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**Ocean and Resources Engineering
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Critical Design Review of the Iroquois Point Beach Stabilization Project

In 2012, Sea Engineering Inc. constructed nine shore-perpendicular rock T-head groins to stabilize the chronically eroding shoreline at Iroquois Point, Hawaii. The beach was nourished with 90,000 cubic yards of sand dredged from the Pearl Harbor Entrance Channel. The designers used a modified version of Bodge's Gamma shoreline model to predict the stable mean low water line between the T-head groins. This study uses post-construction shoreline surveys taken by a Leica Viva GS14 GNSS real time kinematic (RTK) unit to evaluate and calibrate the design methodology.

Comparison of the survey data with numerical wave model results from SWAN and BOUSS2D shows negligible seasonal effects on the stable shoreline position at this site. The model results were also used to estimate the stable shoreline adjacent to the project site using the parabolic bay shape model and the software MEPBAY. As there are numerous chronically eroding beaches in the Hawaiian Islands that are potential candidates for shore protection using T-head groins, calibrating the design process for this type of project is of utmost importance to the health and future of the islands' beaches.