

**National Tsunami Hazard Mitigation Program
FY03 Client Warning System Proposal
Request for \$129,238**

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I. Background

1. Tsunami warning messages issued by the Tsunami Warning Centers are not effectively and uniformly being delivered to the residents in the inundation zones. The WC's responsibility stops when the message is distributed to the state emergency services, which then have the responsibility to distribute that information to local districts. Likewise, quakes below magnitude 7 that are felt by coastal residents cause some residents in inundation zones to evacuate needlessly because they do not receive information that the quake is non-tsunamiogenic.
2. The WC/ATWC responds to felt quakes over magnitude 4 in the coastal region and issues a statement that the earthquake is/is not tsunamiogenic. This information is distributed via standard warning channels to state emergency officials, via EMWIN, and posted on the WC/ATWC web pages. Commercial software exists to receive and display the earthquake information received via EMWIN.
3. Seismic networks now distribute both automatic and reviewed earthquake locations, origin times, magnitudes, ShakeMaps, focal mechanisms, and aftershock probability statements via the Internet. The initial automated earthquake information is typically issued within 4 minutes by regional networks. Reviewed information is typically issued by WC/ATWC within 12 minutes, by regional networks in 20 minutes, and by NEIC by 2 hours. Public domain software now exists to receive and display the earthquake information received via the Internet.

II. Proposal

1. This proposal seeks funding to develop a pilot project that would establish a total of 10 "systems", with 2 each in California, Oregon, Washington, and Alaska, one each at the USGS Menlo Park and WC/ATWC so that local emergency response centers (911, law enforcement, *etc.*) would have access to the above information and be able to respond with authoritative information to residents shaken by a nearby quake who call these centers.
2. The proposed system is designed to be standalone that receives its earthquake data via a commercial satellite ISP. Satellite delivery coupled with a standalone system eliminates firewall issues related to data delivery over the Internet. Such a system also assures that the recipients will receive seismic and tsunami information during a large quake (as long as they have a UPS). The proposed system would have a second satellite dish to receive EMWIN information from the GOES satellite.
3. The earthquake display software is public domain. It would show earthquake data on maps in near real-time (~4 minutes after the origin time). It integrates earthquake data from all data sources (WC/ATWC, AEIC, UW, NCSN, NEIC, HVO). It automatically updates the display as revised information is distributed by seismic networks, including retraction of bogus information. It provides URL's to additional websites that display ShakeMaps, focal mechanisms, Tsunami Bulletins, Aftershock Probabilities, *etc.*
4. The EMWIN display is commercial and displays all messages received via the 2nd, GOES satellite receiver dish.

II. FY 03 Proposed Budget: \$129,238

1. System Hardware		
a. PC, monitor, etc. –	750	
b. Satellite dish & modem for commercial ISP		
i. Hardware	200	
ii. Commercial install	300	
iii. Shipping	200	
c. 3' dish for GOES satellite for EMWIN broadcasts		
i. dish hardware	1400	
ii. shipping	200	
iii. commercial installation	300	
iv. EMWIN software	100	
Subtotal per site	3450	
Total for 10 sites		34,500
2. Consultant to assemble/test one system, develop global maps	20,000	
3. Site visits to State OES/911 centers to explain project, get user input, permission to install	10,000	
4. Installation/training at 10 sites @2K/each	10,000	
5. 1st year ISP costs @100/mo	12,000	
6. Site maintenance contingency	15,000	
Project Subtotal	101,500	
7. USGS overhead	27,738	
Project total	129,238	