METHOD OF PREPARATION

Tsunami inundation modeling was performed by the Tsunami Research Center at the University of Southern California (USC) Tsunami Research Center (2009). The modeling was conducted using a combination of analytical and numerical methods. The following steps were carried out:

1. Maritime Topography: The bathymetric/topographic data that were used in the tsunami models consist of a series of nested grids. Near-shore grids with a 3 arc-second (75- to 90-meter) resolution, and coastal grids with a 1 arc-minute (2,000-meter) resolution. The bathymetric/topographic data were used in the tsunami models as part of the 7.5-minute Quadrangle Map Series (originally at a 1:24,000 scale). Tsunami inundation line was derived for the entire Marin County coastline.

2. Tsunami Source Data: A suite of tsunami source events was selected for modeling, representing realistic circumstances for any direct, indirect, special, incidental or consequential damages. Neither the State of California nor USC shall be liable under any circumstances for any direct, indirect, special, incidental or consequential damages.

3. Software and tools were utilized for developing, implementing and testing of the Method of Tsunami Synthetic Aperture Radar (IfSAR) Digital Elevation Models from GeoSAR platform (EarthData).

REFERENCES:


MAP EXPLANATION

STATE OF CALIFORNIA ~ COUNTY OF MARIN
PETALUMA RIVER QUADRANGLE
July 1, 2009

This tsunami inundation map was prepared to assist cities and counties in identifying tsunami hazards and to aid local emergency preparedness planning efforts. The map, which is intended primarily for informational purposes, is not a legal document and is not to be used for any purpose other than emergency planning.

The inundation map has been compiled with best existing scientific knowledge. The map presents the modeled tsunami inundation resulting from a number of extreme, yet realistic, tsunami sources. Tsunamis are rare events; however, this map is an estimate of severe coastal inundation resulting from the joint effect of extreme tsunamis. This map represents a conservative sea level for the intended use of the tsunami modeling and is subject to limitations in the accuracy and completeness of available terrain and tsunami source information, and the current understanding of tsunami generation and propagation phenomena as expressed in the methodology used. The inundation map is based on the assumption that there is no existing coastal or other infrastructure that is capable of significant seafloor displacement and tsunami generation. Coastal tsunami inundation is influenced by many factors including coastal landform and structural characteristics, local topography (e.g., terrain, depth, slope, and geology), and the configuration of coastal topography and bathymetry.

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Table 1: Tsunami sources modeled for the Marin County coastline.

State of California ~ County of Marin
PETALUMA RIVER QUADRANGLE
July 1, 2009

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