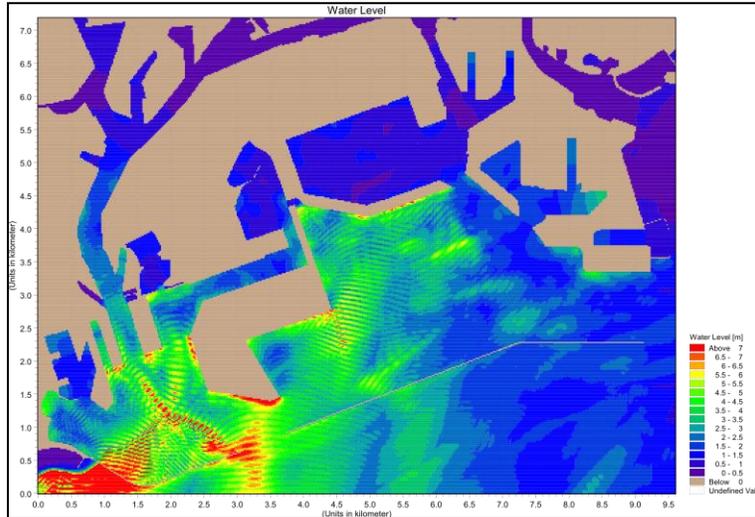


Port of Long Beach, CA and Port of Los Angeles, CA use Advanced Wave Modeling for Tsunami Hazard Assessment and Emergency Response Planning

Interest in assessment of the potential for tsunamis along the southern California coast and the associated impacts to the Ports of Los Angeles and Long Beach was renewed in light of the devastation caused by the recent Indian Ocean earthquake and tsunami of December 26, 2004. Historically, concern for tsunamis along the California coast has been limited to distant sources such as Alaska, Chile, or others. However, a few recent studies have been suggesting potential tsunami sources within the southern California Bight which could have a greater impact to the Ports due to the short travel distance and higher amplitudes than expected from the remote sources.

[Moffatt & Nichol](#) conducted an investigation of the potential tsunami hazard for the Ports of Long Beach and Los Angeles. The investigation included identification of both remote and local sources of tsunamis and a probabilistic assessment of these sources actually occurring. A detailed tsunami propagation and inundation numerical model was prepared using DHI's [MIKE 21 Boussinesq Wave Model](#) to evaluate several potential sources of a tsunami, including potential subaquatic landslides, a thrust fault, and several strike slip faults capable of producing seafloor uplift. The seafloor displacement was used to define the water surface elevation for initial tsunami wave formation.



The model was used in the study to simulate the tsunami propagation and the model results provided details about the local maximum water levels, current speeds, arrival times, and overtopping rates caused by the tsunamis.

The results of the detailed numerical modeling work were used by the Ports to address design guidelines and to produce an inundation map for the City of Los Angeles Department of Emergency Preparedness. The results of the investigation identified specific areas of extreme high water levels. The derived information is also helpful for further evaluation of impacts to the Port infrastructure, hydrodynamic impacts such as moored and moving vessel issues, structural impacts associated with flooding of Port facilities, and personnel safety issues.

For more information about the MIKE by DHI suite of 2D and 3D coastal and marine modeling software products, please visit www.dhigroup.com, send an email to dhi-us@dhigroup.com, or call our North American Toll Free Telephone number at 1-888-344-9233.

For more information on this project, please download the [Final Report](#) prepared by [Moffatt and Nichol](#), or contact David Dykstra, ddykstra@moffattnichol.com.