June 23, 1993

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,

[Signature]

GEORGE N. KAYA
Director of Public Works

Enclosure
JK:ch(ED93-634)
kahauoqj.dmp
FINAL
ENVIRONMENTAL
ASSESSMENT

KAHAKULOA STREAM IMPROVEMENTS

Prepared for:
Lokahi Pacific

June 1993

Michael T. Munekiyo Consulting, Inc.
FINAL
ENVIRONMENTAL
ASSESSMENT

KAHAKULOA STREAM
IMPROVEMENTS

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Chapter 1

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 3  Kahakuloa Stream Improvements
Lower Site Location Map

Michael T. Murokawa Consulting, Inc.
Prepared for: Lokehi Pacific
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.
Figure 4  Kahakuloa Stream Improvements
Proposed Stream Diversion
Improvements at Upper Site

NOT TO SCALE

Source: R. Hayashi, Consultant.
Figure 5  Kahakuloa Stream Improvements
Proposed Lower Site Improvements

Source: R. Hayashi, Consultant.
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 provided 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 latosols 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

- Pulche-Ewa-Loucna association
- Waika-Ketana-Mokolok association
- Horoka-Olelo association
- Rock land-Rough mountainous land association
- Pui Pua-Paque association
- Hydrandeps-Trepagnus association

- Hana-Makale-Kalula association
- Puwele-Haiku association
- Launaka-Kaiopeol-Olioda association
- Keawakapa-Makana association
- Kanaole-Ganapuka association

Project Vicinity

Figure 6  Kahakuloa Stream Improvements
Soil Association Map

Map Source: USDA Soil Conservation Service

NOT TO SCALE
Michael T. Munekiyo Consulting, Inc.
Prepared for: Lokahi Pacific
Figure 7  Kahakuloa Stream Improvements
Soil Classifications

Michael T. Manelidyo Consulting, Inc.
Prepared for:  Lokahi Pacific
(Acacia confusa), guava (Psidium guajava), Java plum (Eugenia cuminum), and koa haole (Leucaena leucocephala). There are some endemic species such as ulei (Osteomeles anthyllidifolia), alahee (Canthium odoratum), a'ali'i (Dodonaea eriocarpa), and a'ilia (Wikstroemia elongata). The mala 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, Will, uakani, nolo, iwa, and Koae. 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 its 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 nopolii (Sicyodus stimpsoni). Other native fish found in Kahakuloa Stream include the Eleotrid O'opu okuhe (Eleotris sandvicensis) and the Kuhliid Aholahole (Kuhlia sandvicensis). The native prawn O'pae 'oehana (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 Kanehoa 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, headquarterd 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
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.
G. \textit{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

Source: County of Maui

Michael T. Munekiyu 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. State of Hawaii  
   Department of Land and Natural Resources  
   1151 Punchbowl Street  
   Honolulu, Hawaii 96813

2. Don Hibbard  
   State of Hawaii  
   Department of Land and Natural Resources  
   1151 Punchbowl Street  
   Honolulu, Hawaii 96813

3. David Nakagawa, Chief Sanitarian  
   State of Hawaii  
   Department of Health  
   54 High Street  
   Wailuku, Hawaii 96793

4. Mr. Bob Siarot  
   State of Hawaii  
   Department of Transportation  
   650 Palapala Drive  
   Kahului, Hawaii 96732

5. Brian Miskea, Director  
   County of Maui  
   Department of Planning  
   250 S. High Street  
   Wailuku, Hawaii 96793

6. Mr. Lloyd Lee  
   County of Maui  
   Department of Public Works Engineering Division  
   200 S. High Street  
   Wailuku, Hawaii 96793

7. Department of Land and Natural Resources Division of Water Resources Management  
   P. O. Box 373  
   Honolulu, Hawaii 96809

8. Mr. Ralph Nagamine  
   County of Maui  
   Land Use and Codes Division  
   250 S. High Street  
   Wailuku, Hawaii 96793

9. Mr. Neal Fujiwara  
   U.S. Department of Agriculture Soil Conservation Service  
   70 S. High Street, Room 215  
   Wailuku, Hawaii 96793

10. U.S. Army Corps of Engineers Pacific Ocean Division  
    Building 230  
    Fort Shafter, Hawaii 96858

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1 Responses were received from those agencies marked with an asterisk (*).
Mr. Michael T. Munekiyo  
Munekiyo Consulting, Inc.  
1823 Wells Street, Suite 3  
Wailuku, Hawai‘i 96793  

April 12, 1993

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,

[Signature]

BRIAN MISKAE  
Planning Director

xc: Colleen Suyama  
Clayton Yoshida  
Elizabeth Anderson
Mr. Michael T. Munekiyo, A.I.C.P.
Michael T. Munekiyo Consulting, Inc.
1823 Waihe'e Street, Suite 3
Wailuku, Hawaii 96793

Dear Mr. Munekiyo:

SUBJECT: Early Consultation for an Environmental Assessment (EA);
Proposed Kahakula Stream Improvements, Kahakula, 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 Kahakula 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. ARUE
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,

[Signature]

RAE M. LOUI  
Deputy Director

GM:ky  
enclosure
April 12, 1993

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

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.
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:111
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,

[Signature]
DAVID H. NAKAGAWA
Chief Sanitarian
TELECOPIER TRANSMISSION NOTE

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

COMMENTS:

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

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

/Imc
March 24, 1993

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 F093-036.

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,

[Signature]

Richard Cheung, P.E.
Director of Engineering

Enclosure
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


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


U.S. Department of Agriculture Soil Conservation Service in cooperation with The University of Hawaii Agricultural Experiment Station, 1972. Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii.
