EXECUTIVE CHAMBERS

HONOLULU

GEORGE R. ARIYOSHI
GOVERNOR

September 12, 1984

Ms. Letitia N. Uyehara
Director
Environmental Quality Commission
550 Halekauwila Street, Room 301
Honolulu, Hawaii 96813

Dear Ms. Uyehara:

Based on the recommendation of the Office of Environmental Quality Control, I am pleased to accept the revised environmental impact statement for the Waiehu Planned Development on Maui as a satisfactory fulfillment of the requirements of Chapter 343, Hawaii Revised Statutes.

This environmental impact statement will be a useful tool in deciding whether this project should be allowed to proceed. My acceptance of the statement is an affirmation of its adequacy under applicable laws and does not constitute an endorsement of the proposal.

When the decision is made regarding this action, I expect the proposing agency to carefully weigh the societal benefits against the environmental impact which will likely occur. This impact is adequately described in the statement and together with the comments made by reviewers, provides a useful analysis of alternatives to the proposed action.

With warm personal regards, I remain,

Yours very truly,

George R. Ariyoshi

cc: Mr. Russell N. Fukumoto
Acting Executive Director
Hawaii Housing Authority

Waiehu Planned Development

Revised Environmental Impact Statement

HAWAII HOUSING AUTHORITY

STATE OF HAWAII

REVISED
ENVIRONMENTAL IMPACT STATEMENT

FOR

WAIEHU PLANNED DEVELOPMENT

WAIEHU, MAUI

TMK 3-3-01:10 and 92

This environmental document is submitted
pursuant to Chapter 343, HRS.

Accepting Authority: Governor, State of Hawaii

Responsible Official: Paul A. Tom — FEB 24 1984

Paul A. Tom — Date
Executive Director
Hawaii Housing Authority

Prepared by: Environment Impact
Study Corp.
Maui & Honolulu, Hawaii

And

Woolsey Miyabara &
Associates, Inc.
Honolulu, Hawaii

JANUARY 1984

PROPOSING PROJECT:	WAIEHU PLANNED DEVELOPMENT TMK: 3-3-01:10 and 92
APPLICANT:	DEPARTMENT OF SOCIAL SERVICES AND HOUSING THE HAWAII HOUSING AUTHORITY
DETERMINATION:	EIS REQUIRED
ACCEPTING AUTHORITY:	GOVERNOR, STATE OF HAWAII

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Summary

SUMMARY

Waiehu Planned Development, Waiehu, Maui
TMK: 3-3-01:10 and 92
The Hawaii Housing Authority

The Hawaii Housing Authority, State of Hawaii, proposed the development of approximately 800 units housing project to meet the low, and moderate income and gap group housing needs. The project site is approximately 133.5 acres and owned by the State of Hawaii and designated as TMK: 3-3-01 parcels 10 and 92. As proposed, some of the house and lot packages will be provided to the people for sale after the area has been subdivided and on-site improvements have been constructed. Tentatively, 680 single-family detached and zero lot line dwellings, 60 one-story attached dwellings (elderly housing) and 60 rental apartments contained in one and two story structures are being proposed for construction, with single family detached and zero lot houses offered for sale. The project site is located approximately 1.5 miles north of Wailuku, 2 miles north of Kahului and adjacent to Waiehu and Paukukalo. The project site abuts the existing Hawaiian Homes subdivision on the southern portion of the site. Elevated sand dunes separates the project site from the existing Waiehu Heights Subdivision located to the north. The sand dunes also separates the project site from Kahekili Highway located to the west. The entire project will be phased within three increments (1 through 3) that could take approximately 10 years to complete depending on market conditions.

Proposed Project

1

SECTION 1

DESCRIPTION OF THE PROPSED PROJECT

I. INTRODUCTION

There is a shortage of affordable homes throughout the State. The average price of homes are high throughout the nation, but even higher in Hawaii. The Honolulu Board of Realtors Multiple Listing Service showed an average price of $184,559 for single family homes sold in the first seven months of 1981. [1.1]

The Hawaii Housing Authority (HHA) of the State of Hawaii was created to help meet some of the housing needs. One of the major objectives of the authority is to develop greater opportunities for Hawaii's people to secure reasonably priced, safe, sanitary livable homes located in suitable environments that satisfactorily accomodate the needs and desires of families and individuals.

The authority has been faced with numerous problems affecting the housing industry, primarily the increased demand for housing and the limited resources to meet the demands. The authority has met the challenge by seeking new programs and techniques to meet the demand for affordable housing. Since Fiscal Years 1972-1982, a total of 7,483 housing units have been completed under Act 105.

The Housing Management Branch of the Authority is responsible for the operation of State and Federal housing projects and rental assistance programs, maintenance of housing projects, providing managemet support and housing opportunities to eligible families. Presently, over 7,500 rental units and leased projects including State (unsubsidized) rental housing, rental units built under Act 105 program, leased lands, housing for teachers in rural areas and other development projects for which HHA is responsible for maintenance or fiscal control are being serviced.

The Housing Finance section of the Authority is basically an outgrowth of the Hula Mae Program. The program now includes all bond financing done by HHA. The function of this section is to act as a conduit to bring outside capital for low and moderate income housing into the state.

Since the housing situation for Maui is not different than that found throughout the state - there is a need for affordable housing. The Authority has the responsibility and is able to provide the necessary support to meet some of the demand for affordable housing on Maui.

A. Proposed Action [1.2]

The Hawaii Housing Authority, State of Hawaii, proposes the development of approximately 800 units housing project to meet the low, and moderate income and gap group housing needs. The project site is approximately 133.5 acres and owned by the State of Hawaii.

As proposed, some of the house and lot packages will be provided to the people for sale after the area has been subdivided and on-site improvements have been constructed. Tentatively, 680 single-family detached and zero lot line dwellings, 60 one-story attached dwellings (elderly housing) and 60 rental apartments contained in one and two story structures are being proposed for construction, with single family detached and zero lot houses will be offered for sale.

II. PROJECT DESCRIPTION

A. Physical Description of the Project Vicinity

The project site is located approximately 1.5 miles north of Wailuku, 2 miles north of Kahului and adjacent to Waiehu and Paukukalo.

The project site abuts the existing Hawaiian Homes subdivision on the southern portion of the site. The project site is however, separated from the Hawaiian Homes Subdivision by a natural drainage swale. Elevated sand dunes separates the project site from the existing Waiehu Heights Subdivision located to the north. The sand dunes also separates the project site from Kahekili Highway located to the west. [Refer to Figures 1-1, 1-2 for location maps.]

B. Ownership

The project site is presently owned by the State of Hawaii and designated as TMK 3-3-01 parcels 10 and 92. [Refer to Figure 1-3]. The land will be acquired through a land exchange program between the Department of Land and Natural Resources (Land Board) and the Hawaii Housing Authority or purchased.

C. Existing Uses

The site is presently used for pasture and grazing of cattle. Approximately twenty-head of cattle were observed within the project site.

D. Project Description [1.3]

The Waiehu Planned Development as proposed will provide four types of dwelling units, single family detached, single family zero lot line, single story elderly housing and rental construction.

Single family detached lots will vary from a minimum of 6,000 square feet to 7,500- and 9,000-square-foot minimum lots. The larger lots occur next to adjacent subdivisions and higher, sloped areas, primarily to reduce the amount of earthwork and site preparation on the steeper areas. Of the total lot count, 240 are 6,000-square-foot minimum, 105 are 7,500-square-foot minimum, and 60 are 9,000-square-foot minimum.

Home construction is expected to be conventionally built with standard methods common to the building trade. Actual construction methods and choice of materials will be dependent upon the economics of development.

Single family zero lot line housing is based on the central idea of the efficient use of a small or substandard house lot. This is done by one or both of the following methods:

1. Elimination of one or more sideyards.
2. Use of common shared walls.

This concept was selected as a housing type because it allows for greater density than conventional single-family development, yet provides many of the similar qualities that make single-family development attractive.

There are 275 units with a minimum lot size of 3,500 square feet proposed. Building construction would be similar to that of single-family detached housing.

The elderly housing site of approximately 60 units was selected because of its proximity to Waiehu Beach Road and transportation routes. This makes for more accessibility for both pedestrian and vehicular traffic. The character of development is envisioned to be low rise, one-story units with convenient access to and from nearby shopping and community facilities.

Rental housing as proposed includes 60 attached units planned in one- and two-story buildings. Parking will be accommodated in common parking areas. The site's proximity to the neighborhood park obviates the need for major recreational amenities, although there should be common facilities for the exclusive use of the residents. A community building/office will be included in the project program as well as outdoor activity areas.

In addition to the housing units, a park, water tank site and roads will be required for the implementation of the project.

The 4.6-acre park site is proposed primarily to serve the residents of the project. However, it is intended to be a public park, maintained by the County for use by the general public. The park may include:

1. Ball Fields (Softball)
2. Football/Soccer Field
3. Tennis and Basketball Courts
4. Tot Lot/Playground
5. Comfort Station/Pavilion
6. Parking

The major roads consist of the connector road that runs centrally through the project and links Waiehu Beach Road and Kahekili Highway.

A 1.6-acre site will accommodate the required 1.0-MG water storage tank that will serve the lower half of the project. The site will be landscaped so as to blend in with the existing landscape.

The entire project will be phased within three increments (1 through 3) that may take approximately 10 years to complete, depending on market conditions. (Refer to Figure 1-4 for a con-

ceptual plan and phasing of the proposed project. Table 1-1 provides some estimates of the acres and units per acre which is being proposed.)

