

Summary Report of the Tsunami Hazard Mitigation Steering Group Meeting

May 10-11, 2000
Seattle, Washington

Attendees

Steering Group

Eddie Bernard - NOAA
Richard Przywarty - NOAA
Richard Hagemeyer - NOAA
Craig Weaver - USGS
Carl Cook - FEMA
Michael Hornick - FEMA Region IX
Roger Hansen - State of Alaska
Scott Simmons - State of Alaska

Richard Eisner - State of California
Lori Dengler - State of California
Brian Yanagi - State of Hawaii
Laura Kong - State of Hawaii
George Crawford - State of Washington
Timothy Walsh - State of Washington
Mark Darienzo - State of Oregon
George Priest - State of Oregon

Guests

Steve Hammond - NOAA
Robert Kamphaus - NOAA
Frank Gonzalez - NOAA
Chris Fox - NOAA
Hal Mofjeld - NOAA
Vasily Titov - NOAA

Marie Eble - NOAA
Jean Newman - NOAA
Jana Goldman - NOAA/OAR Public Affairs

Charles McCreery - NOAA/PTWC
Tom Sokolowski - NOAA/WC/ATWC
David Oppenheimer - USGS
Ted Buehner - WCM Seattle
Lt Alan Yelvington - USCG
Kerre Martineau - Alaska Dept.
of Military & Veterans Affairs
Costas Synolakis - USC

Overview

Dr. Bernard presented the introductory remarks and welcomed everyone to the Pacific Marine Environmental Laboratory. All attendees introduced themselves. The current budget status for the National Tsunami Hazard Mitigation Program was discussed. Available funds from the FY 2000 budget are \$2,028,000. Inundation Mapping: TIME will receive \$176,340 and the states of Alaska, California, and Hawaii will divide equally \$176,340. Warning Guidance Upgrades: Seismic upgrades will receive \$705,360 to install 26 sites and DART will receive \$617,190 to maintain 2 buoys and install 1 new buoy. Mitigation efforts will receive \$352,680 overall with the states equally dividing \$291,000. New developments will be discussed concerning landslide enhanced tsunami maps for southern California, the East coast tsunami concern, and the next five years or Phase II of the Program.

The Program is not included as a line item in the NOAA FY 2001 Budget although supported by Department of Commerce and the National Oceanic and Atmospheric Administration (NOAA); the Program was cut from the Presidential budget by the Office of Management and Budget.

ACTION ITEM: States were requested to send letters of support for the program for the FY 2001 budget to Congressional members in the next two weeks. **ACTION:** All states.

Review of action items from the previous meeting:

Best Cell Size to use in Inundation Maps (requested by all)

ACTION: TIME Center to provide some numerical modeling guidance to Steering Group members.

CLOSED: Covered under Inundation Mapping section below

States requested Adobe Acrobat (.pdf) version of TsuInfo Alert Newsletters be available on the web

ACTION: Connie Manson

CLOSED All TsuInfo Alert Newsletters for 1999 and 2000 are in .pdf format and are linked to our tsunami-hazard web page

Steering Group request for an article on the multi-state partnership was needed for the TsuInfo Alert Newsletter

ACTION: Bernard, Eisner, Dengler

CLOSED: Article appeared in January-February 2000 edition of the newsletter

Mitigation Subcommittee agreed to revisit the issue of how best to get tsunami warning information to end users

ACTION: Mitigation Subcommittee

OPEN: See Mitigation Action Item on MOA

Draft of Tsunami Warning Systems: Guidance for State and Local Officials

A draft of the warning system guidance document was distributed to the Steering Group members for review in April. **ACTION:** Mark Darienzo/Local Warning Subcommittee

OPEN

Public Affairs

Requested to put generic media kit on the web page

CLOSED

Divide list of tsunami videos by public/non-public domains on the web page.

CLOSED

Project Impact Presentation

Carl Cook, FEMA, made a presentation to the group on Project Impact. With Project Impact-Building Disaster Resistant Communities, FEMA is changing the way America deals with disasters. Project Impact helps communities protect themselves from the devastating effects of natural disasters by taking actions that dramatically reduce disruption and loss. Project Impact is basing its work and planning on three simple principles: preventive actions must be decided at the local level; private sector participation is vital; and long-term efforts and investments in prevention measures are essential. FEMA would like to have an operating plan for use in the aftermath of a tsunami event. The NSW helps to get on-site assessment after disasters.

ACTION ITEM: There was considerable discussion on how to confirm the availability of resources after a disastrous event. The group formed an ad hoc committee to formalize the next steps. This committee will consist of: Richard Przywarty, Frank Gonzalez, Eddie Bernard, George Priest, and Costas Synolakis.

ACTION: Richard Przywarty, Frank Gonzalez, Eddie Bernard, George Priest, and Costas Synolakis

Underwater Landslides Presentation

Professor Costas Synolakis gave a presentation on underwater landslides and their effects, illustrated by animations of Skagway, Alaska; Ismir Turkey; and the San Clemente fault generated tsunami (Titov).

