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Mayor
GEORGE N. KAYA
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Chief Staff Engineer



COUNTY OF MAUI
DEPARTMENT OF PUBLIC WORKS
AND WASTE MANAGEMENT

200 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793

June 23, 1993

RALPH NAGAMINE, L.S., P.E.
Land Use and Codes Administration
EASSIE MILLER, P.E.
Wastewater Reclamation Division
LLOYD P.C.W. LEE, P.E.
Engineering Division
DAVID WISSMAR, P.E.
Solid Waste Division
BRIAN HASHIRO, P.E.
Highways Division

RFQ
93 JUN 25 AM 1:40
OFFICE OF ENVIRONMENTAL
QUALITY CONTROL

Office of Environmental Quality Control
Central Pacific Plaza, 4th Floor
220 South King Street
Honolulu, Hawaii 96813

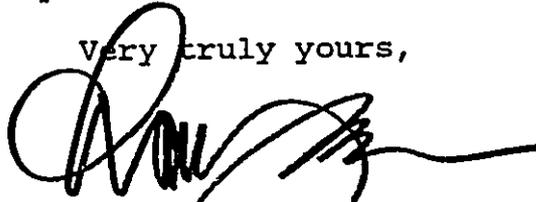
SUBJECT: KAHAKULOA STREAM IMPROVEMENTS
KAHAKULOA, MAUI, HAWAII

GENTLEMEN:

In accordance with the requirements of Chapter 343, Hawaii Revised Statutes, and Chapter 200 of Title 11, Administrative Rules, a Final Environmental Assessment has been prepared for the subject project.

Notice of availability of the Draft Environmental Assessment for the project was published in the May 23, 1993 OEQC Bulletin. As the proposing agency, we are forwarding herewith one copy of the OEQC Bulletin Publication Form, and four copies of the Final Environmental Assessment. We have determined that there will be no significant impacts as a result of the project and therefore are filing the Final Environmental Assessment as a negative declaration. We respectfully request that the notice of Final Environmental Assessment be published in the OEQC Bulletin.

Very truly yours,



for GEORGE N. KAYA
Director of Public Works

Enclosure
JK:ch (ED93-634)
kahaocqc.imp

1993-07-08-MA-FAA - Kahakuloa Stream Improvement JUL - 8 1993

FINAL ENVIRONMENTAL ASSESSMENT

KAHAKULOA STREAM IMPROVEMENTS

Prepared for:



Lokahi Pacific

June 1993



Michael T. Munekiyo Consulting, Inc.

**FINAL
ENVIRONMENTAL
ASSESSMENT**

**KAHAKULOA STREAM
IMPROVEMENTS**

Prepared for:



Lokahi Pacific

June 1993



Michael T. Munekiyo Consulting, Inc.

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Chapter I

Project Overview

I. PROJECT OVERVIEW

A. PROJECT LOCATION, EXISTING USE AND LAND OWNERSHIP

The project sites are located in Kahakuloa Valley within Kahakuloa Stream, a perennial stream located in West Maui.

The proposed improvements will occur at two sites, referred to as the Upper Site and the Lower Site. Figure 1. The Upper Site, approximately 0.60 mile upstream from Kahakuloa Bay, is located adjacent to an existing irrigation ditch which conveys water from Kahakuloa Stream to taro farms found along the east side of the valley. An existing diversion structure and intake are found at the Upper Site. The Upper Site is identified as a portion of TMK 3-1-05:7 and 8.

The Lower Site, situated approximately 0.10 mile downstream of the Upper Site, affects TMK 3-1-04:94 and 95.

The foregoing parcels are privately owned.

B. PROPOSED ACTION

Lokahi Pacific (a non-profit agency), in cooperation with the County of Maui, Department of Public Works, and the Tri-Isle Resource Conservation and Development Council, proposes to undertake improvements at two (2) sites along Kahakuloa Stream. See Figure 2 and Figure 3. The objectives of these improvements are as follows:

Upper Site

- To replace the existing stream diversion system which provides irrigation water to Kahakuloa taro farmers located on the east side of the Kahakuloa Stream with structurally sound diversion works; and

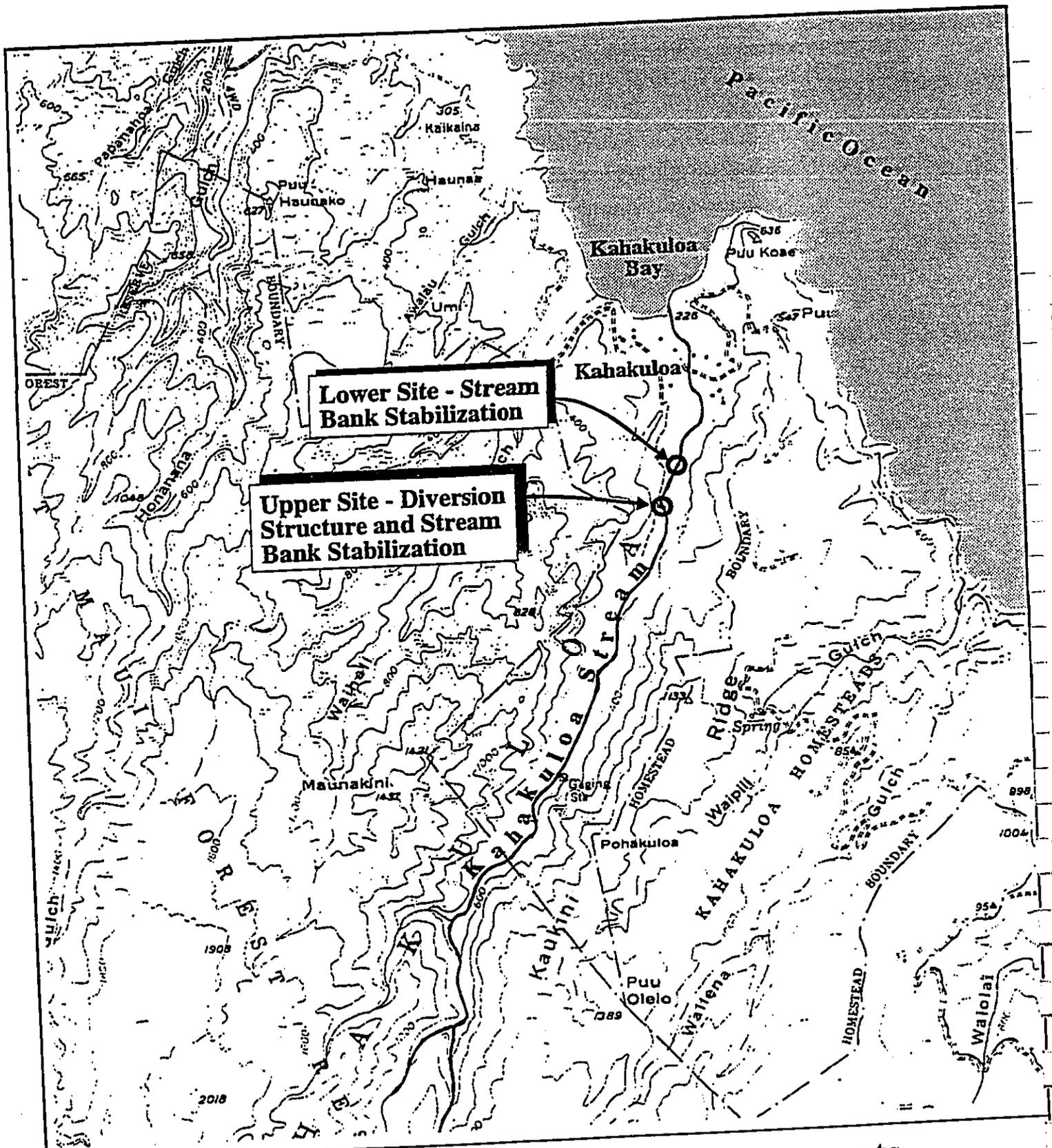


Figure 1 Kahakuloa Stream Improvements
Regional Location Map




 Michael T. Munekiyo Consulting, Inc.
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- 11 **ANNEKE KAHAKULOHA** & **LOUISE M-74**
- 30 **John & Deeg** & **Russ M-74**
- 103 **Charles G. Carter**

- 2 **Nancy KAHAKOHA**
- David R. KAHAKOHA, Deed**
- Arthur KAHAKOHA**
- James KAHAKOHA**
- Robert KAHAKOHA, Jr.**
- Michael KAHAKOHA**
- Clifford KAHAKOHA**
- John KAHAKOHA**
- Robert KAHAKOHA, Jr.**
- Harry KAHAKOHA**

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-
- As needed, provide stream bank stabilization at the diversion site to ensure the long-term structural integrity of the diversion structure.