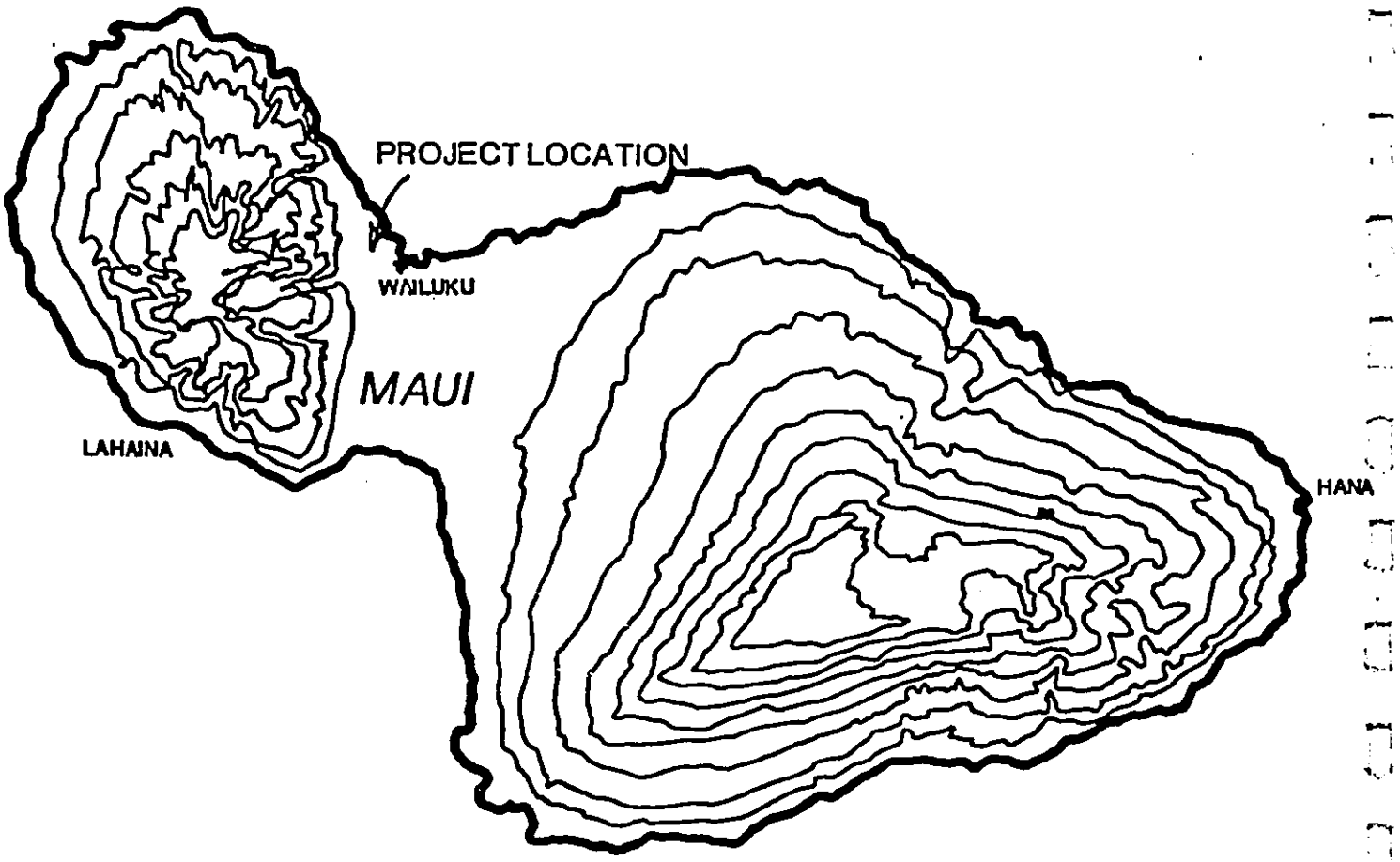
III. ESTIMATED COST AND PHASING

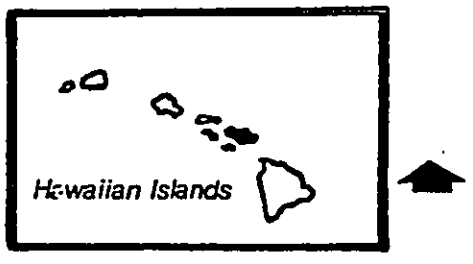
A. Estimated Costs (Today's Dollars)

The estimated cost for site acquisition and for major on-site and off-site improvements is $27,670,000. The construction of the buildings and sales is estimated at $41,390,000. The total project cost is estimated at $69,060,000. [Refer to Table 1-2 for additional information on the cost breakdown.]

B. Phasing

The project will be built in phases. The three major increments have been selected to conform to the major infrastructural constraints. The increments of the development can be further subphased into smaller development units. [Refer to Figure 1-4.]

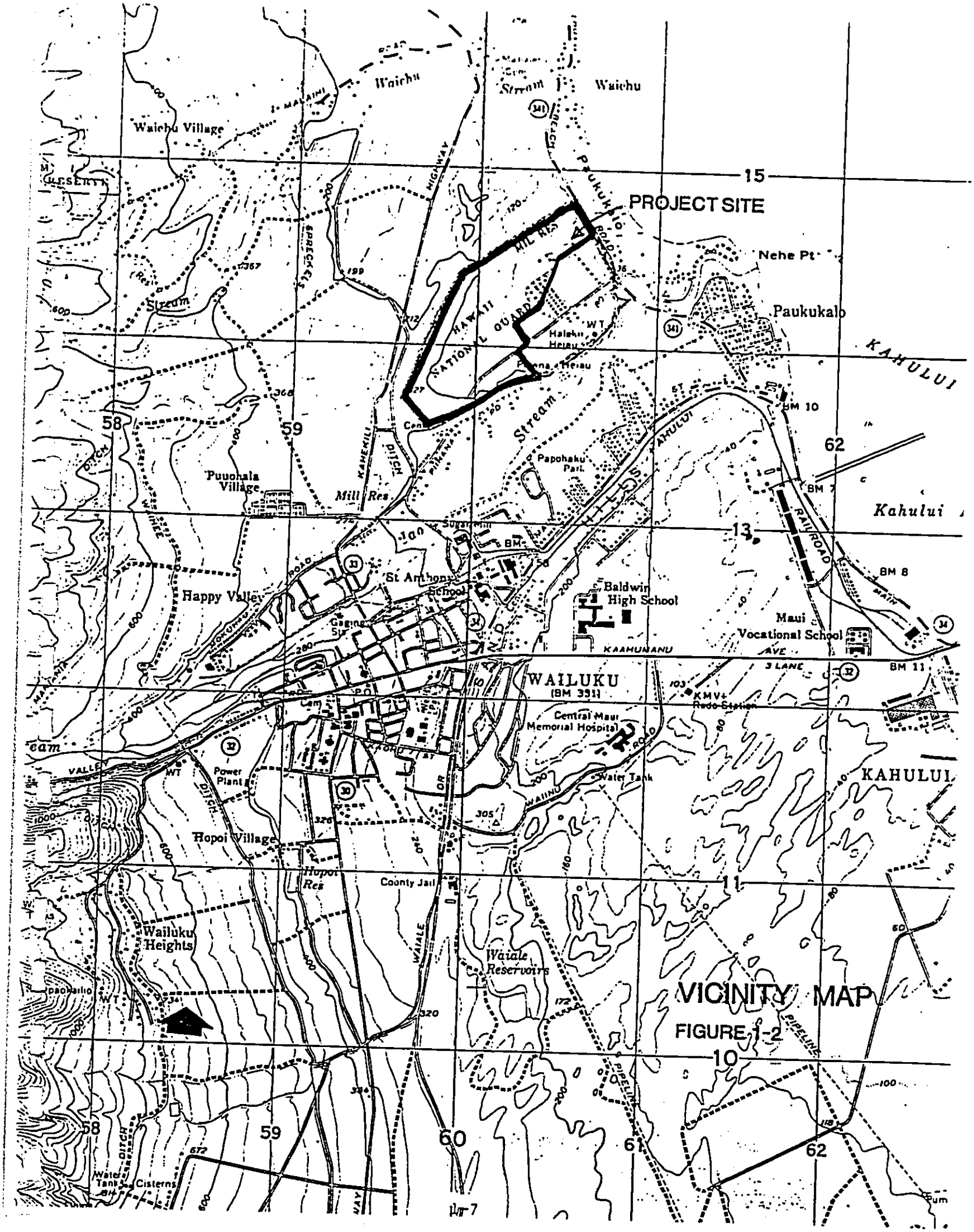


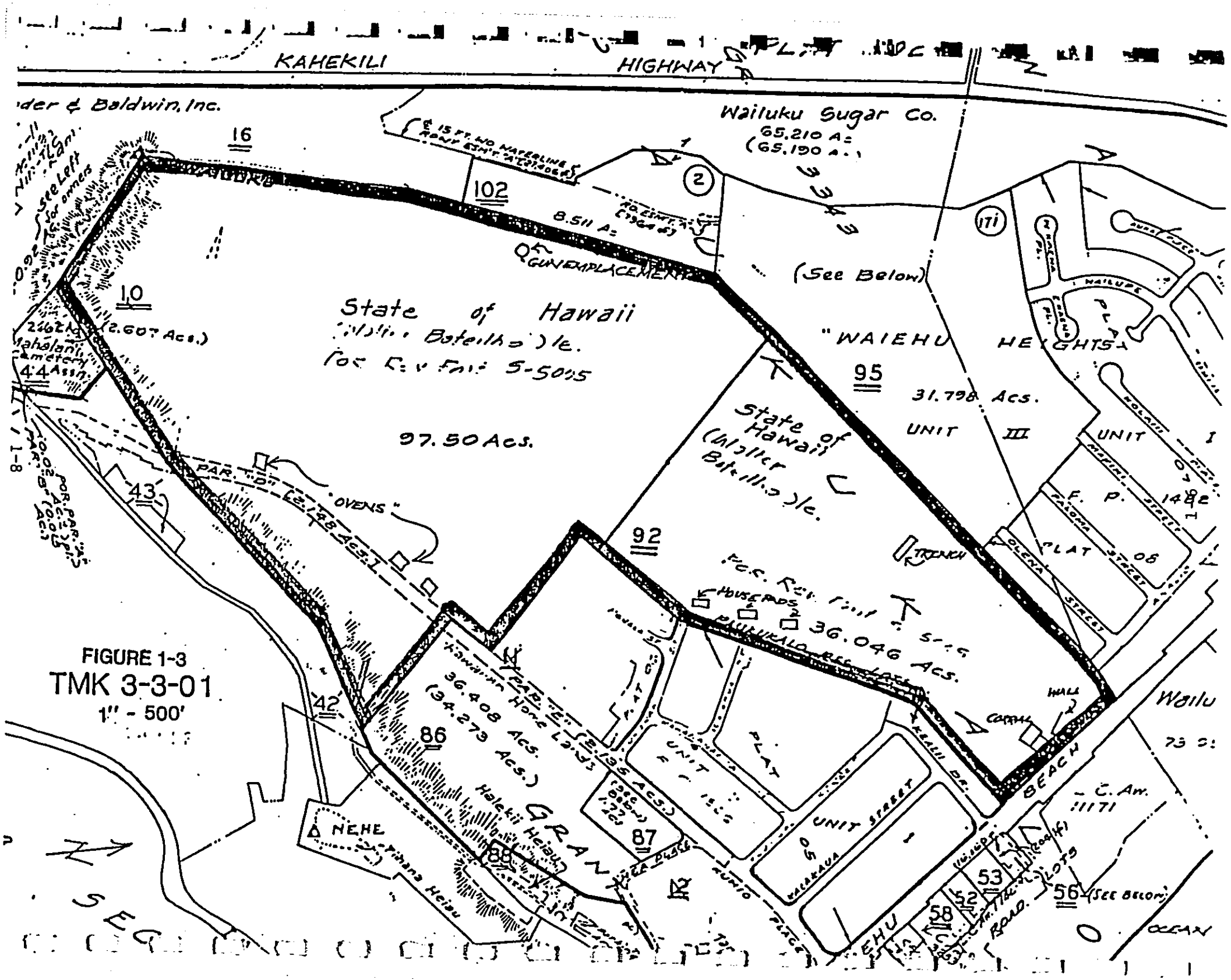


E.I.S.C.

