



Fact Sheet

US Army Corps of Engineers
U.S. Army Engineer Research and Development Center

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Coastal Inundation Studies for Pacific Islands

Purpose: To estimate tropical storm-induced inundation elevations along exposed island coasts for return periods up to 100 years.



Background: The U.S. Army Corps of Engineers, Honolulu Engineer District, area of responsibility includes many islands in the tropical Pacific Ocean. Typically, islands are volcanic, with narrow coasts and rugged interiors. Coastal roads and communities are a vital part of island society. Many island coasts face exposure to vast expanses of open ocean. Fortunately, wave climates are generally mild, but powerful tropical storms can occasionally strike. Often a protective coral reef helps shield island shores from the huge waves that can be generated in an intense storm. Nonetheless, island roads and communities can suffer great damage due to storm-raised water levels and high waves which break and run up on shore.

Facts: Over the past decade, physics-based numerical modeling procedures for determining coastal inundation levels with return periods of up to 100 years have been developed and improved at the U.S. Army Engineer Research and Development Center by the Coastal and Hydraulics Laboratory. Study results provide the basis for flood insurance maps, governmental planning, and project design. Study areas addressed during recent years include the Territory of Guam; Island of Rota, Commonwealth of the Northern Mariana Islands; and Territory of American Samoa.

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