

BENJAMIN CAYETANO  
GOVERNOR



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
869 PUNCHBOWL STREET  
HONOLULU, HAWAII 96813-5097

JUN 7 1995

KAZU HAYASHIDA  
DIRECTOR

DEPUTY DIRECTORS  
SAM CALLEJO  
GLENN M. OKIMOTO

RECEIVED

'95 JUN -8 A9:20 REPLY REFER TO:

OFFICE OF ENVIRONMENTAL  
QUALITY CONTROL HWY-DS  
2.6015

TO: GARY GILL, DIRECTOR  
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

FROM: KAZU HAYASHIDA, DIRECTOR *K.H.*  
DEPARTMENT OF TRANSPORTATION

SUBJECT: FINAL ENVIRONMENTAL ASSESSMENT (EA) FOR KAUMUALII  
HIGHWAY, KUHIO HIGHWAY, RICE STREET INTERSECTION  
IMPROVEMENTS, PROJECT NO. 50E-01-90

The Department of Transportation, Highways Division has reviewed the comments received during the review period for the Draft Environmental Assessment for the subject project and anticipates a negative declaration determination. Please publish notice of availability for this project in the June 23, 1995, (Office of Environmental Quality Control) OEQC bulletin.

We have enclosed a completed OEQC bulletin publication form and four copies of the Draft Environmental Assessment.

Should you have any question, please contact Mr. Herbert Tao of the Highways Division at 587-2124.

Enclosures

1995-06-23-KA-FA-Kaumualii Hwy, Kuhio Hwy JUN 23 1995  
and Rice Street Improvement

FINAL ENVIRONMENTAL ASSESSMENT  
CHAPTER 343, HAWAII REVISED STATUTES (HRS)

For The Proposed

KAUMUALII  
HIGHWAY, KUHIO  
HIGHWAY, AND RICE  
STREET  
IMPROVEMENTS

Project No. 50E-01-90

LIHUE, KAUAI, HAWAII

Prepared For

State of Hawaii  
Department of Transportation  
Highways Division

JUNE, 1995

## TABLE OF CONTENTS

	<u>PAGE</u>
1.0 SUMMARY	1-1
1.1 INTRODUCTION	1-1
1.2 DETERMINATION	1-1
1.3 SUMMARY	1-2
2.0 EXISTING ENVIRONMENT	2-1
2.1 ISLAND OF KAUAI	2-1
2.2 GEOGRAPHIC OVERVIEW	2-1
2.3 EXISTING LAND USES	2-1
3.0 PROJECT NEED AND OBJECTIVES	3-1
3.1 PROJECT OBJECTIVES	3-1
3.2 PROJECT NEED	3-1
4.0 ALTERNATIVES UNDER CONSIDERATION	4-1
4.1 ALTERNATIVE 1 - NO ACTION ALTERNATIVE	4-1
4.2 ALTERNATIVE 2 - LIHUE AREA	4-1
5.0 DESCRIPTION OF AFFECTED ENVIRONMENT AND PROBABLE IMPACTS	5-1
5.1 PHYSICAL ENVIRONMENT	5-1
5.2 NATURAL ENVIRONMENT	5-3
5.3 SOCIO-ECONOMIC FACTORS	5-4
5.4 INFRASTRUCTURE AND PUBLIC FACILITIES	5-5
6.0 DETERMINATION AND SUPPORTING REASONS	6-1
6.1 DETERMINATION	6-1
6.2 REASONS SUPPORTING DETERMINATION	6-1
7.0 AGENCIES, ORGANIZATIONS, AND INDIVIDUALS TO BE CONSULTED DURING THE PREPARATION OF THE E. A.	7-1
8.0 LIST OF PREPARERS	8-1

## EXHIBITS

- A. Stream Biology - AECOS, Inc.
- B. Archaeological - Bio-Systems, Inc.

## FIGURES

<u>Figure</u>	<u>Page</u>	
1.	Location Map	1-4
2.	Vicinity Map	2-2
3.	Aerial Perspective	2-3
4.	Existing Peak Hour Traffic Volumes	3-3
5.	Soils Map	5-2
6.	Proposed Roadway Plan	8-2
7.	State Land Use District Boundary Map	8-3

## Section 1.0

### SUMMARY

#### 1.1 INTRODUCTION

The Department of Transportation, Highways Division, State of Hawaii proposes to design and construct improvements to the existing Kaunualii Highway, Kuhio Highway, and Rice Street intersection on the Island of Kauai. The proposed improvements are planned to provide relief to existing traffic congestion that has resulted from the increased usage of this critical intersection. Improvements to the existing intersection are proposed to increase the capacity of the intersection, improve access and circulation to the surrounding communities, and in general improve a condition that has become a traffic problem of serious proportions. These proposed intersection improvements will also provide additional safety for pedestrian and bicycle traffic within the intersection points. Although the majority of the proposed project will be in the existing right-of-way, some additional lands will be required. These lands are currently undeveloped and taking these lands will not displace any buildings, residences, or businesses. The change to the natural environment is expected to be minor. A Negative Declaration is anticipated for this project. The State of Hawaii, Department of Transportation, Highways Division (DOT) will be the reviewing authority that will determine the acceptability of the proposed intersection improvements as part of the total traffic patterns for the Lihue area.

Accepting Authority:

Benjamin J. Cayetano, Governor  
State of Hawaii

#### 1.2 DETERMINATION

Because the proposed project will involve the commitment of State lands and/or State funds, an Environmental Assessment must be prepared in compliance with Chapter 343, Hawaii Revised Statutes (HRS) Title 11, and Chapter 200 of the State Department of Health Administrative Rules (EIS Rules). If applicable, compliance with the U.S. Coastal Zone Management Act of 1972 as amended will also be provided.

### 1.3 SUMMARY

#### Project Name

**Kaumualii Highway, Kuhio Highway, and Rice Street Improvements  
Project Number 50E-01-90**

#### Proposing Agency

State of Hawaii  
Department of Transportation  
Highways Division  
869 Punchbowl Street  
Honolulu, Hawaii 96813

#### Accepting Authority

State Department of Transportation, Highways Division

#### Project Location

The existing intersection is located in the Lihue District. (See Figure 1).

#### Project Description

Improvements to the existing intersection are proposed to increase the capacity, improve access and circulation to the surrounding communities, improve the efficiency of traffic operations, and reduce congestion. (See Fig.6) These improvements consist of the following:

1. Realignment of 632 feet of Kuhio Highway (Route 56) and 700 feet of Kaumualii Highway (Route 50) to be in direct alignment with each other. The point of intersection of the routes will be approximately 200 feet north of the present point of intersection.
2. Extend Rice Street to meet both highways at a right angle.
3. Provide a free right turn lane from north -east bound Kaumualii Highway to east bound Rice Street.
4. Provide a free right turn lane from west bound Rice Street to north bound Kuhio Highway.
5. Provide a traffic actuated intersection control signal system.

6. Widening the Kaumualii Highway to two full lanes in both directions approaching the intersection.
7. Provide the Kuhio Highway with two full through lanes both directions and a left turn lane to Rice Street.
8. Provide left turn lane from Rice Street to Kaumualii Highway at the signal controlled intersection.
9. Provide curbed median strips, traffic islands, cross walks, and sidewalks with wheelchair ramps.

**Permits** (The following permit applications will be prepared and processed where applicable.)

1. Federal -

- a). U.S. Army Corps of Engineers Section 404 permit . The corresponding Section 401 Water Quality Certification Department of Health application will accompany the 404 application.
- b). National Pollution Discharge Elimination System (NPDES) State Department of Health, Environmental Management Division
- c). Coastal Zone Management - Consistency Certification

2. State of Hawaii -

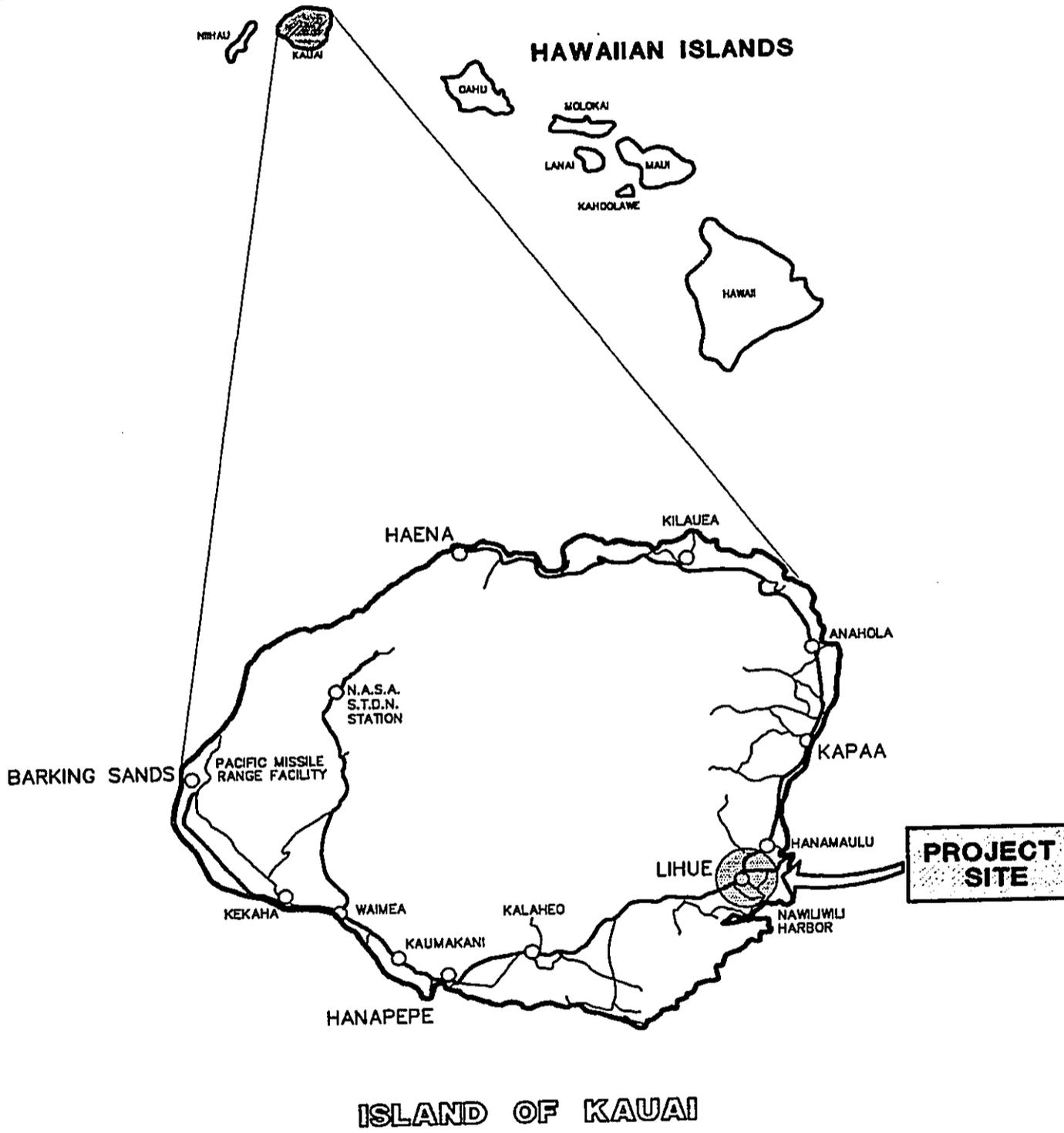
- a). Stream Channel Alteration Permit (SCAP) Dept. of Land and Natural Resources, Water Resources Management Division

3. County of Kauai -

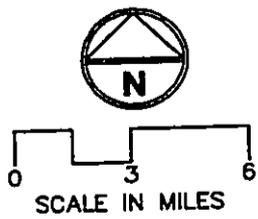
- a). Grading Permit
- b). Building Permit

22-2753-01

Parametrix, Inc.



FILE: C:\CAD\2753-01



Kaumualii Highway, Kuhio Highway,  
and Rice Street Improvements

Figure 1  
Location Map

March, 1995

### Technical Characteristics

This intersection is the connection of the two rural arterials on Kauai and a collector road into Lihue. The intersection is the terminus of Kaumualii Highway which extends around the southern side of the Island, the Kuhio Highway which is the main connection to the East and North side, and the Rice Street collector.

At the present time, the intersection is oriented with Kaumualii Highway being the continuation of Rice Street and the Kuhio Highway forming the stem of a T-intersection. This orientation requires a turning movement for the majority of the traffic.

The realignment of the Kuhio Highway rotates the T-intersection so that the continuation of Kaumualii Highway is Kuhio Highway with Rice Street forming the stem of the "T." The revised alignment eliminates the turning motion for traffic both northbound Kaumualii Highway to Kuhio Highway and south bound from Kuhio Highway to Kaumualii Highway.

A single right turn lane is provided for the free movement of traffic north bound from Kaumualii Highway onto east bound Rice Street. A single right turn lane is also provided from west bound Rice Street to north bound Kuhio Highway.

The south bound left turn lane from Kuhio Highway to east bound Rice Street provides storage for eight vehicles.

Pedestrian movement for both ambulatory and wheelchair traffic is provided. The movement from south to north is along the east side of Kaumualii Highway and the right turn lane to Rice Street, then a crosswalk over the right turn lane, sidewalk west to the highway, a crosswalk on the south side of intersection, and sidewalk along the west side of Kuhio Highway north to the end of the project.

### Proposed Improvements

#### Earthwork

The proposed improvements consist of realignment of 1,350 feet of Kaumualii Highway and Kuhio Highway over a depression. This segment of work will require placement of compacted engineered fill to a height of 40 feet. A near vertical reinforced earth retaining wall will be constructed, rather than a sloped earth embankment. This will greatly reduce the taking of land for highway improvements. The earth work construction is as follows:

1. Reinforced earth retaining wall:  
Length: 890 lineal feet  
Maximum height: 40 feet  
Total surface area for improvements: 29,500 square feet

2. Earth Work:

Total volume of cut: 25,800 cubic yards

Total volume of fill: 50,500 cubic yards

Total area affected by construction: 6.2 acres, including 1.9 acres to be acquired.

**Drainage**

The area that will be improved with the retaining wall, presently drains to the south via an existing culvert under the Kaumualii Highway. New culverts will be installed from north of the retaining wall to the stream on the south side of the project. The culverts will convey surface water runoff from the area north of the project to the receiving stream south of the project. Inlet and outlet structures will be included. The area north of the retaining wall will require minimum amounts of grading to direct the surface flow into the new culverts.

Roadway Configuration

Kaumualii Highway approaches the project site from the south and consists of two 12-foot-wide lanes of traffic. The new highway extension will gradually widen over the 700-foot approach to the intersection with the following north to south configuration:

Retaining wall  
Guard rail and concrete curb  
Ten-foot-wide shoulder  
Two - 12-foot lanes south bound  
Curbed median strip varying in widths of 6 feet to 18 feet.  
Two - 12-foot lanes north bound  
Eight-foot-wide shoulder and concrete curb

Kuhio Highway has four 12-foot lanes and a median strip as it approaches the project area from the north. It widens to the following configuration (from north to south):

Retaining wall  
Four-foot-wide concrete sidewalk  
Guardrail and two foot planting strip  
Four-foot-wide planting strip with curb  
Ten-foot-wide shoulder  
Two - 12-foot-wide lanes north bound  
10-foot left turn lane  
Curbed 8-foot median strip  
Two - 12-foot-wide lanes south bound  
Eight-foot-wide shoulder and concrete curb

Rice Street has a forty-five-foot pavement width with a median strip. Improvements will extend Rice Street 350 feet curving to the right to meet the two highways at right angles. The extension configuration will be (from west to east):

- Four-foot concrete sidewalk
- Two-foot planting strip and curb
- Six-foot shoulder
- 12-foot east bound lane
- Four-foot median
- Two – twelve foot lanes west bound
- Eight-foot shoulder and curb

The right turn lane from Rice Street to Kuhio Highway (identified as Road B) remains in essentially the same location as the existing right turn lane. The right turn lane Kaumualii Highway to Rice Street (identified as Road A) is essentially in the same location as the present Kaumualii Highway and Rice Street extension. (See Figure 6)

#### **Pedestrian Movement**

All sidewalks are four-foot-wide concrete located two feet back of the curb. The total sidewalk length is 1,300 lineal feet. Crosswalks are painted on the roadway and terminate with wheelchair ramps at the sidewalk.

#### **Miscellaneous Improvements**

The project includes street lighting, signage, and road striping of the intersection to Federal and State standards. Traffic islands and the areas between the turn lanes and the intersection will be improved.

#### **Construction**

Construction activities will operate during normal construction hours (8:30 a.m. to 3:30 p.m.) unless changed due to traffic congestion/buildup. Options of working during evening hours, development of a temporary detour or roadway may be required around the construction site for continuous flow of traffic. The preliminary construction cost estimate is \$7.2 million dollars and will require approximately 18 months for completion.

## 2.0 EXISTING ENVIRONMENT

The existing Kaumualii Highway, Kuhio Highway, and Rice Street Intersection area links West Kauai with the Lihue Central Business District, and North Kauai. The site is a major intersection on the island. The existing linkage is considered below standard at present from a traffic management perspective. The current Level-of-Service (LOS) at the project site is LOS D-E and is expected to deteriorate to LOS E-F by 1996. The proposed improvements will permit improved access and reduce congestion by increasing capacity of the intersection with additional lanes. Landscaping at the project site is sparse with a minimum of introduced species of grasses and groundcover vegetative material. The location borders existing Urban/Commercial street frontage (Rice Street); Grove Farm Development Master Plan (Kaumualii Highway); and Kuhio Highway from the North Kauai sector which includes major residential areas as well as the Lihue Airport. There are no established endemic species of plant or animal (Avifauna) at the intersection location. Nawiliwili Stream is adjacent to the Kaumualii Highway portion of the project in a westerly direction.