LOCATION MAP

FIGURE 1-1


PROJECT SITE
Waiehu
Waiehu Village
Stream
Waiehu
Nehe Pt
Paukukalo
KAHULUI
Stream
Puuohala Village
Mill Res
Papohaku Park
Kahului
Happy Valley
St Anthony School
Baldwin High School
Maui Vocational School
WAILUKU (BM 391)
Central Maui Memorial Hospital
KMVI Radio Station
KAHULUI
Power Plant
Hopoi Village
Hopoi Res
County Jail
Wailuku Heights
Waiale Reservoirs
Water Tank Cisterns
15
13
11
10
58
59
60
61
62
VICINITY MAP
FIGURE 1-2


KAHEKILI HIGHWAY
Wailuku Sugar Co.
65.210 Ac.
(65.190 Ac.)
16
102
8.511 Ac.
GUN EMPLACEMENT
(See Below)
10
(2.607 Acs.)
State of Hawaii
97.50 Acs.
"WAIEHU HEIGHTS"
95
31.798 Acs.
UNIT III
UNIT I
State of Hawaii
(Waiehu Beach)
92
36.046 Acs.
43
42
86
36.408 Acs.
(34.279 Acs.)
87
88
NEHE
UNIT 5
UNIT 4
PLAT 8
53
52
58
56
(See Below)
OCEAN
BEACH
GRANT 12
FIGURE 1-3
TMK 3-3-01
1" - 500'

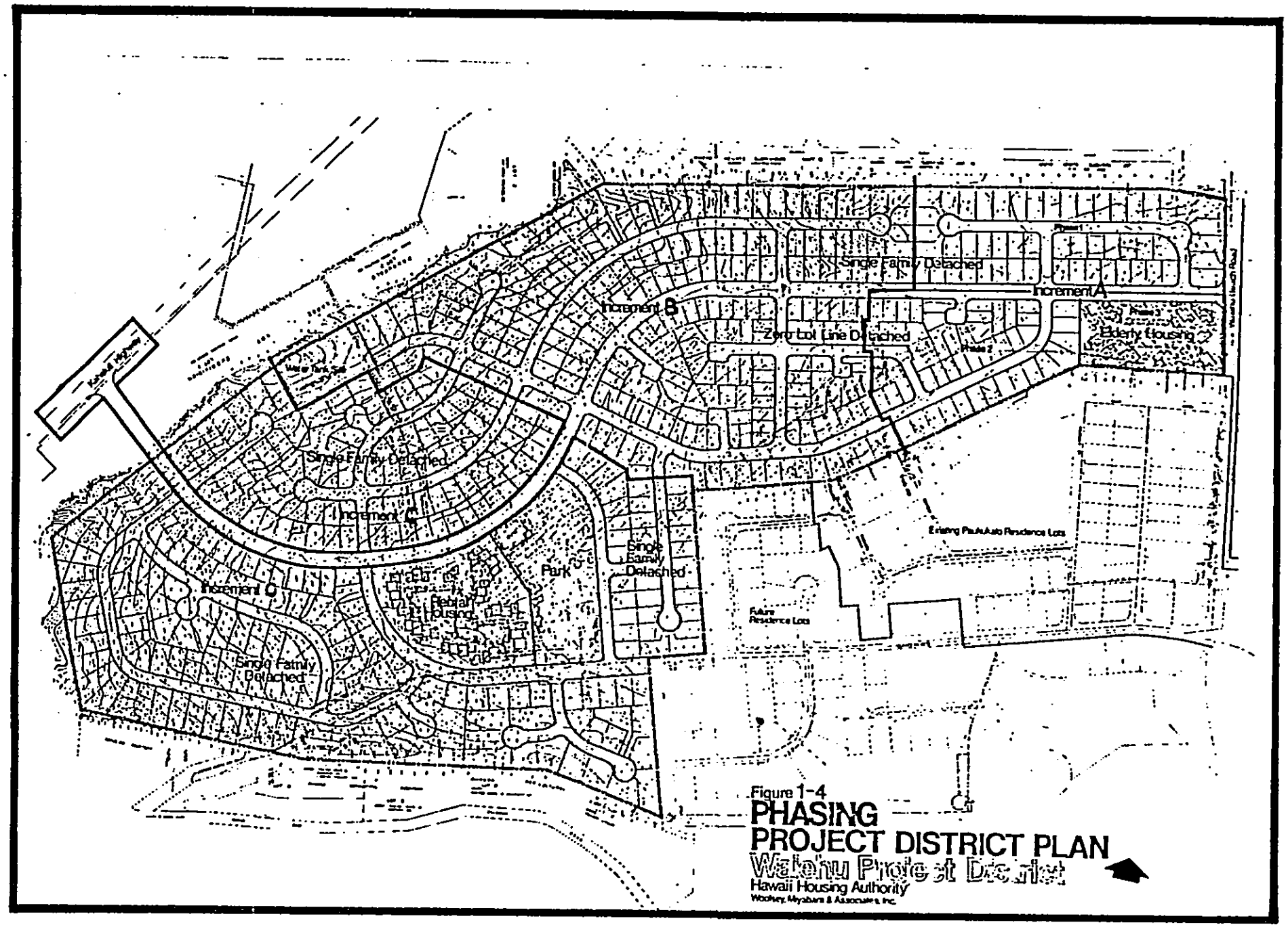


Figure 1-4
PHASING
PROJECT DISTRICT PLAN
Waiahu Project District
Hawaii Housing Authority
Wookey, Miyabara & Associates, Inc.

TABLE 1-1*

LAND USE	ACRES	UNIT/ACRE	UNITS
Single-Family Detached	86.5	4.7	405
Zero Lot Line	27.0	10.2	275
Elderly Housing	3.5	17.0	60
Rental Housing	4.4	13.6	60
Park	4.6		
Major Roads	7.0		
Water Tank Site	1.0		
TOTAL:	134.0±	6.0	800

SOURCE: Table 1 [1.3] p. 5
Updated September 30, 1982

TABLE 1-2 [1.5]

PRELIMINARY COST ESTIMATE
(Revised September 1, 1982)

SITE COSTS				
1.	Raw Land - 134 ac. @ $25,000 =		$ 3,350,000	
2. & 3.	Onsite & Offsite Improvements		20,356,000	
4.	Fees & Interest			
	a. Feasibility Studies	$ 158,000		
	b. Anticipated Engineering Fees	950,000		
	c. Anticipated Legal Fees	136,000		
	d. Interim Interest (3 years)	2,720,000		
	Total Fees & Interest		$ 3,964,000	
	Total Site Costs			$27,670,000
BUILDING & SALES				
1.	Building Construction		$31,040,000	
	Unit costs were based on $40.00/s.f.			
	Single Family 1,000 s.f. x $40.00 = $40,000			
	Elderly 700 s.f. x $40.00 = $28,000			
	Rental 900 s.f. x $40.00 = $36,000			
2.	Public Park, 1.s.		350,000	
3.	Fees & Interest			
	a. Anticipated Architectural & Engineering Fees	$ 400,000		
	b. Anticipated Legal Fees	80,000		
	c. Interim Interest	4,800,000		
	Total Fees & Interest		$ 5,280,000	
4.	Administration & Sales			
	a. Administration	$1,200,000		
	b. Sales	720,000		
	c. Financing	2,800,000		
	Total Admnistration & Sales		$4,720,000	
	Total Building & Sales			$41,390,000
	*TOTAL PRELIMINARY COST ESTIMATE			$69,060,000

*The cost does not reflect proposed cost cutting measures being investigated.

REFERNECES TO SECTION 1

[1.1] Economic Indicators. "Hawaii's Unaffordable Housing," First Hawaii Bank. December, 1982.

[1.2] Summary Report - Phases 2 and 3; Waiehu Planned Development, State of Hawaii - Hawaii Housing Authority. Prepared by Woolsey, Miyabara & Associates, Inc. March 31, 1982.

[1.3] Ibid.

[1.4] Op. Cit. [1.2]

[1.5] Op. Cit. [1.2]

2 Affected Environment

SECTION 2

DESCRIPTION OF THE AFFECTED ENVIRONMENT

I. PHYSICAL CHARACTERISTICS

A. Geology [2.1]

Maui conists of two major volcanoes, West Maui and Haleakala. The project site is located on the east side of the deeply dissected dome of the West Maui Mountain. The West Maui Mountain is nearly circular in plans and is asymetric in profile. The dome of the West Maui Mountain has been reduced by erosion from a summit altitude estimated to have been 7,000 feet to 5,788 feet at Puu Kukui.

The volcanic rocks of the West Maui mountains have been divided into three series: the Wailuku, Honolua and Lahaina volcanic series. Refer to Figure 2-1 for geologic map for the entire island and Figure 2-2 for a generalized geologic map of the project area.

The sedimentary rocks consists of consolidated older alluvium and dune sand of the Pleistocene age, and unconsolidated younger alluvium and beach deposits of the Holocene age. The project site is located on litified calcareous sand dunes. This sand dune rest on the alluvial fans near the shore between Kahului and Waihee and extend inland almost across the western edge of the isthmus. The sand dunes can be up to 200 feet in height and extend below the present sea level. The dunes were formed by wind blowing sand inland from wide beaches exposed during a time when the sea was lower than the present sea level.

B. Soils [2.2]

The project site is located within the Pulehu-Ewa-Jaucas soil association. This association consists of well drained and excessively drained medium-textured, moderately fine textured, and coarse-textured soils on alluvial fans and in basins on the island of Maui, mainly Central Maui. They developed in alluvium weathered from basic igneous rock, coral and sea shells. The association makes up 4% of the island of Maui. The two predominant soil series

found on the project site are the Jaucas and Puuone Series. Specifically the soils are classified as Jaucas sand (JaC) and Puunone sand (PZUE). [Refer to Figure 2-3] The description of the series and the soil types follows:

Jaucas Series: This series consists of excessively drained, calcareous soils that occur as narrow strips on coastal plains adjacent to the ocean.

Jaucas sand, Oto 15% slopes (JaC): The slope from 0 to 15, but in most locations, the slope does not exceed 7%. In a representative profile, the soil is sing grain, pale brown to very pale brown, sandy and more than 60 inches deep. Permeability is rapid and runoff is very slow to slow. The hazard of water erosion is slight, but wind erosion is a severe hazard where vegetation has been removed.

Puuone Series: This series consists of excessively drained soil on low uplands on the Island of Maui. These soils developed in material derived from coral and seashells.

Puuone sand, 0 to 30% slopes (PZUE): This soil is on sandhills near the ocean. In a representative profile, the surface layer is greyish-brown, calcareous sand about 20 inches thick. This soil is underlain by grayish-brown cemented sand. Permeability is rapid above the cemented layer. Runoff is slow and the hazard of wind erosion is moderate to severe. [Refer to Table 2-1 for a summary of the suitability of the soils for construction.]

C. Seismic Potential [2.3]

Earthquakes are densely concentrated in the southern half of the island of Hawaii. Some earthquakes of significant magnitude have occurred off Maui, but it is not as active as Kona or Kau.

Some of the earthquakes of greater magnitude than 4 on the Richter scale which affected Maui include June 14, 1932, January 23, 1938, June 17, 1940, August 7, 1955, August 10, 1957, August 18, 1957. Historically, the most significant earthquakes occurred in 1868, 1871, 1938, and 1951. They are described below.

