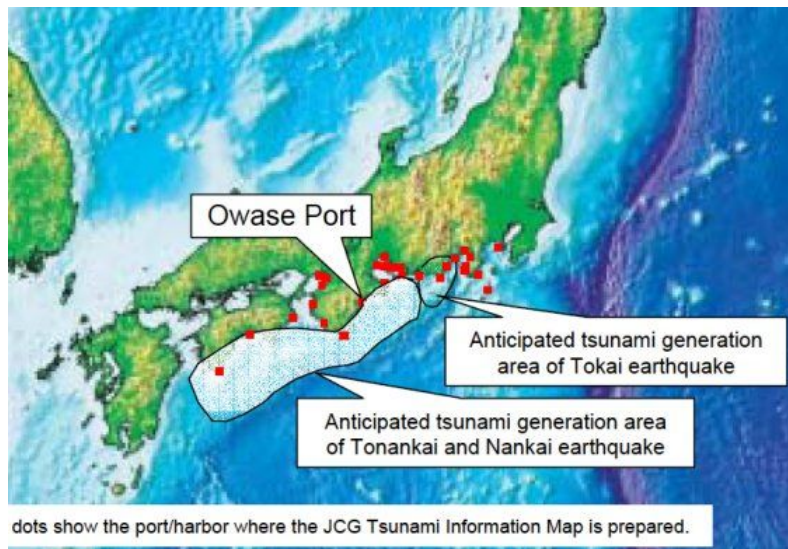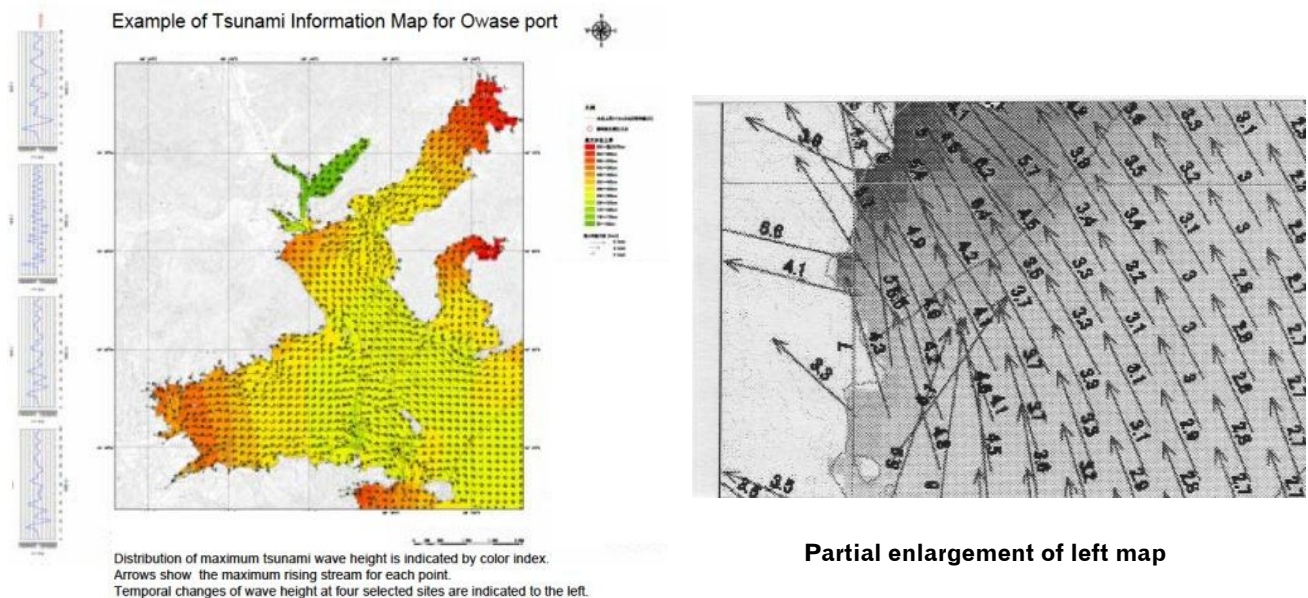# Tsunami simulation

It is said that the subduction-zone earthquakes will occur in the near future in Japan. It is each earthquake of Tokai, To-Nankai and Nankai.

dots show the port/harbor where the JCG Tsunami Information Map is prepared.

As the foci of these earthquakes are located under sea bottoms of the Nankai Trough extending to the south of Tokai district and the Kii Peninsula, the central part of Japan, it is predicted by the Central Disaster Management Council that the Pacific coasts of Japan are flooded by tsunamis more than three meters high. Therefore, the Hydrographic and Oceanographic Department of Japan (JHOD) carried on studies for simulation and expression method of information in order to comprehend the flows of tsunamis, and developed the method of producing the tsunami simulation and tsunami information maps which included whole information concerning tsunamis in the sea areas. In order to minimize the tsunami disaster, preparedness and timely warnings are essential. Tsunami simulation will provide the basis for developing these measures.

Example of Tsunami Information Map for Owase port

Distribution of maximum tsunami wave height is indicated by color index.
Arrows show the maximum rising stream for each point.
Temporal changes of wave height at four selected sites are indicated to the left.

Partial enlargement of left map

・Tsunami simulation enables to indicate the estimated wave heights at each coast, to be used to develop the evacuation programs, and the estimated time of arrival of tsunamis once it emerged, to be used for the

evacuation warnings.

Tsunami information based on tsunami simulation technology are composed of tsunami information maps of printed matter (two kinds of inflow map and outflow map) and tsunami animation which displayed the situation of tsunamis which changes momentarily by the animation.

Example of tsunami simulation at sea areas for select Japanese harbors can be found in the JHOD website. (URL http://www1.kaiho.mlit.go.jp/KAIYO/tsunami-E/index.html)

To make the tsunami simulation reliable, detailed and precise bathymetric data are crucial.

・Dense and accurate bathymetric data at the open ocean are essential to know when and where the tsunami arrives.

・Near-shore bathymetry plays a crucial role in the landing height of the tsunami. For the precise and reliable tsunami simulation, bathymetric data of 50-meter grid or finer resolution are effective. Bathymetric data of this resolution need intensive swath surveys.