, or to promote the existence of the project and the parties, shall only be released to the public upon the mutual agreement of the parties.

Nothing herein is intended to conflict with current Department of Commerce or Department of the Interior directives. If the terms of this agreement are inconsistent with existing directives of either of the agencies entering into this agreement, then those portions of this agreement which are determined to be inconsistent shall be invalid; but the remaining terms and conditions not affected by the inconsistency shall remain in full force and effect. At the first opportunity for review of the agreement, all necessary changes will be accomplished by either an amendment to this agreement or by entering into a new agreement, whichever is deemed expedient to the interest of both parties.

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