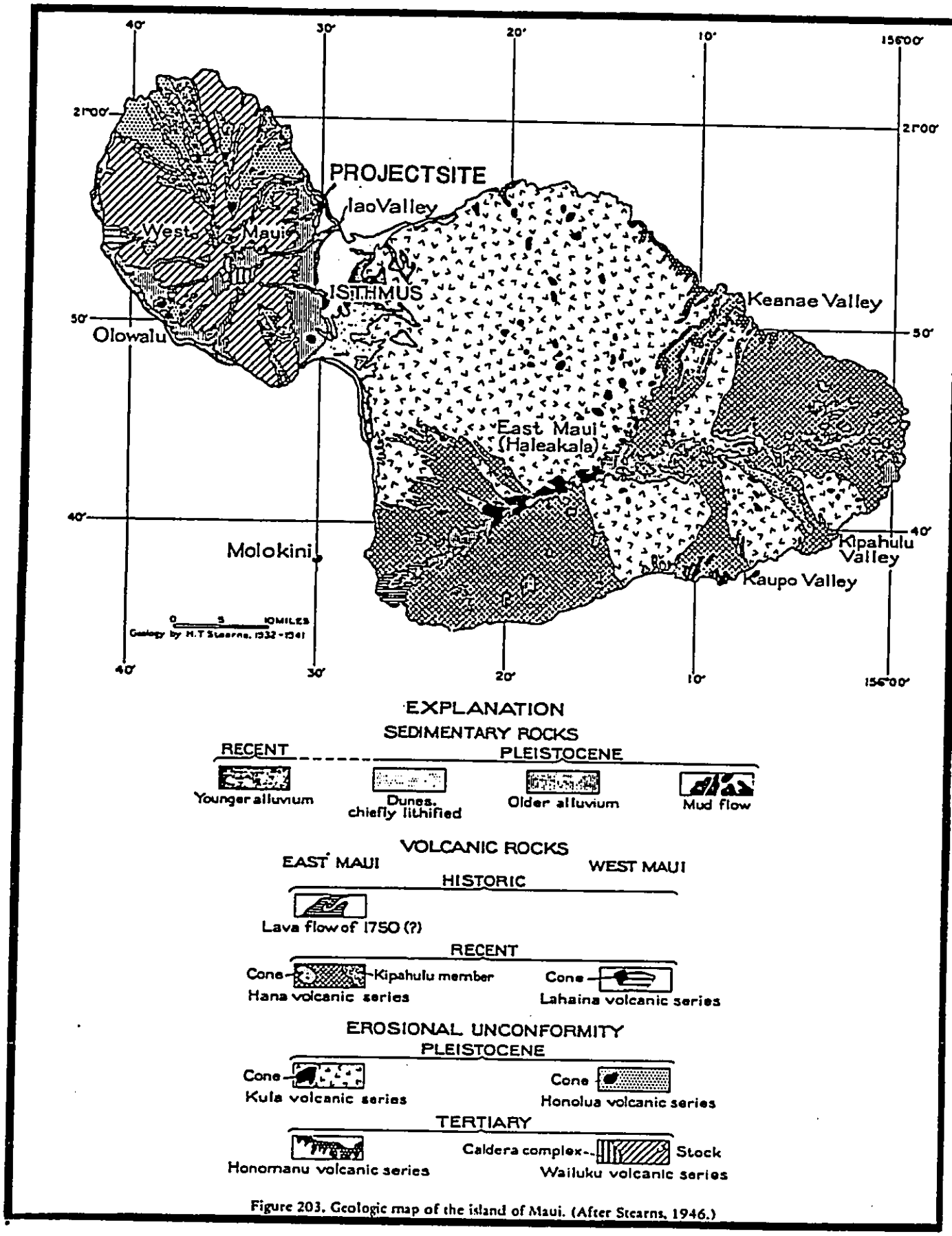
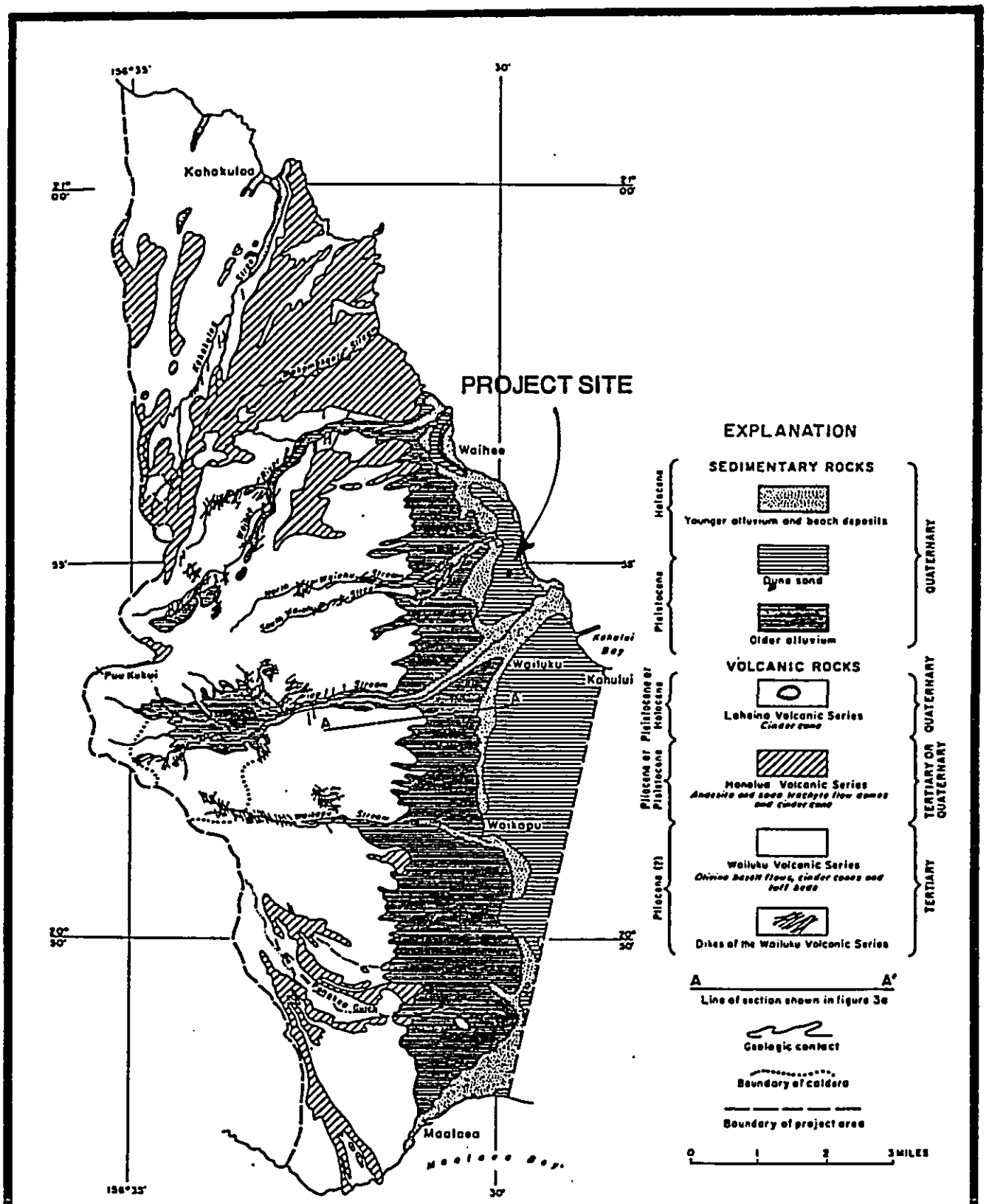


Figure 203. Geologic map of the island of Maui. (After Stearns, 1946.)

FIGURE 2-1

REGIONAL GEOLOGY



GENERALIZED GEOLOGIC MAP OF THE WAILUKU AREA

FIGURE 2-2

SOILS MAP

FIGURE 2-3

TABLE 2-1

Engineering Interpretations

Soil Series	Suitability as a source of -			Soil features affecting -
	Top Soil	Road Fill	Highway Location	Terraces and diversion:
Jaucas (JaC)	Poor: low available water capacity	Poor: unstable; highly erodible; high water Table	Unstable slopes; erodible; high water Table	Unstable embankments; sandy material; rapid permeability
Puuone (PZUE)	Poor: low fertility; low available water capacity; cememted sand below 20 inches	Poor: unstable on slopes erodible; cemented sand	Unstable, slopes 30° erodible	Sandy material; erodible;

Source: Table 3, p. 168 [2.2]

The Kau earthquake of April 2, 1868 was the largest historical earthquake. Although seismographs were nonexistent then, the estimated magnitude was 7.5 - 7.75, based on descriptions of the earthquake's effects. The island of Hawaii was naturally the hardest hit but some effects were felt on Maui. Vibrations "rattled dishes, swashed water over tops of nearly full cisterns, and made it difficult to stand on slopes of fresh lava of Haleakala."

The February 19, 1871 earthquake was not as large as the 1868 one and it occurred near Honolulu. It caused considerable damage to Honolulu and Oahu; damaged houses, stonewalls, and furniture on Molokai; caused landslides on Lanai; and caused some serious damage to adobe and stone houses in Lahaina. It is estimated that this earthquake had a magnitude of about 7, with the epicenter in the Molokai-Maui area.

On January 23, 1938 an earthquake of magnitude 6.75 occurred 25 miles north of Maui. There was considerable damage on Maui and minor damage on Oahu. Details of this earthquake are not available.

The Kona earthquake occurred on August 21, 1951 off the coast of Kealakekua with a magnitude of 6.9. The epicenter of the quake was along the Kealakekua Fault, approximately 6 miles below sea level. Although it caused extensive damage on the island of Hawaii, it was only weakly felt on the islands of Maui and Oahu.

Maui is located in Seismic Probability Zone 2, "Moderate Damage." Refer to Figure 2-4.

D. Topography

The project site is located in a small U-shaped gulch-the sides formed by the two converging sand dunes. The opening of the gulch is along Waiehu Beach Road. The elevation ranges from approximately 24 to 325 feet above sea level. The lower portion of the site has slopes ranging between 5 to 20% and the hills are steeper with slopes of 20 to 50%.

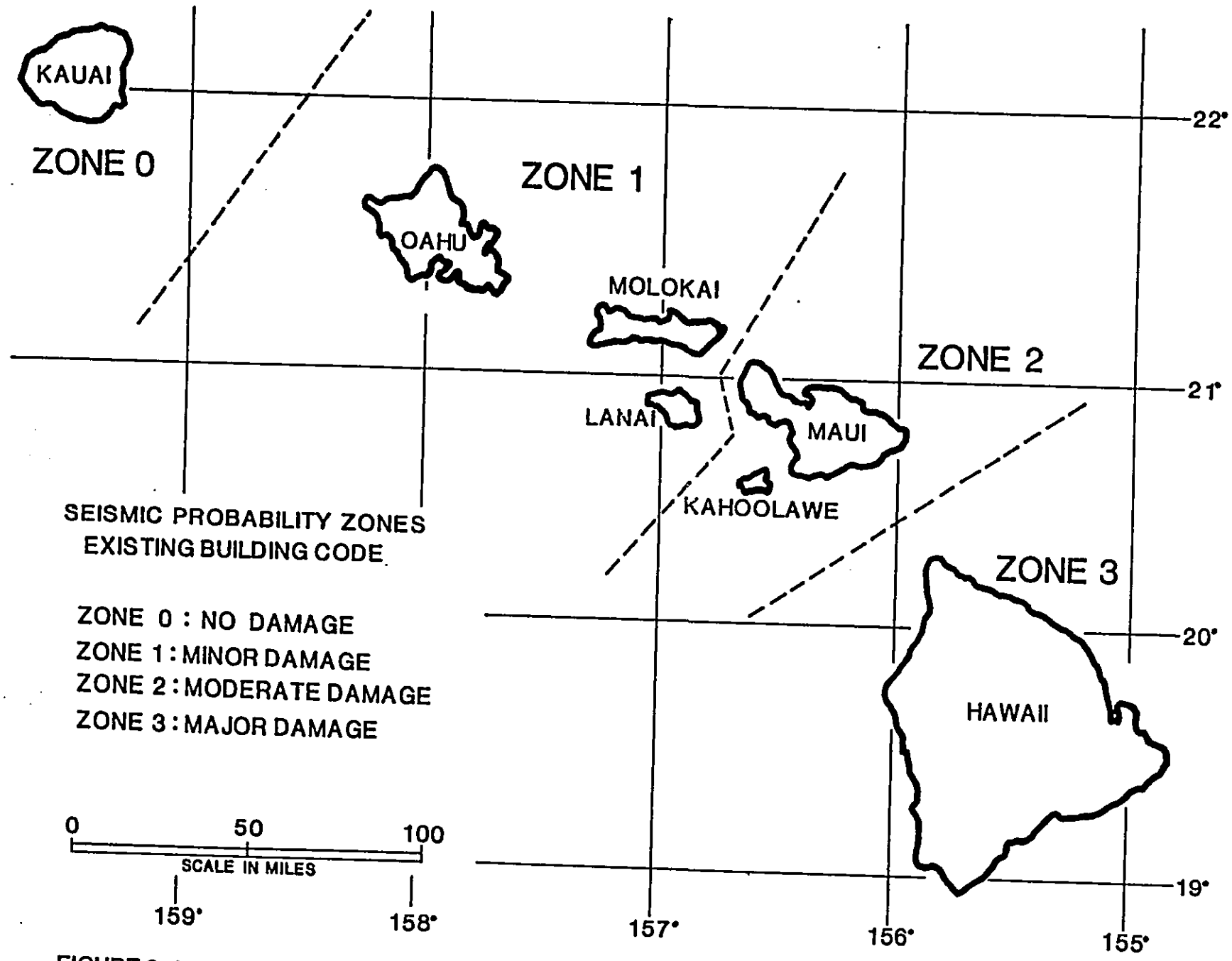


FIGURE 2-4

SEISMIC PROBABILITY ZONES

E. Climate

The majority of Hawaii exhibits only two seasons: the summer, which occurs between May and October when the weather is warmer and drier and the tradewinds are most persistent; and the winter, which is between October and April when the weather is cooler and the tradewinds are more often interrupted by other winds and by intervals of widespread clouds and rain. Hawaii's general climate is reflected by four factors: latitude, the surrounding ocean, Hawaii's location relative to the storm tracks and the Pacific anticyclone, and terrain [2.4].

