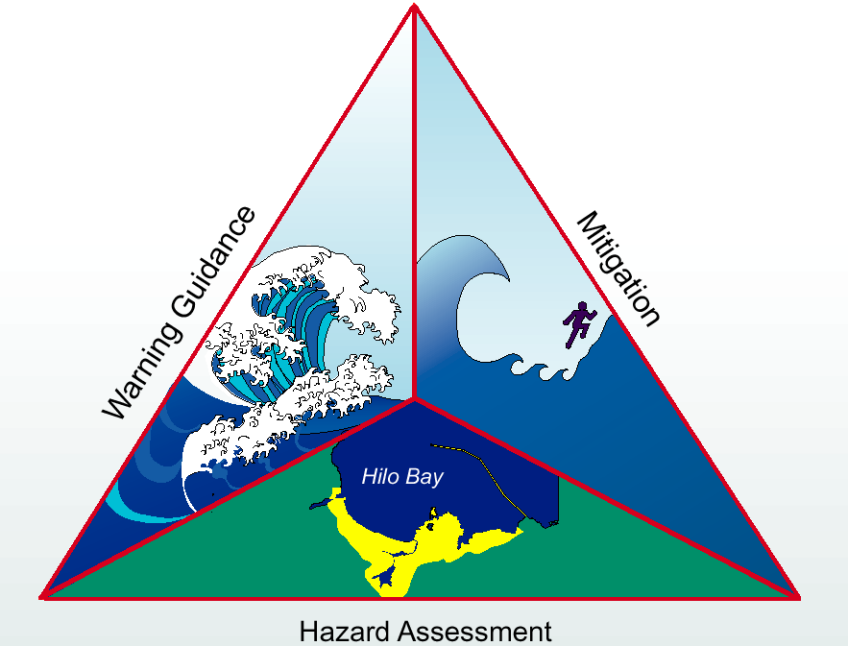
U.S. National Tsunami Hazard Mitigation Program Overview



David Green, NOAA Tsunami Program Manager

Partners

States

Alaska - California - Hawaii - Oregon – Washington - Guam - Puerto Rico

U.S. Virgin Islands – Texas – Georgia – Maine – New York – Alabama

Maryland – Connecticut – Louisiana – Florida – New Hampshire

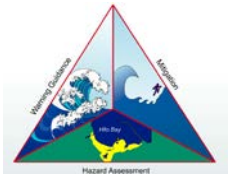
South Carolina – Mississippi – Virginia – North Carolina – Massachusetts

New Jersey – Rhode Island – American Samoa – Virginia

Northern Marianas Islands - Delaware

Federal Agencies

NOAA – FEMA – USGS - NSF



Senate Charge to NOAA

1. Review 12 recommendations from 1995 NOAA Report
2. Develop an action plan and budget

Primary Issues of Concern to States:

- Quickly confirm potentially destructive tsunamis and reduce false alarms
- Address local tsunami mitigation and the needs of coastal residents
- Improve coordination and exchange of information to better utilize existing resources
- Sustain support at state and local level for long-term tsunami hazard mitigation

(Implementation Plan, 1996)

History Continued

Congressional Reaction: $2.3M/year FY1997-2007

- Add-on to NOAA Budget (97-04)
- Appropriated Funds (05 on)

2005 NTHMP Expanded to 29 States, Territories and Commonwealths

Tsunami Warning and Education Act (P.L. 109-424)

- Passed in 2006
- Codifies the NTHMP and provides explicit guidance for program
- Authorizes the NOAA Administrator to use no less than 27% of NOAA's Appropriation for NTHMP Activities