### 2.1 ISLAND OF KAUAI

The island of Kauai is the fourth largest of the Hawaiian Islands with slightly over 622.5 square miles. It is also the fourth most populated with a resident population of 50,947 in 1990 and a de facto population of 67,963 (State Data Book 1991, Table 7).

### 2.2 GEOGRAPHIC OVERVIEW

The island of Kauai, or "The Garden Island" as it often referred to, has been eroded into a spectacular scenery of peaks, ridges, canyons, and palis (cliffs), of which Na Pali coast and Waimea Canyon are best known. Mt. Waialeale receives the world's heaviest rainfall, which feeds numerous streams and waterfalls, and helps preserve a high wilderness of swamp and forest in the center of the island that is a sanctuary for species of native plants, insects, and birds not found elsewhere in Hawaii. On it's coastal lowlands, Kauai has sugar and pineapple plantations, resorts, and large mill towns. A vicinity map is provided below as Figure 2 and an Aerial Perspective of the project site is shown in Figure 3.

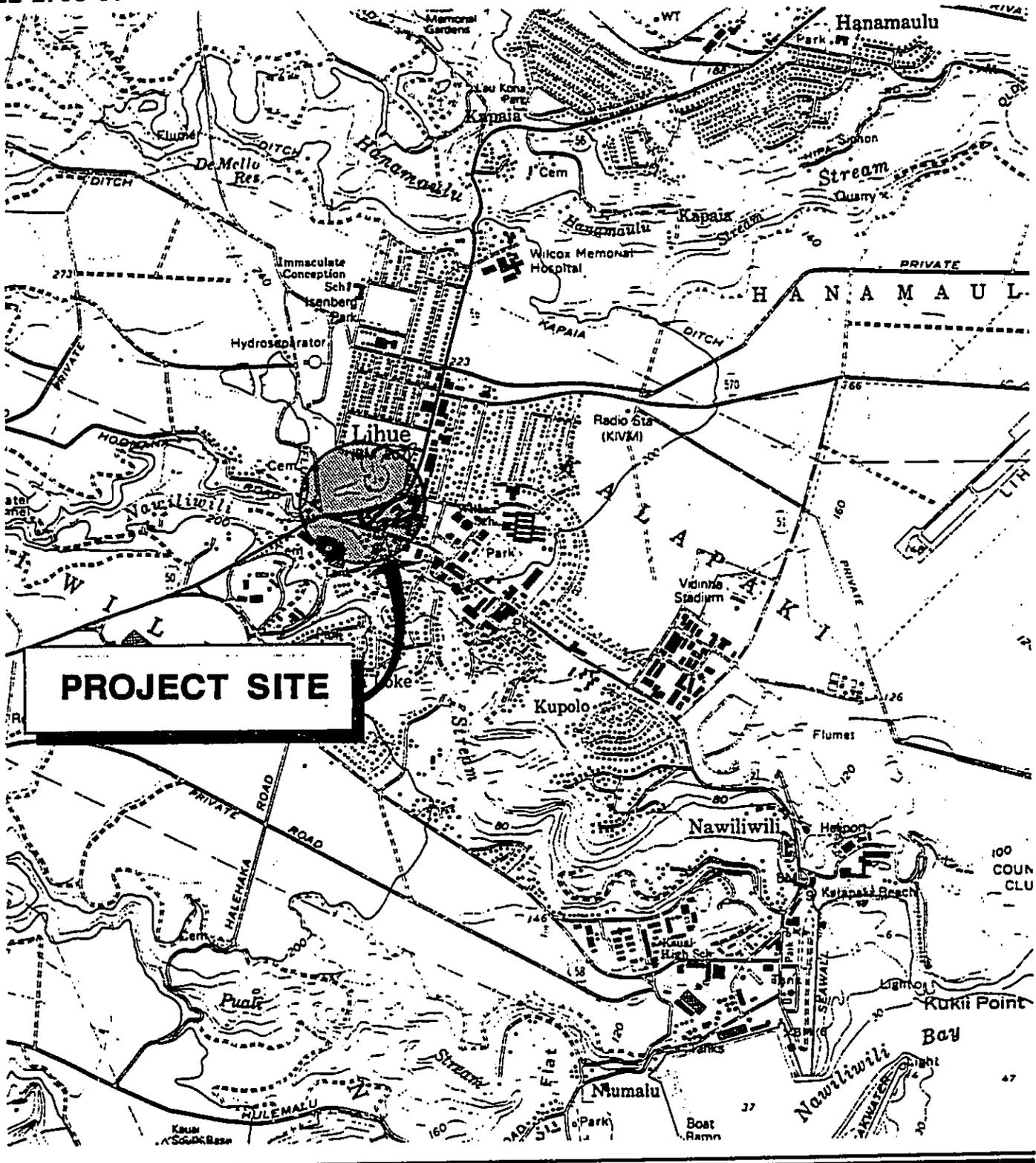
### 2.3 EXISTING LAND USES

#### 2.3.1 State Land Use Districts

The project site is located within the State Land Use Urban District (See Figure 2).

22-2753-01

Parametrix, Inc.



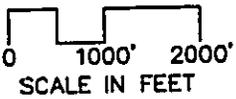
**PROJECT SITE**

FILE: C:\CAD\5723-01



SOURCE:  
 LIHUE/KAPAA QUADRANGLE  
 HAWAII-KAUAI CO., ISLAND OF KAUAI  
 7.5 MINUTE SERIES (TOPOGRAPHIC), 1985

**Figure 2  
Vicinity Map**



Kaumualii Highway, Kuhio Highway,  
 and Rice Street Improvements

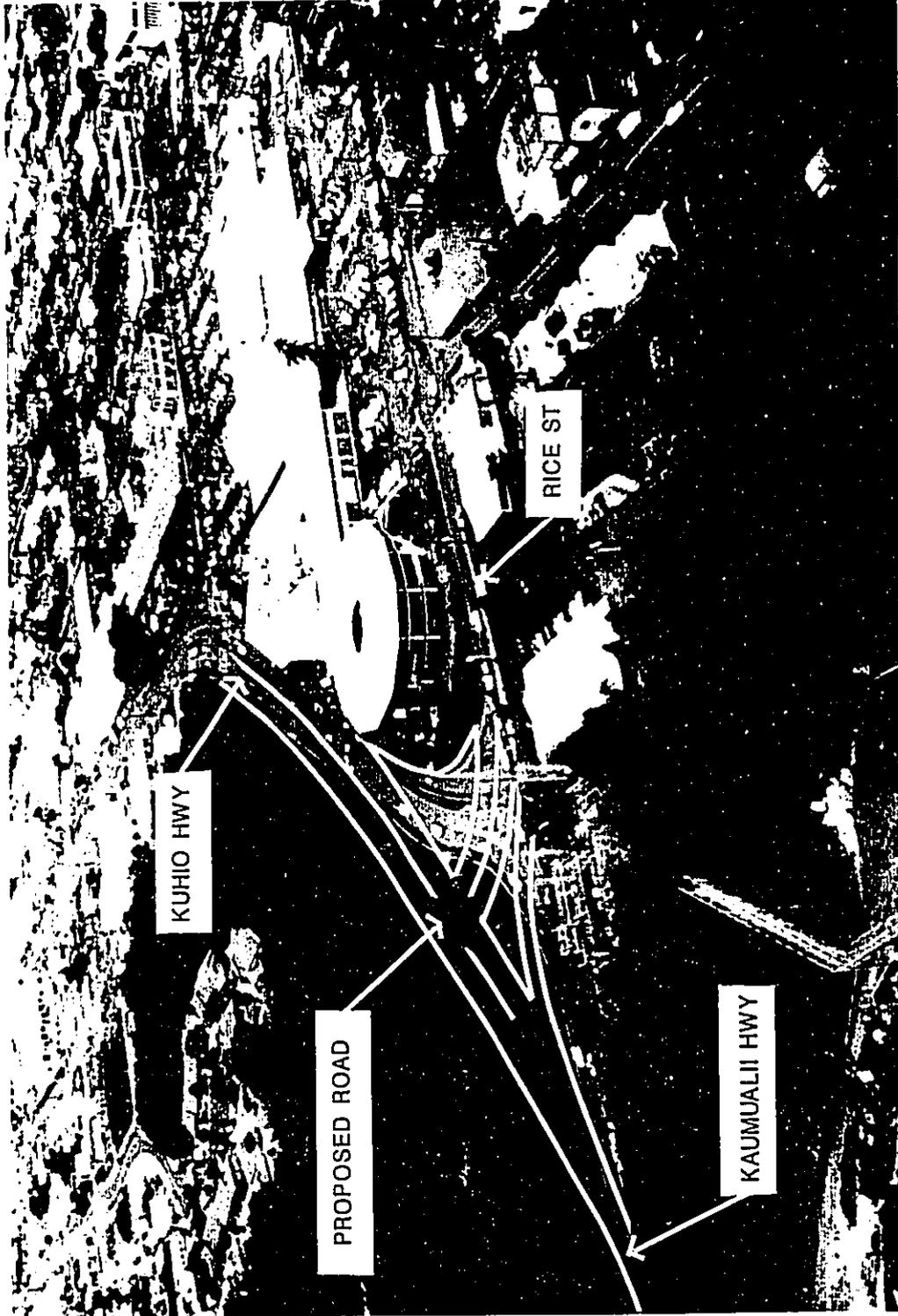
March, 1995

Parametrix, Inc.

22-2753-01

Kaumualii Highway, Kuhio Highway,  
and Rice Street Improvements

March, 1995



FILE: C:\CAD\2753-01\AERIAL

Figure 3  
Aerial Perspective  
of Proposed Improvement  
Looking North, 1993

2.3.2 County of Kauai

Development Plan designation is Urban/Public Facilities.

2.3.3 County Zoning

The subject parcel is zoned I-G, R-10, and O. The project intersection improvements are to service the communities of North Kauai, Lihue Town, and West Kauai. The planned improvements will be designed and built under the jurisdictional approval of the State Department of Transportation, Highways Division.

### 3.0 PROJECT NEED AND OBJECTIVES

#### 3.1 PROJECT OBJECTIVES

The proposed improvements will enable existing traffic to move in a more efficient manner than presently possible. A brief description of the three roadways will inform the reviewer as to what is currently available to Kauai's driving population. Also, a current traffic flow measurement is provided to further examine the existing conditions (See Figure 4).

**3.1.1a Kaumualii Highway Route 50** - is a two lane minor arterial which generally runs in an east-west orientation along the southern region of the island. Kaumualii Highway begins in Lihue where it intersects with Kuhio Highway and Rice Street, and provides access to the western and southern areas of the island. Truck climbing lanes are provided in the eastbound direction in four sections of the highway. In the rural areas, the posted speed is generally 50 miles per hour (mph) and reduces to 25 to 35 mph in populated areas.

**3.1.1b Kuhio Highway Route 56/560** - is a two lane minor arterial which runs in a north-south direction from Lihue to Anahola and then runs in an east-west direction to Haena. Kuhio Highway provides four travel lanes between Kaumualii Highway and Eha Street in Lihue. Limited on-street parking is permitted in some sections of the commercial areas in Lihue, Hanamaulu, Wailua, and Kapaa. There is a truck climbing lane just north of Lihue in the northbound direction. As with Kaumualii Highway, the posted speed is normally 50 mph in the rural areas and is reduced to 25 to 35 mph in populated areas.

**3.1.1c Rice Street** - is a two lane east-west street in Lihue, with a continuous left-turn lane provided between Kuhio Highway and Hardy Street/Kalena Drive. Rice Street has signalized intersections at Kuhio Highway, Umi Street/Ewalu Street and Hardy Street /Kalena Drive. There is a limited amount of on-street parking permitted on the south-west side of the street. South of Kapule Highway, Rice Street is designated as a state highway, Route 51. Also, a truck climbing lane exists just south of Kapule Highway in the northbound direction. (Figure 4 and the three descriptions are from Kauai County Highway Planning Study, Final Report, October 1990 by Kaku Associates.)

#### 3.2 PROJECT NEED

##### 3.2.1 Present Needs

In August 1986, the State of Hawaii and the County of Kauai executed an agreement to participate in a Countywide Transportation Planning Process (CTPP) for the island of Kauai. This process of long-range planning has also been

Kaumualii Highway, Kuhio Highway,  
and Rice Street Improvements

March, 1995

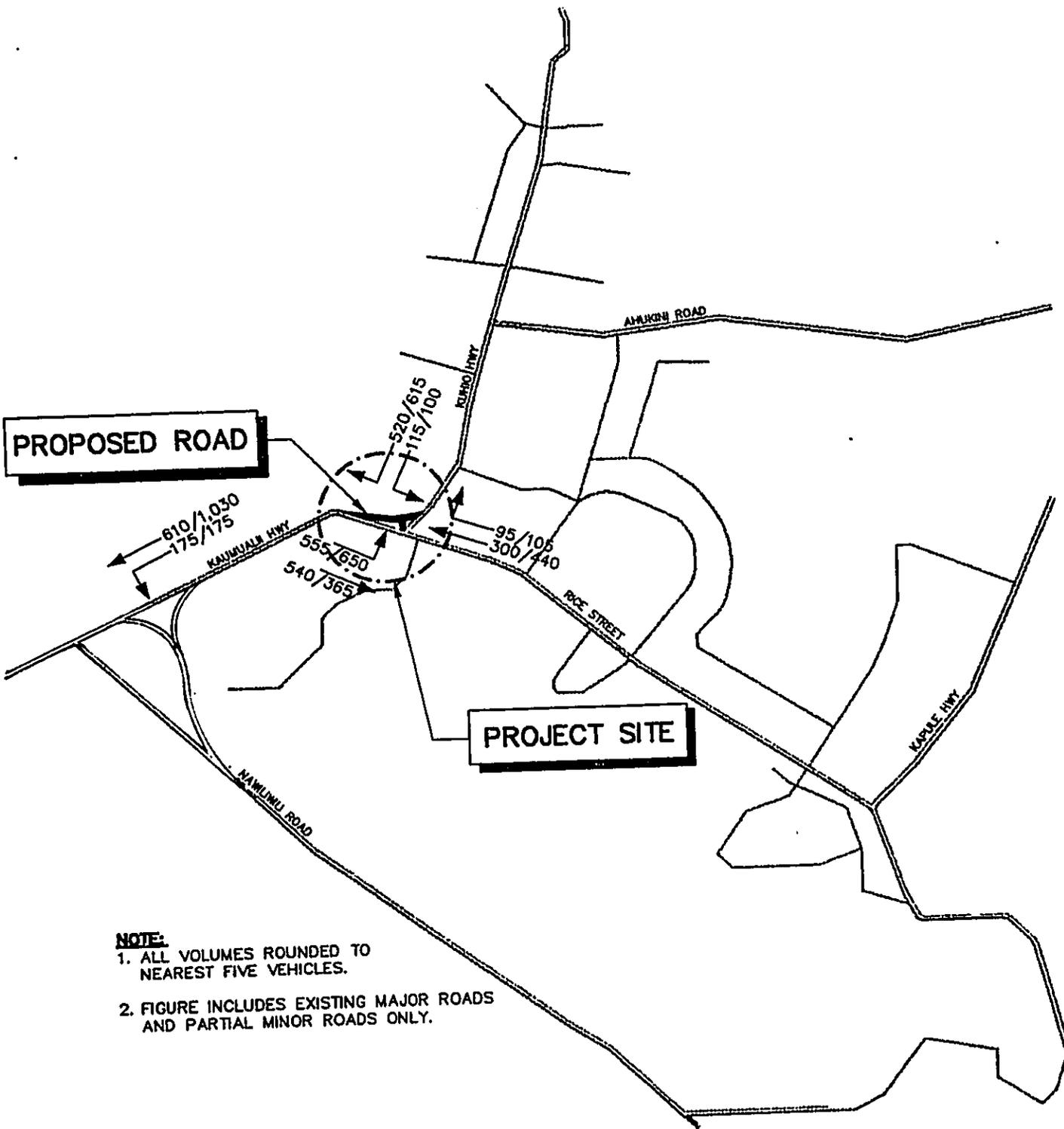
established for the Counties of Hawaii and Maui. The purpose of long-range transportation planning is to provide the State of Hawaii a mechanism to cooperatively identify long term transportation requirements for each County. This study provided the County Planning Department as well as State DOT the following goals and objectives:

- a. *The County of Kauai's island wide transportation system for the safe, convenient, and economical movement of people and goods;*
- b. *An adequate land transportation system for the County of Kauai which is compatible with and maintains the quality of the island's environmental resources;*
- c. *A land transportation system which is responsive to the community's needs without sacrificing the overall quality of the island's environmental resources; and,*
- d. *A land transportation system which is compatible with the County of Kauai's fiscal resources and allows for orderly growth and development while assuring for compatibility with the island's existing and planned land use (Kaku Associates).*

At the present time, the subject intersection is operating at (LOS D-E), less than ideal conditions.