The latitude of Hawaii puts it well within the tropics, accounting for a relatively uniform day length throughout the year. Consequently, a relatively uniform amount of solar energy is received and, therefore, temperature is relatively uniform. The surrounding ocean supplies moisture to the air, and acts as a thermostat. Because the ocean's temperature varies little compared to large land masses, the temperature varies only 1 to 2 degrees from day to night and only about 6 degrees at the sea's surface on a seasonal basis [2.5].

The Pacific High or anticyclone is a large, subtropical high pressure system which generally lies northeast of Hawaii. The air, moving outward from this anticyclone, streams past the islands and is the source of the northeasterly tradewinds. Along with its associated storm tracks, this anticyclone follows the seasonal shift in the sun, moving northward in the summer and southward in the winter and tending to be stronger and more persistent in the summer than in the winter. Since the anticyclone weakens and is occasionally absent in the winter, the tradewinds may be interrupted by northerly fronts or by Kona storms; therefore, winter is exhibited by more frequent cloudiness and rain storms and southerly and westerly winds [2.6].

Terrain has profound effects on weather and climate. Mountains tend to obstruct, deflect, and accelerate air flow. As warm, moist winds rise over windward coasts and slopes, cloudiness and rainfall are more prevalent than over the open sea. Leeward areas, where air descends, tend to be sunny and dry. Terrain can also account for orographic (mountain-caused) rainfall, which is formed when moist tradewind air moves from the sea and is forced up the steep and high terrain of the island. Rainfall distribution, therefore, is usually greatest over the upper slopes and crests and least along the leeward lowlands [2.7].

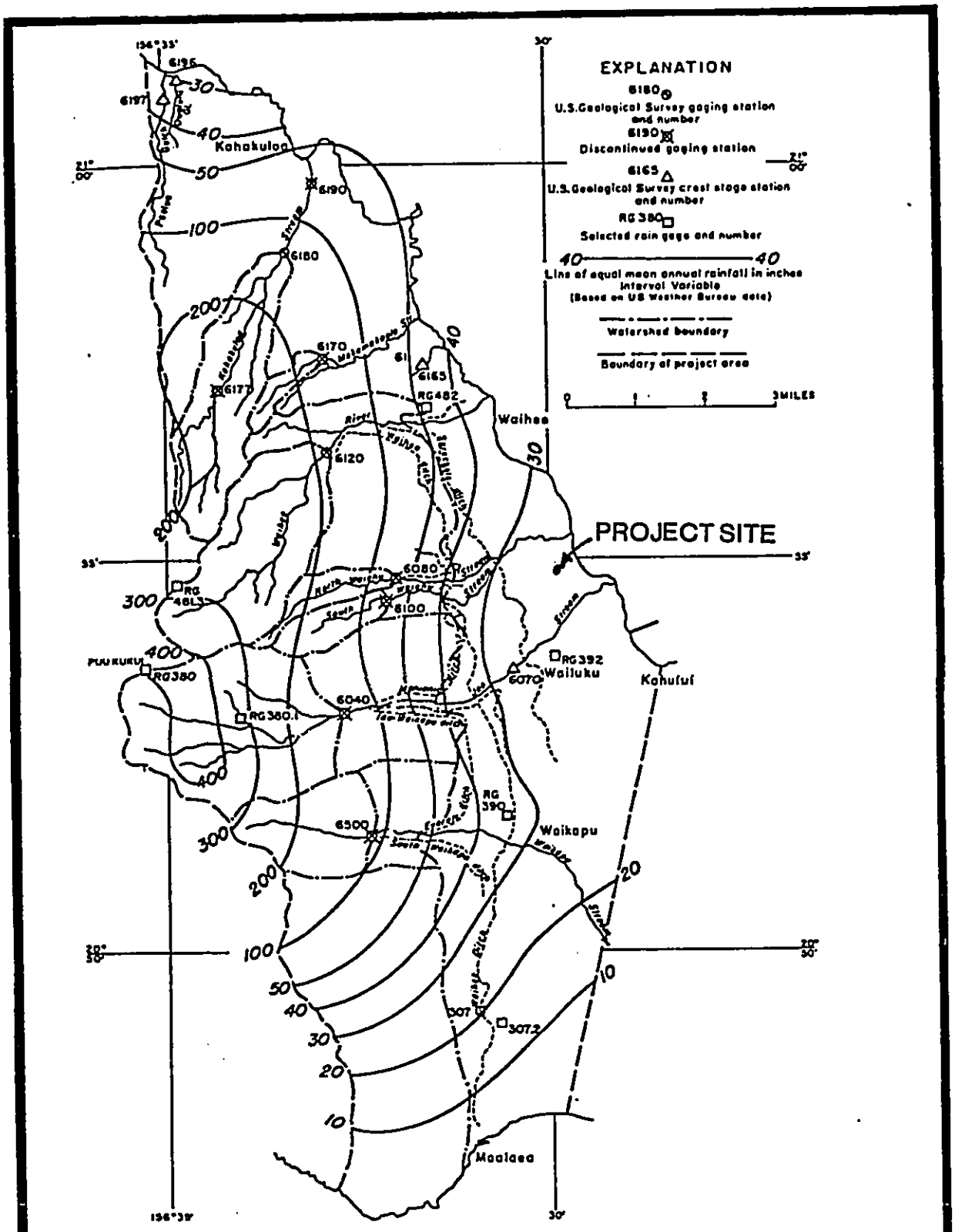
1. Rainfall

The heaviest rains in Hawaii are usually brought about by winter storms. Lowland lee areas and other dry areas obtain most of their rainfall by winter storms, so the rainfall is strongly seasonal, with summers being arid. The project site, however, is located toward the windward side of the island and receives rainfall from both winter storms and year-round trade wind showers. For this reason, seasonal differences in rainfall are much smaller [2.8].

Mean annual rainfall for the project site is between 20 to 30 inches per year. [Refer to Figure 2-5.]

2. Temperature

Hawaii's equable temperatures result from the small seasonal variations in energy received from the sun and the tempering effect of the surrounding ocean. Throughout Hawaii the warmest and coolest months differ, on the average, by 9 degrees or less. The daily variation between day and night are greater than the variations between seasons. Windward coasts exposed to trand wind air off the sea have the least variation in temperature between day and night.



MAP OF AREA SHOWING DISTRIBUTION OF MEAN ANNUAL RAINFALL AND LOCATION OF SELECTED RAINFALL AND STREAMFLOW STATIONS, AND MAJOR DITCHES

FIGURE 2-5

RAINFALL

Farther inland, on leeward coasts and at elevations above about 6,000 feet, the daily range increases. The day's highest temperatures generally occur two hours after noon and are coolest near sunrise [2.10].

Temperatures at Kahului Airport, approximately 2 miles south of the project site, vary from an average low of 71.6°F in February to an average high of 78.8°F in August. The annual average temperature is 75.2°F.

3. Wind

The northeasterly tradewind prevails throughout the year in Hawaii, is more persistent in the summer (90%) than in the winter (50%), and tends to be stronger in the afternoon than at night. During the winter months, Hawaii may be under the influence of southerly winds from Kona storms or of southwesterly winds preceding the northeasterly winds that follow cold fronts [2.11].

Terrain has a varied and profound effect on wind and neighboring localities can differ widely with the effects of wind. Winds moving over crests, around headlands, or through saddles or narrow gorges become stronger and more turbulent, while areas sheltered by high mountains may be more affected by land and sea breezes or other local winds in the immediate vicinity [2.12].

Maui is noted for its varied orographic features. Mount Haleakala dominates the island landscape and forms an immense barrier to normal air flow, and the lower but deeply eroded West Maui mountains form a secondary barrier. The isthmus between these two mountin masses is open to the persistent tradewinds from the northeast [2.13].

Average tradewind direction at Kahului Airport, at the northen end of the isthmus, is 55°. Progressing southward, the winds are deflected toward a more northerly direction, by the north-south alignment of the West Maui mountains,

CORRECTION

THE PRECEDING DOCUMENT(S) HAS BEEN REPHOTOGRAPHED TO ASSURE LEGIBILITY
SEE FRAME(S)
IMMEDIATELY FOLLOWING

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with an average direction of 23° at Puunene Naval Air Station. Refer to Figure 2-6 and Figure 2-7 for surface streamline information [2.14].

In the vicinity of the project site, northeasterly trade winds blow between 5 and 15 mph during the day. Kona winds (from the south) occur primarily in the winter months.

F. Drainage and Flooding

1. General Vicinity [2.15]

The project site is located outside of the potential tsunami inundation limit established for this area. The project site is also located outside of the Iao stream flood inundation area.

2. Project Site [2.16]

Presently storm water sheet flows over the site. Preliminary drainage calculations of the expected storm runoff from the project when completed show that the existing drainage system will not be adequate. Two drainage plans are being evaluated, the first is to enlarge the existing system to handle the increase flows; the second, construct a new drainage outlet to the ocean.