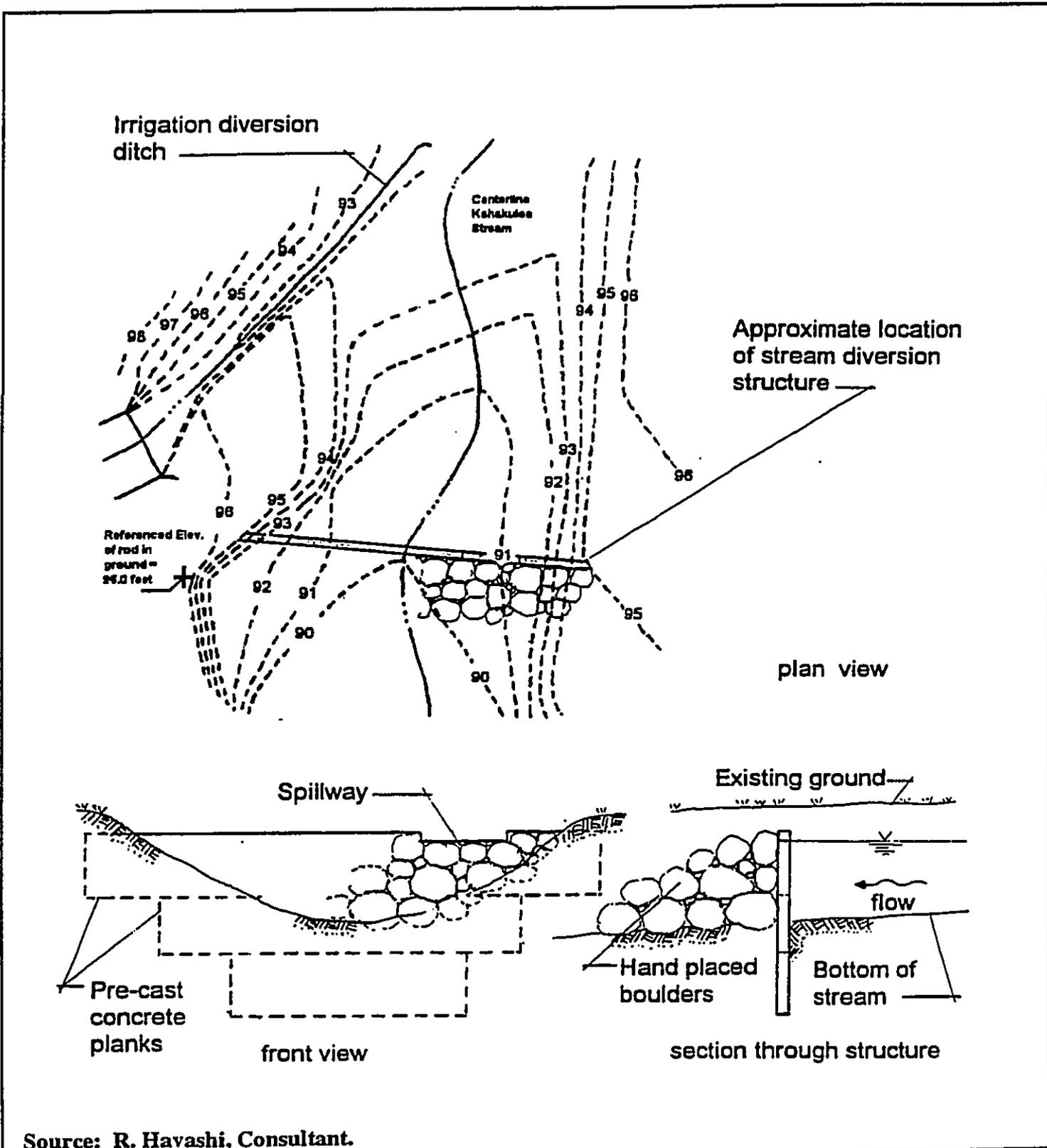
Lower Site

- Provide stream bank stabilization improvements along the access roadway leading to the diversion site (approximately one-fourth of a mile downstream of the diversion site).

Proposed improvements at the Upper Site include rebuilding an existing diversion structure and its ditch intake, and related incidental work, including stabilizing the stream banks immediately downstream of the proposed diversion structure. If needed, stream bank stabilization would be provided only to the extent needed to ensure the long-term structural integrity of the diversion structure and intake. The diversion structure will consist of a concrete core and hand-placed boulders. See Figure 4. The section of Kahakuloa Stream affected by the proposed diversion works is approximately 30-ft. wide (bank-to-bank). Stream bank stabilization required makai of the diversion structure will be of concrete and rock construction. Rock material used in the construction of the proposed improvements will be obtained from the stream bed/bank at the site.

Stream stabilization work at the Lower Site will involve the placement of large boulders along the severely eroded west bank. See Figure 5. The boulders will be left ungrouted and will serve to dissipate energy of large storm flows. This improvement is intended to protect the existing access road to the Upper Site and surrounding taro farms. Approximately 100 lineal feet of stream bank will be protected.

In addition to the improvements at the Upper and Lower Sites, other incidental work will include repairs to two existing concrete ford crossings which provide vehicular access to numerous taro lo'i and the Upper Site.

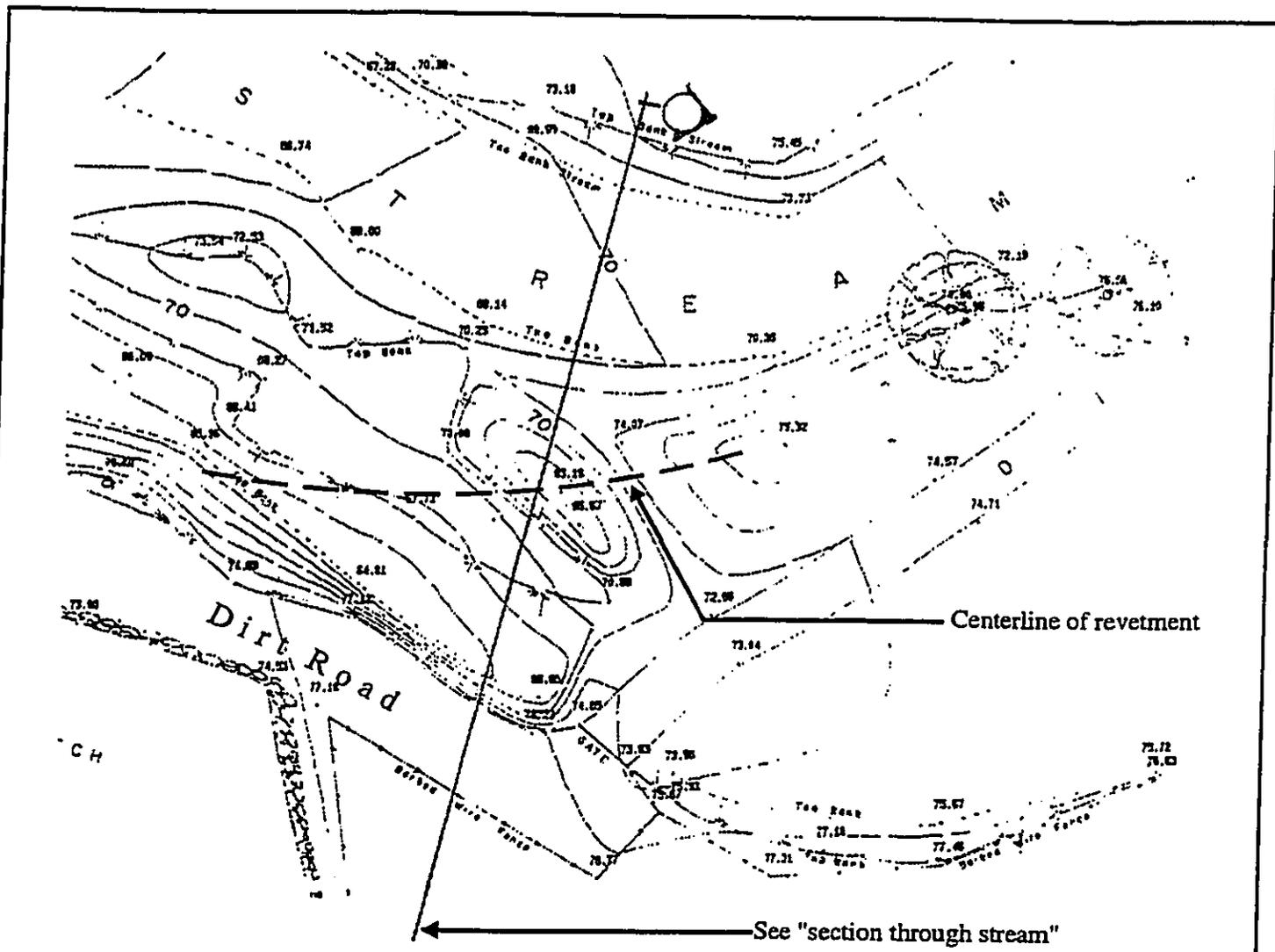


Source: R. Hayashi, Consultant.

Figure 4 Kahakuloa Stream Improvements
 Proposed Stream Diversion
 Improvements at Upper Site

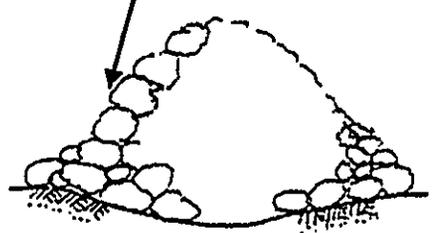
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 Prepared for: Lokahi Pacific



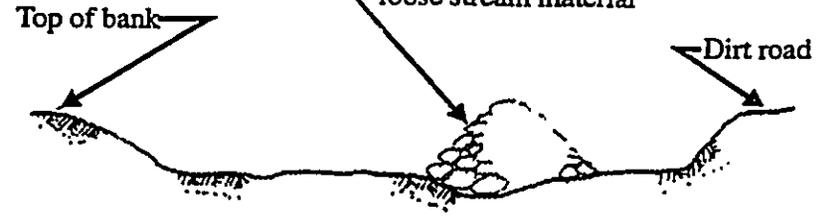
Plan View of Stream

Push or place larger loose boulders from stream to stream centerline side of revetment



Revetment Section

Diversion revetment built from loose stream material



Section Through Stream

Source: R. Hayashi, Consultant.

Figure 5 Kahakuloa Stream Improvements Proposed Lower Site Improvements

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Repairs would include the concrete patching of the undermined and broken sections of the ford crossings.

The cost for the proposed improvements are expected to be on the order of \$200,000.00. Construction time anticipated to complete work at the Upper and Lower sites is estimated to be between 45 to 60 calendar days.

