University of Hawaii at Manoa

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February 22, 1993
RP: 0150

District Engineer (PODCO-O)
U.S. Army Corps of Engineers
Building 230
Ft. Shafter, Hawaii 96858

Dear Sir/Madam:

Army Permit PODCO 93-002
Manoa Stream Revetment and Headwall
Manoa, Oahu

The referenced project proposes to build a rock revetment in Manoa Stream in conjunction with the construction of the University of Hawaii's (UH) Hawaiian Studies building. The revetment will be ca. 250 feet long and up to 20 feet high from the stream level to the top of the bank. A rock headwall will be built upstream of the revetment to protect the outlet of two pipe culverts in Waahila Ditch. Stones excavated from the construction site, as well as other construction projects, at the UH campus will be used.

Our review of the PODCO was prepared with the assistance of Paul Ekern (Emeritus), Agronomy and Soil Science; Hans-Jurgen Krock, Ocean Engineering/Look Laboratory; James Parrish, Hawaii Cooperative Fishery Research Unit; Frank Peterson, Geology and Geophysics; and Elizabeth Gordon, Environmental Center.

Our reviewers have noted a number of areas in which additional information will contribute to a better basis for decision making, and we urge that these concerns be accommodated. First, there is not an adequate rationale for the project. Why is this necessary in Manoa Stream? What is the composition of the current stream bed at the site (e.g., lava flow, debris material)? Also, is there evidence of erosion at the site, or changes in flow rates downstream, or changes in the stream flow gauge? This information will help to assess the stability of the bank in terms of potential erosion.

Second, construction of the revetment may be deleterious to the riparian habitat (bank vegetation) and create problems of erosion and a lack of shading for the fauna in the stream. A main concern should be to mitigate the impacts of the revetment by enhancing and developing the Riparian

habitat above and below the revetment. Where were the cultivated plant species listed on the federal and state endangered species list transplanted?

Third, the document should consider including information on storm peak flows. A report published in May 1976, Technical Memo Report #48, by Reginald Young and Yu Si Fok of the UH Water Resources Research Center, contains information on the UH Manoa Stream gauge. Dr. Paul Ekern (ph.# 988-2530) has stream gauge data over a number of years: particularly a 13 foot and 11.3 foot peak flow recorded on April 19, 1977 where the water nearly reached the base of the bridge on Dole Street, and an 8 1/2 foot rise recorded on May 12, 1977 at the UH gauge near the East/West Center. These records and others are available from Dr. Ekern. There is also an M.A. Thesis by Steve Ikenaga at the UH Civil Engineering Department, which contains data on the sediment load in Manoa Stream during two peak floods. A storm assessment study of Manoa Stream carried out by M & E Pacific in September 1977 for the Army, also includes detailed storm flow profiles for the 100 and 500 year floods for the whole Manoa Stream.

Thank you for the opportunity to review this document. We hope that our comments are helpful.

Sincerely,

Jacquelin M. Miller

Jacquelin Miller
Associate Environmental Coordinator

cc: OEQC
Roger Fujioka
Paul Ekern
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James Parrish
Frank Peterson
Elizabeth Gordon