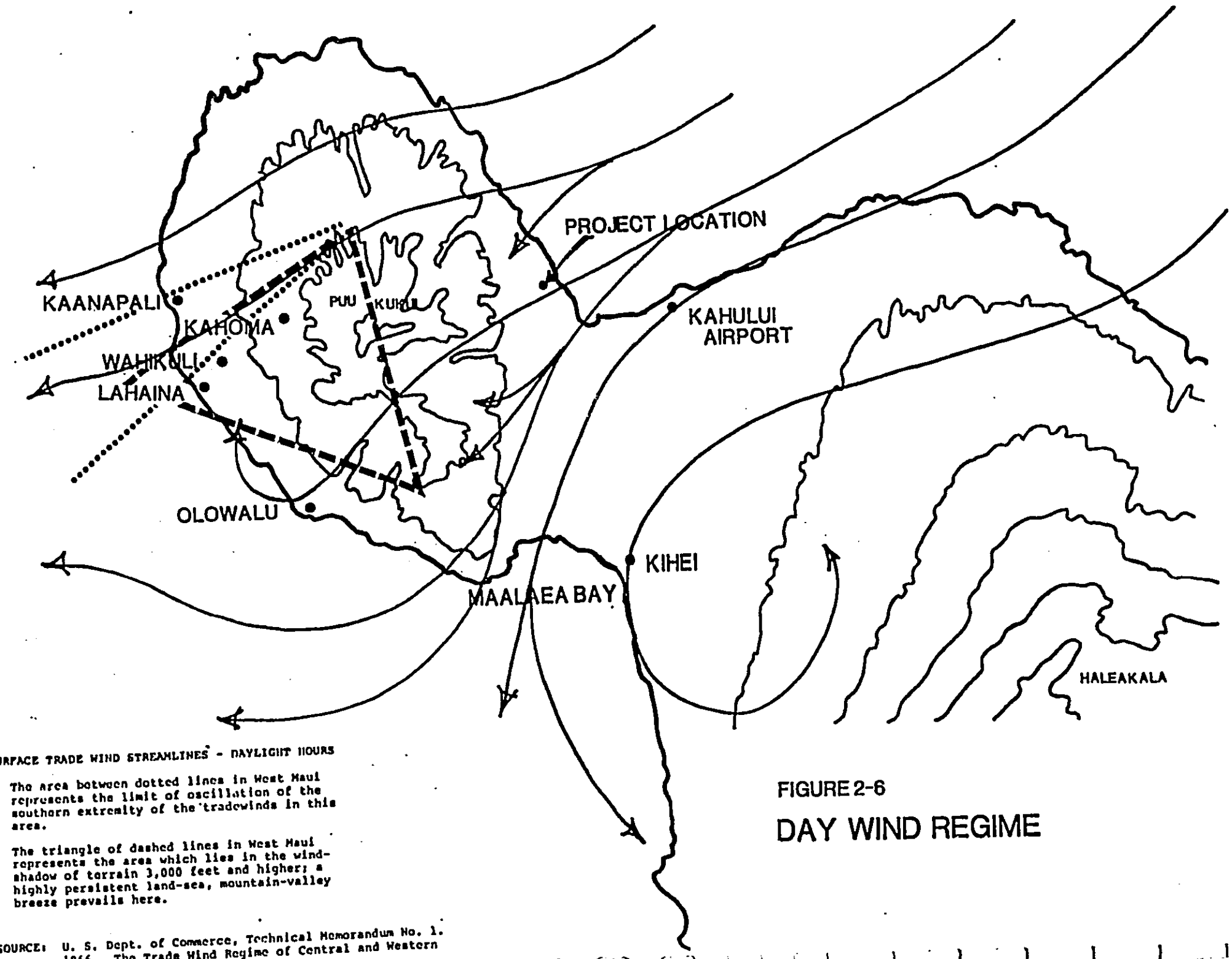
G. Hydrology

1. Surface Water

The project site is not located in close proximity to any streams. Iao Stream's potential flood inundation limit does not include the project site. Therefore, flooding problems or impacts on streams are precluded.

2. Ground Water [2.17]

The project site is located in an area characterized as a coastal area underlain by local basal water lens. This basal water is fresh water floating on sea water and lying seaward of the diked water. The basalt of the Wailuku Volcanic Series forms the reservoir for the main body of the basal water. How-



SURFACE TRADE WIND STREAMLINES - DAYLIGHT HOURS

- The area between dotted lines in West Maui represents the limit of oscillation of the southern extremity of the tradewinds in this area.
- The triangle of dashed lines in West Maui represents the area which lies in the wind-shadow of terrain 3,000 feet and higher; a highly persistent land-sea, mountain-valley breeze prevails here.

SOURCE: U. S. Dept. of Commerce, Technical Memorandum No. 1. 1966. The Trade Wind Regime of Central and Western

FIGURE 2-6

DAY WIND REGIME

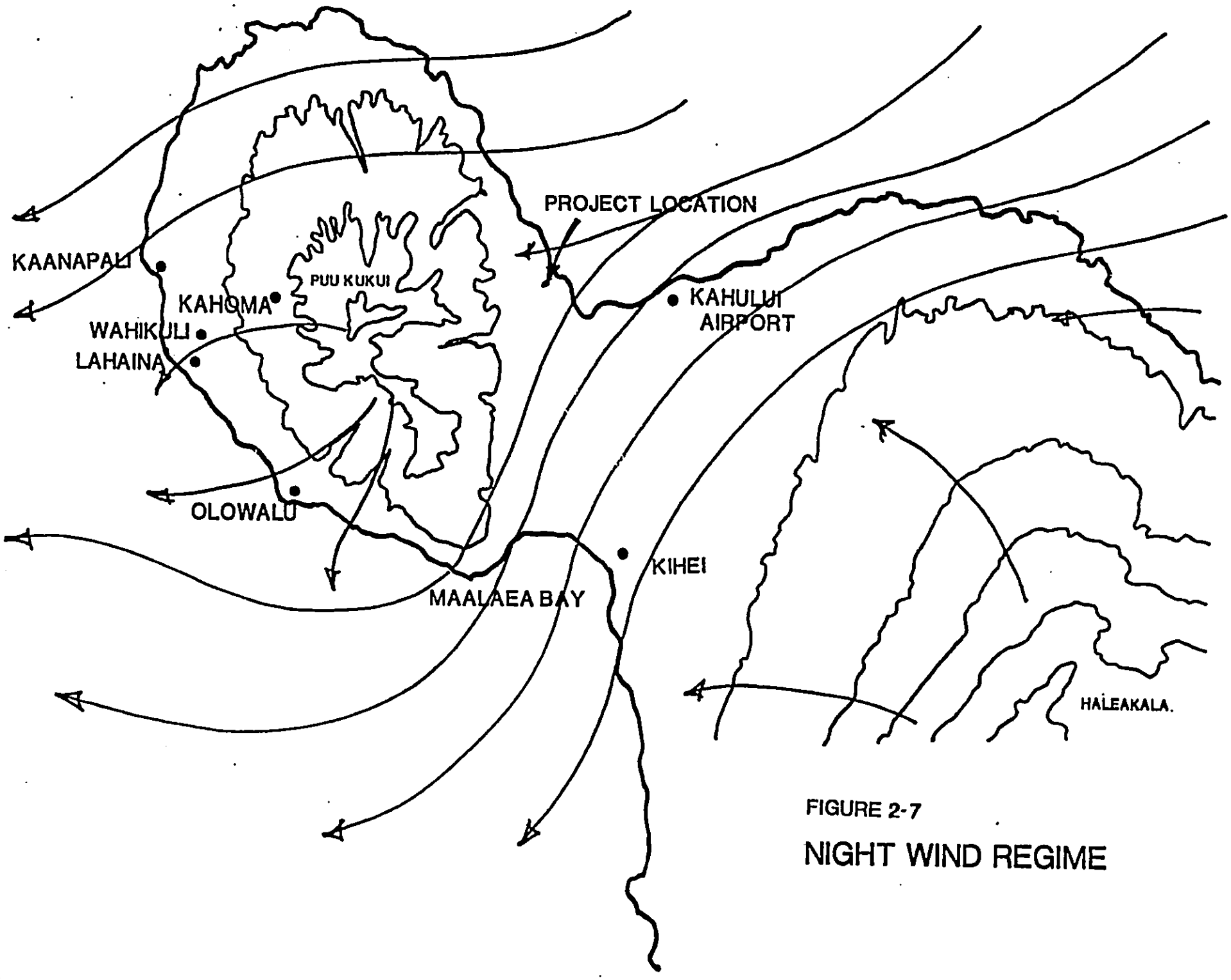


FIGURE 2-7

NIGHT WIND REGIME

Except for a small but unknown number of shallow, low yielding wells used for lawn and garden irrigation, there is little development of the local basal lens along the coast. The water from these wells are brackish and the possibility of obtaining satisfactory domestic or agricultural irrigation water from this source is small.

H. Mineral Resources

The project site contains no mineral resources other than sand. It is not certain if the sand dunes can be used for concrete. However, the sand can be used as fill material.

I. Watershed

The project site is not located within a designated watershed.

J. Agriculture

In 1977 a soil classification system was adopted by the State Board of Agriculture. This classification delineates those lands of the State which are of agricultural importance and categorizes agricultural lands into three classes. The three classes are as follows:

Prime Agricultural Land - Land which has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops economically, when treated and managed according to modern farming methods.

Unique Agricultural Land - Land that has the special combination of soil quality, location, growing season, moisture supply, and is used to produce sustained high quality and high yields of a specific crop when treated and managed according to modern farming methods.

Other Important Agricultural Land - Land other than Prime or Unique Agricultural Land that is also of statewide or local importance for agricultural use.

The lands surrounding the project site are classified as other important agricultural land. However, the project site is not included within this designation but is designated as being within an area of existing urban development [2.18]. [Refer to Figure 2-8]

K. Noise [2.19]

Ambient noise levels were recorded at the project site using a Bruel and Kjaer Sound Level Noise Meter. The existing ambient noise environment is dominated by wind sounds. Noise levels within the center of the project site varied from 35 dBA to 45 dBA. The noise levels by plane overflights varied with the type of plane and direction, readings ranged from 66 dBA to 70 dBA.

L. Visual Characteristics [2.20]

Views within the project site consist of vacant forested areas. Views from the project site looking south, east, and west are similar to those described above.

M. Air Quality

Ambient air quality in the project vicinity is affected primarily by dust and ocean spray. Interviews conducted with residents indicate no significant air pollution problems [2.21].

Several locations throughout the State are monitored for air quality. For Maui, sampling stations are located at Kahului and at Kihei. The Kahului site is located at the Kahului Shopping Center, in an area which includes Maui Electric Power Plant. The Kihei site is located at the Kihei Wastewater Reclamation Plant in a residential and rural community.

Results show that Kahului and Kihei average the highest for particulate matter of the sites sampled. This may be partly due to the high wind conditions experienced between the West Maui mountains and Haleakala and because much of the area is in sugar cane, portions of which are denuded at any given time. Also, ocean

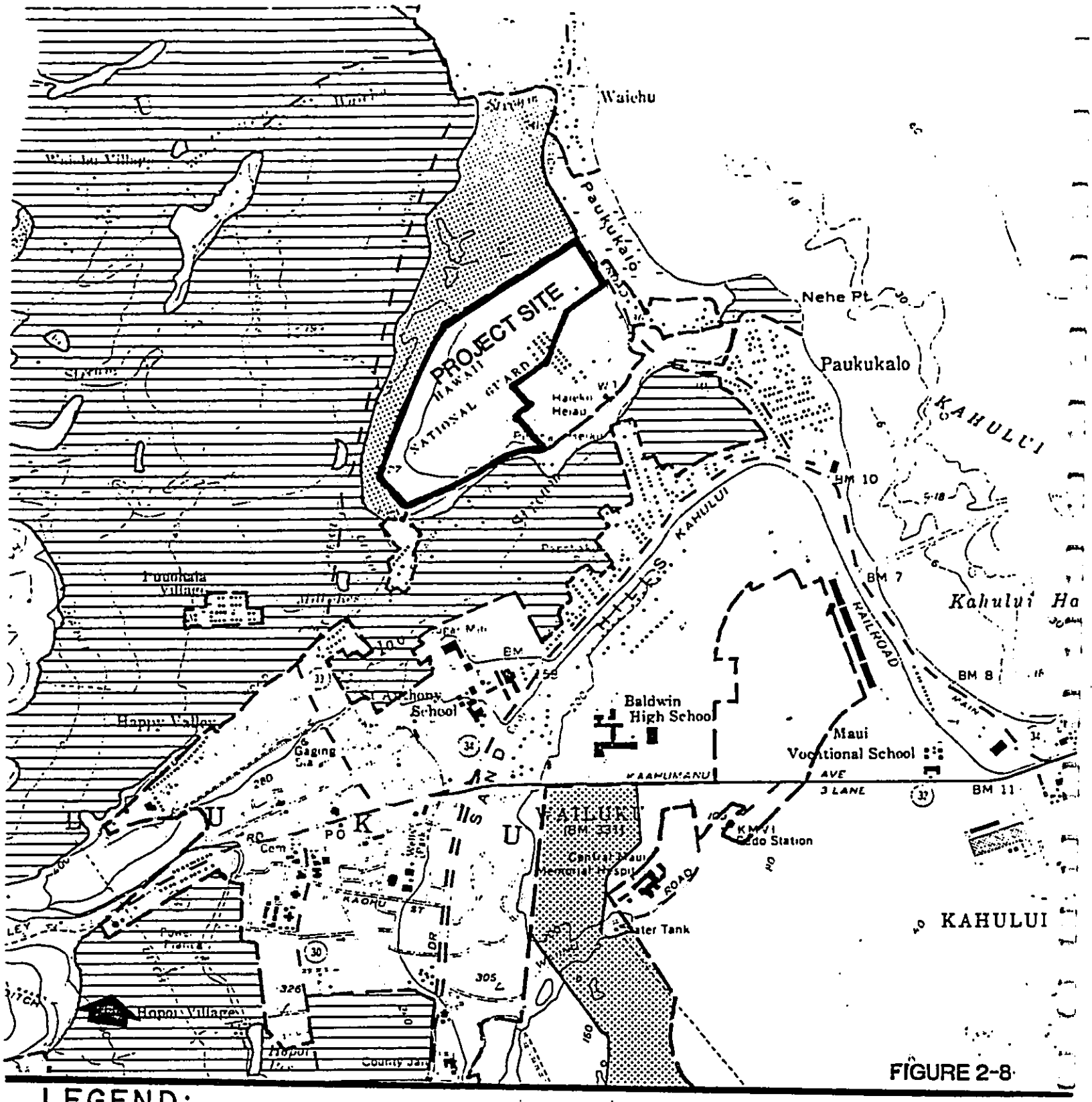


FIGURE 2-8

AGRICULTURAL LANDS OF IMPORTANCE

LEGEND:

PRIME AGRICULTURAL LAND - Land which has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops economically when treated and managed according to modern farming methods.

