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Regional Sediment Management Program

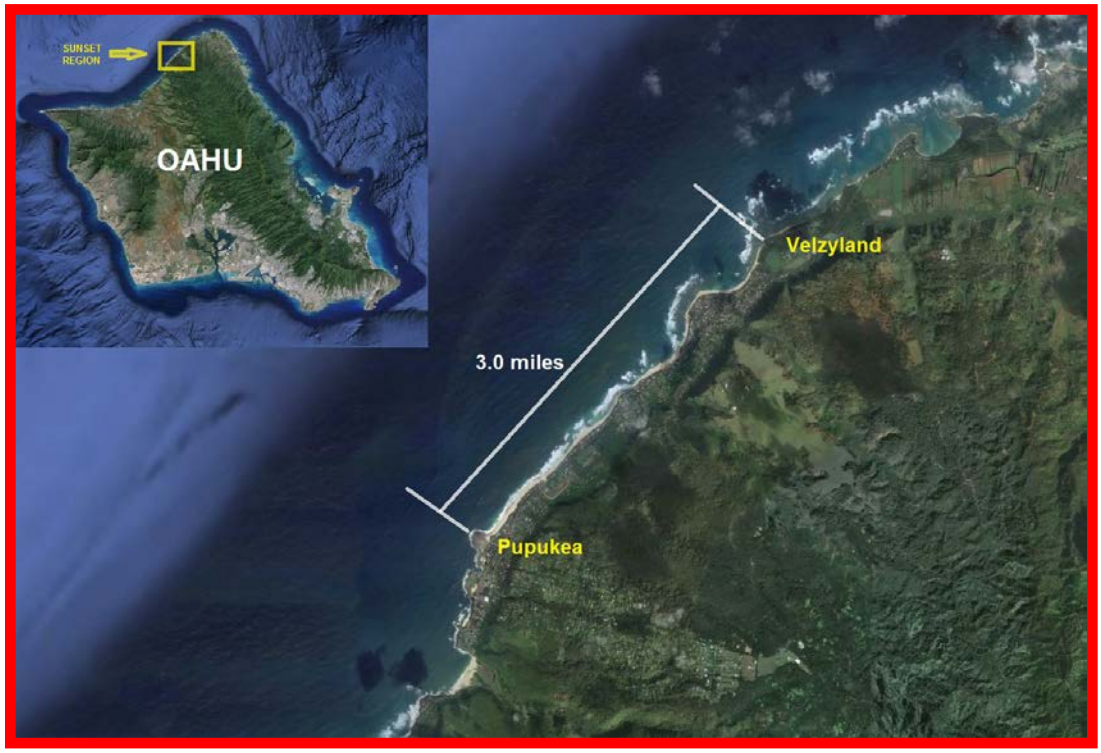
Sunset Beach RSM, Oahu, Hawaii

Description

The Sunset Beach Region is located on the island of Oahu in the state of Hawaii (Figure 1). The Hawaii Regional Sediment Management (RSM) non-federal sponsor, the State of Hawaii Department of Land and Natural Resources, is looking for "soft" solutions to the shoreline erosion induced problems within the region.

Sunset Beach RSM studies will engage various federal, state and county agencies in the implementation of strategies to maximize the use of the region's scarce sediment resources. The Sunset Beach RSM initiative will quantify shoreline changes, coastal processes, the regional sediment budget, and identify potential RSM projects in the region. The region extends along the three miles of shoreline from Pupukea Quarry to Velzyland on Oahu's north shore (Figure 1).

Hawaii RSM will eventually investigate sediment management opportunities along all shoreline regions in Hawaii. To date, Hawaii RSM has been instrumental in quantifying coastal processes and identifying sediment related issues in various regions on the islands of Oahu, Maui and Kauai. On Oahu, RSM investigations have led to a greater understanding of the sediment related issues in the Mokapu Point to Makapuu Point Region, Diamond Head to Pearl Harbor Region and the Haleiwa Region.



Location Map. The Sunset Beach Region extends along approximately three miles of shoreline on Oahu's north shore.

Issue/Challenges To Address

Shoreline erosion is currently threatening upland development within the Sunset Beach Region. In December 2013, the shifting sands within the region caused problems for several homeowners. As the winter 2013 northeast swells began to ramp up, the beach

experienced the average annual amount of erosion in a matter of days. Backyards, staircases, and even a swimming pool were swept away in a matter of days. The Christmas 2013 swells damaged at least five oceanfront properties in the region, rekindling a decades-old debate about how best the state and property owners should respond to beach erosion and the increasingly rising waters of the Pacific Ocean. Property owners were unable to acquire necessary permits to install seawalls to protect their property. The City and County of Honolulu, State of Hawaii and federal agencies expressed concerns that shoreline hardening could result in the loss of the beach fronting such structures and cause impacts to adjacent shorelines (including Sunset Beach, home to one of the world's top surf spot).

Successes
New initiative

Lessons Learned
New initiative

Expected Products

- Water circulation and wave transformation model results
- Regional sediment budget
- Identification of potential RSM projects in the region
- Preparation of a Technical Note documenting study findings
- Web site update on findings and lessons learned (to be posted in the following FY)

Stakeholders/Users

Stakeholders in the region include USACE Honolulu District, State of Hawaii Department of Land and Natural Resources' Offices of Conservation and Coastal Lands and the City and County of Honolulu. User include property owners in the region as well as both local and visiting beachgoers, swimmers, snorkelers, kayakers, sail boarders, boogey boarders, stand up paddlers, canoe enthusiasts and surfers.

Projected Benefits

Advancing the state-of-knowledge of regional coastal processes in Hawaii and improvement of sediment management in the Sunset Beach Region. Coastal modeling data will be used to develop a conceptual regional sediment budget. Technical Notes will be prepared that document methodology used and results of the Sunset Beach regional sediment budget analysis. Potential RSM projects will be identified within the region.

Leveraging Opportunities

The Sunset Beach RSM project delivery team (PDT) has initiated cooperative field investigations with students and teachers from the University of Hawaii (UH). A number of UH graduate and undergraduate students are investigating shoreline change, economic drivers and coastal sustainability within the region. The PDT is working closely with UH interests to coordinate and leverage resultant products being developed. The PDT is also engaging the non-federal Hawaii RSM sponsor on the way forward for utilizing sediment resources in the Sunset Beach Region to minimize storm induced damages to upland development.

Points of Contact

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Participating Partners

The non-federal sponsor is the Department of Land and Natural Resources' Office of Conservation and Coastal Lands.
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