C. PROJECT NEED

The existing diversion structure at the Upper Site consists of hand-placed rocks and plastic lining and is constructed to increase the water surface elevation to allow water conveyance into the existing taro irrigation intake system. Over the past several years, the streambed elevation has been reduced due to natural erosional processes, with significant erosion occurring during large rainfall events. This streambed erosion has created a condition where surface flows from Kahakuloa Stream cannot adequately be diverted into the existing diversion structure to provide a sustained water supply for the Kahakuloa taro farmers. The result has been that taro cultivation opportunities in the Valley have been significantly reduced.

It is also noted that after large storm flow events, the existing diversion structure is heavily damaged requiring labor-intensive repairs by taro farmers.

In addition to the Upper Site improvements, the project will involve stream bank stabilization (at the Lower site) along a section of the stream which borders the access roadway to the diversion site. Further erosion to this stream bank will result in the undermining of the roadway, thereby threatening vehicular access to the diversion site and surrounding taro farms.

The State Department of Land and Natural Resources has made funds available for this project to the County of Maui. In turn, the County of Maui has granted the funds to Lokahi Pacific to oversee project administration and implementation.

Chapter II

Description of the Existing Environment

II. DESCRIPTION OF THE EXISTING ENVIRONMENT

A. PHYSICAL ENVIRONMENT

1. Surrounding Land Use

The project site is approximately 12 miles northwest of the urbanized region of Kahului and Wailuku in Central Maui, and approximately 14 miles northeast of Kapalua in West Maui. The Upper and Lower Sites are upstream of Kahakuloa Village within cultivated taro lands, scattered dwellings and vacant land. The West Maui Forest Reserve is southwest (*mauka*) of the project area, while lands to the west and southeast are primarily vacant and undeveloped. There is scattered cattle grazing in the extended area.

2. Climate

Like most areas of Hawaii, Maui's climate is relatively uniform year-round. Characteristic of Hawaii's climate, the project site experiences mild and uniform temperatures year round, moderate humidities and a consistent northeasterly tradewind. Variations in climate on the Island is largely left to local terrain.

Average temperatures at the project site range from lows in the 60's to highs in the 80's. August and September are historically the warmest months, while January and February are the coolest. Average annual rainfall in the Kahakuloa watershed ranges from about 45 inches at the coast to 250 inches near Eke Crater.

3. Topography and Soil Characteristics

The project sites are located in the lower reaches of Kahakuloa Valley on the northeastern side of West Maui. West Maui is characterized by deep valleys, steep cliffs and large mountain ridges. Kahakuloa Valley is a linear valley with a relatively narrow gorge

from the stream origin to its mouth. Accordingly, slopes within the project area vary with proximity to the stream.

The soils of the Kahakuloa watershed are chiefly well drained latasols belonging to the Rock land-Rough mountainous association. See Figure 6. This association is characterized by very shallow, steep, rock land and rough mountain land. The soil type specifically associated with the lower reaches of Kahakuloa Stream is Stony alluvial land (rSM). This alluvial soil type consists of stones, boulders and soil deposited by Kahakuloa Stream. See Figure 7.

4. **Flood and Tsunami Hazard**

The lower reaches of Kahakuloa Valley is subject to periodic flooding from Kahakuloa Stream. According to the Hawaii Stream Assessment (DLNR, 1990), the average annual stream flow at U.S.G.S. gaging 618000 is 17.3 cubic feet per second. (The gaging station is located approximately one (1) mile upstream of the Upper Site.)

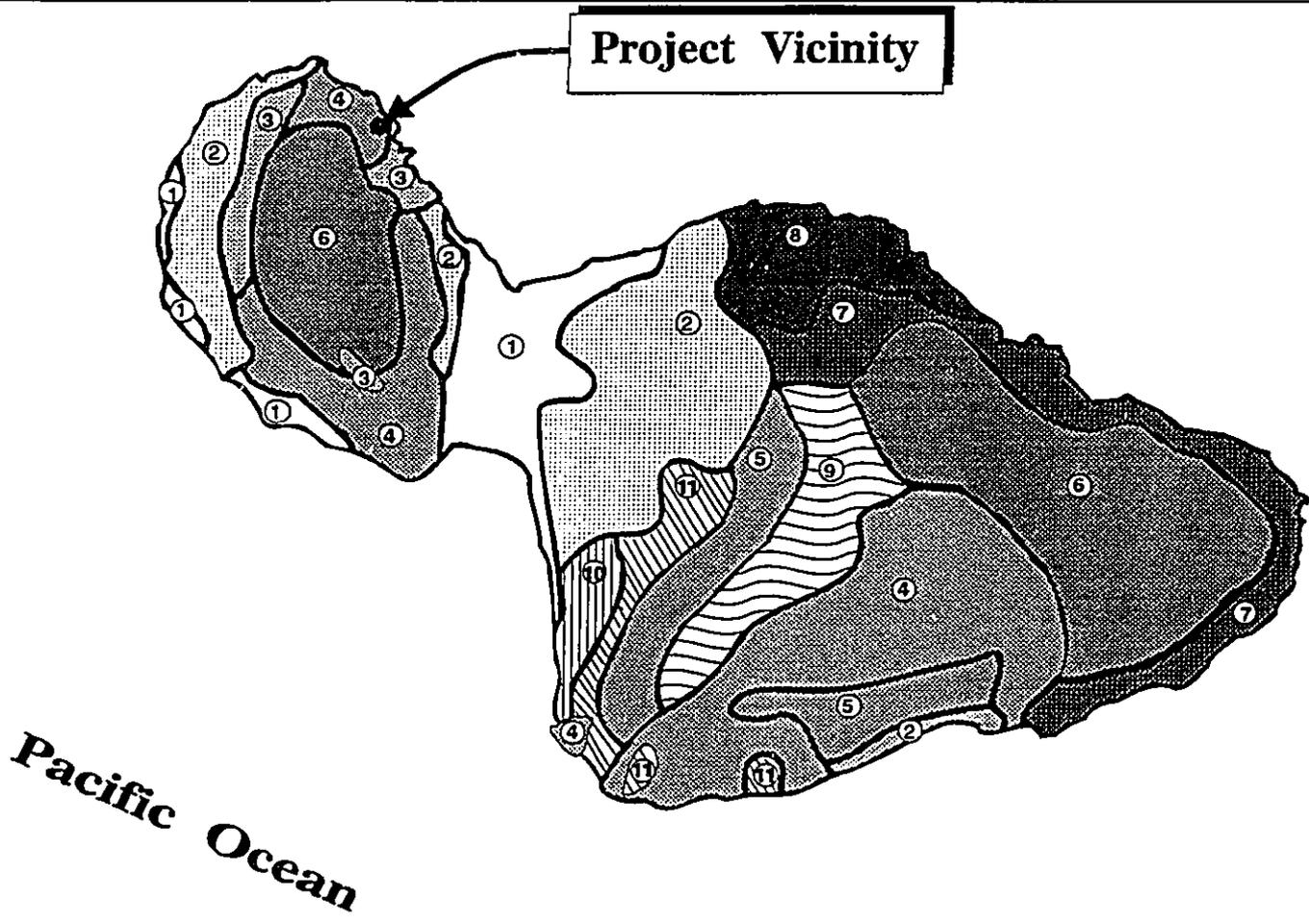
The Flood Insurance Rate Map for this region indicates that the areas in the vicinity of the Upper and Lower sites fall within Zone C, areas of minimal flooding.

5. **Flora and Fauna**

The flora of the lower lands in the Kahakuloa watershed up to the 400 foot elevation consists primarily of grasses and low shrubs. The grasses include Bermuda (Cynodon dactylon), paspalum (Paspalum conjugatum), and guinea (Panicum maximum). Introduced shrubs and trees include Christmas berry (Schinus terebinthifolius), lantana (Lantana camara), ironwood (Casuarina equisetifolia), Formosa koa

LEGEND

- | | | | |
|---|--|---|-----------------------------------|
|  | Pulehu-Ewa-Jaucas association |  | Hana-Makaalae-Kailua association |
|  | Waiakoa-Keahua-Molokai association |  | Pauwela-Haiku association |
|  | Honolua-Olelo association |  | Laumaia-Kaipoi-Olinda association |
|  | Rock land-Rough mountainous land association |  | Keawakapu-Makena association |
|  | Puu Pa-Kula-Pane association |  | Kamaole-Oanapuka association |
|  | Hydrandepts-Tropaquods association | | |