### 3.2.2 Future Needs

Expected land use changes and population projections to the year 2010 were used to develop a growth model for Kauai County. A significant increase in traffic on Kauai is expected as land use on the island shifts from agriculture to tourism. Traffic volumes on a number of highways are expected to increase significantly, and in certain instances, even double. Traffic volume forecasts for the year 2010 were also used to identify specific locations and corridors on the island where the demand for travel would potentially exceed the available roadway capacity. The study evaluated the feasibility of ensuring sufficient capacity to meet all future traffic demands, but this alternative proved to be too costly.



- NOTE:**
1. ALL VOLUMES ROUNDED TO NEAREST FIVE VEHICLES.
  2. FIGURE INCLUDES EXISTING MAJOR ROADS AND PARTIAL MINOR ROADS ONLY.

FILE: C:\CAD\2753-01\FIC



NOT TO SCALE

**SOURCE:**  
EXISTING PEAK HOUR TRAFFIC VOLUMES  
(LIHUE AREA) BY KAKU ASSOCIATES, 1990

Kaunualii Highway, Kuhio Highway,  
and Rice Street Improvements

**Figure 4**  
**Existing Peak Hour**  
**Traffic Volumes**

March, 1995

## 4.0 ALTERNATIVES UNDER CONSIDERATION

### 4.1 ALTERNATIVE 1 - NO-ACTION ALTERNATIVE

Under this alternative, the existing traffic congested condition would worsen and the contributing traffic from the planned and anticipated urban growth for the Lihue area would only further congest an already unacceptable level-of-service.

### 4.2 ALTERNATIVE 2 - LIHUE AREA

CTPP provided the following alternative improvements to the State DOT and Kauai County. These alternatives are provided as depicted in the Kaku Associates Study, October 1990.

*Construct a mauka bypass highway, diverging from Kaumualii Highway west of Nawiliwili Road and connecting back to Kuhio Highway north of the Kapule Highway Intersection. Connector roads would also be provided between the bypass highway and Nawiliwili Road and Ahukini Road.*

*Construct a mauka bypass highway terminating at Maalo Road, and widen Kuhio Highway between Maalo Road and Kapule Highway.*

*Widen existing roadways between Puhi and Kapule Highway.*

These alternatives were discarded in favor of the proposed improvements on the basis that the proposed improvements would require a minimal taking of land outside the existing right-of-way and would provide relief in a timely and cost effective manner.

*Design and build within the existing intersection, the proposed improvements with a fill wall of engineered fill to provide the required space for the additional laneage and also the storage left-turn lanes.*

This alternative was discarded in favor of the retaining wall concept in order to minimize the amount of additional right-of-way required and to avoid potential surface runoff impacts to Nawiliwili Stream.

## 5.0 DESCRIPTION OF AFFECTED ENVIRONMENT AND PROBABLE IMPACTS

The proposed improvements to the Kaumualii Highway, Kuhio Highway, and Rice Street Interchange are designed and will be built to minimize the increase in State DOT Intersection rights-of-way. By so doing, the anticipated impacts will not result in significant adverse impacts to the physical environment. Further, the taking of lands beyond the metes and bounds of State DOT jurisdiction will not displace any residences or businesses.

### 5.1 PHYSICAL ENVIRONMENT

#### 5.1.1 Geology, Soils and Agricultural Potential

Adjacent to the sides of the interchange are the Urban and Agricultural land uses of the Lihue area. The predominant soil type is *Lihue Silty Clay, 0-8 percent slopes LhB* (See Figure 5)

*"This soil is on the tops of broad interfluvies in the uplands. Included in the mapping were small areas of a soil that has a very dark grayish-brown surface layer and a mottled subsoil. As part of the Lihue Series, LhB consists of well drained soils on uplands on the island of Kauai. These soils were developed in material weathered from basic igneous rock. They are gently sloping to very steep. Elevations range from nearly sea level to 800 feet. The annual rainfall amounts to 40 to 60 inches. These soils are used for irrigated sugarcane, pineapple, pasture, truck crops, orchards, wildlife habitat, woodlands, and homesites. The natural vegetation consists of lantana, guava, koa haole, joe, kikuyu grass, molasses grass, guinea grass, bermuda grass, and Java Plum." Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii, U.S. Department of Agriculture, Soil Conservation Service, August 1972.*

#### 5.1.2 Ground, Surface and Nearshore Waters

##### Ground Water Resources

The planned improvements will not significantly affect ground water resources during the design or construction of the proposed project. Evaluation criteria by Federal and State standards for roadway improvements will provide disclosure for potential impact concerns to the groundwater aquifer.



## **Surface Water Resources**

The planned improvements will continue to utilize the existing drainage patterns previously installed for the existing intersection. The additional laneage on the new improvements will also be required to include preventive or mitigative measures for surface runoff impacts to the receiving waters of the adjacent Nawiliwili Stream. Long-term operational as well as short term construction related impacts and mitigative measures will be provided for in the overall drainage plans (See Exhibit A).

### **5.1.3 Natural Hazards**

The planned improvements at the intersection will not induce or alter the frequency of natural hazards occurring in the region. The natural hazards that could have an impact on the planned improvements include flooding from the Nawiliwili Stream which is adjacent to the intersection site. The stream is a major drainageway that is subject to seasonal rains in the areas north of the intersection. The design of the bearing wall for the additional laneage will need to consider these potential hazards from the stream.

### **5.1.4 Visual Attributes**

The planned improvements will constitute significant infringement on the visual aesthetics of the project site. The existing intersection is in place and the additional laneage will be non-structural in the sense that it will be at ground level, the planned improvements will not be obtrusive. The proposed improvements, however, will create a wall that is designed to be up to 45 feet high.

## **5.2 NATURAL ENVIRONMENT**

### **5.2.1 Terrestrial Flora**

The existing flora species at the site are almost entirely exotic or introduced species. During the clearing and grubbing process, the loss of the vegetative materials will be of temporary impact and loss.

### **5.2.2 Terrestrial Fauna**

The intersection site has been fully altered for Man's use and in terms of potential habitat for faunal species, therefore, it is highly unlikely that the proposed improvement areas will adversely impact these habitat areas. Feral animals, i.e. dogs, cats, released exotic species of avifauna, and exotic species of lizards/snakes recently discovered in the area could be affected by the proposed improvements.

### 5.2.3 Historical and Archaeological Resources

Cultural and archaeological surveys have been conducted for the area during construction of the traffic arterials towards Koloa and Kapaa; these findings are on record with the State Historic Preservation Officer, (SHPO) in the State Department of Land and Natural Resources (See Exhibit B).

The area to be disturbed is minimal and is adjacent to lands previously disturbed for road building. In the event that historic or cultural remains are uncovered during intersection construction, it is a mandatory practice that work be halted and the State SHPO advised of the find. A determination can be made by the SHPO as to the significance of the discovery with the next steps to be determined by the SHPO. A Section 106 notice of determination may need to be prepared and processed pending the findings and recommendations of the SHPO.

### 5.2.4 Noise

Community Noise Regulations for Kauai are administered by the State Department of Health, Environmental Health Division. These noise standards deal with construction related noise and the impacts of noise on adjacent residential areas. Contractors are required to adhere to Community Noise Regulations in terms of hours of operation, (normally 8:30 a.m. to 3:30 p.m.); noise abatement devices on their equipment; avoiding the gunning of equipment; and other mitigative measures that may be deemed necessary by the State Department of Health. For situations that may require blasting, a permit may be required by the Health Department and the adjacent residential communities advised of the impending blasting. Review of preliminary design plans indicate that blasting is unlikely to be required for this project.

### 5.2.5 Air Quality

Control of Fugitive Dust is also a function of the State Department of Health. Adherence to the Kauai County Building Code standards for clearing and grading is mandatory in project areas where extensive clearing, grubbing, and grading is required. Also, mitigative measures to alleviate fugitive dust, i.e. frequent watering down of the project improvement areas, mulching and providing vegetative cover of the construction site to control fugitive dust are all tools at the disposal of the general contractor.

## 5.3 SOCIO-ECONOMIC FACTORS

The existing traffic conditions on the intersection and the adjacent roadways have already made it essential that these planned improvements be  
Kaunualii Highway, Kuhio Highway,  
and Rice Street Improvements

March, 1995

implemented. Future land use plans for urbanization north of the Lihue development area have made it imperative that the planned improvements be initiated as soon as practicable. Spatial patterns of land use as well as timing of future development within the Lihue/Koloa development area are moving ahead of planned highway improvements. As a result, traffic related congestion is increasing at a faster rate than planned improvements can alleviate; this results in increased costs for construction, sales, and beneficial occupancy of residential dwelling units. Traffic congestion also causes an economic loss to all persons delayed by traffic.

#### 5.4 INFRASTRUCTURE AND PUBLIC FACILITIES

##### 5.4.1 Ground Transportation

Given the low population densities on Kauai, alternative means of ground transportation are not considered economically cost-effective at this time. School district bussing is currently the only coordinated action for mass transit on Kauai. The prevailing mode of transport remains the private automobile. Express buses, park & ride, car pooling, and other transportation media are not reducing congestion to a significant degree. Re-direction of employment centers is also underway, with early results considered promising.

##### 5.4.2 Harbors

The proposed intersection improvements will favorably impact the Nawiliwili Harbor in terms of commercial vehicular traffic.

##### 5.4.3 Water Supply

The planned improvements under consideration and review in this document will not adversely impact the present or future level of water consumption in communities located within the project area. The improvements may involve adjustments to existing water lines. During water line adjustment, potable water will be temporarily unavailable to customers serviced by these lines.

##### 5.4.4 Wastewater Treatment and Disposal

The planned improvements at the intersection will not adversely impact the present or future level of sewage generated by the communities located within the project improvement area.

##### 5.4.5 Solid Waste Collection and Disposal

The planned construction of the new intersection improvements will generate construction related debris and refuse. It will not however, affect the present or future levels of solid waste to be generated by communities within the project site.

#### 5.4.6 Power and Communications

##### **Electrical Power and Gas Facilities**

The planned improvements may require relocation or realignment of existing transmission lines or poles. If these changes are necessary, they will not effect the amount of energy consumed by the communities in the area. All relocation activities will be coordinated with the affected utilities, prior to actual construction.

##### **Communication Facilities**

Short-term construction related impacts may result from the construction of the new improvements. They will not however, result in any change in the level of communication consumption.

#### 5.4.7 Police and Fire Protection Services

Police and Fire protection services are County functions positioned in strategic locations in their service or protection areas. As planned, the proposed improvements are not expected to adversely affect the Fire or Police Departments. Emergency response time will not be adversely impacted, and at the conclusion of the improvements, the ability to provide these vital services will be improved.

#### 5.4.8 Health Care Facilities

Health care on Kauai is provided by the Wilcox Hospital, Kauai Medical Group, the Samuel Mahelona Memorial Hospital, and the Kauai St. Francis Medical Center. In a similar fashion, the planned improvements are not expected to adversely impact these health care facilities or their services.

#### 5.4.9 Educational Facilities

Educational facilities in the project area are located at Kauai Community College in Puhi and the Kauai Intermediate and High School in Nawiliwili. These facilities should not be adversely impacted by the proposed construction improvements at the Waipio Interchange.

#### 5.4.10 Recreational Facilities

Recreational facilities have been developed at the resort locations and also at Wailua Municipal Golf Course. None of these facilities are in the immediate

project area, and the planned improvements are not expected to adversely impact their continued operations.

## 6.0 DETERMINATION AND SUPPORTING REASONS

### 6.1 DETERMINATION

The environmental assessment analyzed whether the probable impacts resulting from implementation of the proposed project improvements may be significant in accordance with the significance criteria listed in Section 11-200-12 of the State Department of Health's EIS Rules.

Based on the assessment results and findings, the planned intersection improvements should not adversely impact the physical site. Further, the planned improvements are designed to minimize the infringement on private lands and the State DOT right-of-way. Therefore, a Notice of Negative Declaration will be requested for this project. This E.A. will be filed with the Office of Environmental Quality Control as a Final Environmental Assessment in anticipation of a Negative Declaration.

### 6.2 REASONS SUPPORTING DETERMINATION

The findings and reasons supporting this determination are discussed below in terms of the significance criteria.

1. *Involves an irrevocable commitment to loss or destruction of any cultural resource.*

The planned improvements at the Kaumualii Highway, Kuhio Highway, and Rice Street Interchange will not adversely impact any known cultural or historical resource. In the event that sites are discovered during the construction phase, the State Historic Preservation Officer will be immediately advised and all work is to stop until a significance determination is made by the SHPO.

2. *Curtails the range of beneficial uses of the environment.*

Although the majority of planned improvements will take place within the established State DOT rights-of-way, the project will require some additional right-of-way and this will reduce the amount of open, space in the project vicinity.

3. *Conflicts with the State's long term environmental policies or goals as expressed in Chapter 344, Hawaii Revised Statutes, and any revisions thereof and amendments thereto, court decisions, or executive orders.*

The proposed improvements are not expected to conflict with the long-term environmental policies or goals as expressed in Chapter 344, Hawaii Revised Statutes.

4. *Substantially affects the economic or social welfare of the community or the State.*

The planned improvements will enhance the economic and social fabric of the community by expanding the transportation network necessary to accommodate previously approved and endorsed land use policy changes for the Lihue District.

5. *Substantially affects public health.*

The planned improvements will adhere to and maintain the terms, conditions, requirements, and building code standards of the State Department of Health, and the Department of Public Works of the County of Kauai.

6. *Involves substantial secondary impacts, such as population changes or effects on public facilities.*

Land use policy changes have predicated substantial secondary impacts such as population changes by designating certain areas for directed growth. These planned improvements are facilitating these policy mandates, and will not adversely impact these mandates.

7. *Involves a substantial degradation of environmental quality.*

These planned improvements will not adversely impact the environmental quality of the project site. Mitigative measures will provide for the protection of the physical properties of the proposed improvements area.

8. *Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions.*

The planned improvements are a commitment to larger actions that have been determined essential to the adherence to previous land use policy

changes established by local government. They will not have an adverse impact on the environment of the area.

9. *Substantially affects a rare, threatened, or endangered species, or its habitat.*

The project site is not recognized as habitat for rare or endangered species of flora or fauna. There will be no adverse impact to any natural habitat due to the planned improvements at the intersection.

10. *Detrimentially affects air or water quality or ambient noise levels; or,*

These planned improvements will be required to adhere to all Best Management Practices to mitigate to the best extent practicable, the potential impacts to Air, Water, and Noise standards.

11. *Affects an environmentally sensitive area such as a flood plain, tsunami zone, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters.*

The planned interchange improvements are not expected to adversely impact environmentally sensitive areas described above. A detailed Soils report will certify the adequacy of the soils and site geology prior to construction. Further, erosion control mitigation measures will be employed as Best Management Practices for the NPDES permit.

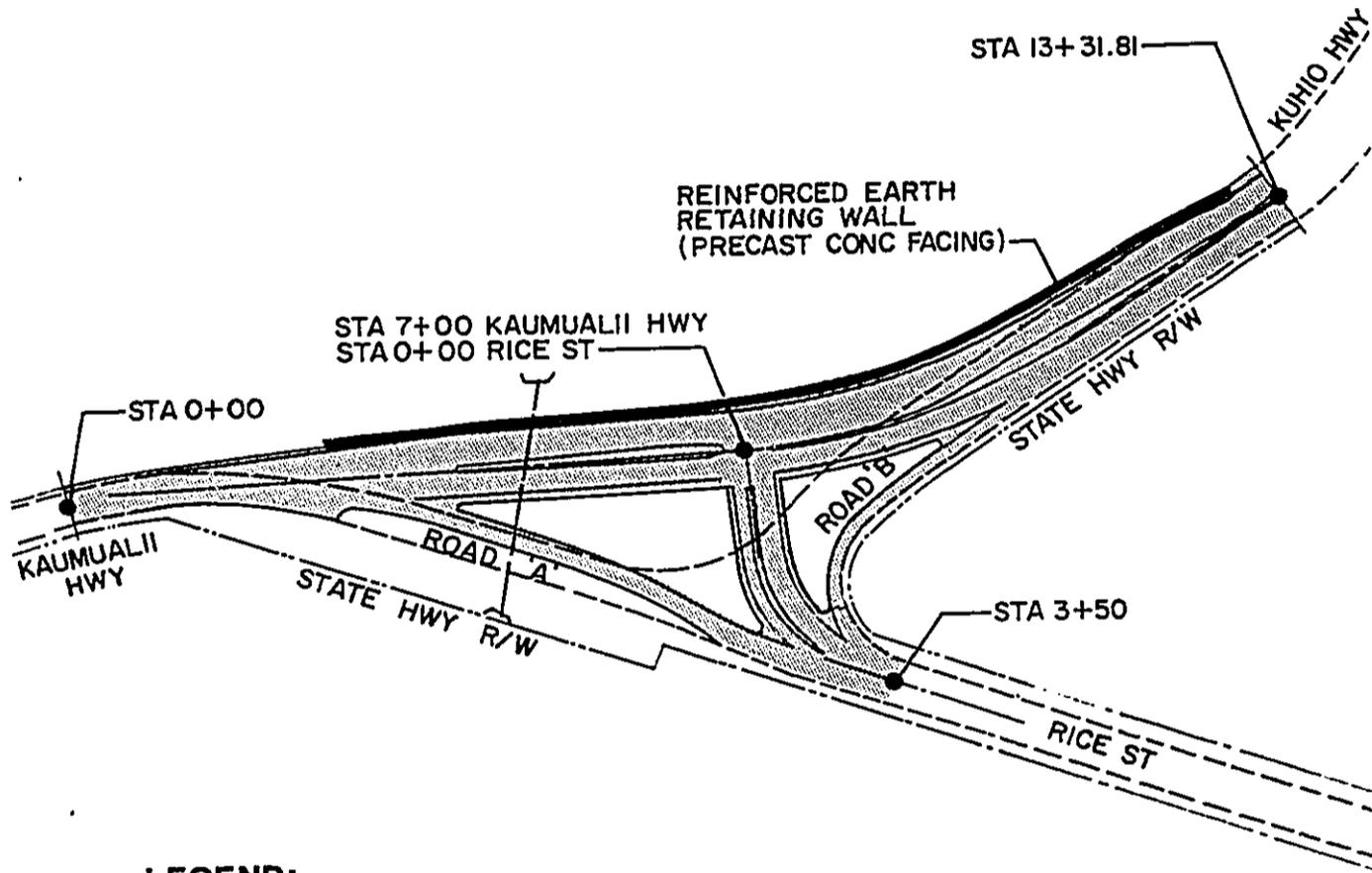
**8.0 LIST OF PREPARERS**

**SHIMABUKURO, ENDO, & YOSHIZAKI, SEY ENGINEERS - DESIGN**

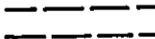
**ENVIRONMENTAL COMMUNICATIONS. - ENVIRONMENTAL  
ASSESSMENT**