Program Budget 1997- Present

Fiscal Year	Inundation Maps	Seismic	Detection Buoys	Mitigation	NOAA Admin	Other	Tsunami Forecast	Totals
1997	$390,400	$976,000	$780,800	$170,800	$57,000			$2,375,000
1998	$390,400	$780,800	$683,200	$390,400	$55,200			$2,300,000
1999	$390,400	$780,800	$683,200	$390,400	$55,200			$2,300,000
2000	$352,680	$705,360	$617,190	$352,680	$272,090			$2,300,000
2001	$377,739	$546,148	$870,374	$377,739	$128,000			$2,300,000
2002	$380,000	$410,904	$894,244	$499,852	$115,000			$2,300,000
2003	$1,300,000	$719,696	$1,197,744	$500,000	$300,000	$129,238	$153,322	$4,300,000
2004	$1,300,000	$596,800	$1,197,700	$500,000	$300,000	$249,500	$156,000	$4,300,000
2005	$1,300,000	$601,000	$1,360,000	$500,000	$220,000		$319,000	$4,300,000
2006	$683,900	$602,700	$0	$865,300	$73,100	$75,000	$0	$2,300,000
2007	$697,300	$602,700	$0	$900,000	$30,000	$30,000	$0	$2,260,000

U.S. National Tsunami Hazard Mitigation Program

- **Program Funding Disbursement**:
  - Internally driven through annual funding request review and voting process
  - Voting process ensures the program meets states needs for Tsunami Mitigation Activities and higher apportionment of $ goes to State, Territories, and Commonwealths with greatest Tsunami Hazard risk (U.S. Tsunami Hazard Assessment, 2007)
  - Management of NTHMP is done through contract
    - States invoice NOAA for work completed under the contract; NOAA accepts and disburses funds
    - Current contract expires June 30, 2007
    - New Contract Expected in July 2007;
      - little interruption expected between contracts

U.S. National Tsunami Hazard Mitigation Program

- CA, OR,WA,AK, HI – 5 votes (1 ea.)
- PR -1 vote
- USVI – 1 vote
- Eastern states – 1 vote (based on NWS eastern region AOR)
- Southern states – 1 vote (based on NWS southern region AOR)
- Pacific territories/commonwealths – 1 vote (based on NWS PR AOR)
- FEMA-USGS-NOAA-NSF – 2 votes each

- Federal total -8 State total -10
- Tie vote goes to chair
- Written proxy from a non-attending member must verify voting preference

13 NTHMP Goals

- 2 Tsunami Assessment Goals
- 5 Tsunami Warning Guidance Goals
- 6 Tsunami Mitigation Goals

NTHMP Assessment Goals

1. Complete tsunami inundation maps for 75% of U.S. coastal communities at risk in each state (Alaska, California, Hawaii, Oregon, and Washington). **States**

2. Produce evacuation maps that are consistent from state to state for mapped communities. **States**

NTHMP WARNING GUIDANCE Goals

3. The USGS, NOAA, and state agencies disseminate their automated, reviewed earthquake and tsunami notifications as rapidly as is scientifically and technologically possible. Automated notification of preliminary hypocenter and magnitude should be provided within 2 minutes after receipt of sufficient seismological information at observing networks and reviewed information should be provided in 5 minutes. **NOAA/USGS**

4. For at least one community per state, issue site- and event-specific forecasts of maximum tsunami flooding depth and inland penetration with an average rms error less than 50%. **NOAA**

5. Develop a suite of graphical products for dissemination from NOAA's tsunami warning system. **NOAA**

6. Install evacuation notification system (for example: EMWIN, NOAA Weather Radio, telephone alert, etc.) in 50% of coastal communities in each state. **States**

7. Reduce tsunami warning system false alarms by 20%. **NOAA**

NTHMP Mitigation Goals

8. Use social science tools to measure tsunami resilience of communities and the effectiveness of the NTHMP. **States**

9. Designate that 25% of communities at risk in each state are TsunamiReady. **States/NOAA**

10. Ensure that public information is available at all beach access points; ensure that evacuation procedures and maps are in all coastal jurisdiction telephone books/utility bills/school sites/hotels. Display education posters in 75% of coastal water oriented/ recreation businesses. **States**

11. Develop approved engineering guidance in the FEMA Coastal Construction Manual or other appropriate document that addresses both high seismic and tsunami loading for use in new construction and retrofitting of existing structures. **FEMA**

12. Convince 25% of the potentially threatened businesses to include tsunami components in their business continuity plans. **States**

13. Ensure the National Response Plan (NRP) comprehensively addresses tsunami response and recovery. **FEMA**

Summary

- 13 Goals were formed after the 2001 NTHMP Review; based on reviewer recommendations