UNIQUE AGRICULTURAL LAND - Land that has the special combination of soil quality, location, growing season, moisture supply, and is used to produce sustained high quality and or high yields of a specific crop when treated and managed according to modern farming methods.

OTHER IMPORTANT AGRICULTURAL LAND - Land other than Prime or Unique Agricultural Land that is also of statewide or local importance for agricultural use.

EXISTING URBAN DEVELOPMENT - Land which has been developed for urban type use.

U.S. GOVERNMENT - Land which is currently under the jurisdiction of the U.S. Government.

spray may affect particulate readings. Kahului also exhibits the highest values of sulfur oxides, primarily because of its proximity to Maui Electric Power Plant. The project site is not located within the area affected by the Maui Electric Power Plant's plume.

II. BIOLOGICAL CHARACTERISTICS

A. Flora

1. Project Site

A field reconnaissance was conducted in March, 1981. Flora on the project site included residential plantings around the existing houses and common weeds in the overgrown vacant areas. None of the plants observed on the project site are rare or endangered species. [Refer to Appendix A for a species list.]

2. Adjacent Areas

The project site is located in an area identified as being in Vegetation Zone A. [Refer to Figure 2-9] The natural vegetation would is characteristic of semi-acid conditions, i.e.c Kaahaole, Kiawe, etc. However, the adjacent area has been extensively modified and is presently used for sugar and macadamia nut cultivation.

B. Fauna

1. Project Site

A field reconnaissance was conducted in December 1982 and January, 1983. Avifauna observed on the project site include lace-necked dove, barred dove, common mynah, Japanese white-eye, house sparrow, cardinal, pidgeons and frankelin. None of the observed avifauna are rare or endangered.

Mammals observed or believed to be present include dogs, cats, mongoose, rats and mice; none of which are endangered.

The only amphibian observed was the bufo toad, and reptiles included the mourning gecko and house gecko. Please refer to Appendix A for a complete listing of avifauna, mammals, and reptiles observed or believed to be present.

SOURCE: (2.221)

Zone	General elevations	Mean annual temperature	Annual rainfall, principal origin, and characteristics	Topography and soils	Land use	Vegetation characteristics and principal species
A	Sea level to 500 feet on lee sides or low windward lands	75° F. at sea level; maximum exceeding 90° F.	Less than 20 inches; southwest origin; torrential and infrequent; runoff and evaporation high; long, dry periods common	Coastal flats and adjacent sloping lands. Lava common	Irrigated sugar cane, grazing, waste	Ground cover sparse and conditions semi-desert. Algarobs, koa haole, and klu grow well where their roots penetrate ground water. Ilima and uhaloa are common shrubs. Annual grasses and herbs are scarce except following rains.
B	Sea level to 2,000 feet. Lee sides above A where present	70° F.	20-40 inches; southwest origin; similar to zone A	Similar to zone A	Irrigated sugar cane below 1,200 feet, pineapple above; grazing, waste	Vegetation similar to zone A but plants more numerous and vigorous due to increased rainfall. Annuals are longer lived. Cactus and *Lantana* often form dense stands. Both perennial and annual grasses occur. Annual herbs are prominent during and following rainy periods.
C_1	Sea level to 2,500 feet. Lies above B except where it reaches the sea	70° F.	40-60 inches; northeast trade-wind origin. Dry periods of more than one month uncommon. Moist spring and dry summer permit maturing of seeds	Gentle and steep slopes dissected by deep gullies; high plateaus. Excellent soil	Irrigated sugar cane and pineapple where topography and soils permit. Grazing restricted to gullies and poorer soils	Both temperate and tropical species adapted, the former seasonal, the latter perennial. Guava is the predominant shrub; *Lantana* and koa haole may form dense stands. Grasses and pasture legumes are responsive and small shrubs are common. Herbaceous forms volunteer good growth on disturbed soils. This zone formerly forested.
C_2	2,500 to 4,000 feet	60° F.	Similar to zone C_1	Steeper mountain gradients and high plateaus. Good soils used for pastures	Too cool for sugar cane or pineapple. Grazing is major use	Like zone C_1 this was once forested. Now mostly open grassland but remnants of koa and ohia lehua occur. Aalii and puakeawe are dominant shrubs. Grasses, legumes, and other herbs generally form good stands.
D_1	Sea level to 1,500 feet on windward sides	73° F. at sea level. 2-3° lower than on lee sides at same elevation	60 inches minimum; northeast trade-wind origin	Rugged; soils leached, acid, poorly aerated	Non-irrigated sugar cane; limited pineapple. Grazing on non-arable land	Perennial shrubs and grasses most abundant but commonly low in protein, minerals, and total dry matter. Guava, *Lantana*, and staghorn fern grow profusely in places restricting other vegetative growth.
D_2	Variable but generally between 1,500 to 4,000 feet on windward sides. Lies above D_1	60° F.	From more than 60 to 450 inches and more; northeast trade-wind origin	Rough topography. Soils acid, often boggy, have little available plant matter, decreased silica, high organic matter	Forest reserve providing main source of water for islands. Grazing in some cleared portions	Nearly impenetrable forest of koa and ohia lehua accompanied by tree ferns and various low growing ferns. Such forests lack diversification of vegetative types and seed producing species.
D_3	4,000-7,000 feet on windward sides. Lies above D_2	50° F.	About 100 to 50 inches; northeast trade-wind origin. Mist frequent	Gentle gradient with small gullies	Grazing	Originally forested like zone D_2 but heavy grazing has left only remnants. In cleared portions grasses do well but annuals do not persist because of lack of sunshine and a dry season necessary for seeding. Shrubs are scarce due to grazing.
E_1	4,000 - 7,000 feet. Lies above D_3 in wetter parts and C_2 in drier localities	50° F.	40 inches; northeast trade-wind origin. Mist common. Summers dry. Frost occasional in low regions and ice forms in upper areas.	High plateau and gentle mountain slopes. Lava common. Soil thin but good in places	Grazing	Formerly forested. Much now open grassland. Where grazing not so severe, remnant stands of koa, mamani, and naio persist. Aalii and puakeawe common where trees have disappeared. Herbs are frequent but grazing limits maximum coverage.
E_2	7,000 - 10,000 feet	40° F.	Less than 40 inches; northeast trade-wind origin. Summers are too cool to permit good plant	Topography steep. Soils little weathered and make poor substrata for plants. Lava plentiful	National Park and Forest Reserve; heavy grazing by feral sheep and goats	Vegetation similar to zone E_1 but sparser and more scrubby because of poorer soil and more rigorous climate. Heavy grazing in places has caused severe denudation of both vegetation and soil.
E_3	10,000 - 14,000 feet	Freezing	Less than 20 inches; northeast trade-wind origin. Snow frequent and may remain in sheltered places all year.	Steep but not rugged. Ash cones and lava common. Soil rocky and thin	National Park and Forest Reserve	Little plant growth except moss and lichen association.

FIGURE 2-9 VEGETATION ZONES

2. Adjacent Area

The area surrounding the project area is presently under cane macademia nut cultivation and does not provide a unique wildlife habitat. The type of animals and birds found are characteristic of cane fields and not considered rare.

III. INFRASTRUCTURE

A. Access and Traffic

1. Access

The site is situated between the two routes between Waihee and Wailuku-Kahului and adjoins Waiehu Beach road along the east boundary of the site. the other route, Kahekili Highway, runs roughly parallel with Waiehu Beach Road just west of the site, although at present is not accessible due to the existing sand dune and other lands under private ownership. Waiehu Beach Road is a State Highway with a single permitted access while Kahekili Highway is a County road. The adajcent Hawaiian Home Lands Paukukalo Residence Lots have been planned with internal streets and roads that adjoin the project site for possible future connection. These include Kuhio Place, Pumehana, Waihona and Kaumualii Streets.

At the present time, the County is in favor of a connector road between Waiehu Beach Road and Kahekili Highway. There is an easement (unrecorded) for a future Piihana-Paukukalo Road that would connect Piihana road with Kuhio Place. Due to the present width of Piihana Road R.O.W., if this option is pursued, there would be a need for land acquisition and other road improvements. If another route is preferred, an easement through adjacent privately owned lands would be necessary. [2.23]

2. Traffic [2.24]

The existing peak hour capacity of Waiehu Beach Road in the vicinity of the project site is 1,940 vehicles per hour. Kahekili Highway's peak hour capacity is 1,500 vehicles per hour.

The average daily traffic, A.M. and P.M. peak hours, and design capacities of the two roads are shown in Table 2-2. Total average daily traffic for Waiehu Beach Road at the main road intersection amounts to 7,584 cars. Peak hour traffic consists of 523 cars in the morning between 7:15 and 8:15 A.M. and 687 cars between 4:00 and 5:00 P.M. Of the two peak hours, the afternoon peak is larger and accounts for 9.1 percent of the total daily traffic.

Kahekili Highway has total average daily traffic of 1,486 cars. The peak hour traffic amounts to 131 cars between 7:00 and 8:00 A.M. and 138 cars between 3:30 and 4:30 P.M. The afternoon peak accounts for the larger percentage of total daily traffic and amounts to about 9.3 percent.

Based on the design capacities of the highways, existing traffic flows are currently within acceptable levels.

B. Water [2.16]

The project site is within an area served by the County of Maui water system and development plans for the project site will involve the installation of a two level system.

The high level system is to be serviced from the existing Mokuhau well. The low level system will be serviced by a 1.0 million gallon storage tank on site, fed from the Waihee/Waiehu wells. Also, an easement for the existing 12" waterline running from Piihana Road to the Hawaiian Home Lands property is required.

C. Liquid and Solid Waste

1. Liquid Waste (Sewage)

a. Existing

The project site is located within an area served by the County of Maui. The wastes are collected and treated at the County operated Wailuku-Kahului wastewater treatment plant.

Table 2-2

WAIEHU EXISTING TRAFFIC COUNT SUMMARY
March 1979 Highway State Highway Department

Location	A.D.T. Average Daily Traffic			Peak Hour A.M.			Peak Hour P.M.			Capacity
	S.E.	N.W.	Total	S.E.	N.W.	Total	S.E.	N.W.	Total	
Waiehu Beach Road at Main Street Intersection	3,779	3,805	7,584	312	211	523 (6.9%)	287	400	687 (9.1%)	1,940 vph
	S.	N.	Total	S.	N.	Total	S.	N.	Total	
Kahekili Highway just South of Waiehu Beach Intersection	764	722	1,486	73	58	131 (8.8%)	66	72	138 (9.3%)	1,500 vph

b. Proposed

Future plans for the project site will include an internal sewage collector system which will hook up to the existing county system. The sewage will be conveyed from the project site to the Kahului-Wailuku Waste Water Treatment Plant for treatment and disposal.