**AECOS, INC. - STREAM BIOLOGY**

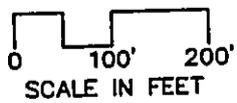
**BIO-SYSTEMS ANALYSIS, INC. - CULTURAL ANTHROPOLOGY &  
ARCHAEOLOGY**



**LEGEND:**

-  PROPOSED ROAD
-  EXISTING ROAD
-  PROPOSED DRAINAGE STRUCTURE

FILE: C:\CAD\2753-01\FIG6



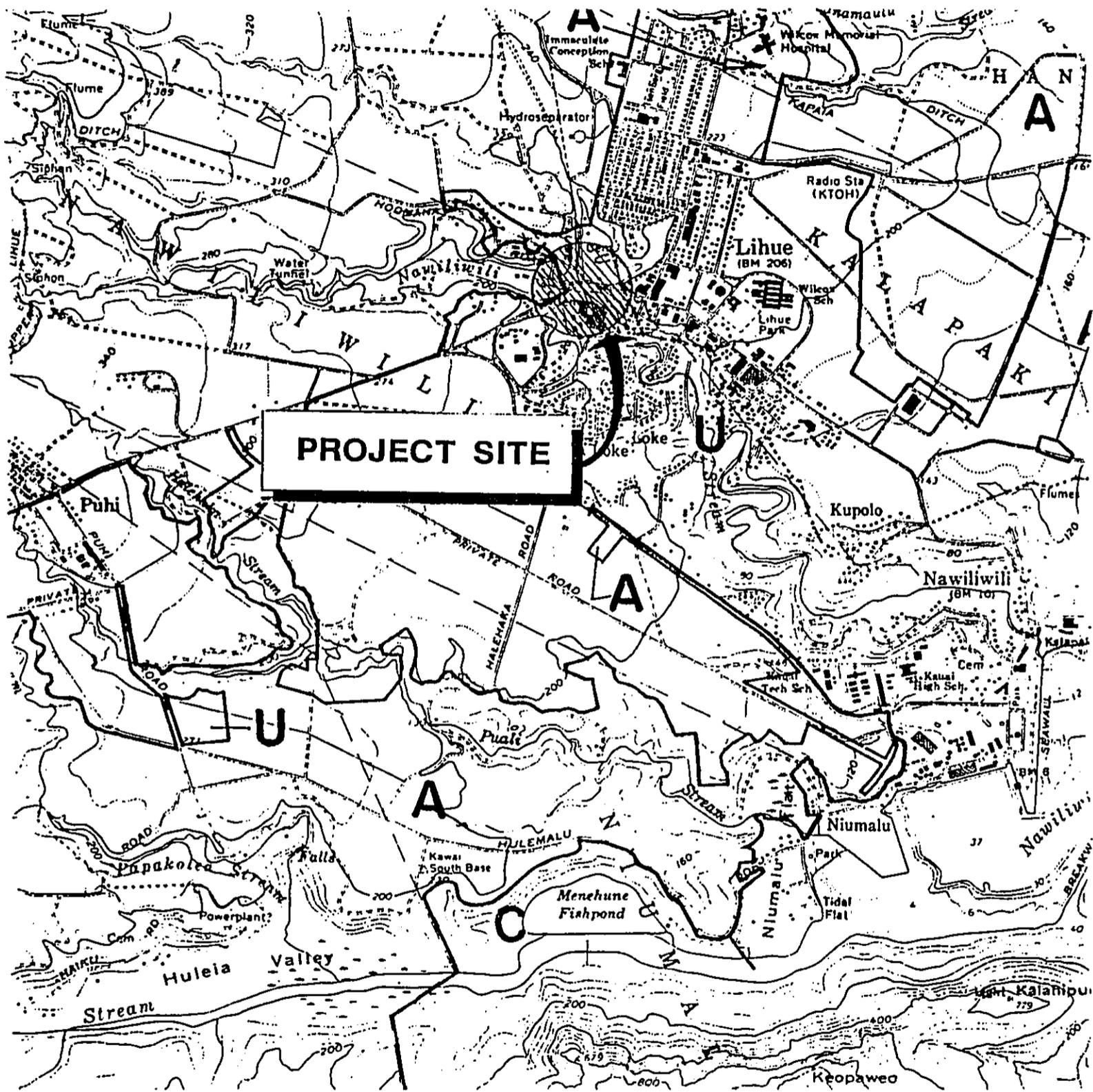
**SOURCE:**

ROADWAY PLAN PREPARED BY SHIMABUKURO, ENDO AND YOSHIZAKI, INC. FOR THE DEPARTMENT OF TRANSPORTATION, STATE OF HAWAII, 1994.

Kaumualii Highway, Kuhio Highway, and Rice Street Improvements

**Figure 6  
Proposed Roadway Plan**

March, 1995



**FIGURE 7 STATE LAND USE DISTRICT BOUNDARY MAP**

**Kaumualii Highway, Kuhio Highway, and Rice Street Improvements**

AECOS No. 795

**KAUMUALII HIGHWAY,  
KUHIO HIGHWAY, AND  
RICE STREET INTERSECTION  
IMPROVEMENTS  
STREAM ASSESSMENT**

**Prepared For:**

**Parametrix, Inc.  
1164 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813-2832**

**Prepared By:**

**AECOS, Inc.  
970 N. Kalaheo Ave, Suite C300  
Kailua, Hawaii 96734**

**October 1994**

---

## INTRODUCTION

---

The State of Hawaii, Department of Transportation proposes to improve the intersection of Kaunualii Highway, Kuhio Highway, and Rice Street in Lihue, Kauai. Rice Street and Kuhio Highway are the two principal thoroughfares through Lihue. Rice street connects Lihue to Nawiliwili and the harbor area; Kuhio Highway (State Route 56) is the main highway connecting all parts of the east and north coasts of Kauai; Kaunualii Highway (State Route 50) connects central Lihue to newer developments south of town and to the south and west coasts of the island.

This report considers the impact that the proposed highway improvements will have on the natural environment and particularly streams located in the area. The main intersection will be moved a distance of approximately 200 feet north from its present location, with transitions to and from Rice Street into the connected Kaunualii and Kuhio Highways occupying most of the present three-way intersection. The area proposed for the new connection between Kaunualii and Kuhio Highways is presently a deep swale and was the focus of this investigation. The drainage through this area will have to be confined within culvert structures beneath the fill supporting the new roadway. Initially, this fill was to extend north as a graded slope covering much of an unnamed stream in the swale, but this plan has been replaced with a vertical, reinforced earth retaining wall.

Within the vicinity of the existing intersection is the Lihue Shopping Center, the Lihue Sugar Mill, and forested land along the banks of Nawiliwili Stream and the small, unnamed tributary of Nawiliwili Stream. This report presents the results of a field reconnaissance of the streams and the riparian environment potentially impacted by planned improvements to the intersection.

---

## AREA STREAM DESCRIPTIONS

---

Nawiliwili Stream is coded 2-2-13 in the Hawaii Stream Assessment (Hawaii Cooperative Park Service Unit, 1990), which indicates that it is a perennial stream. Nawiliwili Stream arises from several branches around 1000 feet elevation on the east side of Kilohana Crater. The southernmost branch of Nawiliwili Stream passes just north of Kauai Community College, converging not far from the college to form the main stream which is within the gulch conspicuous along the south side of the central part of Lihue. The

stream meanders through Lihue to Nawiliwili where it enters Nawiliwili Bay at Kalapaki Beach (Figure 1).

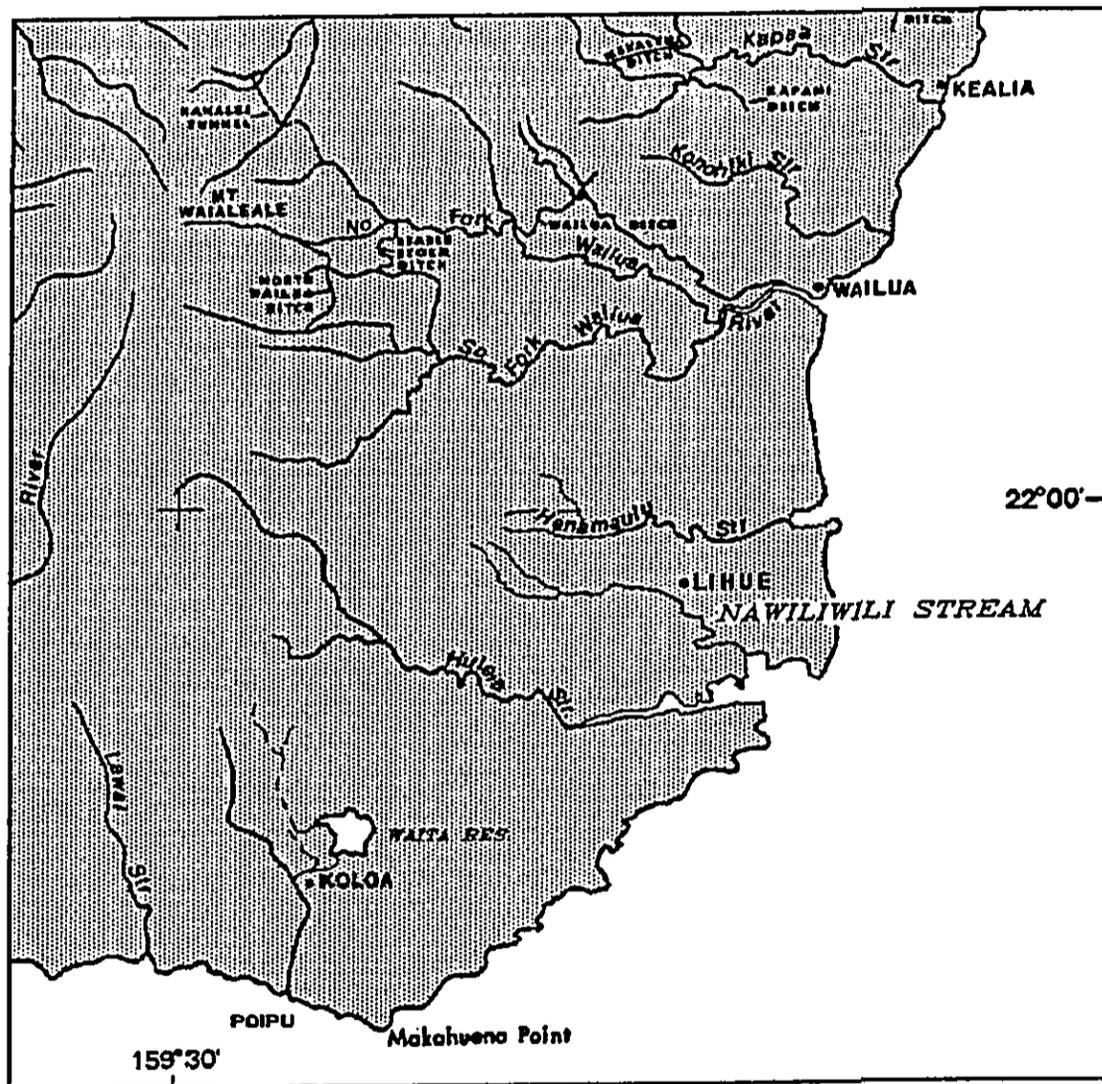


Figure 1. Portion of a USGS prepared map showing major streams on the southeast part of the Island of Kauai with Nawiliwili Stream added.

Table 1 provides a summary of selected characteristics of streams in this part of Kauai. The list includes all streams which occur between Hanamaulu (north of Lihue on Hwy 56) and Knudsen Gap on Hwy 50 (near the Koloa turnoff), although not all tributary streams are listed. This table is helpful to putting Nawiliwili Stream in perspective with regard to other nearby streams, although, not much more is known about these other streams. In the table, vertical bars connect streams that have a common outlet at the shore.

Information is from the Hawaii Stream Assessment and USGS topographic maps. Numerous, smaller drainages that would not be classified as streams or do not appear on the maps as streams were ignored.

Table 1. Summary of stream characteristics and other information for Lihue area streams and gulches.

Stream	Code	Class <sup>1</sup>	Headwaters Elevation <sup>2</sup>	Aquatic Resources <sup>3</sup>	Survey Data
[Hanamaulu] ↑					
<i>Hanamaulu</i> [Lihue]	2-2-12	Pc	1000™	L	DLNR, 1966
<i>Nawiliwili</i>	2-2-13	Pc	1000		
<i>Puali</i>	2-2-14	Pc	340		AECOS, 1994
<i>Puhi</i>		Pc	750		
<i>Hoinakaunalehua</i>		Pc	800		
<i>Papakolea</i>		Pc	LR		
<i>Huleia</i>	2-2-15	Pc	3000™	O	DLNR, 1990
[Koloa] ↓					

NOTES:

- 1 - P= perennial; I = intermittent; c = continuous; i = interrupted. Where given in *Italics*, the class is inferred from topographic sheet by solid, dash-dotted, or no blue line.
- 2 - In feet, estimated (from topographic sheets) upper elevation of drainage basin; generally somewhat higher than headwaters. ™ = multiple headwater tributaries; LR = a lower reach of other named stream(s).
- 3 - Summary from Hawaii Stream Assessment (Hawaii Cooperative Park Service Unit, 1990); L = Low; O=Outstanding (aquatic ranking).

Kaunualii Highway (Hwy 50) spans both Nawiliwili stream and private transportation roads for the Lihue Sugar Mill operation immediately west of the highway improvement project. Nawiliwili Stream flows along the north side of the sugar mill, passing under an old CRM bridge supporting an entrance to the mill off Kaunualii Highway (Figure 2). This area and the main course of Nawiliwili Stream would not be directly impacted by the proposed project. However, a small tributary of Nawiliwili Stream flows southward, more or less parallel with Kubio Highway into the project area and passes under Kaunualii Highway to join Nawiliwili Stream just downstream of the mill entrance road bridge (Figure 2).

The small, unnamed stream on the north side of the intersection was flowing at the time of the field survey. However, this flow dwindled rapidly upstream and no water was present in the stream bed at the upper end of the project area (vicinity of a street drain outlet). This drainage arises within about 2000 feet of the confluence with Nawiliwili

Stream, the channel running parallel to the west side of Kuhio Highway (Figure 2). Several small side flows were noted to be coming from the vicinity of mill operations on the north side of Kaumualii Highway. The source of this water was not determined. This area, however, is used to dry sediment deposited from mill operations (presumably washings from the harvested cane) and the drainage ways are suitably fitted with detention ponds to reduce silt loading to the stream. Whether the water was coming from mill operations, sediment dewatering, or local ground water springs could not be determined. Much or all of the flow was arising outside of the study area on mill property. The drainage basin which includes these mill operations is much larger than that of the unnamed stream, but *highly modified* by the mill operations. Topographic maps (USGS, 7.5 Minute Series, Lihue and Kapaa Quadrangles) show an intermittent stream arising around the 600 foot elevation and feeding into this area. Certainly all of this drainage would flow to Kaumualii Highway in the project area, and would join the unnamed stream or otherwise be accommodated in culverts beneath the highway before entering Nawiliwili Stream.

