



Alenaio Stream Flood Control Project

Full Mitigation Best Practice Story

Hawaii County, Hawaii



Hilo, HI - It was November 2000 when more than 27 inches of rain fell on the city of Hilo in a 24-hour period. The banks of the Alenaio Stream overflowed, and the water marks reached 10 feet high. Fortunately for the community of Hilo, the floodwall was 12 feet high.

Between 1920 and 1994, the 10 reported major flooding events in the city often took with it lives and devastated residential and commercial structures. The Alenaio Stream had flowed through residential areas to the business district of Hilo, a principal urban center and the county seat for the County of Hawaii.

It was in 1994 when the Water Resources Development Act of 1990 authorized the Secretary of the Army to construct a watershed to control and direct floodwaters. This project was designed to contain the 100-year flood, removing the flood designation for eight properties. One of these is the Hilo Central Fire Station, which was then eligible for a Hazard Mitigation (404) Grant to seismically retrofit the Drying Tower. The floodwall guides the water into the channel and terminates in a catch basin, which also serves as a soccer field. The soccer field was constructed in an area where commercial structures had previously been flooded and destroyed by Tsunamis. The excess water from the channel captured in the soccer field ultimately flows to the Pacific Ocean.

As expected, the water from the record-breaking rains of November 2000 flowed successfully through the channel and into the soccer field. This rainstorm was the first real test of the flood control project. More than 27 inches of rain fell on Hilo in a 24-hour period.

The uprooted trees, large boulders and twisted bleachers where businesses once resided, were visual reminders of what could have happened had the project not been accomplished.

The US Army Corps of Engineers estimated that the project helped the community avoid in excess of \$20million in damages. The watershed more than paid for itself in this single event.

Activity/Project Location

Geographical Area: **Single County (County-wide)**

FEMA Region: **Region IX**

State: **Hawaii**

County: **Hawaii County**

Key Activity/Project Information

Sector: **Public**
Hazard Type: **Severe Storm; Flooding**
Activity/Project Type: **Flood Control**
Activity/Project Start Date: **12/1994**
Activity/Project End Date: **06/1997**
Funding Source: **Hazard Mitigation Grant Program (HMGP); Local Sources; Other Federal Agencies (OFA)**
Funding Recipient: **Local Government**
Funding Recipient Name: **County of Hawaii**

Activity/Project Economic Analysis

Cost: **\$14,200,000.00 (Actual)**
Non FEMA Cost:

Activity/Project Disaster Information

Mitigation Resulted From Federal Disaster? **Unknown**
Value Tested By Disaster? **Yes**
Tested By Federal Disaster #: **No Federal Disaster specified**
Year First Tested: **2000**
Repetitive Loss Property? **No**

Reference URLs

Reference URL 1: <http://www.fema.gov/business/nfip/>
Reference URL 2: <http://www.floodsmart.gov/>

Main Points

- Flooding occurred frequently and posed a significant life safety and property damage risk.
- Project was authorized by the Water Resources Act of 1990.
- The flood wall removed properties from harms way and created a recreation area that doubles as a catch basin in the event of significant rainfall.
- Record-breaking rains of November 2000 flowed successfully through the channel and into the soccer field, as designed.
- The project proved successful by the record breaking rainfall of 27 inches in a 24 hour period. The watershed more than paid for itself in this single event.