Map Source: USDA Soil Conservation Service

Figure 6 Kahakuloa Stream Improvements
Soil Association Map



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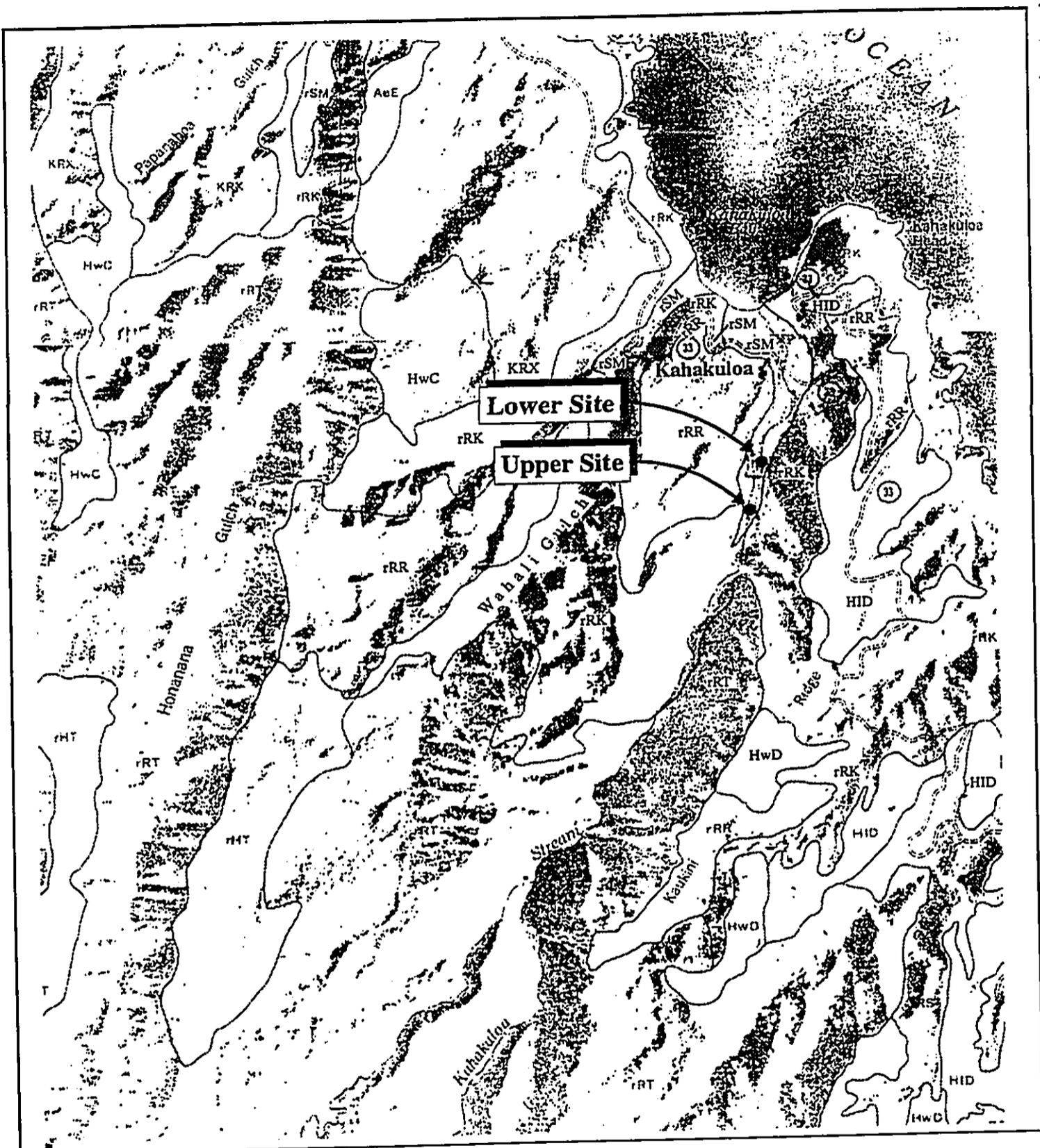


Figure 7 Kahakuloa Stream Improvements
Soil Classifications




Michael T. Munekiyo Consulting, Inc.
Prepared for: Lokahi Pacific

(Acacia confusa), guava (Psidium guajava), Java plum (Eugenia cumini), and koa haole (Leucaena leucocephala). There are some endemic species such as ulei (Osteomeles anthyllidifolia), alahee (Canthium odoratum), a'alii (Dodonea eriocarpa), and akia (Wikstroemia elongata). The maia pilo or pua pilo (Capparis sandwichiana) is the only known rare and endangered endemic plant found in this area. Several acres of wetland taro are cultivated in Kahakuloa for local use (Wilson Okamoto & Associates, 1977).

No known rare or endangered terrestrial fauna is found in the vicinity of the project site. Sea birds are quite common to the coastal areas. These include the Kolea, akeake, Wili, uakani, noio, iwa, and Koaie. In the middle zones below the forest are found pheasant, barred dove, Japanese quail, white eye, mynah, sparrow, ricebird, linnnet and pueo. Feral pigs inhabit the forest area. Other mammals found here are the mongoose, rat, and mouse (Wilson Okamoto & Associates, 1977).

Kahakuloa Stream is ranked "outstanding" in the Hawaii Stream Assessment (DLNR, 1990) for it's biological quality. Stream fauna found in Kahakuloa Stream includes the endemic goby, a diadromous fish that completes part of its life cycle in the ocean. Gobies found in Kahakuloa Stream include the O'opu nakea (Awaous stamineus), O'opu alamo'o (Lentipes concolor), and O'opu nopili (Sicyopterus stimpsoni). Other native fish found in Kahakuloa Stream include the Eleotrid O'opu okuhe (Eleotris sandwicensis) and the Kuhliid Aholehole (Kuhlia sandwicensis). The native prawn O'pae 'oeha'a (Macrobrachium grandimanus), the native Shrimp O'pae kala'ole (Atyoda bisulcata) and the native snail Hihiwai (Neritina granosa) are also found in Kahakuloa Stream (State of Hawaii,

Department of Land and Natural Resources and the National Park Service, 1990; and Skippy Hau, personal communication.)

6. **Air Quality**

Remote from any point and non-point sources of emission (e.g. urbanized Wailuku-Kahului region), the quality of air at the project site is considered excellent. This level of air quality can also be attributed to the area's constant exposure to the trade winds which quickly disperse emissions.

7. **Noise Characteristics**

Noise levels in the vicinity of the project site, due to its relatively remote setting, are very low. The primary source of background noise in the project area is attributed to natural conditions (e.g., wind).

8. **Visual Resources**

The Upper Site is located at about 120 feet above sea level, approximately 0.60 mile upstream from the mouth of Kahakuloa Stream. As Kahakuloa Valley is a narrow, densely vegetated valley with steep walls, the sites, which are located on the valley floor, are only visible from the area immediately adjacent to it. The diversion site and stream stabilization site are not visible from Kahekili Highway.

9. **Archaeological Resources**

No thorough archaeological survey has been conducted in Kahakuloa Valley (DLNR, 1982). Nonetheless, even though archaeological coverage of Kahakuloa Stream is very light, it is thought that the stream represents a continuous archaeological site.

Using National Register of Historic Places Criteria, the valley contains important archaeological information and culturally noteworthy sites (Hawaii Stream Assessment, 1990).

Walker (1928) identified several archaeological sites within Kahakuloa Valley, including the **Kaneaola Helau** (Site 22 C12-2) on the west side of Kahakuloa Valley just mauka of the old school site, and the **Kuewa Helau** (Site 23 C12-3) located one half mile mauka of Kahakuloa Village on the east side of the stream.

It is not known whether the irrigation ditch itself represents an archaeological resource. However, it is estimated that ditch on the west side of the valley was built in the late 1800's or early 1900's (DLNR, 1982).

The limits of construction improvements at the Upper and Lower Sites will be contained within the Kahakuloa Stream channel and will not affect features along and adjacent to the stream.

10. Cultural Resources

The residents of Kahakuloa Valley have retained much of the Hawaiian fishing/agrarian lifestyle. Their lifestyle is centered around the ocean and the stream, which provide water for domestic needs, agricultural needs, recreational uses, and as a major source of food.

Taro farming has been an important part of the community's agrarian lifestyle since precontact times. The taro lo'i complex in Kahakuloa Valley is considered very extensive (DLNR, 1982).

Handy (1940) describes Kahakuloa as "one of the most genuinely

native communities still extant in the islands [with] a population of about 20 families, all Hawaiian and all taro planters."

Following World War II, many of the taro patches were abandoned. Recent years, however, have seen a resurgence of interest in traditional taro farming, and once disused patches are again under cultivation. Today, taro farmers rely on water from Kahakuloa Stream to irrigate taro crops. Taro farms on the east side of the valley rely upon the ditch system and intake for which improvements are proposed.

B. PUBLIC SERVICES

1. Recreational Facilities

The Wailuku-Kahului region located southeast of the project site, offers a full range of recreational opportunities including beaches, public pools, public parks, community centers and the War Memorial Complex. Recreational resources are also available in Kapalua, some 14 miles to the southwest of Kahakuloa. These include beaches and golfing, Recreational opportunities in the vicinity of Kahakuloa itself exist for fishing, diving, and hiking.

It is noted that the Boy Scouts of America's Camp Maluhia is located approximately four (4) miles south of Kahakuloa Village. Facilities at Camp Maluhia include cabins, hiking trails, archery and rifle ranges, and a swimming pool.

2. Police and Fire Protection

The County Police Department, headquartered at the Wailuku Station, provides police protection for Kahakuloa. The Police Station is approximately 13 miles from the project site.

The County Department of Fire Control's Wailuku Station provides fire prevention, suppression and protection services for this area of the island. The Wailuku Fire Station is in old Wailuku Town, approximately 13.5 miles from the project site.

3. **Solid Waste**

Single-family residential solid waste collection service is provided by the County of Maui on a once-a-week basis. Residential solid waste collected by County crews are disposed of at the County's 55-acre Central Maui Landfill, located four miles southeast of the Kahului Airport. In addition to County-collected refuse, the Central Maui Landfill accepts commercial waste from private collection companies.

There is no County refuse collection at Kahakuloa Village.

4. **Health Care**

Maui Memorial Hospital, the only major medical facility on the island, services the Wailuku-Kahului region. Acute, general and emergency care services are provided by the 145-bed facility. In addition, numerous privately operated medical/dental clinics and offices are located in the area to serve the region's residents.

5. **Schools**

The Wailuku-Kahului region is served by the State Department of Education's public school system as well as several privately operated schools accommodating elementary, intermediate and high school students. Department of Education facilities in the vicinity of Kahakuloa include Waihee School (Grades K to 5), Iao School (Grades 6 to 8), and Baldwin High School (Grades 9 to 12).

C. INFRASTRUCTURE

1. Roadways

Kahekili Highway serves as the single public roadway between the Wailuku-Kahului region and Kahakuloa. Kahekili Highway continues north, linking Kahakuloa with the West Maui communities of Kapalua, Kaanapali and Lahaina (via Honoapiilani Highway). Kahekili Highway, north of Waihee, is narrow, winding and considered substandard in terms of current roadway design criteria.