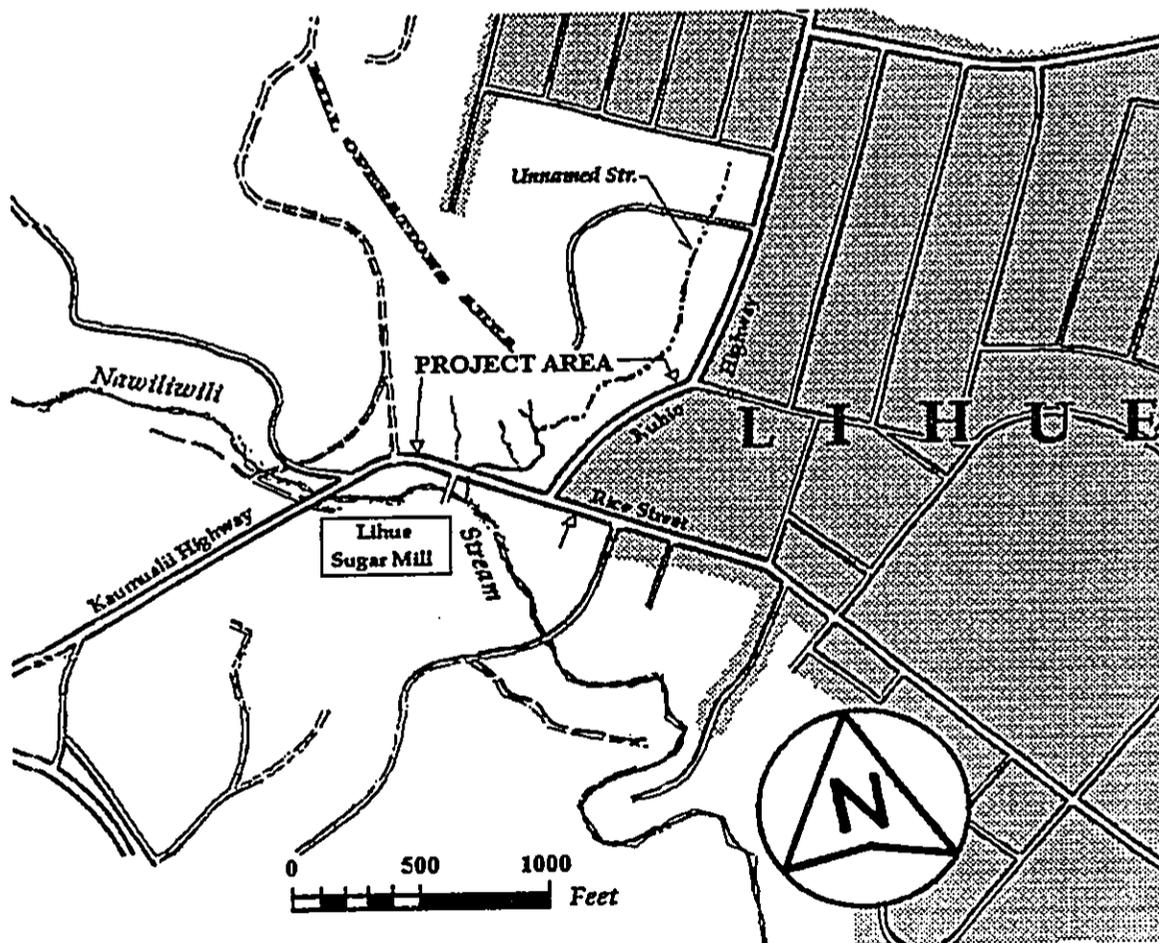


Figure 2. Field sketch map of project area and area streams.

The unnamed stream is directed into a 3' x 6' box culvert under Kaumualii Highway, opening directly into Nawiliwili Stream at the outlet end. This culvert has an unusual form, dipping downward in an inverted arch beginning some 15 feet in from the north entrance. At the exit, which is lower than the entrance, but not sloped to the end, sediment has been deposited to within about 18 inches of the top of the culvert. About 12 inches of stream water occupies the remaining opening.

---

## WATER QUALITY

---

The results of sampling (and subsequent water quality analyses) in Nawiliwili Stream (Station 2) and the unnamed side stream (Station 1) on September 29, 1994 are presented in Tables 2 and 3. From these measurements a general characterization can be drawn that the quality of Nawiliwili Stream is fairly typical with perhaps a slightly elevated nutrient content. The unnamed stream, on the other hand, has rather poor water quality with elevated conductivity and nutrients.

---

**Table 2. Basic water quality characteristics of Nawiliwili Stream.**

---

	Temperature (°C)	DO (mg/L)	pH (pH units)	Conductivity (µmhos/cm)	Turbidity (ntu)	Suspended Solids (TSS) (mg/L)
Station 1	25.1	4.32	6.50	301	2.80	1.4
Station 2	23.6	6.95	7.05	199	11.3	1.8

---

The temperatures measured (Table 2) were not unusual and reflect seasonal influences, time of day, and local shading. The dissolved oxygen (DO) value at Station 1 was somewhat low. For example, the results represent the following in relation to saturation (the amount of oxygen that could be dissolved in water at a given temperature, salinity, and air pressure): Station 1 = 53 % and Station 2 = 84 %. The State water quality standard for stream water is dissolved oxygen not less than 80% saturation (DOH, 1992).

pH values (Table 2) were both close to neutral (7.00), with Station 1 very slightly acidic. Conductivity values indicated a low dissolved ion content, although again Station 1 was notably higher than Nawiliwili Stream. High suspended solids and high turbidity were observed only at Station 2 representing the main flow of Nawiliwili Stream. Both turbidity and suspended solids are highly variable in streams and the results of a single measurement cannot characterize long term trends. Given the short reach of the unnamed stream, the lack of disturbances at the time of sampling, and the sediment

detention ponds between the stream and the mill operations, the recorded high clarity of the water is understandable. Activities contributing to the higher turbidity in Nawiliwili Stream at the time were outside of the survey area.

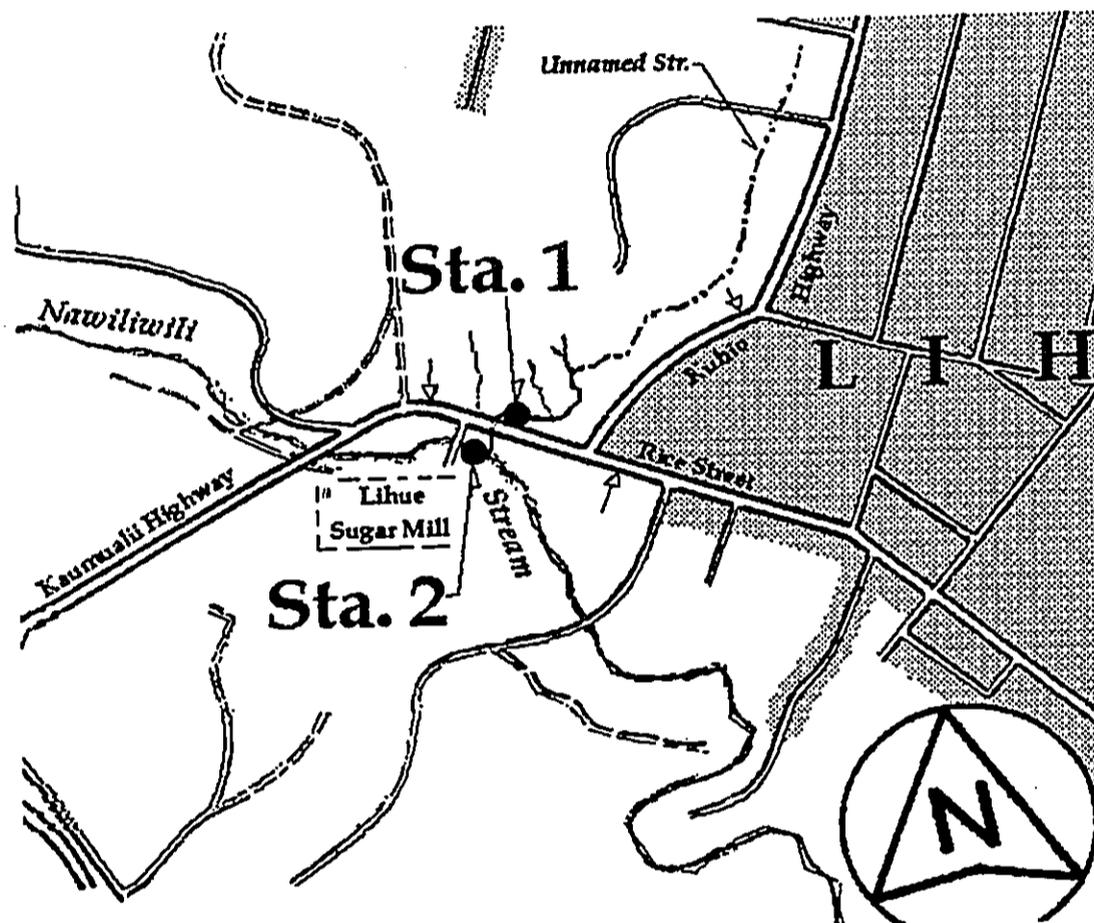


Figure 3. Location of water quality sample Stations 1 and 2 (Sept. 29, 1994).

The term "nutrients" (Table 3) refers to dissolved and/or particulate substances which are conducive to biological productivity. Nutrients stimulate plant growth and comprise organic matter. The abundant nutrients of significance in aquatic environments are compounds of nitrogen and phosphorus. The two locations sampled showed quite different concentrations of these substances suggesting a complex situation with respect to inputs and uptake along the stream reaches represented here. The organic nitrogen is estimated by subtracting the ammonia and nitrate + nitrite values from the total N and is seen to be a small part (6% or less) of the total N in these samples.

**Table 3. Nutrient water quality characteristics of Nawiliwili Stream.**

	Ammonia ( $\mu\text{g N/L}$ )	Nitrate + nitrite ( $\mu\text{g N/L}$ )	Total nitrogen ( $\mu\text{g N/L}$ )	Total organic N ( $\mu\text{g N/L}$ )	Total phosphorus ( $\mu\text{g P/L}$ )
Station 1	332	3150	3610	128	6
Station 2	29	890	980	61	28

The water quality standards for nutrients concentrations in Hawaiian streams (total N, nitrate + nitrite, and total P are included) require the collection of several samples over a period of time in order to calculate at a mean value. Thus, any comparison of the values in Table 3 with the standards is subject to uncertainty based upon how "typical" the results for September 29, 1994 actually are. Nonetheless, given the elevated nutrient values, comparison with the water quality standard criterion values for a mean not-to-exceed are 30  $\mu\text{g N/l}$  for nitrate + nitrite, 180  $\mu\text{g N/l}$  for total N, and 30  $\mu\text{g P/l}$  for total P (These are the dry season criteria applicable to September measurements). Both locations readily exceeded the mean criteria for nitrate + nitrite and total N on the day sampled.

### FIELD SURVEY

Close to the sugar mill and the mill roads above Kaunualii Highway, Nawiliwili Stream flows through a mostly open area with only a few trees. Shrubs, grasses, and other herbaceous plants are thick along the stream banks. Within the project area, both the unnamed stream and Nawiliwili Stream at and below the confluence with the unnamed stream flow through mostly forested areas. The forest is one composed entirely of introduced species and has largely grown up since the present highway intersection was constructed, as evidenced by the fact that much of the growth occurs on the steep highway embankments. The dominant trees are African tulip (*Spathodea campanulata*) and *Macaranga tanarius*. Hau (*Hibiscus tiliaceus*) is prominent on the south side of the intersection near Rice Street, and probably very common downstream of the project area. Other trees and large plants common within the survey area are banana (*Musa x paradisiaca*), bamboo (*Bambusa vulgaris*), koa haole (*Leucaena leucocephala*), Java plum (*Syzygium cumini*), scrambled egg plant (*Senna surattensis*), and an ornamental hibiscus (*Malvaviscus cf. arboreus*) planted along Kuhio Highway. Wood rose vine (*Merremia tuberosa*) is abundant throughout the area.

The understory tends to be dominated by one of the following plants: white shrimp plant (*Justicia betonica*) in the more open and semi-shaded areas along Kaunualii Highway, an unidentified herbaceous plant (?*Ruellia* sp.) forming a dense ground cover in semi-shaded

areas on the bank below Kuhio Highway, or wedelia (*Wedelia trilobata*) on the south bank. *Odontonema* (*Odontonema strictum*) is common near the stream along the north side of Kaumualii Highway and lantana (*Lantana camara*) is common high on the bank along the Kuhio Highway side. Because of shading by trees, grasses are not abundant along the stream, nor are the typical aquatic herbaceous plants. Job's tears (*Coix lachryma-jobi*) occurs along Nawiliwili Stream in the more open area beside and above the mill and umbrella sedge (*Cyperus alternifolius*) is present in scattered locations. A wide variety of other plants are present in the area as listed in Table 4. Most of the small weedy herbs and grasses along the highway rights-of-way are not included in this listing.

TABLE 4. Checklist of plants found in the vicinity of Nawiliwili Stream at the intersection of Kaumualii Hwy., Kuhio Hwy., and Rice Street in Lihue, Kaua'i.

Species	Common name	Status	Abundance
<b>FERNS</b>			
<i>Dryopteris</i> sp.	oak fern		Common
<b>MONOCOTYLEDONES</b>			
<b>AGAVACEAE</b>			
<i>Cordyline fruticosa</i> (L.) A. Chev.	ti, ornamental ti	nat.	Occasional
<b>ARACEAE</b>			
<i>Alocasia cucullata</i> (Lour.) Schott.	Chinese taro	orn.	Uncommon
<i>Epipremnum pinnatum</i> (L.) Engl.	taro vine, pothos	nat.	Abundant
<b>ARECAEAE</b>			
<i>Livistonia chinensis</i> (Jacq.) R. Br. ex Mart.	Chinese fan palm	nat.	Uncommon
<b>COMMELINACEAE</b>			
<i>Commelina diffusa</i> N. L. Burm.	honohono	nat.	Uncommon
<b>CYPERACEAE</b>			
<i>Cyperus alternifolius</i> L.	umbrella sedge	nat.	Uncommon
<b>HELICONIACEAE</b>			
<i>Heliconia</i> cf. <i>collinsiana</i> Griggs	ornamental heliconia	orn.	Uncommon
<b>MUSACEAE</b>			
<i>Musa x paradisiaca</i> L.	banana	pol.	Abundant
<b>POACEAE (GRAMINEAE)</b>			
<i>Chloris radiata</i> (L.) Sw.	plush grass	nat.	Occasional*
<i>Coix lachryma-jobi</i> L.	Job's tears, <i>pu'ohē'ohē</i>	nat.	Occasional
<i>Panicum maximum</i> Jacq.	Guinea grass	nat.	Common
<i>Bambusa vulgaris</i> Schrad. ex Wendl.	bamboo	orn.	Occasional

Table 4 (Continued).

Species	Common name	Status	Abundance
<b>DICOTYLEDONES</b>			
<b>ACANTHACEAE</b>			
<i>Asystasia gangetica</i> (L.) T. Anderson	Chinese violet	nat.	Common
<i>Justicia betonica</i> L.	white shrimp plant	nat.	Abundant
<i>Odontonema strictum</i> (Nees) Kuntz		orn.	Occasional
<i>Ruellia</i> cf. <i>graecizans</i> Backer		nat.	Abundant
<i>Thunbergia fragrans</i> Roxb.	white thunbergia	nat.	Uncommon
<b>ANACARDIACEAE</b>			
<i>Schinus terebinthifolius</i> Raddi	Christmasberry tree	nat.	Uncommon*
<b>ARALIACEAE</b>			
<i>Schefflera actinophylla</i> (Endl.) Harms	octopus tree	nat.	Uncommon*
<b>ASTERACEAE (COMPOSITAE)</b>			
<i>Bidens pilosa</i> L.	<i>ki</i>	nat.	Uncommon
<i>Wedelia trilobata</i> (L.) Hitchc.	wedelia	nat.	Abundant*
<b>BIGNONIACEAE</b>			
<i>Spathodea campanulata</i> P. Beauv.	African tulip tree	nat.	Abundant
<b>CONVOLVULACEAE</b>			
<i>Ipomoea indica</i> (J. Burm.) Merr.	<i>Koali 'awa</i>	ind.	Uncommon
<i>Ipomoea obscura</i> (L.) Ker-Gawl	field bindweed	nat.	Uncommon
<i>Merremia tuberosa</i> (L.) Rendle	wood rose, <i>pilikai</i>	nat.	Abundant
<b>CUCURBITACEAE</b>			
<i>Cucurbita</i> sp.	squash	orn.	Uncommon
<b>EUPHORBIACEAE</b>			
<i>Chamaesyce hirta</i> (L.) Millsp.	garden spurge	nat.	Abundant*
<i>Macaranga tanarius</i> (L.) Müll. Arg.		nat.	Abundant
<i>Ricinus communis</i> L.	castor bean, <i>pa'aila</i>	nat.	Common
<b>FABACEAE</b>			
<i>Canavalia cathartica</i> Thouars	<i>maunaloa</i>	nat.	Uncommon*
<i>Chamaecrista nictitans</i> (L.) Moench	partridge pea	nat.	Occasional
<i>Leucaena leucocephala</i> (Lam.) de Wit	<i>koa haole</i>	nat.	Occasional*
<i>Mimosa pudica</i> L.	sensitive plant	nat.	Uncommon
<i>Senna surattensis</i> (N.L. Burm.) H. Irwin & Baneby	<i>kolomona</i>	nat.	Occasional
<b>LAMIACEAE</b>			
<i>Leonotis nepetifolia</i> (L.) R. Br.	lion's tail	nat.	Uncommon

Table 4 (Continued).