NOAA Weather Radio Presentation

Ted Buehner, Warning Coordination Meteorologist, NWS, Seattle, gave a presentation on Washington NOAA Weather Radio. NOAA Weather Radio is a major way to reach the target audience in a timely manner with a tsunami watch/warning message. The most recent NOAA Weather Radio transmitter has just become operational in test mode on Mt. Octopus. This transmitter bridges the gaps in coverage caused by the terrain on the Washington coast. This station also provides Emergency Alert System reception to Forks, Washington, broadcasters. As soon as all licensing and leasing agreements are complete, the station will be fully operational.

Funding for this project was provided by the state tsunami warning group.

[Develop NOAA/State Coordination and Technical Support](#)

The full windows version of the Historical Tsunami Data Base for the U.S. is almost complete. Work has begun on a beta version of the HTDB for the Caribbean.

[Improve Seismic Networks](#)

All new stations will be installed by 2001. Delays have been caused by weather and equipment problems (slow to arrive or defective) as well as an underestimation of the manpower needed to install the new stations. The dedicated 128Kbps circuit from HVO to PTWC is now operational after many months of effort. This circuit allows PTWC to have access to continuous seismic waveforms for all CREST stations installed at HVO as well as most analog channels. The new Quake Data Distribution System (QDDS) was discussed. This new system is an on-line real-time reporting system. QDDS is designed as a hub and leaf system with two hubs, one in Menlo Park, California, and the other in Reston, Virginia. Much discussion ensued on how to word the messages that would go out with tsunami warnings and on how to get the quake information down to the city level. Discussion also focused on determining the best method for dissemination of quake information and on what information (on quakes below magnitude 6.5) states need.

ACTION ITEM: Develop state requirements for earthquakes below magnitude 6.5.

ACTION: Lori Dengler.

[Deploy Tsunami Detection Buoys](#)

The DART test mooring (D123) was recovered off the coast of Monterey, California in February 2000. DART mooring D130 was deployed on March 21, 2000. To date, D130's data return rate has been 100%. Moorings deployed in October 1999 at D157 and D165 will be recovered and new moorings deployed in August 2000. One new mooring is planned for deployment at 175 degrees west longitude.

[Produce Inundation Maps](#)

The inundation mapping progress report was given by Lt Kamphaus. Frank Gonzalez, co-director TIME, presented an overview of PMEL tsunami programs (National Tsunami Hazard Mitigation Program: TIME and DART moorings; NOAA: Facility for the Analysis and Comparison of Tsunami Simulations (FACTS), and DOD/NASA: Short-term Inundation Forecasting for Tsunami (SIFT). TIME's purpose is to assist Pacific states in the development, maintenance, and upgrade of inundation maps; to archive bathymetry and topographic data; and to develop computational bathymetry and topographic models. In January 2000, Vasily Titov became co-director of TIME and the center moved to PMEL at Seattle, Washington. Lt Kamphaus will be leaving for sea duty in early June and his replacement will not be in place until December 2000.

ACTION ITEM: The Steering group requested an assessment of lessons learned and how to go forward on where and how to map areas. **ACTION:** TIME to collect and summarize data.

At the last meeting, TIME agreed to attempt to summarize the existing knowledge on the best cell size to use for inundation mapping and provided the following conclusions/recommendations to Steering Group members: inundation computations (moving, not solid boundaries) are essential for producing the inundation maps; at least 150-100m cell size is required for inundation computations to produce useful guidance; models with 50-30m cell

size seem to capture most of the important local inundation features; and use the best resolution bathy-topo data available. **CLOSED**

Mitigation

Mark Darienzo presented the Mitigation Subcommittee report covering state activities since the last meeting as well as budget issues and plans for the future.

ACTION ITEM: There was considerable discussion concerning a common plan (MOA) for mitigation procedures. The group decided to form a subcommittee to collect procedures now in place and analyze them and report back. The subcommittee will post their findings on tsuhaz by the end of June and report their next steps via conference call by the end of July 2000.

ACTION: The subcommittee members are: Mark Darienzo, Tim Walsh, Richard Eisner, George Priest, Gary Brown, Brian Yanagi, Michael Hornick, and Chris Jonientz-Trisler.

ACTION ITEM: States suggested that a web site be established to house Power Point presentations from all five states.

ACTION: States, PMEL

Local Tsunami Warning Systems

ACTION ITEM: The third draft of the Tsunami Warning Systems: Guidance for State and Local Officials was given to Steering Group members for review and comments. Comments due May 31, 2000. **ACTION:** M. Darienzo, all Steering Group members.

Mark Darienzo reported that he would like to hold a workshop to discuss warning systems in general in the spring of 2001 in either Portland or Seattle. Final recommendations on local warning systems will come from the workshop next spring.