2. Wastewater

There is no municipal wastewater collection system in the Kahakuloa area. Wastewater disposal is accommodated through cesspools and individual wastewater systems.

3. Water

Kahakuloa Stream provides the residents of Kahakuloa Valley with water for domestic purposes and agricultural uses (especially taro cultivation).

4. Drainage

There are no drainage improvements in the vicinity of the proposed project sites. Surface runoff percolates naturally into the ground or makes its way to Kahakuloa Stream, which drains into Kahakuloa Bay.

Chapter III

Project Impact Assessment

III. PROJECT IMPACT ASSESSMENT

A. PHYSICAL ENVIRONMENT

1. Surrounding Uses

The project sites, situated within Kahakuloa Stream, are surrounded by undisturbed land, scattered residences and taro patches (lo'i). The proposed improvements at the Upper and Lower Sites will not adversely impact surrounding land uses. In fact, once constructed, the improvements will increase the amount of water available for taro irrigation and maintain the long-term integrity of the farming system in Kahakuloa Valley.

2. Local Topography

Project completion will help to stabilize Kahakuloa Stream bed and banks at the Upper and Lower Sites.

The proposed diversion structure will incorporate stream rocks and boulders in its construction and is not considered to be a significant topographical impact.

Similarly, stabilization at the Lower Site will not significantly alter stream topography which has eroded to a nearly vertical slope. Existing stream bank conditions threaten to undermine both the access roadway and taro lo'i along the west side of the road.

3. Flora and Fauna

As Kahakuloa Stream offers habitat to rare endemic aquatic species, adequate mitigative measures must be taken to protect stream fauna both in design and construction of the dam and stream bank stabilization.

The diversion structure will be designed so as not to interfere with fish spawning and migratory activities. The downstream face of the diversion structure will provide a rough surface characterized by rocks/cobbles. The rough surface (breaking up the stream flows) will provide desirable conditions under which stream fauna can migrate upstream. In addition, low stream flows will be directed away from the ditch intake. This will minimize the likelihood of fish entering the intake, thereby increasing the opportunity for upstream migration. Construction activities will minimize impact to migratory fish species by maintaining stream flow throughout the construction period.

Construction associated activity which disturbs the bottom sediment increases turbidity and may affect bottom dwelling aquatic organisms, drive away fish and other mobile organisms and alter the existing habitat at the site (US. Fish and Wildlife Service, 1980) Construction will be timed to coincide with low stream flow in order to minimize downstream transport of sediment.

4. Air Quality

Air quality impacts attributed to the project will include dust generated by short-term, construction-related activities. Site work may generate air borne particulates, and mitigative measures will be implemented as warranted.

No long-term impacts to air quality are anticipated as a result of project implementation.

5. Water Quality

Water quality impacts anticipated during the construction phase are associated with increased turbidity from the disruption of the stream

bed. In the long-term, the proposed improvements at the Upper and Lower Sites will reduce localized stream erosion.

6. **Noise**

As with air quality, ambient noise conditions will be impacted by construction activities. Construction equipment (e.g., portable concrete mixers) will be the dominant source of noise during construction. All construction activities will be limited to normal, daylight working hours. Given the site's remote location, temporary construction noise is not considered a significant issue.

7. **Visual Resources**

The proposed improvements will not have an adverse impact upon the visual character of the surrounding area. The installation of a low diversion structure and related incidental work at the Upper Site will not alter the visual quality and ambience of the surrounding environs. Similarly, the stabilization of the stream bank at the Lower Site is not anticipated to alter the visual character of the immediate surrounding area.

8. **Cultural Resources**

Because the project sites are very localized and within the channel of the Kahakuloa Stream, there is no impact anticipated to archaeological sites in the extended area. It is noted that the proposed improvements will serve to preserve and maintain historic use of the area and perpetuates the historic and cultural value of taro farming.

B. PUBLIC SERVICES

The proposed project will not result in any adverse impacts to public

services. The project will not affect requirements for recreational facilities, police or fire protection, medical facilities or schools.

C. INFRASTRUCTURE

The proposed improvements at the Upper Site and Lower Site will not adversely affect domestic infrastructure systems serving Kahakuloa residents. The improvements are, however, considered a significant enhancement to the agricultural infrastructure system which is an integral part of the lifestyle of Kahakuloa residents.

Chapter IV

***Relationship to Government
Plans, Policies and Controls***

IV. RELATIONSHIP TO GOVERNMENT PLANS, POLICIES AND CONTROLS

A. U.S. DEPARTMENT OF THE ARMY PERMIT

The Department of the Army, Corps of Engineers has determined that a Department of the Army permit will be required for improvements at the Upper and Lower Sites. Accordingly, a permit application has been filed with the Corps of Engineers. (Refer to comment letter from the U.S. Department of the Army (Chapter VI).)

B. SECTION 401 WATER QUALITY CERTIFICATION

As required by Section 401 of the Clean Water Act, "Any applicant for a federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters, shall provide the licensing or permitting agency a certification ... that any such discharge will comply with the applicable provisions ... of this Act." Inasmuch as a Corps of Engineers permit is required for proposed improvements, a 401 Water Quality Certification application has been filed with the Director of the State of Hawaii, Department of Health (DOH) (the designated issuing authority for the 401 Water Quality Certification).

C. HAWAII COASTAL ZONE MANAGEMENT PROGRAM

The Hawaii Coastal Zone Management Program (HCZMP), as formalized in Chapter 205A, Hawaii Revised Statutes, establishes objectives and policies for the preservation, protection, and restoration of natural resources of Hawaii's coastal zone areas. The objective of the HCZMP are as follows:

1. Provide coastal recreational opportunities accessible to the public;
2. Protect, preserve, and where desirable, restore those natural and man-made historic and prehistoric resources in the

coastal zone management area that are significant in Hawaiian and American history and culture;

3. Protect, preserve, and where desirable, restore or improve the quality of coastal scenic and open space resources;
4. Protect valuable coastal ecosystems from disruption and minimize adverse impacts on all coastal ecosystems;
5. Provide public or private facilities and improvement important to the state's economy in suitable locations;
6. Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, and subsidence; and
7. Improve the development review process, communication, and public participation in the management of coastal resources and hazards.

Since a U.S. Department of Army permit will be required for the proposed stream improvements, a Coastal Zone Management consistency review will be required. Processing and certification is administered by the State of Hawaii, Office of State Planning, Coastal Zone Management Program Office. An application for a Coastal Zone Management Consistency certification has been filed with the Office of State Planning.

D. STATE WATER CODE

The State Water Code (Chapter 174C, Hawaii Revised Statutes) is intended to protect the water resources of the State of Hawaii by:

- a. Providing a program of comprehensive water resources planning;
- b. Maximizing the beneficial use of waters of the State for purposes such as domestic uses, aquaculture uses, irrigation and other agricultural uses, power development, and commercial and industrial uses; and
- c. Protecting and improving the quality of waters of the State.

With respect to the proposed improvements, the Water Code and its Administrative Rules may require that the following approvals and permits be obtained from the State Commission on Water Resources Management;

- a. Approval to amend interim instream flow standard;
- b. Permit for Stream Channel Alteration; and
- c. Permit for Stream Diversion Works.

It is noted however, that Section 174C-101 of the Water Code states that:

Traditional and customary rights of ahupua'a tenants who are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778 shall not be abridged or denied by this chapter. Such traditional and customary rights shall include, but not be limited to, the cultivation or propagation of taro on one's own kuleana... (Section 174C-101(c)).

Furthermore, the Water Code states that:

The appurtenant water rights of kuleana and taro lands, along with those traditional and customary rights assured in this section, shall not be diminished or extinguished by a failure to apply for or to receive a permit under this chapter. (Section 174C-101(d)).

In light of the foregoing provisions, the need to apply for and obtain the necessary approvals and permits pursuant to Chapter 174C, HRS, will be addressed through coordination with DLNR's Division of Water Resources Management.

E. STATE LAND USE DISTRICTS

Chapter 205, Hawaii Revised Statutes, relating to the Land Use Commission, establishes the four major land use districts in which all lands in the State are placed. These districts are designated "Urban", "Rural", "Agricultural", and "Conservation". The Upper Site is located within the

"Agricultural" district, while the Lower Site falls within the "Rural" district. See Figure 8.

F. GENERAL PLAN OF THE COUNTY OF MAUI

The General Plan of the County of Maui (1990) update provides long-term goals, objectives and policies directed toward the betterment of living conditions in the County. Addressed are social, environmental, and economic issues which influence both the quantity and quality of growth in Maui County. The following General Plan objectives and policies are addressed by the proposed project:

Objective: To preserve lands that are well suited for agricultural pursuits.

Policy: Promote the use of agricultural lands for diversified agricultural pursuits by providing public incentives and encouraging private initiative.

Provide adequate irrigation water and access to agricultural lands.

Objective: To preserve for present and future generations the opportunity to know and experience the arts, culture and history of Maui County.