Species	Common name	Status	Abundance
<b>MALVACEAE</b>			
<i>Abutilon grandifolium</i> (Willd.) Sweet	hairy abutilon	nat.	Uncommon*
<i>Hibiscus tiliaceus</i> L.	<i>hau</i>	ind.	Occasional*
<i>Malvastrum coromandelianum</i> (L.) Garcke	false mallow	nat.	Occasional
<i>Malvaviscus cf. arboreus</i>	sleeping hibiscus	orn.	Occasional*
<b>MORACEAE</b>			
<i>Artocarpus heterophyllus</i> Lam.	jack fruit	orn.	Uncommon*
<i>Ficus microcarpa</i> L. fil.	Chinese banyan	orn.	Uncommon
<b>MYRTACEAE</b>			
<i>Psidium guajava</i> L.	guava	nat.	Uncommon*
<i>Syzygium cumini</i> (L.) Skeels	Java plum	nat.	Common
<b>PASSIFLORACEAE</b>			
<i>Passiflora cf. suberosa</i> L.	<i>huehue haole</i>	nat.	Uncommon
<b>RUTACEAE</b>			
<i>Citrus</i> sp.	?lemon	orn.	Uncommon*
<b>VERBENACEAE</b>			
<i>Lantana camara</i> L.	<i>lakana</i>	nat.	Uncommon*

Status = distributional status

- end. = endemic; native to Hawaii and found naturally nowhere else.
- ind. = indigenous; native to Hawaii, but not unique to the Hawaiian Islands.
- nat. = naturalized, exotic, plant introduced to the Hawaiian Islands since the arrival of Cook Expedition, and well-established outside of cultivation.
- orn. = exotic, ornamental; plant not naturalized (not well-established outside of cultivation).
- pol. = Polynesian introduction.

Abundance = abundance ratings are for this site only.

- Uncommon - a plant found less than five times;
- Occasional - a plant that was found between five and ten times;
- Common - a plant considered an important part of the vegetation
- Abundant - plants found in large numbers, dominant or locally dominant.
- \* - found here mostly closer to the highway(s) rather than to the stream(s).

Terrestrial animal species observed during the field survey include the star or crab spider, Japanese white eye (*Zosterops japonica japonica*), and an abundance of rats (probably *Rattus exulans*). It was noted that the unnamed stream was littered with large numbers of plastic, colored balls about 3-inches in diameter. These were also observed downstream of the confluence with Nawiliwili Stream. These may have been released from a children's commercial play yard by hurricane *Iniki*.

Visual observations and sweepings with a coarse net revealed only one species of fish residing in the unnamed stream: the introduced guppy or rainbow fish (*Poecilia reticulata*). A few small bullfrogs (*Rana catesbeiana*) were seen, as were young crayfish (*Procambarus clarki*). No snails or aquatic insects were observed. This unnamed stream may experience considerable fluctuation in water flow from nearly dry with isolated pools, to substantial freshet flows. The small size of the populations of aquatic animals (Table 5) suggests that the habitat space may have been considerably smaller than that observed. Extensive deposits of sediments in the stream bed at the north end of the project area suggest relatively recent floods.

TABLE 5. Checklist of aquatic animals observed or reported from Nawiliwili Stream

Species	Common name	Status	Abundance
<b>INVERTEBRATES</b>			
<b>ARTHROPODA, CRUSTACEA</b>			
<b>DECAPODA - CAMBARIDAE</b>			
<i>Procambarus clarki</i> (Girard)	American swamp crayfish	nat.	Uncommon
<b>VERTEBRATES</b>			
<b>FISHES - POECILIIDAE</b>			
<i>Poecilia reticulata</i> (Peters)	rainbow fish, guppy	nat.	Common
<b>AMPHIBIANS - RANIDAE</b>			
<i>Rana catesbeiana</i> Shaw	American bullfrog	nat.	Uncommon

### CONCLUSIONS

The plants observed in the project area are almost entirely species that have been introduced to the Hawaiian Islands since the Cook Expedition (i.e., naturalized or ornamental species). These species are widespread in the lowlands of Kaua'i and have no specific intrinsic value that would be lost because of the proposed improvements to the highway system at Lihue. No threatened or endangered species of plants or animals were noted in the area.

The unnamed stream provides some habitat of limited value to aquatic species, although no native aquatic animals were observed. The source of water for this side stream was not determined, but the drainage basin includes a large area within and above the sugar

mill operations area. Several detention ponds separate the operations area from the proposed construction area, and some of these ponds may need to be moved further away from the construction site.

Nawiliwili Stream, although essentially a lowland stream, may include habitat areas outside of the project area which are of value to native aquatic species. However, Timbol and Maciolek (1978) rated this stream as having low environmental and biological quality despite the fact that it is continuous flowing and not channelized. Nawiliwili Stream proper will not be directly impacted by the proposed highway construction project. However, care will have to be exercised during construction to minimize indirect impacts on Nawiliwili Stream because of the close proximity of the construction and the intimate relationship with the unnamed side stream which flows directly through the construction area before joining Nawiliwili Stream.

---

#### REFERENCES CITED

---

AECOS, Inc. 1994. An environmental reconnaissance survey of Puali and Halehaka Streams, Puhi, Kauai. Prep. for Grove Farm Properties, Lihue. AECOS No. 769: 18 p.

Hawaii Cooperative Park Service Unit. 1990. Hawaii stream assessment, a preliminary appraisal of Hawaii's stream resources. Prep. for Commission on Water Resource Management, State of Hawaii. Report R84.

Timbol, A.S. and J.A. Maciolek. 1978. Stream channel modification in Hawaii, Part A: Statewide inventory of streams, habitat factors and associated biota. U.S. Fish and Wildlife Service, FWS/OBS-78/16. 158 p.

**ASSESSMENT OF POTENTIAL ARCHAEOLOGICAL RESOURCES  
AT THE KAUMUALI'I HIGHWAY, KUHIO HIGHWAY,  
AND RICE STREET INTERSECTION  
KAUA'I, HAWAI'I**

prepared for

Parametrix, Inc.  
1164 Bishop St., Suite 1600  
Honolulu, Hawai'i 96813

prepared by

James McIntosh, B.A. and Ingrid Carlson, M.A.  
BioSystems Analysis, Inc.  
1051 Keolu Drive, Suite 104-B  
Kailua, Hawai'i 96734

5 October 1994.

## 1.0 INTRODUCTION

BioSystems Analysis, Inc., under contract with Parametrix, Inc., conducted archival research in an attempt to assess the potential archaeological resources that may be impacted by the proposed improvements at the Kuhio Highway-Rice Street intersection in Lihu'e Kaua'i, Hawai'i (Figure 1). The project area is located within the existing right-of-way along Kuhio Highway, that runs into Lihu'e business district. The improvements proposed are widening of the existing lanes and medians. The impact to the area at its widest point is estimated to be just over 130 feet, with subsurface disturbance extending to a depth of 2.5 feet for the roadway pavement structure, and up to 30 feet for the drainage utilities. The project area is located approximately one mile and a half north-northwest of Nawiliwili Harbor within the town of Lihu'e. Rainfall in the area is just over 50 inches per year (Armstrong 62:1983). Buildings currently exist on each side of Rice Street and on the eastern side of Kuhio Highway. The Plantation Mill is to the west of the intersection with mixed vegetation running to the west along Kuhio Highway. Soils within the proposed project area are from the Lihue Series, defined as well-drained soils that "developed in material weathered from basic igneous rock" (Foote et al. 82:1972). This type of soil is suitable for commercial agriculture.

## 2.0 ARCHIVAL RESEARCH

An archival search was conducted by BioSystems Analysis, Inc. in an attempt to determine what, if any, archaeological resources may be impacted by the aforementioned improvements to the intersection at Kuhio Highway and Rice Street. Previous archaeological research that has been conducted in the area was reviewed at the State Historic Preservation Division. Historical documents and maps were researched (State Survey Office and Division of Land Management) to determine what types of sites may be present in the project area.

Archival research determined that the proposed project area was once owned by Victoria Kamamalu who owned a large portion of Kalapaki. Approximately, 1870 acres of this land was transferred (Grant 188:1) in 1849 to William L. Lee by Mataio Kekuanaoa, who is believed to be Kamamalu's uncle. The proposed project area is located within Grant 188:1.

## 2.1 PREVIOUS ARCHAEOLOGY

There has been no previous research conducted in the immediate vicinity of the project area. Henry et al. (1993) conducted an archaeological survey roughly three-quarters of a mile south of the proposed project area. Two sites were identified within this area, Site 503, a historic cemetery, and Site 9390, a historic residence. No other sites were identified within the 590-acre survey area.

In 1991 Walker and Rosendahl surveyed and tested an area at Kalapaki Point, approximately one mile and three-quarters to the east of the proposed project area. The surface survey revealed two mounds and a few portable artifacts. Subsurface testing revealed: "... 34 intact burials, nine other burials, 44 exhumed burial pits, and a concentration of head stones and broken concrete foundations from previously disinterred graves" (Walker et al. 1991:2).

Nancy McMahon (1990) conducted a fieldcheck of three parcels of land in Lihu'e. One of the areas was a portion of the aforementioned area later surveyed by PHRI containing Site 9390. Another area surveyed was approximately one mile north-west of the proposed project area. One feature, Site 9402, a historic building was identified. No other archaeological sites were located.

## **2.2 HISTORIC LAND USE**

Archival research determined that the proposed project area was formerly owned by the Lihu'e Plantation Co. It is possible that the land was used for the cultivation of sugar cane which would have resulted in the removal and destruction of the surface and subsurface, respectively, components of any pre-existing features. The recent urban development of this section of Lihu'e would have destroyed any surface features which survived the plantation era.

## **2.3 ASSESSMENT OF POTENTIAL RESOURCES**

No archaeological sites have been recorded near the proposed project area. However, it is possible to postulate the types of archaeological resources that may have been present at different times in the past.

**Prehistoric Habitation Sites:** low walled enclosures, C-shapes, platforms, terraces, or house foundations may have been present given that the project area sits on an elevated slope adjacent to Nawiliwili Stream.

**Historic Structures:** Structures such as storage buildings, sheds, residences, and building foundations may be present in the area due to the former use of land by the sugar industry and the current urban development.

**Historic Burials:** Human remains have been encountered near the harbor and three-quarters of a mile south of the project area, and thus it is possible that the area could contain historic burials associated with the plantation workers. It is unlikely that prehistoric human burials will be encountered in this area.

As discussed above, the proposed project area was likely used by the cane industry. Subsequently, it was developed by the State of Hawai'i as a highway. For these two reasons, it is highly unlikely that any surface features still remain anywhere within the proposed area. The sugar industry would have cut and cleared the land leaving it devoid of any surface features. Any

buried deposits would have been destroyed to a depth of approximately two feet below surface. Likewise when the area was modernized, roads improved and buildings built, any surface and buried deposits would have been removed.

### **3.0 CONCLUSIONS AND RECOMMENDATIONS**

BioSystems Analysis, Inc. recommends no further archaeological work be conducted for the proposed improvements at the Kuhio Highway-Rice Street intersection, Kaua'i, Hawai'i. The archival research indicates that the potential for identifying any surface archaeological resources is extremely low. Likewise, the potential for discovering any buried deposits is low. The proposed construction will only be excavating to a depth of 2.5 feet for the roadway pavement structure and up to 30 feet for the drainage utilities, and it is highly possible that the sugar cane industry would have disturbed any buried deposits to that depth many years ago. Given that it is unlikely that any archaeological resources will be impacted, by the proposed project, permanent on-site monitoring is not recommended.

Though no human remains have been discovered near the project area, it should be noted that there is a very small possibility of uncovering burials interred in the historic era. In the event that any remains be uncovered, work in the area should stop immediately (as per Hawaii Revised Statutes Chapter 6E), and the Burials Program at the State Historic Preservation Division and the State Historic Preservation Officer for Kaua'i should be notified.

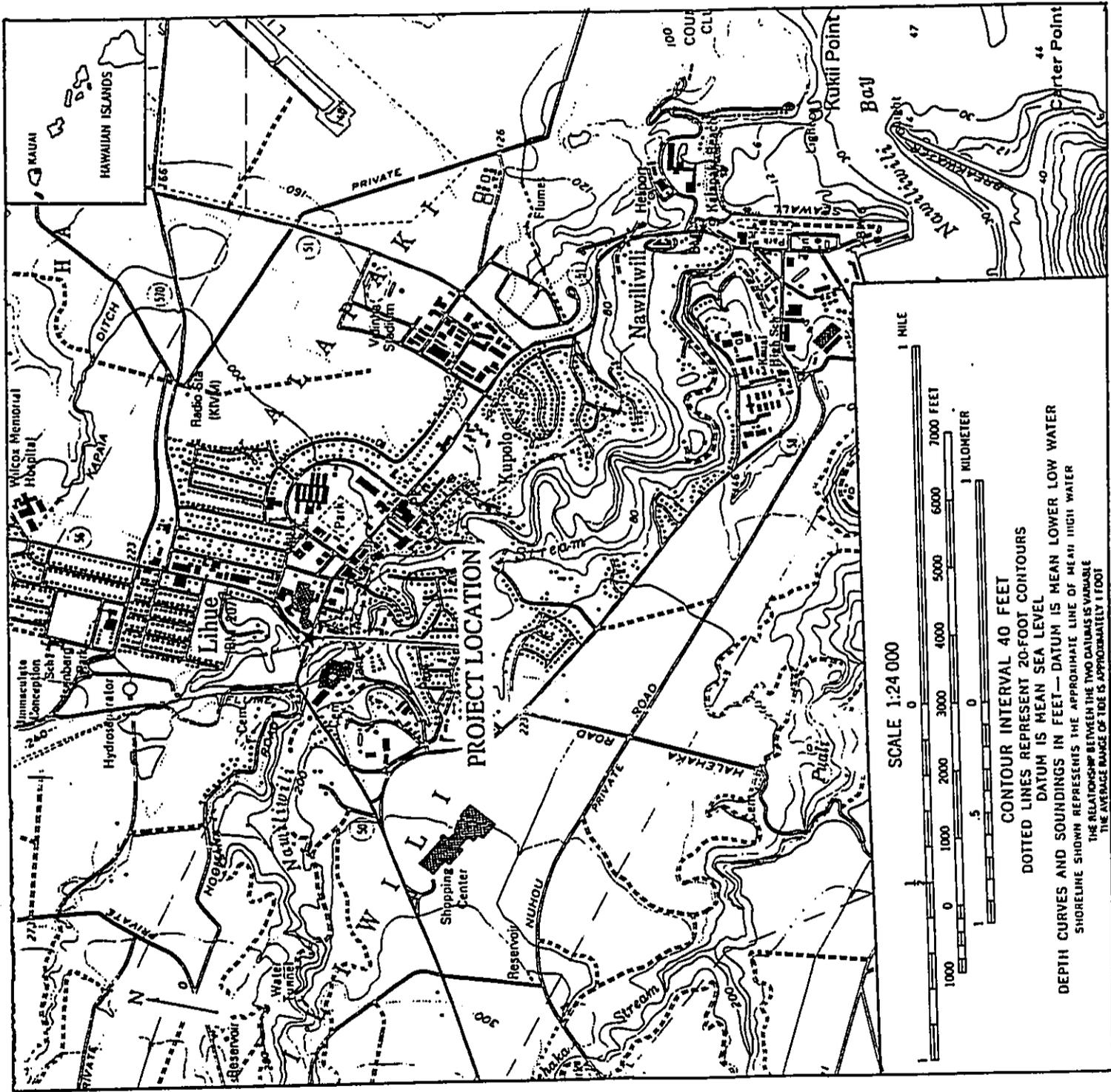


Figure 1. Location of project area.

#### 4.0 BIBLIOGRAPHY

Armstrong, Warick R.

1983 *Atlas of Hawaii*. University of Hawai'i Press. Honolulu Hawaii.

Foote, D., E. Hill, S. Nakamura, F. Stephens.

1972 *Soil Survey of Islands of Kaua'i, O'ahu, Maui, Molokai, and Lani, State of Hawai'i*. U.S. Department of Agriculture, Soil Conservation Service.

Henry, J., A. Walker, K. Maly, P. Rosendahl.

1993 *Archaeological Inventory Survey Grove Farm Lihu'e/Puhi Project Area*. PHRI, Hilo, Hawai'i.

McMahon, Nancy

1990 *Archaeological Fieldcheck of Three Parcels in Lihu'e Judiciary District: Possible Locations for a new Kaua'i Judiciary Building*. Historic Preservation Program, Dept. of Land and Natural Resources, State of Hawai'i.

Walker, A., and P. Rosendahl.

1991 *Archaeological Inventory Survey Kalapaki Point Development Project Area*. PHRI, Hilo, Hawai'i.

