

Flood and Erosion Hazard Mitigation for North Shore, O'ahu

Jonathan Chapman, John Melve & Andrew Storey

Graduate Students

Department of Ocean and Resources Engineering

University of Hawai'i at Mānoa

Wednesday, December 8
3:30 pm – 4:30 pm Seminar

Zoom Meeting ID: 935 9608 7383
Passcode: OREseminar



Scan code for website & Zoom link

Abstract

The ORE 783 Capstone Design course invited detailed proposals from engineering students for FEL-1 and -2 level studies. The aim is to assess technical, economic, and regulatory feasibility of engineering measures that can reduce flood and erosion hazards on O'ahu's North Shore while taking into consideration climate change. We present three preliminary design solutions to mitigate three respective challenges experienced along the North Shore including: wave overtopping at Haleiwa Harbor, wave overtopping to the Kamehameha Highway at Laniakea Beach, and erosion at Sunset Beach. Present and future wave climates are analyzed along with projected sea level rise and tidal variation to determine the design conditions typical to O'ahu's North Shore. Environmental impact and permitting are assessed and a cost/benefit analysis is performed for each scenario.