

## **COASTAL PLANNING IN AMERICAN SAMOA THROUGH INNOVATION, EDUCATION, EROSION HAZARD ANALYSIS AND SEDIMENT MANAGEMENT**

*Jessica H. Podoski, US Army Corps of Engineers, Honolulu District  
Thomas D. Smith, US Army Corps of Engineers, Honolulu District*

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The U. S. Army Corps of Engineers' (USACE) Honolulu District, in coordination with the American Samoa Department of Public Works (DPW), have developed various approaches to addressing the sustainability of the territory's sandy shorelines while also identifying coastal hazards and protecting the valued infrastructure and buildings from these hazards. This presentation will discuss the coastal challenges present along the shorelines of American Samoa, and some of the methods being used to address them, in addition to some of the coastal planning goals that have yet to be achieved.

One method of protecting infrastructure along the shoreline when retreat is not possible is by hardening the shoreline. In the village of Vatia on the northern coast of the main island of Tutuila, the USACE recently completed construction of a revetment to protect the only road through the village. The structure was built using an innovative new type of concrete armor unit, aptly named "Samoa Stone". The armor unit has a unique ability to interlock with the units around it to form a matrix that is very stable under wave attack. Design and construction of the project will be discussed.

In addition, USACE at the request of DPW has also recently performed educational outreach to the practicing engineers in American Samoa. Coastal engineers from USACE's Honolulu District and Coastal and Hydraulics Lab in Vicksburg, MS traveled to American Samoa to present a class on coastal data collection, structure design, wave parameter analysis, and coastal modeling to local engineers. This was intended to expand the design capabilities of the DPW engineers and to answer questions from the construction officers that oversee the building of many USACE projects in Samoa.

USACE has also conducted an analysis of coastal erosion hazards along the shorelines of 4 of the islands of American Samoa. The analysis was completed by on-site evaluation of the shoreline, and was compiled into a shoreline atlas for reference and use by DPW in determining how to manage its coastal areas. The methods and results of the analysis will be presented.

Finally, an area of coastal planning that has not yet been fully explored by USACE and DPW is the concept of sediment management. In many places along US coasts including Hawaii, sand is viewed as a valuable resource that must be managed carefully in order to alleviate coastal erosion problems. This concept has not yet been encouraged in American Samoa, and is an important next step in establishing a comprehensive view of

coastal hazards and hazard mitigation in these islands. A discussion of sediment management and its applicability to the islands of American Samoa will be included in this presentation.

Jessica H. Podoski  
US Army Corps of Engineers, Honolulu District  
Building T-223  
Ft. Shafter, HI 96858  
[Jessica.H.Podoski@usace.army.mil](mailto:Jessica.H.Podoski@usace.army.mil)  
(808) 438-1680