7.0 AGENCIES, ORGANIZATIONS, AND INDIVIDUALS  
CONSULTED DURING THE PREPARATION OF THE DRAFT E. A.

<u>AGENCY</u>	<u>DATE</u>	<u>RESPONSE</u>
<u>Federal Agencies</u>		
U.S. Department of Transportation Federal Highways Administration Region IX		
U.S. Department of Agriculture, Soil Conservation Service	4-25-95	5-30-95
<u>State Legislators</u>		
The Hon. Lehua Fernandez Sallings - State Senate The Hon. Bertha Kawakami - State House		
<u>State Agencies</u>		
Department of Accounting & General Services	4-19-95	5-3-95
Department of Agriculture Department of Business, Economic Development & Tourism	5-10-95	5-22-95
Department of Health - Environmental Management Division	4-21-95 5-1-95	6-1-95
Department of Land and Natural Resources - Office of Conservation Affairs	5-23-95	6-2-95
Historic Preservation Division	4-18-95	5-3-95
Office of Environmental Quality Control Office of State Planning	4-19-95	5-22-95
State Land Use Commission	5-10-95	
University of Hawaii, Manoa Environmental Center		
<u>County of Kauai</u>		
The Hon. Maryanne Kusaka, Mayor Building Department Fire Department Planning Department		
Police Department	4-24-95	5-3-95
Department of Public Works Department of Water Supply	4-25-95	5-3-95
Kaunualii Highway, Kuhio Highway, and Rice Street Improvements		June, 1995

**Private Utilities**

**DATE**

**DATE**

Kauai Electric Company  
Hawaiian Telephone Company 5-12-95

5-30-95

**Kaunualii Highway, Kuhio Highway,  
and Rice Street Improvements**

**June, 1995**

BENJAMIN CAYETANO  
GOVERNOR



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
869 PUNCHBOWL STREET  
HONOLULU, HAWAII 96813-5097

KAZU HAYASHIDA  
DIRECTOR

DEPUTY DIRECTORS  
SAM CALLEJO  
GLENN M. OKIMOTO

IN REPLY REFER TO

HWY-DS  
2.5580

May 3, 1995

TO: DR. DON HIBBARD, ADMINISTRATOR  
HISTORIC PRESERVATION DIVISION  
DEPARTMENT OF LAND AND NATURAL RESOURCES

FROM: MR. HUGH Y. ONO, ADMINISTRATOR   
HIGHWAYS DIVISION

SUBJECT: PRELIMINARY DRAFT ENVIRONMENTAL ASSESSMENT FOR  
KAUMUALII HIGHWAY, KUHIO HIGHWAY AND RICE STREET  
INTERSECTION IMPROVEMENTS, LIHUE, KAUAI, HAWAII  
PROJECT NO. 50E-01-90

Thank you for your transmittal dated April 17, 1995,  
indicating a "no effect" on significant historic sites for  
the proposed project. Your timely review and comments are  
appreciated.

BENJAMIN J. CAYETANO  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
STATE HISTORIC PRESERVATION DIVISION  
33 SOUTH KING STREET, 6TH FLOOR  
HONOLULU, HAWAII 96813

MICHAEL D. WILSON, CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES

DEPUTY  
GILBERT COLOMA-AGARAN

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

April 17, 1995

Mr. Fred Rodriguez  
Environmental Communications  
P.O. Box 536  
Honolulu, Hawaii 96809

LOG NO: 14282 ✓  
DOC NO: 9504NM06

**SUBJECT: Historic Preservation Review - Draft EA for the Proposed  
Kaumualii Highway, Kuhio Highway and Rice Street Improvements  
Project No. 50e-01-90  
Lihue, Kauai, Hawaii**

Thank you for submitting the above draft EA for our review. On December 22, 1994, we reviewed your consultants' Document Review and Assessment of Potential Archaeological Resources at Kaumualii Highway and Rice Street (McIntosh and Carlson, BioSystems Analysis, 1994) which is attached in this EA. At that time we concurred with your consultants assessment that it is unlikely that significant historic sites exist in the project area. We believe that your project will have no effect on significant historic sites.

If you have any questions please call Nancy McMahan at 742-7033.

Aloha,

A handwritten signature in black ink, appearing to read "Don Hibbard".

DON HIBBARD, Administrator  
State Historic Preservation Division

NM:amk

APR 18 1995

BENJAMIN CAYETANO  
GOVERNOR



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
869 PUNCHBOWL STREET  
HONOLULU, HAWAII 96813-5097

KAZU HAYASHIDA  
DIRECTOR

DEPUTY DIRECTORS  
SAM CALLEJO  
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-DS  
2.5581

May 3, 1995

Mr. Brian S. Fujiuchi  
Acting Chief of Police  
Police Department  
County of Kauai  
3060 Umi Street  
Lihue, Hawaii 96766

Dear Mr. Fujiuchi:

Subject: Preliminary Draft Environmental Assessment for  
Kaunualii Highway, Kuhio Highway and Rice Street  
Intersection Improvements, Lihue, Kauai, Hawaii  
Project No. 50E-01-90

Thank you for your transmittal dated April 3, 1995,  
indicating a "no objections or suggestions" for this project.  
Your timely review and comments are appreciated.

Very truly yours,

A handwritten signature in black ink, appearing to read "Hugh Y. Ono".

HUGH Y. ONO  
Administrator  
Highways Division



AN EQUAL OPPORTUNITY EMPLOYER  
OUR REFERENCE

YOUR REFERENCE

# POLICE DEPARTMENT

## COUNTY OF KAUAI

3060 UMI STREET  
LIHUE, HAWAII 96766  
TELEPHONE 808-241-6711  
FAX 808-241-6776



ADDRESS ALL  
COMMUNICATIONS TO

**BRIAN S. FUJIUCHI**  
INTERIM  
CHIEF OF POLICE

April 3, 1995

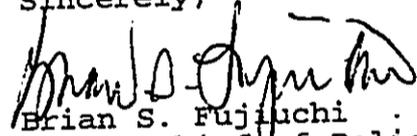
Mr. Herbert Tao  
State Department of Transportation  
869 Punchbowl St.  
Honolulu, HI 96813

Dear Mr. Tao:

We have reviewed the proposed plans for the improvements at the Kaumualii Highway, Kuhio Highway and Rice Street intersection. We do not have any objections or suggestions at this time.

If you have any questions please do not hesitate to contact Lieutenant Gordon Isoda of the Traffic Safety Unit at 808-241-6761.

Sincerely,

  
Brian S. Fujiuchi  
Acting Chief of Police

BENJAMIN CAYETANO  
GOVERNOR



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
869 PUNCHBOWL STREET  
HONOLULU, HAWAII 96813-5097

KAZU HAYASHIDA  
DIRECTOR

DEPUTY DIRECTORS  
SAM CALLEJO  
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-DS  
2.5582

May 3, 1995

Mr. Murl T. Nielsen  
Manager and Chief Engineer  
Department of Water  
County of Kauai  
Lihue, Hawaii 96766-5706

Dear Mr. Nielsen:

Subject: Preliminary Draft Environmental Assessment for  
Kaunualii Highway, Kuhio Highway and Rice Street  
Intersection Improvements, Lihue, Kauai, Hawaii  
Project No. 50E-01-90

Thank you for your transmittal dated April 21, 1995,  
indicating a "no objections" for this project. All final  
construction drawings will be provided for your review and  
approval prior to actual construction. Your timely review  
and comments are appreciated.

Very truly yours,

A handwritten signature in black ink, appearing to read "Hugh Y. Ono".

HUGH Y. ONO  
Administrator  
Highways Division

**DEPARTMENT OF WATER**

County of Kauai  
P. O. Box 1706  
Lihue, HI 96766-5706  
Phone No. (808) 245-5400 — FAX No. (808) 245-5813

RECEIVED

APR 25 1 59 PM '95

DEPARTMENT OF TRANSPORTATION  
HIGHWAY DIVISION

April 21, 1995

Mr. Fred Rodriguez  
Environmental Communications  
P.O. Box 536  
Honolulu, HI 96809

RE: Kaunualii Highway, Kuhio Highway and Rice Street Improvements, Lihue

We have no objections to the Draft Environmental Assessment for this project provided that detailed construction plans shall be submitted for review and approval prior to actual construction.

If there are any questions, please call Keith Fujimoto at 245-5400-0.



Murl T. Nielsen  
Manager & Chief Engineer

KF:dc  
cc: Mr. Herbert Tao

BENJAMIN CAYETANO  
GOVERNOR



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
869 PUNCHBOWL STREET  
HONOLULU, HAWAII 96813-5097

KAZU HAYASHIDA  
DIRECTOR  
DEPUTY DIRECTORS  
SAM CALLEJO  
GLENN M. OKIMOTO

IN REPLY REFER TO:

May 3, 1995

TO: MR. GORDON MATSUOKA, STATE PUBLIC WORKS ENGINEER  
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES

FROM: MR. HUGH Y. ONO, ADMINISTRATOR  
HIGHWAYS DIVISION

SUBJECT: PRELIMINARY DRAFT ENVIRONMENTAL ASSESSMENT FOR  
KAUMUALII HIGHWAY, KUHIO HIGHWAY AND RICE STREET  
INTERSECTION IMPROVEMENTS, LIHUE, KAUAI, HAWAII  
PROJECT NO. 50E-01-90

We have received your comments dated April 18, 1995, on the  
subject document and note for the record that you have no  
comments to offer.

Thank you for your timely comments.

BENJAMIN J. CAYETANO  
GOVERNOR



EUGENE S. IMAI  
COMPTROLLER

MARY PATRICIA WATERHOUSE  
DEPUTY COMPTROLLER

RECEIVED  
APR 25 10 39 AM '95  
HIGHWAYS DIVISION  
DEPT. OF TRANSPORTATION

STATE OF HAWAII

DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES

P. O. BOX 118, HONOLULU, HAWAII 96810

LETTER NO. (P) 1293.5  
RECEIVED  
APR 21 1 45 PM '95  
DEPT. OF TRANSPORTATION  
HIGHWAYS DIVISION

APR 18 1995

Department of Transportation  
Highways Division  
869 Punchbowl Street  
Honolulu, Hawaii 96813

Attention: Mr. Herbert Tao

Gentlemen:

Subject: Kaumualii Highway, Kuhio Highway  
and Rice Street Improvements  
Lihue, Kauai, Hawaii  
Preliminary Draft Environmental Assessment

Thank you for the opportunity to review the subject document. We have no comments to offer.

If there are any questions, please have your staff contact Mr. Ralph Yukumoto of the Planning Branch at 586-0488.

Very truly yours,

GORDON MATSUOKA  
State Public Works Engineer

RY:jj  
cc: Environmental Communications

APR 26 1995

BENJAMIN GAYETANO  
GOVERNOR



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
869 PUNCHBOWL STREET  
HONOLULU, HAWAII 96813-5097

KAZU HAYASHIDA  
DIRECTOR

DEPUTY DIRECTORS  
SAM CALLEJO  
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-DS  
2.5944

June 1, 1995

*Denis*  
Mr. Denis R. Lau, Chief  
Clean Water Branch  
Environmental Management Division  
Department of Health  
919 Ala Moana Boulevard, Rm. 301  
Honolulu, Hawaii 96814

Dear Mr. Lau:

Subject: Draft Environmental Assessment for Kaumualii  
Highway, Kuhio Highway, Rice Street  
Intersection Improvements,  
Lihue, Kauai, Hawaii Project No. 50E-01-90

We have received your comments dated April 21, 1995, and note the possible need for permits from the U.S. Army Corps of Engineers for a Section 404; the accompanying Section 401 Clean Water Act permit; and also, the NPDES permit for possible discharge of stormwater runoff into State waters.

The State's design consultant is currently coordinating the required permits with the appropriate agencies.

Thank you for your advice and timely response.

Very truly yours,

A handwritten signature in black ink, appearing to read "Hugh Y. Ono".

HUGH Y. ONO  
Administrator  
Highways Division

**BENJAMIN J. CAYETANO**  
GOVERNOR OF HAWAII



**LAWRENCE MIKE**  
DIRECTOR OF HEALTH

**STATE OF HAWAII**  
**DEPARTMENT OF HEALTH**

P. O. BOX 3378  
HONOLULU, HAWAII 96801

In reply, please refer to:  
EMD

April 21, 1995

P04134JS

Mr. Fred Rodriguez  
Environmental Communications  
P.O. Box 536  
Honolulu, HI 96819

Dear Mr. Rodriguez:

Subject: Kaunualii Highway, Kuhio Highway  
and Rice Street Improvements  
Lihue, Kauai, Hawaii  
TMK: 3-8-04: 01

The Department of Health acknowledges the receipt of your letter and has the following comments:

1. The applicant should 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 Water Quality Certification (WQC) is required for "Any applicant for 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..." pursuant to Section 401(a)(1) of the Federal Water Pollution Act (commonly known as the "Clean Water Act (CWA)").
2. If the project involves the following activities with discharges into State waters, an NPDES general permit is required for each activity:
  - a. Discharge of storm water runoff associated with construction activities, including clearing, grading, and excavation that result in the disturbance of equal to or greater than five (5) acres of total land area;
  - b. Construction dewatering effluent;
  - c. Non-contact cooling water;
  - d. Hydrotesting water; and
  - e. Treated contaminated groundwater from underground storage tank remedial activity.

Mr. Fred Rodriguez  
April 21, 1995  
Page 2

3. If there is any type of process wastewater discharge from the facility into State waters, the applicant may be required to apply for an individual NPDES permit.

Should you have any further questions regarding this matter, please contact Ms. Joanna L. Seto, Engineering Section of the Clean Water Branch, at 586-4309.

Sincerely,



DENIS R. LAU, P.E., CHIEF  
Clean Water Branch

JLS:sl

BENJAMIN J. CAYETANO  
Governor of Hawaii



Chairperson  
MICHAEL D. WILSON  
Board of Land and Natural Resources

Deputy Director  
GILBERT COLOMA-AGARAN

Aquaculture Development  
Aquatic Resources  
Boating and Ocean Recreation  
Bureau of Conveyances  
Conservation and Environmental Affairs  
Conservation and Resources Enforcement  
Forestry and Wildlife  
Historic Preservation  
Land Management  
State Parks  
Water and Land Development

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

REF: OCEA: TES

P. O. Box 621  
Honolulu, Hawaii 96809

MAY 23 1995 File No.: 95-456

MEMORANDUM

TO: The Honorable Kazu Hayashida, Director  
Department of Transportation

ATTN: Herbert Tao

FROM: Michael D. Wilson, Chairperson *Michael D. Coloma-Agaran f*  
Board of Land and Natural Resources

SUBJECT: Preliminary Draft Environmental Impact Statement  
(DEIS): Kaumualii Highway, Kuhio Highway and Rice  
Street Improvements, Lihue, Kauai, TMK: 3-8-04: por.1

We have reviewed the preliminary information for the subject project received on March 29, 1995, and have the following comments:

Historic Preservation Division

The Historic Preservation Division (HPD) notes that they have previously reviewed the Exhibit B: Assessment of Potential Archaeological Resources at the Kaumualii Highway, Kuhio, and Rice Street Intersection (McIntosh and Carlson, BioSystems Analysis, 1994) in December of 1994, and concurred with its author's assessment that it is unlikely that significant historic sites exist in the project area. HPD believes that this project will have "no effect" on significant historic sites.

We have no other comment to offer at this time. We appreciate the opportunity to comment in this process.

Please feel free to Steve Tagawa of our Office of Conservation and Environmental Affairs at 587-0385, should you have any questions.

cc: Fred Rodriguez, Environmental Communications

ST:tes

ELIJAH CAYLE IANO  
GOVERNOR



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
869 PUNCHBOWL STREET  
HONOLULU, HAWAII 96813-5097

KAZU HAYASHIDA  
DIRECTOR  
DEPARTMENT OF TRANSPORTATION  
SAM GALLI JO  
GLENN M. OKIMOTO

IN REPLY REFER TO

JUN 2 1995

HWY-DS  
2.5942

TO: MICHAEL D. WILSON, CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES

FROM: KAZU HAYASHIDA, DIRECTOR  
DEPARTMENT OF TRANSPORTATION *KH*

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA) FOR KAUMUALII  
HIGHWAY, KUHIO HIGHWAY, RICE STREET INTERSECTION  
IMPROVEMENTS, LIHUE, KAUAI, HAWAII  
PROJECT NO. 50E-01-90

Thank you for your letter dated May 23, 1995, reiterating comments received earlier from the State Historic Preservation Division and your coordination of this effort. A response was sent to the Historic Preservation Division and will be included in the Final Environmental Assessment together with your comments. Your timely review and comments are appreciated.

BENJAMIN CAYETANO  
GOVERNOR



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
869 PUNCHBOWL STREET  
HONOLULU, HAWAII 96813-5097

KAZU HAYASHIDA  
DIRECTOR  
DEPUTY DIRECTORS  
SAN CALLEJO  
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-DS  
2.5759

May 22, 1995

TO: SHELLEY M. MARK, Ph.D., SENIOR ADVISOR  
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT,  
AND TOURISM

FROM: *Hugh Y. Ono*  
HUGH Y. ONO, ADMINISTRATOR  
HIGHWAYS DIVISION

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT FOR KAUMUALII  
HIGHWAY, KUHIO HIGHWAY AND RICE STREET INTERSECTION  
IMPROVEMENTS, LIHUE, KAUAI, HAWAII  
PROJECT NO. 50E-01-90

Thank you for your comment dated May 10, 1995, confirming that the subject project site is located entirely within the State Land Use Urban District. Your suggestion to include a map showing the project site in relation to the State Land Use Districts will be incorporated into the final environmental document.

Thank you for your timely response.



**DEPARTMENT OF BUSINESS,  
ECONOMIC DEVELOPMENT & TOURISM**

**BENJAMIN J. CAYETANO**  
GOVERNOR  
**SEJI F. NAYA**  
DIRECTOR  
**RICK EGGED**  
DEPUTY DIRECTOR

Central Pacific Plaza, 220 South King Street, 11th Floor, Honolulu, Hawaii 96813  
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

Telephone: (808) 586-2355  
Fax: (808) 586-2377

May 10, 1995

**MEMORANDUM**

**TO: MR. FRED RODRIGUEZ**  
Environmental Communications

**FROM: *Shelley M. Mark***

**SUBJECT: Kaunualii Highway, Kuhio Highway and Rice Street**

The State Land Use Commission has reviewed the DEA and has prepared the attached comments.

Thank you for the opportunity to offer our comments.

