

Tsunami Warning and Education Act Becomes Law

Legislation introduced in response to the tsunami that struck southern Asia in December 2004 was recently passed by Congress and signed into law. Known as the Tsunami Warning and Education Act (H.R. 1674), the law authorizes the U.S. National Oceanic and Atmospheric Administration (NOAA) and related agencies to conduct an expanded program of tsunami detection and warning, and it authorizes additional funding for these purposes. However, some of the law's supporters express hope that the legislation is the first step toward developing a more integrated system for observing oceans and their hazards.

Passed by the House on December 6 and the Senate on December 8, H.R. 1674 was signed by President Bush on December 20, whereupon it became Public Law 109-424. Introduced in April 2005, H.R. 1674 formally authorizes NOAA's present system for detecting and forecasting tsunamis, codifies an existing federal-state partnership that seeks to improve community awareness and preparedness regarding tsunamis, and establishes a tsunami research program at NOAA (see "Senate Passes Tsunami Bill, House Version Awaits Action," *Civil Engineering*, August 2005, page 10).

Although H.R. 1674 was passed with relatively few major modifications, some of the bill's more substantive changes involve requirements that NOAA must follow in apprising Congress of the status of tsunami detection equipment that has been deployed. For example, the legislation stipulates that NOAA's administrator annually submit a "certification" to Congress specifying the equipment that has been deployed and the equipment that is operational as of the end of the preceding calendar year, according to the legislation. For any piece of equipment designated as nonoperational, NOAA must describe its "mitigation strategy" for repairing or replacing the equipment in question or otherwise ensuring "adequate tsunami detection coverage," the law states.

NOAA must submit this information to Congress each year as part of the documentation used to support the president's budget request. The certification to Congress must also list any detection equipment not yet deployed for which NOAA entered into an agreement during the previous year to develop or construct. NOAA is required to provide a schedule for deploying such equipment.

The requirement that NOAA's administrator annually certify the extent to which the administration's tsunami detection equipment is functioning properly was added to address congressional concerns that equipment was being deployed but not adequately maintained, says David Goldston, who served as chief of staff for the House Committee on Science and Technology during the 109th Congress. (The committee's chairman, Representative Sherwood Boehlert [R-New York], sponsored the legislation.) "The issue there was there had been times when buoys had been [malfunctioning] and

nothing had been done for a while," Goldston says. Therefore, he says, lawmakers "were very interested in making sure that Congress had immediate information" on the condition and status of detection equipment to facilitate better oversight.

Along these lines, the original version of H.R. 1674 had specified that NOAA was to notify Congress within three months of "impaired regional forecasting capabilities" resulting from equipment or system failures, as well as "significant contractor failures or delays in completing work" related to the tsunami forecasting and warning system. However, the version of the legislation signed into law changed the requirement to say that NOAA must inform Congress within 30 days of such an event.

In an apparent attempt to prevent such failures from occurring in the first place, lawmakers also modified H.R. 1674 to require that NOAA "establish a process for monitoring and certifying contractor performance in carrying out the requirements of any contract to construct or deploy tsunami detection equipment, including procedures and penalties to be imposed in cases of significant contractor failure or negligence."

In terms of appropriations, the law authorizes a total of \$135 million for five years beginning in fiscal year 2008, which starts October 1. Of this amount, at least 35 percent must be directed to research on tsunamis or to the National Tsunami Hazard Mitigation Program, a partnership of federal and state agencies that works to help communities prepare for and mitigate the effects of tsunamis. Congress added the percentages to ensure that funding authorized by the law would not be devoted entirely to detection equipment, Goldston says. "We wanted to make sure that it was a comprehensive program and that no particular part of it got short shrift," he says.

Some supporters of the law agree with this decision, noting that education and public awareness must figure in any efforts to reduce potential hazards posed by tsunamis. "It's not just enough that a siren goes off or an alarm rings" to warn of an imminent tsunami, says William Hooke, the director of the policy program for the American Meteorological Society, of Boston. "People have to know what to do when they get that cue," Hooke says.

The law directs NOAA and its partners to promote tsunami warning and mitigation measures, including "programs to discourage development in high-risk areas." Such an approach is justified, Hooke contends, because in some cases little can be done to protect life and property in the event of a tsunami. "If you have built too heavily along the coast and you haven't protected the people who are living and working there," Hooke says, "when the tsunami occurs you've already kind of lost the battle."

Within one year of the law's enactment, NOAA must report to Congress on how the tsunami detection system "will be integrated with" other systems for observing such physical phenomena as earthquakes and tides. In particular, the report to

Congress is to discuss the integration of the tsunami detection system with the U.S. Geologic Survey's Advanced National Seismic System and "other United States and global ocean and coastal observation systems," according to the legislation.

Integrating the tsunami detection system with existing systems or systems under development for observing ocean behavior will be a significant step in understanding how tsunamis are generated and how oceans respond to them, says Nina Young, the deputy director of external affairs for the Consortium for Oceanographic Research and Education (CORE). With headquarters in Washington, D.C., CORE represents institutions engaged in ocean research and education.

Ultimately, Young says, Congress should build on its efforts with the tsunami law and enact legislation formally establishing an integrated ocean observing system designed to improve scientific knowledge of oceans and the hazards they pose. Although various elements of such a program are currently being implemented in a number of federal agencies, these disparate components should be integrated into a more functional system, Young says. "That's the next critical step that we need to take," she says.

UPDATE

In one of its final acts before adjourning, the 109th Congress gave a boost to dam safety advocates by passing legislation to

reauthorize the National Dam Safety Program. Known as the Dam Safety Act of 2006 (S. 2735), the legislation was signed into law (P.L. 109-460) by President Bush on December 22.

The legislation reauthorizes the National Dam Safety Program through fiscal year (FY) 2011, increasing authorized funding levels for the program and certain other federal efforts related to dam safety. Whereas the program was authorized to receive \$6 million in FY 2006, this figure is slated to increase to \$9.2 million in FY 2011. Authorized funding levels also were increased for research and training related to dam safety. Finally, the law also authorizes additional funding for the National Inventory of Dams (NID), a database maintained by the U.S. Army Corps of Engineers.

S. 2735 includes language that directs the Corps to include more information regarding dams listed in the NID. In particular, the Corps is told to include "any available information assessing each dam based on inspections completed by either" a federal or a state dam safety agency, according to the legislation. Intended as a means of providing more details regarding the physical condition of dams in the NID, the language is similar to that included in the version of a related bill (H.R. 4981) passed by the House in late September (see "Fate of Dam Safety Bills to Be Decided in November," *Civil Engineering*, November 2006, page 10).

—Jay Landers