Role of the U.S. Coast Guard in tsunami maritime response planning

Lt. Alan Yelvington briefed the Steering Group on the role of the Coast Guard in tsunami response planning for the maritime industry. Coast Guard missions include operations, marine safety, aids to navigation, and a Federal Response Plan. Customers include ports and harbors, commercial carriers, charter boats, fishing fleets, recreational boaters, and live-aboards. He covered the aspects of Federal Response Planning and customer needs as well as how the Coast Guard and other response teams can work together.

Tsunami-Ready Community Proposal

Richard Przywarty, Director, NWS Alaska Region, briefed the group on a proposal for a "Tsunami Ready Community." The proposal is based on the NWS "Storm Ready Program" which has been quite successful. He proposed that the Steering Group as a body should endorse and codify a "Tsunami Ready Program." The designation as a "Tsunami Ready Community" would mean that a community has met a minimum standard of tsunami education, awareness, and preparation and has been awarded the "Tsunami Ready Community" designation. The objectives of the Tsunami Ready Program would be to promote an active partnership in promoting tsunami awareness in the emergency management and the general community. The Program would

establish a Tsunami Ready certification process and create a certifying board. The benefits of the program are that the communities would be recognized by a national body of scientific experts, the community would be at least more aware and better ready in the event of a tsunami, it would receive a visual certificate, and have access to funding sources not available otherwise.

ACTION ITEM: By our November Steering Group meeting: Richard Przywarty will prepare a short implementation plan based on Lori Dengler's Strategic Implementation Plan for Tsunami Mitigation Projects (NOAA Technical Memorandum ERL PMEL-113).

ACTION: Each state, agency that has information and suggestions on how to make the Tsunami Ready Program work, send the information to Richard Przywarty as soon as possible. Richard Przywarty will draft a straw plan and e-mail it to the Steering Group requesting points of contact. He will collaborate with Lori Dengler on the plan.

Alaska Tsunami Sign Program

Scott Simmons reported on the sign program in Alaska. He showed various adaptations of the sign developed to meet special needs such as evacuation sites and shelter locations.

Public Affairs Report

Ann Thomason presented the highlights of the Program's Media Coverage since the October 1999 meeting (copies given to each member). Jana Goldman asked that the group members keep her and Ann Thomason informed when they meet/talk to media. Jana will e-mail the tsuhaz list to inform everyone of upcoming media events, opportunities, articles, etc. Jana also said she would try to help us get a tsunami b-roll and will add this item to her budget request for next year. Jana also put in her FY 2001 budget a request for \$1000 for development of a tsunami rolodex card for reporters with contact information and our web site address. Kerre Martineau, State of Alaska, discussed the upcoming (previously postponed) Sitka sign dedication, newly developed educational materials (pens, mouse pads, pamphlets, etc.), and other public affairs activities in the State of Alaska. The State of Washington is putting the finishing touches on a 30 second Public Service Announcement which was shown to the Steering Group for comments. California has held five workshops on map projections and the Local Tsunami Response Guidance document. (See Tsunami Mitigation Subcommittee Report for other mitigation/education/public affairs activities).

ACTION ITEM: The Steering Group requested that we do other backgrounders on tsunami issues. Specific issues need to be selected.

ACTION: Steering Group to determine issues for backgrounders, PAWG to create and post backgrounders on web site.

The Next Five Years (Phase II-sustained efforts)

The Tsunami Hazard Mitigation Plan calls for assessment of the Tsunami Hazard Mitigation Program after 5 years. To fulfill this requirement, the first day of the International Tsunami Symposium in August 2001 will be devoted to a review of the Tsunami Hazard Mitigation Program. The program will be reviewed by tsunami experts. In order to obtain reviewers 6-9 months in advance an ad hoc subcommittee is needed.

ACTION ITEM: Ad hoc subcommittee to be named by Bernard to nominate reviewers.

ACTION: Bernard

FY 2001 Budget:

Plan for a \$2.3m budget. We should be able to meet the targets in the plan except for mapping.

ACTION ITEM: All programs/states were asked to draft their 2001 budget numbers and submit them to Eddie Bernard by July 31, 2000. Eddie will compile the figures and redistribute them to all members. Final budgets should be ready for presentation at the Subcommittee meeting in November.

ACTION: All

NSF Modeling Support:

George Priest stated that the program needs more ongoing support for modeling. He suggested that perhaps NSF could designate a program for tsunami modeling research to which modeling proposals could be written.

ACTION: E. Bernard to contact C. Astill at NSF concerning this suggestion.

Meeting Dates and Locations for 2000

May 9-11, 2000, PMEL, Seattle, Washington

November 14-16, Hilo, Hawaii

Change in Format For November Meeting

The Mitigation Subcommittee requested that the meeting format be altered at the November meeting so that the Subcommittee meets from 8 a.m. to 12 noon on Tuesday, November 14. The full Steering Committee meeting would then begin at 1 p.m. on Tuesday, November 14 and run through Wednesday, November 15. Thursday, November 16 would be a day for field trips. The group agree to this change in format.