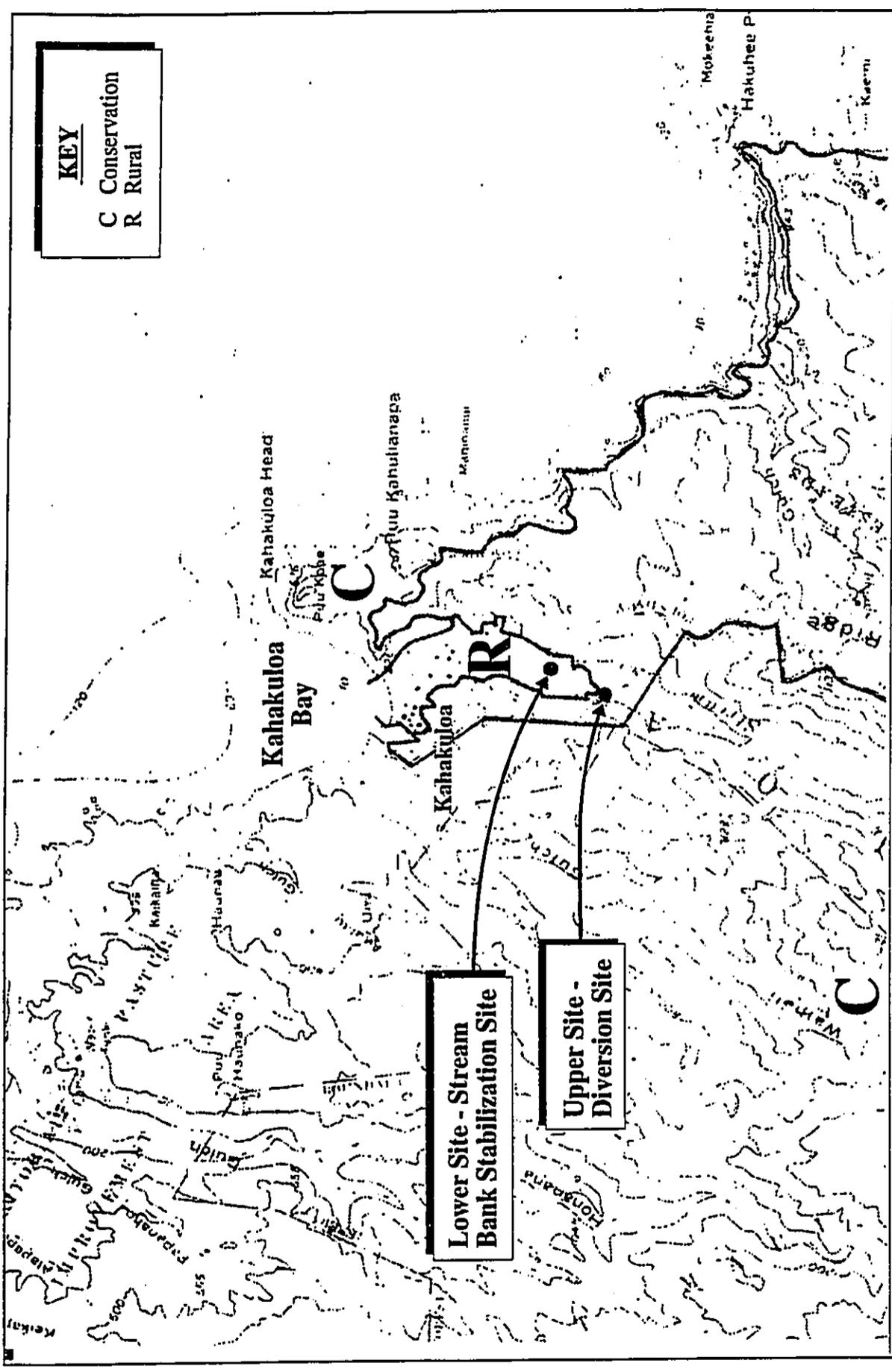
Policy: Encourage the rehabilitation and adaptive use and reuse of historic districts, sites and buildings in order to perpetuate traditional community character and values.

Objective: To provide an economic climate which will encourage controlled expansion and diversification of the County's economic base.

Policy: Support programs, services and institutions which provide economic diversification.

Objective: To maximize the use and yield of productive agricultural land throughout the County.

Policy: Ensure the availability of adequate irrigation water for agricultural purposes during periods of limited rainfall.



KEY
 C Conservation
 R Rural

Lower Site - Stream
 Bank Stabilization Site

Upper Site -
 Diversion Site

Figure 8 Kahakuloa Stream Improvements
 State Land Use Classifications



Michael T. Munekiyo Consulting, Inc.
 Prepared for: Lokahi Pacific

G. WAILUKU-KAHULUI COMMUNITY PLAN

Nine (9) community plan regions have been established in Maui County. Each region's growth and development is guided by a Community Plan, which contains objectives and policies drafted in accordance with the County General Plan. The purpose of the Community Plan is to outline a relatively detailed agenda for carrying out these objectives.

The proposed project is located within the Wailuku-Kahului Community Plan region. The *Wailuku-Kahului Community Plan* acknowledges the need to preserve small agricultural communities.

Maps are included within each Community Plan in order to capture spatially the intent of the plan. The Upper Site is designated "Agriculture" by the Wailuku-Kahului Community Plan Land Use Map, while the Lower Site is designated "Rural". See Figure 9.

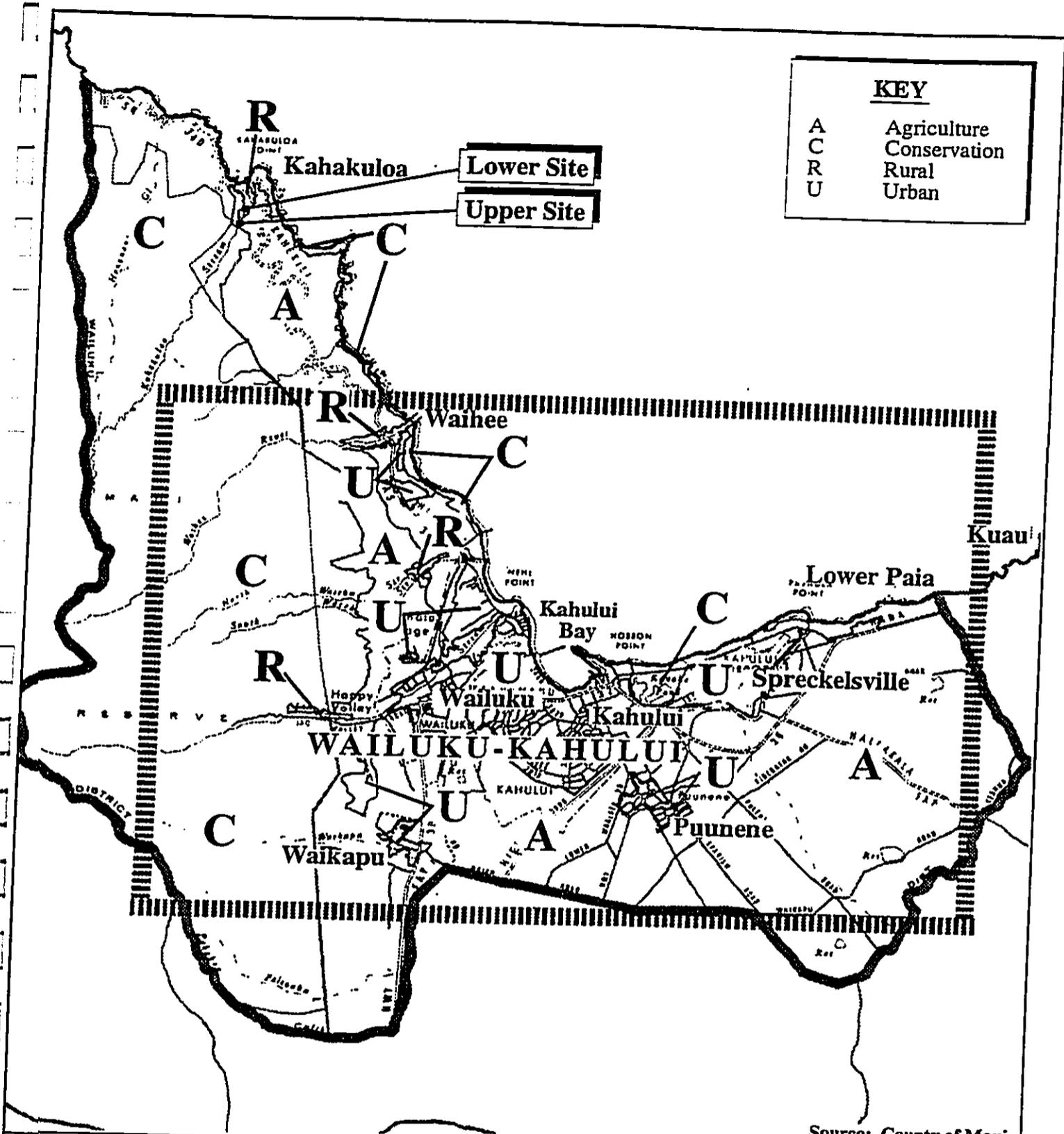


Figure 9 Kahakuloa Stream Improvements
 Wailuku-Kahului Community Plan
 Map Designations



NOT TO SCALE



Michael T. Munekiyo Consulting, Inc.
 Prepared for: Lokahi Pacific

Chapter V

Findings and Conclusion

V. FINDINGS AND CONCLUSION

The proposed improvements at the Upper Site will include a new diversion structure and related incidental improvements to ensure the long-term integrity of irrigation water supply to downstream taro farmers. The proposed improvements at the Lower Site, is also intended to preserve the long-term viability of taro farming by protecting the stream bank which supports the existing access road to the Upper Site and surrounding taro farms.

The improvements are localized and contained within the Kahakuloa Stream banks. Access to the work sites can be gained without encroaching into undisturbed areas which surround the project areas. The primary construction-related impact is related to stream turbidity resulting from the movement and relocation of stream bed materials (primarily rocks). This disturbance will be limited in areal extent. Furthermore, installation of improvements at each site will be undertaken during low flow months and will be completed within 45-60 days. In this regard, construction activities are not anticipated to result in adverse environmental impacts to the immediate surrounding areas.

With regard to long-term environmental considerations, the proposed diversion structure design will incorporate features which will support the upstream migration of native aquatic species. Specifically, the downstream face of the diversion structure will provide a rough surface characterized by rocks/cobbles to provide more desirable conditions under which stream fauna can migrate. In addition, low flows will be directed away from the ditch intake to minimize the likelihood of fish entering the intake. This design feature will increase the opportunity for upstream migration of aquatic species.

