

Stormwater Education on US Army Installations on Oahu

Problem and Research Objectives

Public education and outreach are required elements of the Army's Environmental Protection Agency MS4 permit to operate "small municipal separate storm sewer systems" in Hawai'i. One way the Army has attempted to meet these requirements in Hawai'i was to develop an educational program addressing stormwater-related problems in watersheds associated with military installations within the state. Working with specific public schools located on Army installations, the goal of this project was to introduce the students, their families, and their teachers to stormwater-related problems. The two-year project successfully culminated with the presentation of a "WaterWorks Festival" incorporating reusable science-education exhibits developed by Bishop Museum specifically for this project.

The exhibits were designed to increase awareness of drainage-basin processes and stormwater-related environmental concerns. They identify activities with negative impacts and display ways the public can mitigate these negative impacts to improve water quality. The exhibits introduced concepts related to best-management stormwater-related practices to the students, their families, and their teachers.

The project's primary objective was to provide education intended to help ameliorate negative impacts originating on Army installations while introducing best-management practices to public school students, their families, and their teachers living on these military bases.

A secondary goal was to increase awareness and understanding of other stormwater-related problems affecting the watersheds of central O'ahu. Of particular concern was the Waikele Stream, identified as an "at-risk" watershed by the state of Hawai'i, which is located, in part, on Army installations.

Principal Findings and Significance

The project developed a “Water Works Festival” that was presented to elementary and secondary school students, their families, and their teachers at Wheeler Army Airfield. Bishop Museum science and cultural education specialists prepared exhibits for an event held at Wheeler Elementary School on 10 March 2007. Approximately 60 students and their families from public elementary and middle schools located on Wheeler Army Airfield and Schofield Barracks attended the festival. The schools involved included Wheeler Middle School and its three feeder schools: Wheeler, Hale Kula, and Solomon Elementary Schools.

The Festival was a three-hour event in an “open house” format (drop-in; self-exploration). It was held in the Wheeler Middle School cafeteria and engaged visitors in a diverse array of hands-on science, engineering, and cultural activities designed for multi-generational, interactive learning. The topics presented in the Festival include watershed boundaries and topography, the water cycle, aquatic ecosystems and biota, soil erosion, water quality and management, stormwater and wastewater infrastructure, stormwater and drinking water systems, avoidance of pollution, and cultural resources.

As indicated, the objective of this project was to develop stormwater education materials targeted for elementary and middle public school students, their families, and staff living and working at Wheeler Army Airfield and Schofield Barracks. The initial challenge was considered to be curriculum development, but instead became a matter of addressing school administrator and teacher concerns as how to accommodate the addition of stormwater-related concepts into existing curriculum. The original intent was to develop content that would be incorporated into existing curriculum during the course of the school year. However, the evident reluctance on the part of school administrators to overload their teaching staff indicated that a compromise solution was necessary to achieve the project objective. The compromise was to conduct the Festival and to develop the exhibits for continued use by Bishop Museum.

Publications Cited in the Synopsis

N/A