



11 December 2008

INFORMATION PAPER

SUBJECT: 'Āao Stream, Maui, Hawai'i

1. Purpose: To provide information on the subject project.

2. Points of Major Interest and Facts.

a. The 'Āao Stream Flood Control Project protects the town of Wailuku, Maui, from destructive floods by channelizing high velocity floodwaters into the Pacific Ocean. It was completed by the U.S. Army Corps of Engineers in 1981. Currently, the Corps of Engineers has another related project which seeks to correct a design deficiency which was later found in the existing 'Āao Stream Flood Control Project. The current project is authorized under Section 203 of the Flood Control Act of 1968 (Public Law 90-483). Current investigations were initiated because of the extensive erosion to the levee toe and the potential for project failure.

b. The existing 'Āao Stream Flood Control Project includes a debris basin, diversion levees, and channel improvements along the lower 2.5 miles portion of the 'Āao Stream, with a drainage basin of approximately 10 square miles. The existing Project was not fully lined due to limited project funding and inadequate economic benefits as mandated by federal laws. The standard project design discharge is 27,500 cubic feet per second, and the existing Project was designed to contain the standard project flood (SPF) equivalent of a 222-year flood event. To date, the existing Project has prevented more than \$24.2 million in damages.

c. Numerous storm events involving high velocity flows within the steeply sloped channel have occurred over the years and resulted in recurring episodes of major erosion of the streambed. After the existing Project initially sustained damage during construction (January 1980), the streamside slope of the levees was extended with a concrete riprap slope lining into the streambed and the cutoff wall toe was imbedded 5 feet below the eroded stream invert. Damages later occurred again, and repairs were completed in 1983. Since that time, recurring storm events have caused extensive erosion to the levee toe, and the streambed and bank have continued to erode to as much as 10 feet below the 1983 repair. No flood event larger than a 25-year event has occurred in 'Āao Stream since project construction.

d. The Corps is currently conducting an investigation to correct the existing levee system to enable the Project to function in the manner as it was originally intended. The ongoing Project is in



the Pre-construction, Engineering and Design phase, and the local sponsor is the County of Maui, Department of Public Works (County).

e. An Environmental Assessment (EA) is underway and is targeted to be available for public review and comment in Spring 2009. An in-house decision document to be used as the basis for construction plans is also underway. Design is targeted to begin in Fall 2009; construction is scheduled to begin in Fall 2011 and be completed by Fall 2013. More than \$3 million of Federal funding has been received to date. Total project cost is currently estimated at \$30 million, with a cost share of 65% Federal and 35% County.

f. New Federal Emergency Management Agency (FEMA) rules require that existing levees obtain certification of their ability to withstand a 100-year frequency flood. A government agency responsible for levee construction or a Registered Professional Engineer must provide this certification. At this time, the Corps cannot certify the existing Project as providing 100-year flood damage reduction in its present condition, therefore, the area protected by the uncertified 'Īao Stream levees will revert to a flood hazard area Zone A in Fall 2009. The expected project modifications to the 'Īao Stream Flood Control Project will meet the criteria for future certification by a registered engineer and accreditation by FEMA.