In light of the foregoing findings, it is concluded that the proposed action will not result in significant adverse impacts upon the local and regional environments.

Chapter VI

*Agencies Contacted in the
Preparation of the Draft
Environmental Assessment
and Responses Received*

**VI. AGENCIES CONTACTED IN THE PREPARATION OF THE
DRAFT ENVIRONMENTAL ASSESSMENT AND RESPONSES
RECEIVED**

The following agencies were contacted during the preparation of the Draft Environmental Assessment:¹

- | | | | |
|-----|--|------|--|
| 1. | State of Hawaii
Department of Land and
Natural Resources
1151 Punchbowl Street
Honolulu, Hawaii 96813 | 6. | Mr. Lloyd Lee
County of Maui
Department of Public Works
Engineering Division
200 S. High Street
Wailuku, Hawaii 96793 |
| *2. | Don Hibbard
State of Hawaii
Department of Land and
Natural Resources
1151 Punchbowl Street
Honolulu, Hawaii 96813 | *7. | Department of Land and
Natural Resources
Division of Water Resources
Management
P. O. Box 373
Honolulu, Hawaii 96809 |
| *3. | David Nakagawa, Chief
Sanitarian
State of Hawaii
Department of Health
54 High Street
Wailuku, Hawaii 96793 | 8. | Mr. Ralph Nagamine
County of Maui
Land Use and Codes Division
250 S. High Street
Wailuku, Hawaii 96793 |
| *4. | Mr. Bob Siarot
State of Hawaii
Department of Transportation
650 Palapala Drive
Kahului, Hawaii 96732 | 9. | Mr. Neal Fujiwara
U.S. Department of Agriculture
Soil Conservation Service
70 S. High Street, Room 215
Wailuku, Hawaii 96793 |
| *5. | Brian Miskae, Director
County of Maui
Department of Planning
250 S. High Street
Wailuku, Hawaii 96793 | *10. | U.S. Army Corps of Engineers
Pacific Ocean Division
Building 230
Fort Shafter, Hawaii 96858 |

¹ Responses were received from those agencies marked with an asterisk (*).

LINDA CROCKETT LINGLE
Mayor



APR 15 1993
BRIAN W. MISKAE
Planning Director

**COUNTY OF MAUI
PLANNING DEPARTMENT**

260 S. HIGH STREET
WAILUKU, MAUI, HAWAII 96793

April 12, 1993

Mr. Michael T. Munekiyo
Munekiyo Consulting, Inc.
1823 Wells Street, Suite 3
Wailuku, Hawai'i 96793

Dear Mr. Munekiyo:

SUBJECT: Proposed Kahakuloa Stream Improvements

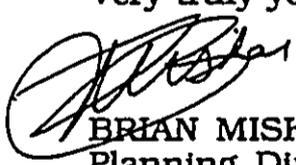
Our review of the proposed repairs to the existing stream diversion system and streambank stabilization indicates that the construction work will enhance the productivity of taro lands at Kahakuloa. These repairs seem necessary to maintain sufficient water level for diversion as well as to maintain the existing streambed and access road.

Apparently the work is all within the streambed itself and will not disturb structures other than the dam itself. However, we caution that construction equipment and activities avoid disturbance of existing stone walls in the vicinity of the streambed, as they may be related to early Hawaiian occupation and cultivation. The proposed action should also provide mitigation measures for disturbance to wildlife and water quality.

Additionally, we support the enhancement of taro cultivation lands both for the maintenance of Hawaiian cultural traditions and for Maui's agricultural and economic diversity.

If further clarification is required, please contact Elizabeth Anderson of my office.

Very truly yours,


BRIAN MISKAE
Planning Director

xc: Colleen Suyama
Clayton Yoshida
Elizabeth Anderson

JOHN WAIHEE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
P. O. BOX 621
HONOLULU, HAWAII 96809

APR 20 1993
Keith W. Ahue, Chairperson
BOARD OF LAND AND NATURAL RESOURCES

DEPUTY
John P. Keppeler, II
Dona L. Hanaïke

AQUACULTURE DEVELOPMENT
PROGRAM
AQUATIC RESOURCES
CONSERVATION AND
ENVIRONMENTAL AFFAIRS
CONSERVATION AND
RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
PROGRAM
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

REF:OCEA:SKK

APR 19 1993

FILE NO.: 93-500
DOC. NO.: 2600

Mr. Michael T. Munekiyo, A.I.C.P.
Michael T. Munekiyo Consulting, Inc.
1823 Wells Street, Suite 3
Wailuku, Hawaii 96793

Dear Mr. Munekiyo:

SUBJECT: Early Consultation for an Environmental Assessment (EA):
Proposed Kahakuloa Stream Improvements, Kahakuloa, Maui,
TMK: 3-1-04; 3-1-05

We have reviewed the preliminary EA information for the subject project transmitted by your letter dated March 8, 1993, and have the following comment.

Brief Description:

The applicant proposes to: 1) repair the existing stream diversion system which provides irrigation water to Kahakuloa taro farmers, 2) provide stream bank stabilization at the diversion site, and 3) provide stream bank stabilization improvements along the access roadway leading to the diversion site.

The proposed improvements include rebuilding an existing dam and its ditch intake, stabilizing the stream banks immediately downstream of the proposed rebuilt dam, and other incidental work. In addition, a severely eroded section of the stream which now threatens the access road to the diversion site will be stabilized with the placement of large boulders along the stream bank.

Division of Aquatic Resources

The Division of Aquatic Resources (DAR) comments that its Maui Aquatic Biologist reports that since the proposed diversion is an existing one, this project is not expected to have significant adverse impact on aquatic resource values in this area.

In addition, he suggests that stones be added to the proposed design to break up the continuous flow coming over the diversion to improve upstream migration of native stream fauna.

DAR would support the following measures (as an inclusion) to minimize erosion and siltation during construction:

- 1) Site work should be scheduled for periods of minimal rainfall;
- 2) Lands denuded of vegetation should be replanted or covered as quickly as possible to control erosion;
- 3) Construction materials, petroleum products, and debris should be prevented from falling, blowing, or leaching into the aquatic environment.

Commission on Water Resource Management

The Commission on Water Resource Management (CWRM) staff comments that the project developer has been informed of the need to secure a Stream Channel Alteration Permit (SCAP) from CWRM. CWRM is awaiting the permit application for this project.

Division of Land Management

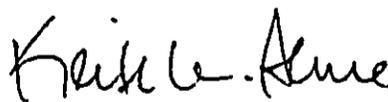
The Division of Land Management comments that it has no objections to the proposed project.

We will forward our Historic Preservation Division comments as they become available.

Thank you for the opportunity to comment on this matter.

Please feel free to contact Steve Tagawa at our Office of Conservation and Environmental Affairs, at 587-0377, should you have any questions.

Very truly yours,


KEITH W. AHUE

APR 18 1993

JOHN WAIHEE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

P. O. BOX 821
HONOLULU, HAWAII 96809

APR - 7 1993

KETH W. AHUE
CHAIRPERSON

JOHN C. LEWIN, M.D.
ROBERT S. NAKATA
RICHARD H. COX, P.E.
GUY K. FUJIMURA
J. DOUGLAS ING, ESQ.

RAE M. LOUI, P.E.
DEPUTY

Mr. Michael T. Munekiyo
1823 Wells Street, Suite 3
Wailuku, HI 96793

Dear Mr. Munekiyo:

Proposed Kahakuloa Stream Improvements

Please be advised that a stream channel alteration permit and a stream diversion works permit will be required for your proposed work in Kahakuloa Stream. Should you decide to proceed with the project, please complete the appropriate permit application forms, copies of which are herewith enclosed.

Sincerely,

A handwritten signature in cursive script, appearing to read "RAE M. LOUI".

RAE M. LOUI
Deputy Director

GM:ky
enclosure

JOHN WAIHEE
GOVERNOR OF HAWAII



APR 14 1993

KEITH AHUE, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCE

DEPUTIES

JOHN P. KEPPELER II
DONA L. HANAKE

AQUACULTURE DEVELOPMENT
PROGRAM

AQUATIC RESOURCES
CONSERVATION AND

ENVIRONMENTAL AFFAIRS
CONSERVATION AND

RESOURCES ENFORCEMENT
CONVEYANCES

FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
DIVISION

LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
33 SOUTH KING STREET, 6TH FLOOR
HONOLULU, HAWAII 96813

April 12, 1993

Mr. Michael T. Munekiyo, A.I.C.P.
1823 Wells St., Suite 3
Wailuku, Hawaii 96793

LOG NO: 7776
DOC NO: 9304AG21

Dear Mr. Munekiyo:

**SUBJECT: Historic Preservation Review of Proposed Kahakuloa
Stream Improvements
Kahakuloa, Wailuku, Maui**

Thank you for consulting our office for the preparation of an environmental assessment for the proposed Kahakuloa Stream Improvements Project. According to the project summary, these improvements consist of the repair of an existing stream diversion system, stream bank stabilization at the diversion site, and stream bank stabilization along the access road leading to the diversion site.

Kahakuloa Valley is known to contain historic sites such as agricultural terraces, habitation sites, and religious sites. Along Kahakuloa Stream are the remains of taro terraces and irrigation ditches, some of which are currently used while some have been abandoned for a number of years. The existing stream diversion dam was visited by our staff in 1991. The age of this diversion system is unknown, but it appears to be of modern construction. Thus, its repair and the stabilization of the stream bank adjacent to the dam will have "no effect" on historic sites.

The stabilization of the stream bank along the access road also appears to have "no effect" on historic sites. This work will only involve placement of boulders along the eroded bank to keep the roadway from collapsing.

Michael T. Munekiyo, A.I.C.P.
Page 2

Please contact Ms. Annie Griffin at 587-0013 if you have any questions about these comments.

