

Tsunami Inundation Modeling

The following material was presented to the Steering Group on March 4-5, 1997, as an update on this effort:

1. Background

The Implementation Plan (April 1996, pp. 12-13) outlined the original strategy to be used for inundation modeling. This strategy consisted of: (a) using the "one-dimensional modeling technique developed at the University of Hawaii ...," (b) to be "... taught to city and/or county engineers (or state representatives) through a workshop format ...," (c) supplemented with "two-dimensional models for certain communities ...," (d) "... through the formation of a tsunami inundation mapping center (TIMC)." This approach was discussed and adopted by the Steering Group because it was (a) technically acceptable and better than what most communities have now, (b) affordable, and (c) do-able in the time available.

2. Activity since December 4-5, 1996, Steering Group meeting.

December 9, 1996 -- A meeting of the WA, OR, and NOAA representatives was held in Olympia, Washington. Oregon proposed abandoning the original 1-D strategy and attempting two-dimensional modeling through a combination of FEMA, WA, OR, and TIMC efforts. The resources that could be brought to bear on this task were identified as:

FEMA support to WA and OR	195.2K
WA and OR support (in kind)	97.6K
NOAA support for TIMC	195.2K

This new strategy was, of course, heavily dependent on the quick recruitment and hiring of a modeler and the timely establishment of a productive TIMC. Unfortunately, the modeler recruitment effort eventually failed.

December 17, 1996 to February 25, 1997 -- Recruitment of a modeler was conducted during this time. *EOS* ads and postings on the Tsunami Bulletin Board gave the announcement wide distribution. Two

excellent candidates gave a seminar and were interviewed in Newport by Bernard, González, Priest and Walsh. But eventually, each of these candidates declined the offer.

February 20, 1997 to March 4, 1997 -- Options were developed to present to the Steering Group. The first step was to verify the continued availability of 1-D modeling by UH. This option was found to be still available.

Next, the possibility of contracting the 2-D modeling work was explored. Informal pre-proposal statements of intent were solicited from the Oregon Graduate Institute and the University of Southern California. Guidelines for the modelers were: (a) all priority areas identified by WA and OR must be modeled, (b) preliminary results are needed about July for presentation to funding agencies, (c) work must be completed no later than February 1998, and (d) only \$100K is available for the entire job. The priority areas and communities identified by WA and OR are summarized in the following table:

Area	Communities	Status
Gray's Harbor	Aberdeen, Hoquiam, Cosmopolis, Westport, Ocean Shores	
Willapa Bay	Raymond, South Bend	
Long Beach Peninsula		
Columbia River	Warrenton	Summer '97
Seaside	Seaside	Completed
Siletz Bay		Completed
Yaquina Bay	Newport	April '97
Rogue River	Gold Beach	
Coos Bay	North Bend, Coos Bay	
	Florence	
	Waldport	

The pre-proposal statements were received in time for the March 4-5, 1997, Steering Group meeting, and the three options were summarized for the Steering Group in the following table:

Options for Contracting of Inundation Modeling

Contractor	Model	Coverage	Budget	Schedule	Comments
UH	1-D	All sites	\$80 K	Oct '97	
OGI	2-D Finite Element	1. Warrenton to Gray's Harbor	\$100 K Modeling	Dec '97	1. Jul '96 Preliminary Results
		2. Gold Beach	\$20 K Software		2. Train DOGAMI & NOAA to run model
DOGAMI & NOAA	2-D Finite Element	Coos Bay Florence Waldport		Jul '98	Advice from OGI
USC	2-D Finite Difference	All sites	\$100 K	Apr '98	Bathy/Topo data collection where required

After considerable discussion, the general consensus of the Steering Group was that:

1. A contract should be let for 2-D numerical modeling.
2. All work by the modeler and states must be constrained by the budget of \$195.2K available from FEMA.
3. This contracting approach does not preclude the use of a different model in any other State.

We are now awaiting the submission of formal proposals, which have been solicited from the University of Southern California, the Oregon Graduate Institute, and the University of Alaska.