MAY 12 1995

BENJAMIN J. CAYETANO  
GOVERNOR



ESTHER UEDA  
EXECUTIVE OFFICER

STATE OF HAWAII  
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM  
LAND USE COMMISSION  
Room 104, Old Federal Building  
335 Merchant Street  
Honolulu, Hawaii 96813  
Telephone: 587-3822

March 30, 1995

SUBJECT: Director's Referral No. 95-039-J  
Draft Environmental Assessment (DEA) for the Proposed  
Kaumualii Highway, Kuhio Highway, and Rice Street  
Improvements, Lihue, Kauai

We have reviewed the DEA for the subject project, and confirm that the project site, as represented in Figure 2 (Vicinity Map), is located within the State Land Use Urban District. We suggest that the Final EA include a map showing the project site in relation to the State land use districts.

We have no further comments to offer at this time.

EU:BS:th

MAY 12 1995

BENJAMIN CAYETANO  
GOVERNOR



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
869 PUNCHBOWL STREET  
HONOLULU, HAWAII 96813-5097

KAZUHIYASHIYAMA  
DIRECTOR

DEPUTY DIRECTORS  
SAM CALLEJO  
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-DS  
2.5950

May 30, 1995

Mr. Kenneth M. Kaneshiro  
State Conservationist  
United States Department of Agriculture  
Natural Resources Conservation Service  
4334 Rice Street, Room 104  
Lihue, Hawaii 96766-1801

Dear Mr. Kaneshiro:

Subject: Draft Environmental Assessment for proposed  
Kaunualii Highway, Kuhio Highway and Rice Street  
Intersection Improvements, Lihue, Kauai, Hawaii  
Project No. 50E-01-90

We have received your agency's comments dated April 25, 1995,  
and respond as follows:

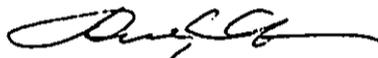
1. Your concerns over the potential impacts to the adjacent Nawiliwili Stream have been reviewed and evaluated on the basis of engineering design and mitigative measures that will reduce potential impacts to the stream and the stream biota. The stream water quality consultants have studied the existing stream conditions and have determined that the intrinsic stream quality is not of prime quality, with little if any endangered plant or animal species. Efforts will be made to minimize impacts to the stream and its adjacent tributaries.
2. We have included the governmental agencies listed in your comments for the required permits that will include the Corps of Engineers 404 permit with the accompanying Section 401 Clean Water permit; the NPDES permit from the Department of Health; and the Stream Channel Alteration Permit from the State Department of Land and Natural Resources. The U. S. Fish and Wildlife Service was also contacted as required by the Corps of Engineers permit process.

Mr. Kenneth M. Kaneshiro  
Page 2

HWY-DS  
2.5950

Thank you for your timely comments.

Very truly yours,



HUGH Y. ONO  
Administrator  
Highways Division

United States  
Department of  
Agriculture

Natural  
Resources  
Conservation  
Service

4334 Rice Street  
Room 104  
Lihue, HI  
96766-1801

April 25, 1995

RECEIVED  
MAY 4 10 38 AM '95  
DEPARTMENT OF HIGHWAYS  
DIVISION  
DEPARTMENT OF TRANSPORTATION

State Dept. of Transportation, Highways Division  
869 Punchbowl Street  
Honolulu, HI 96813

ATTENTION Mr. Herbert Tao,

**Subject: Draft EIS, Kaumualii Highway, Kuhio Highway and Rice St. Improvements**

We have reviewed the Draft Environmental Assessment report. We recognize the need to develop near or adjacent to existing infrastructure. The area is classified as urban according to the State Department of Agriculture's Agricultural Lands of Importance map. No "Prime, Unique or Other Important Lands" are shown. Hydric soils are possible along the streams.

There is concern about the possible alteration to a stream.  
The following agencies should be contacted for any necessary permits.

1. Federal Agency

U.S. Army Corp of Engineers  
Operations Division  
Building 230  
Fort Shafter, HI 96858

Phone Number: 438--9258

U.S. Fish and Wildlife Service  
P.O. Box 50167  
Honolulu, HI 96850

Phone Number: 541-3441

2. State Agencies

Department of Land and Natural Resources  
Commission on Water Resource Management  
1151 Punchbowl Street, Room 227  
Honolulu, HI 96809

Phone Number: 587-0249

Department of Health  
Clean Water Branch  
Five Waterfront Plaza  
500 Ala Moana Blvd, Suite 250  
Honolulu, HI 96813

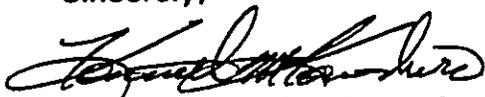
Phone Number: 586-4309

Project sites should be located to prevent the loss of prime agricultural lands and wetlands whenever possible.

Best management practices should be incorporated into the permanent landscaping plan to control the movement of sediment laden runoff during the construction phases. Innovative erosion control measures should be considered to retain all the project generated sediment and runoff on site (sediment basin(s) and/or silt fences).

Thank you for the opportunity to provide comment. Should you have any questions, please do not hesitate to contact Mr. Chris Smith at (808) 541-2605 or Mr. Jon Schlegel at (808) 245-6513.

Sincerely,



KENNETH M. KANESHIRO  
State Conservationist

cc: Mr. Jon Schlegel, Acting District Conservationist, Lihue Field Office.

BENJAMIN CAYETANO  
GOVERNOR



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
869 PUNCHBOWL STREET  
HONOLULU, HAWAII 96813-5097

KAZU HAYASHIDA  
DIRECTOR

DEPUTY DIRECTORS  
SAM CALLEJO  
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-DS  
2.5943

May 30, 1995

Mr. Glen H. Takenouchi  
Supervisor, Engineering  
Citizens Utilities Company  
Engineering Department  
P.O. BOX 300  
Lihue, Hawaii 96766

Dear Mr. Takenouchi:

Subject: Draft Environmental Assessment for proposed  
Kaumualii Highway, Kuhio Highway and Rice Street  
Intersection Improvements, Lihue, Kauai, Hawaii  
Project No. 50E-01-90

We have received your comments dated May 12, 1995,  
(Ref. No. 95-6 302JPL) on the proposed highway improvements.  
Your concerns regarding the section of Kaumualii Highway  
containing the major distribution circuits for the Lihue  
area, and the Kuhio Highway section serving the Wilcox  
Memorial Hospital, Hanamaulu, and the GTE Hawaii Telephone  
Building and the "Round" Building have been duly noted.

Please be advised that the State's design consultant will be  
made aware of the potential impacts to the electrical  
distribution centers adjacent to the proposed improvements.  
We will also make available the final construction drawings  
for review by Citizens Utilities. We will coordinate  
construction with Citizens Utilities Engineering Department  
to minimize risk and possible power outages.

Thank you for your continuing concern and support.

Very truly yours,

A handwritten signature in black ink, appearing to read "Hugh Y. Ono".

HUGH Y. ONO  
Administrator  
Highways Division

**CITIZENS**  
  
**UTILITIES**  
**KAUAI ELECTRIC DIVISION**  
P.O. BOX 300 • LIHUE, KAUAI, HAWAII 96766-0300

May 12, 1995

In reply refer to:  
File #95-6-302JPL

Environmental Communications  
P.O. Box 536  
Honolulu, HI 96809

Attention: Mr. Fred Rodriguez

**SUBJECT: KAUMUALII HWY., KUHIO HWY., AND RICE STREET IMPROVEMENTS -  
PROJECT #50E-01-90**

---

Dear Mr. Rodriguez:

Thank you for the opportunity to comment on the subject project.

In reviewing page 2-3, Figure 3, this project will involve a major relocation of Kauai Electric's facilities as shown in yellow on the copy of our system map. The section along Kaumualii Highway contains the major distribution circuits for the Lihue area and the section along Kuhio Highway not only serves the Hospital and Hanamaulu area, but also serves the GTE Hawaiian Telephone building and the "Round" building.

The relocation of the facilities must be planned correctly and closely coordinated so that our customers will not experience long outages during the construction phase of the project. Depending on how the project is constructed, temporary lines may be required, the cost of which will be borne by the State of Hawaii.

May 12, 1995  
Environmental Communications

File #95-6-302JPL  
Page Two

Please forward all future documents for review and comment to:

Citizens Utilities Company  
Engineering Department  
P.O. Box 300  
Lihue, HI 96766

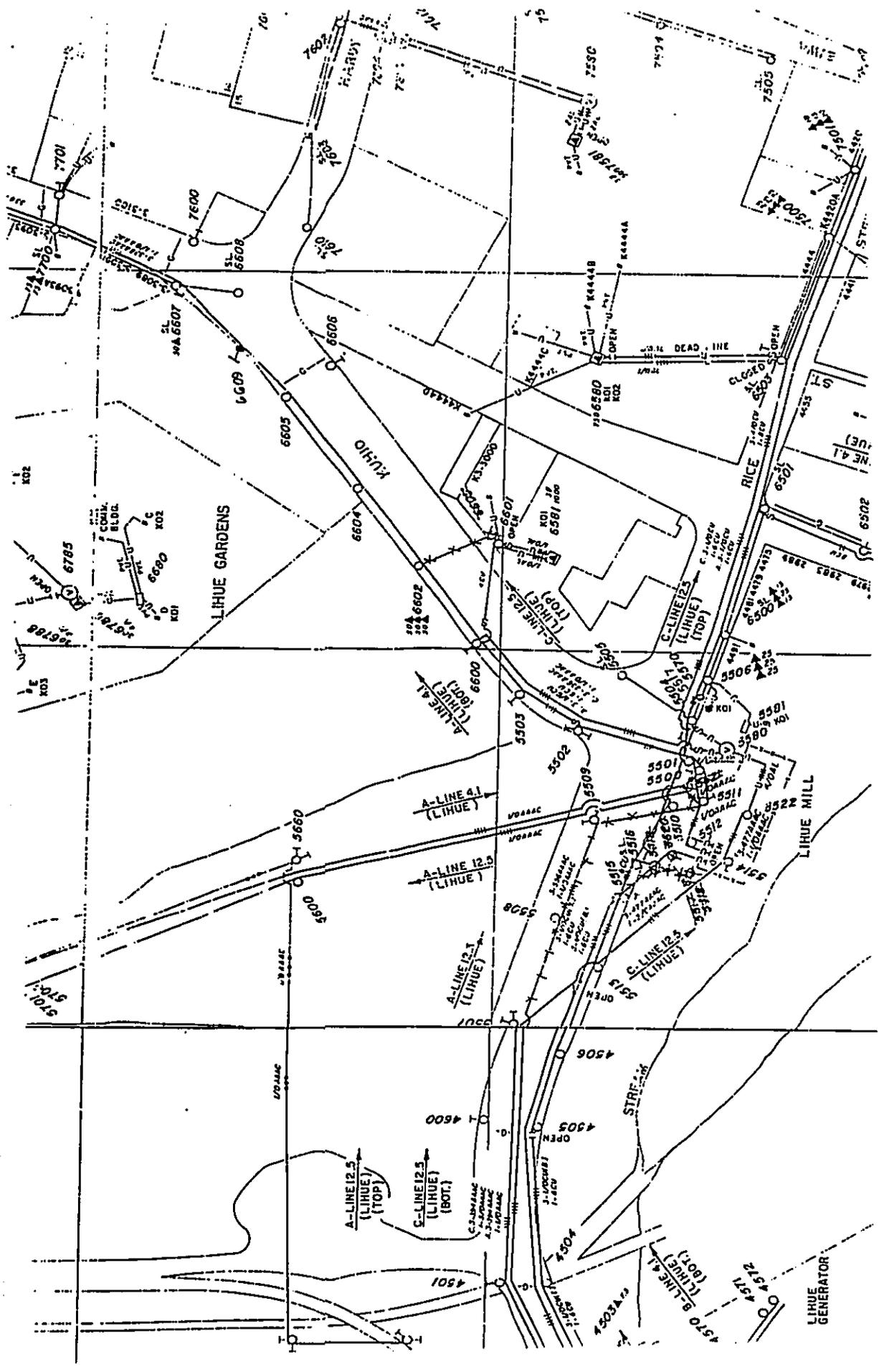
If further questions arise concerning this project, please do not hesitate to call me at 246-4372.

Very truly yours,



GLEN H. TAKENOUCHI  
Supervisor, Engineering

GHT:lo



BENJAMIN CAYETANO  
GOVERNOR



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
869 PUNCHBOWL STREET  
HONOLULU, HAWAII 96813-5097

KAZU HAYASHIDA  
DIRECTOR

DEPUTY DIRECTORS  
SAM CALLEJO  
GLENN M. OKIMOTO

IN REPLY REFER TO:

MAY 22 1995

HWY-DS  
2.5756

TO: GREGORY G. Y. PAI, PH.D.  
DIRECTOR  
OFFICE OF STATE PLANNING

FROM: KAZU HAYASHIDA, DIRECTOR  
DEPARTMENT OF TRANSPORTATION *K.H.*

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT FOR KAUMUALII  
HIGHWAY, KUHIO HIGHWAY AND RICE STREET INTERSECTION  
IMPROVEMENTS, LIHUE, KAUAI, HAWAII  
PROJECT NO. 50E-01-90

We have received your comments dated April 19, 1995, and respond as follows:

1. Concern has been expressed over the project's proximity to Nawiliwili Stream and its tributaries, with particular consideration to the potential erosion and runoff impacts on the adjacent stream area. The Highways Division, State Department of Transportation will be coordinating the preparation of the required permit applications for the following:
  - a. State Department of Health, National Pollutant Discharge Elimination System; Water Quality Certification Section 401 permit;
  - b. U.S. Army Corps of Engineers Section 404 permit; and
  - c. State Department of Land and Natural Resources for Stream Channel Alteration Permit.

We also note for the record on page 11 of the October, 1994 report by AECOS, Inc. the relatively low intrinsic value of the adjacent streams and tributaries. All efforts will be made to protect this resource from any significant impacts due to the proposed project. Mitigation measures will be employed to comply with the intent and spirit of the Coastal Zone Management objectives and policies.

MR. GREGORY G. Y. PAI, PH.D.  
PAGE 2

HWY-DS  
2.5756

The area mauka of the roadway improvements will decrease due to the proposed construction. Therefore, soil erosion may decrease after the ground cover/natural vegetation matures. Vertical impermeable walls are not factored in to determine rainfall runoff quantities in general.

2. Concern over the "visual impact" of the proposed retaining wall and how this impact can be mitigated is responded to as follows:

Reference to Figure 3, "Aerial Perspective of Proposed Improvement Looking North," identifies the wall location along the mauka (north) side of the proposed road. Viewing of this wall from the residential development to the north is minimal from ground level due to the vegetation and tall trees located between the residential development and the road improvements. The wall would be visible to the north bound traffic, south of the proposed intersection.

If further discussion is needed on this visual impact consideration, we would be pleased to discuss it with your staff.

Thank you for your continuing interest and timely response.



# OFFICE OF STATE PLANNING

Office of the Governor

MAILING ADDRESS: P.O. BOX 3540, HONOLULU, HAWAII 96811-5500  
STREET ADDRESS: 250 SOUTH HOTEL STREET, 4TH FLOOR  
TELEPHONE: (808) 587-2848, 587-2800

Benjamin J. Cayateno, Governor  
FAX: Director's Office 587-2848  
Planning Division 587-2824

APR 21 9 11 AM '95  
HIGHWAYS DIVISION  
TRANSPORTATION

Ref. No. C-1148

April 19, 1995

## MEMORANDUM

TO: The Honorable Kazu Hayashida, Director  
Department of Transportation

ATTN: Mr. Herbert Tao  
Highways Division

FROM: Gregory G.Y. Pai, Ph.D. *Gregory G.Y. Pai*  
Director

SUBJECT: Draft Environmental Assessment for the Proposed Kaumualii  
Highway, Kuhio Highway, and Rice Street Improvements

RECEIVED  
APR 21 2 22 PM '95  
DEPT. OF TRANSPORTATION  
HIGHWAYS DIVISION

We have reviewed the draft environmental assessment for the proposed Kaumualii, Kuhio and Rice Street improvements and realignment, and have the following comments to offer.

The project will require construction of a reinforced earth retaining wall with a maximum height of 45 feet and a length of 1,000 lineal feet. A near vertical wall of this size may result in significant increases in erosion and runoff within the surrounding area since impermeable surfaces set at a steep slope will increase the speed of runoff thereby incurring greater erosion impacts. Given the substantial annual rainfall on the project site and the project's proximity to Nawiliwili Stream and its tributaries, particular consideration needs to be given to potential erosion and runoff impacts on the adjacent stream area.

The State's Coastal Zone Management (CZM) law, Chapter 205A, Hawaii Revised Statutes, advocates protection of valuable coastal and aquatic ecosystems from disruption and the minimization of adverse impacts on these ecosystems. CZM policies require effective measures to be taken to minimize disruption or degradation of aquatic ecosystems through the regulation of stream diversions, channelization, and similar land and water uses. Since all land and water use activities in the State must comply with the CZM objectives and policies, mitigation measures need to be developed and implemented to ensure compliance with CZM during the construction and post-construction phases.

We also have concerns regarding the quality and preservation of the surrounding scenic and open space resources. While the document states that the "planned improvements will constitute significant infringement on the visual aesthetics of the project site," it does not discuss

The Honorable Kazu Hayashida  
Page 2  
April 19, 1995

how the proposed retaining wall will be evaluated with regard to visual considerations, what options there may be, nor how the adverse environmental impacts will be mitigated. This matter should be thoroughly discussed in the environmental impact statement, and mitigation measures should be identified to assure compliance with Chapter 205A.

If you have any questions regarding these comments, please contact our CZM Program at 587-2876.