Sincerely,



DON HIBBARD, Administrator
State Historic Preservation Division

c: Steve Tagawa, OCEA (File No. 93-500)
AG:lll

APR 1 8 1993

JOHN WAIHEE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF HEALTH
MAUI DISTRICT HEALTH OFFICE
54 HIGH STREET
WAILUKU, MAUI, HAWAII 96793

JOHN C. LEWIN, M.D.
DIRECTOR OF HEALTH
JOSEPH J. SOBOTKA
Acting DISTRICT HEALTH SERVICES ADMINISTRATOR (M.D.)

April 12, 1993

Mr. Michael T. Munekiyo
Michael T. Munekiyo Consulting, Inc.
1823 Wells St., Suite 3
Wailuku, Hawaii 96793

Dear Mr. Munekiyo:

Subject: Proposed Kahakuloa Stream Improvements

We have completed our review of the subject proposal and have the following comments:

Water Quality Certification

A Section 401 Water Quality Certification (WQC) is required for "Any applicant for a Federal License or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable water..", pursuant to Section 401 (a) of the Federal Water Pollution Act (commonly known as the "Clean Water Act (CWA)").

The Department of Health is requesting that the applicant contact the Army Corps of Engineers (COE) to identify whether a Federal permit (including a Department of Army (DA) permit) is required for this project. A Section 401 WQC is required when a Federal permit is required for the project.

Storm Water Discharge

A storm water National Pollutant Discharge Elimination System (NPDES) permit application is required for construction activities which involve the clearing, grading, and excavation of equal to or greater than five (5) acres of total land area. The Notice of Intent Form should be submitted to the Director of Health at least 90 days before the date on which construction is to commence.

The Department has adopted NPDES general permitting as a part of the Hawaii Administrative Rules, Chapter 11-55, effective October 29, 1992. Any construction

dewatering activity discharging water to surface waters will require an NPDES permit.

Should the project require site remediation for contaminated ground water, an additional NPDES permit is required for discharge of treated ground water into surface waters.

If you have any questions on the above, please contact Mr. Devender Narala of the Engineering Section of the Clean Water Branch on Oahu at 586-4309.

Sincerely,



DAVID H. NAKAGAWA
Chief Sanitarian

HN WAIHEE
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MAUI DISTRICT
630 PALAPALA DRIVE
KAHULUI, HAWAII 96732

REX D. JOHNSON
DIRECTOR
DEPUTY DIRECTORS
JOYCE T. OMINE
AL PANG
JEANNE K. SCHULTZ
CALVIN M. TSUDA
IN REPLY REFER TO:

TELECOPIER TRANSMISSION NOTE

DATE: 3/11/93
NUMBER OF PAGES: 1 (INCLUDING THIS SHEET)
TO: MIKE MUNEKIYO
FROM: F. CAJIGAL
SUBJECT: PROPOSED KAHAKULOA STREAM IMPROVEMENTS

COMMENTS:

WE HAVE NO COMMENTS AT THIS TIME. PROPOSED IMPROVEMENTS WILL NOT IMPACT OUR FACILITIES. OUR JURISDICITON ENDS AT CAMP MALUHIA (EFFECTIVE LATE THIS YEAR).

THANK YOU FOR THE OPPORTUNITY TO COMMENT ON THE DRAFT EA.

/fmc

MAR 30 1993



DEPARTMENT OF THE ARMY
U. S. ARMY ENGINEER DISTRICT, HONOLULU
FT. SHAFTER, HAWAII 96858-5440

REPLY TO
ATTENTION OF

March 24, 1993

Planning Division

Mr. Michael T. Munekiyo
Michael T. Munekiyo Consulting Inc.
1823 Wells Street, Suite 3
Wailuku, Maui, Hawaii 96793

Dear Mr. Munekiyo:

Thank you for the opportunity to review and comment on the Proposed Kahakuloa Stream Improvements Project, Maui. The following comments are provided pursuant to Corps of Engineers authorities to disseminate flood hazard information under the Flood Control Act of 1960 and to issue Department of the Army (DA) permits under the Clean Water Act; the Rivers and Harbors Act of 1899; and the Marine Protection, Research and Sanctuaries Act.

a. The proposed project involves work in waters of the U.S.; therefore, a DA permit will be required. Please consult with our Operations Branch for further information at 438-8554 and refer to file number P093-036.

b. According to the enclosed Federal Emergency Management Agency's Flood Insurance Rate Map, panel number 150003-0145-B, dated June 1, 1981, the project site is located in Zone C (areas of minimal flooding).

Sincerely,


Kisuk Cheung, P.E.
Director of Engineering

Enclosure

DOCUMENT CAPTURED AS RECEIVED

KEY TO MAP

500-Year Flood Boundary	---	ZONE B
100-Year Flood Boundary	----	ZONE A1 DATE
Zone Designations* With Date of Administration e.g., 12/2/74		ZONE A5 DATE
100-Year Flood Boundary	----	ZONE B
400-Year Flood Boundary	----	ZONE B
Base Flood Elevation Line With Elevation in Feet**	-----573-----	
Base Flood Elevation in Feet Where Uniform Within Zone**		(EL 987)
Elevation Reference Mark		RM7 _x
Coastline Mile		M 20

**Referenced to the National Geodetic Vertical Datum of 1929

*EXPLANATION OF ZONE DESIGNATIONS

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
AD	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AM	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

MAUI COUNTY, HAWAII

PANEL 145 OF 400
(SEE MAP INDEX FOR PANELS NOT PRINTED)

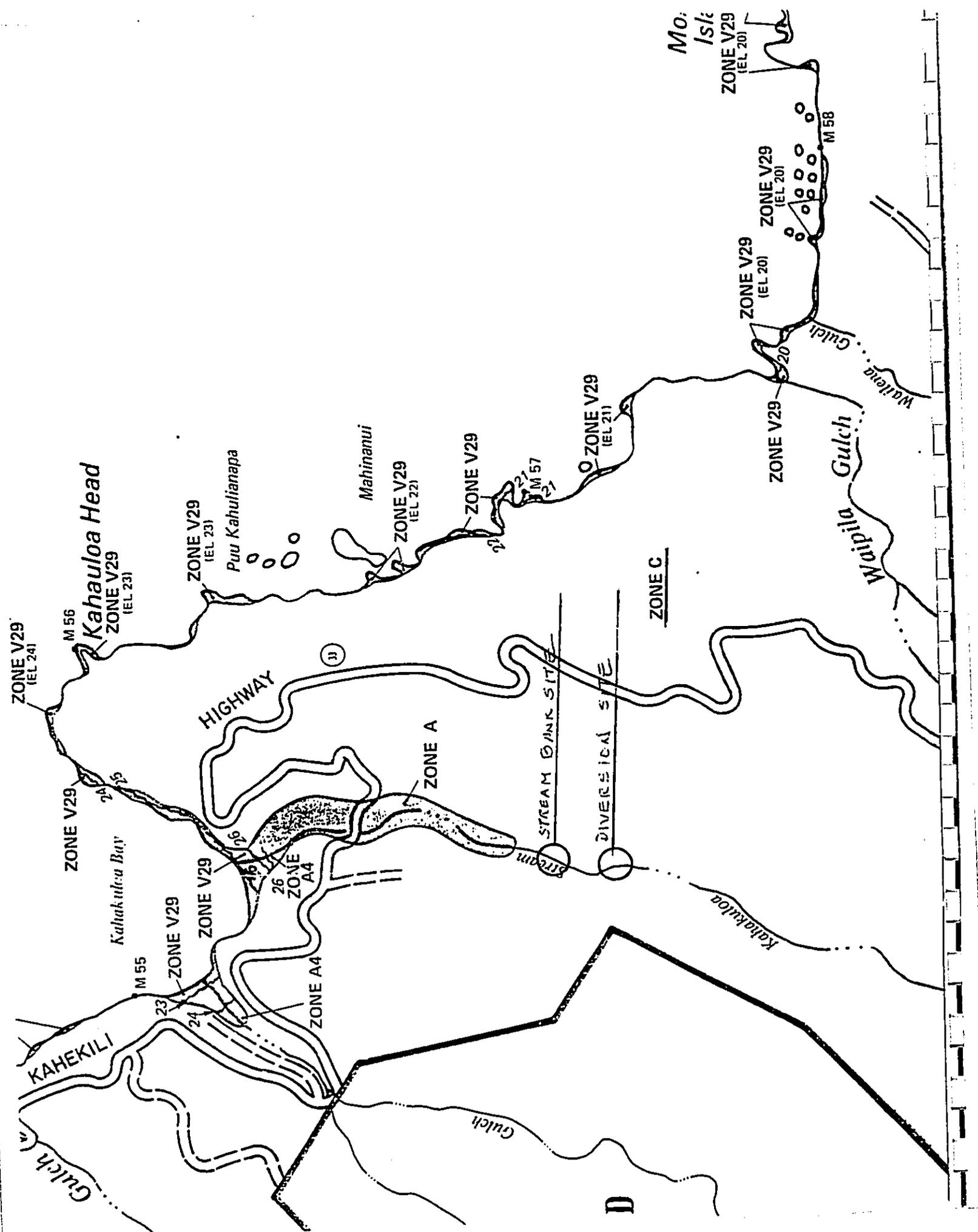
COMMUNITY-PANEL NUMBER
150003 0145 B

EFFECTIVE DATE:
JUNE 1, 1981



federal emergency management agency
federal insurance administration

CUSTOMER COPY



Chapter VII

***Comments on the Draft
Environmental Assessment***

VII. COMMENTS ON THE DRAFT ENVIRONMENTAL ASSESSMENT

There were no comments received on the Draft Environmental Assessment during the 30-day comment period (May 23, 1993 through June 22, 1993).

References

REFERENCES

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Hau, Skippy. Personal communication, March 9, 1993.

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