2. Solid Waste (Refuse)

a. Existing

The project area is presently served by the County of Maui. Refuse is collected by the County and disposed of at a County-operated sanitary landfill.

b. Proposed

Trash collection and disposal, upon completion of the project, will be assumed by the County of Maui. Refuse will be collected on a weekly basis and disposed of at a County-operated sanitary landfill.

D. Utilities

1. Electricity

The project area is presently served by Maui Electric Company. Overhead lines provide electrical service to the individual homes.

2. Gas

Some of the homes in the project area have propane gas tanks and it is anticipated that some of the future homes within the project site will use gas for some energy requirements.

3. Telephone

Telephone service is currently available for the homes within the project area and will be available for the future homes within the development.

E.. Public Facilities

1. Schools

The public schools serving the project site are Waihee Intermediate-Elementary School, and Baldwin High School.

Students from grades K-5 through 6-8 will probably be assigned to the existing Waihee schools.

2. Police

Police protection for the project area is provided by the Maui County Police Department. No problems are anticipated in providing police protection for the additional homes to be developed on the project site.

3. Fire Protection

A County-operated fire station is located in Wailuku. The fire station is manned 24-hours a day and the major equipment is a LaFrance 1250 pumper and a 250gpm mini-pumper. Response time from the fire station to the project site is estimated at 3.0 to 5.0 minutes. No unique fire problems exist within the project vicinity and no increased demands on fire protection are anticipated [2.25].

4. Parks and Recreation

Public recreational lands and facilities near the project area include Paukukalo Park, Waiehu Beach Park and Waiehu Golf Course. These facilities are operated and maintained by the County of Maui. Paukukalo Park provides for the following recreational activities: a soccer and baseball field; and a childrens play area. The Halekii and Piihana Heiaus are operated by the State and are used as Historic Sites. [Refer to Table 2-3]

5. Medical

Public health services serving the project vicinity include Maui Memorial Hospital, located between Kahului and Wailuku. There are also numerous physicians and dentists located within the Kahului-Wailuku area.

NAME	OWNERSHIP	ACRES	FACILITIES
WAIHEE			
Waihee Lookout	State	1.0	Viewpoint
Waihee Ball Park	County	1.9	Fields
Waihee Beach Park	County	4.0	Picnicking, shoreline sports
Waihee School	State	0.5	Playfields
WAIEHU			
Waiehu Heights	County	0.6	Undeveloped
Waiehu Golf Course	County	178.0	Golf
Waiehu Beach Park	County	1.3	Picnicking, shoreline sports
Paukukalo Park	County	4.7	Playfields, courts
Halekii and Piihana Heiaus	State	10.2	Historic sites
WAILUKU-KAHULUI			
Iao Valley State Park	State	4.0	Scenic views, picnicking, nature appreciation
Kepaniwai Park	County	7.5	Cultural interpretation, picnicking
Puuohala Park	County	0.6	Fields and courts
Mokuhau Park	County	2.4	Fields and courts
Honolii Park	County	.3	Playground
Wailuku School Park	County	4.0	Playfields
Wailuku Elem. School	State	1.0	Playfield
Wells Park	County	8.4	Fields, courts, gym, pool, community center
Iao School	State	1.0	Playfield
Papohaku Park	County	5.0	Field and Courts
Maui Central Park	County	190.0	Zoo, undeveloped shoreline sports.
Maui War Memorial	County	70.0	Gym, courts, field pool
Maui Community College	State	15.0	Fields and courts
Baldwin High	State	10.0	Fields and courts
Maui High	State	10.0	Fields and courts
Kahului School	State	3.0	Playground
Lihikai School	State	1.8	Playground
Kahului Comm. Park	County	36.5	Fields and courts
Kahului Ball Park	County	7.0	Fields and courts
Lihikai Park	County	5.3	Fields and courts
Pomaikai Park	County	0.8	Playground
Salvation Army	County/ Private	6.0	Fields, courts, pool
Kamalii Park	County	1.4	Fields, courts
Kanaha Wildlife Refuge	State	140.0	Refuge, nature appreication
Kanaha Beach Park	County	66.0	Shoreline sports, picnicking
H.A. Baldwin Park	County	17.2	Shoreline sports, picnicking, camping field and courts
Kahului Boat Ramp	State	1.5	Boat ramp
Maui Country Club	Private	—	Golf course
Hoaloha Park	Private	3.0	Shoreline sports, picnicking

TABLE 2-3

F. Shopping Opportunities

The project area is served by numerous small stores and commercial facilities located within the area and the commercial area of Kahului-Wailuku area. There are three major shopping centers located in the Kahului area to serve the project site (Kaahumanu Center, Maui Mall, and Kahului Shopping Center).

IV. POPULATION/DEMOGRAPHICS

A. Population

1. Existing

The resident population of the project are (Census Tracts 308, 309 and 310) for the years 1970 and 1980 is given in Table 2-4. The location of these Census Tracts is shown in Figure 2-10. (The project site is located in Census Tract 309).

2. Projected

The projected population for the entire area of Wailuku-Kuhului for the year 2000 is 38,900 - a 49% growth is expected. The project area is only a small portion within the Kahului-Wailuku area.

B. Demographic Characteristics

1. Ethnicity [2.27]

According to the 1980 Survey for Maui county, the majority of persons living within the project site (Census tract 309) Hawaiian (22.9%), White (20.3%), or Japanese (29.0%). These figures compare with a County-wide representation of 22.1% Japanese, 17.4% Hawaiian, and 33.6% White. [Refer to Table 2-7] At the present time, it is not possible to determine which ethnic groups would be represented in the proposed development.

2. Age-Sex Distribution [2.28]

The age-sex distribution for Maui is presented in Table 2-8. The year 1980 to 1985.

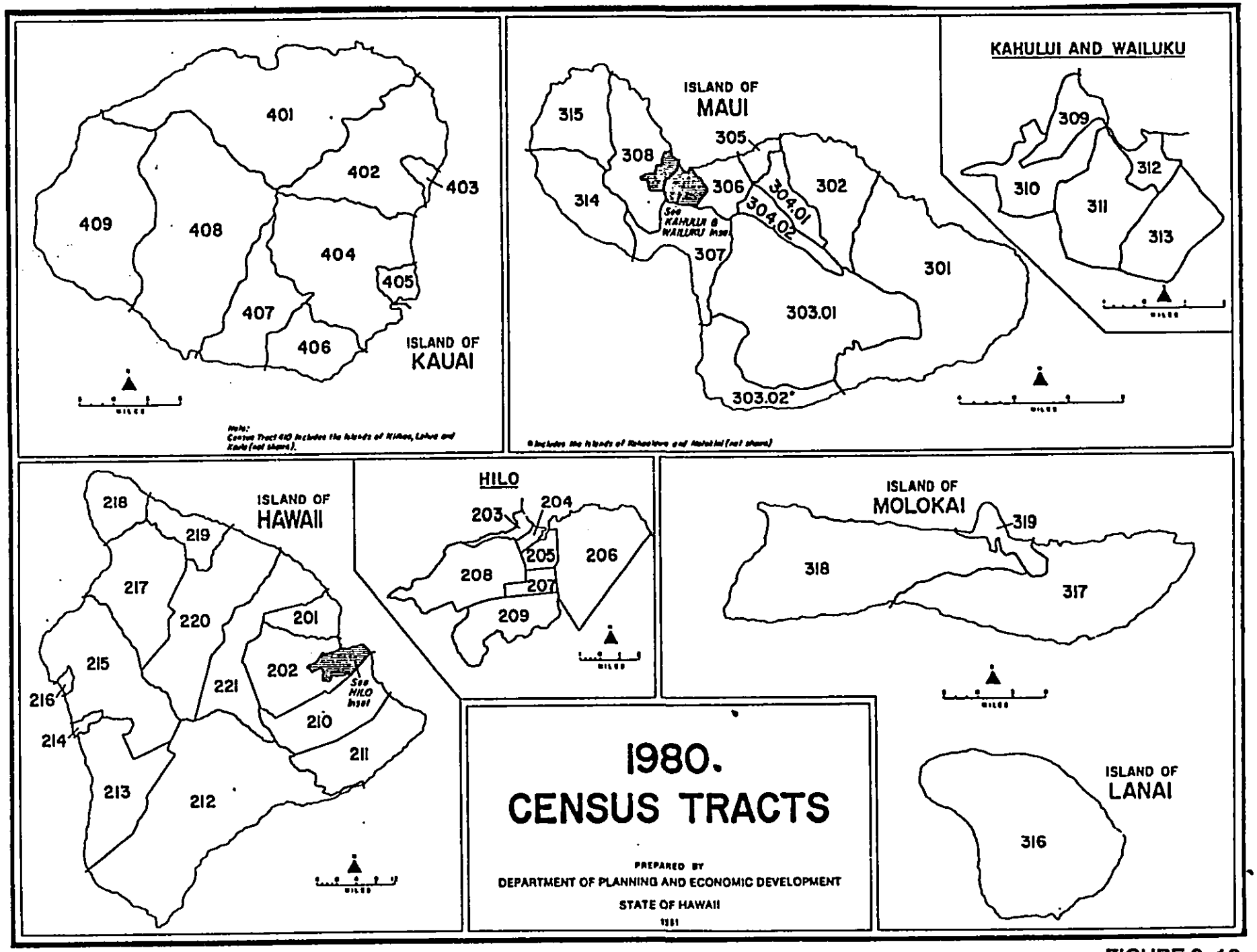

ISLAND OF
KAUAI
401
402
403
404
405
406
407
408
409
Note:
Census Tract 410 includes the islands of Niihau, Lehua and Kaula (not shown).
ISLAND OF
MAUI
KAHULUI AND WAILUKU
301
302
303.01
303.02*
304.01
304.02
305
306
307
308
309
310
311
312
313
314
315
See KAHULUI & WAILUKU Insets
*Includes the islands of Kahoolawe and Molokini (not shown)
ISLAND OF
HAWAII
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
See HILO Inset
HILO
ISLAND OF
MOLOKAI
317
318
319
ISLAND OF
LANAI
316
1980.
CENSUS TRACTS
PREPARED BY
DEPARTMENT OF PLANNING AND ECONOMIC DEVELOPMENT
STATE OF HAWAII
1981

FIGURE 2-10

Table 2-4
Resident Population

Resident Population

Census Tract	1980	1970	% Change	Households, 1980
308	1,584	1,299	21.9	461
309	6,542	4,537	49.2	2,041
310	4.132	4,547	9.1	1,989
311	10,424	5,505	89.4	2,967

Source: The State of Hawaii Data Book 1982, page 32, Table 9

Table 2-5

RESIDENT POPULATION OF THE STATE AND
OF MAUI COUNTY BY DISTRICT: 1970 and 1980

County and District	April 1, 1970	April 1, 1980	Percent change 1970-1980
The State	769,913	965,000	25.3
Maui and Kalawao	46,156	70,991	53.8
Hana	969	1,423	46.9
Makawao	9,979	19,005	90.4
Wailuku	22,219	32,111	44.5
Lahaina	5,524	10,284	86.2
Lanai	2,204	2,119	-3.9
Molokai	5,089	5,905	16.0
Kalawao	172	144	16.3

Source: Department of Planning and Economic Development, State of Hawaii. March 18, 1981. The Population of Hawaii, 1980: Final Census

Table 2-6A

Projected population for Wailuku-Kahului Region

Year	Population	Percent Change 1980-2000
1970	20,583	
1980	26,076	
2000	38,900	49%

Source: p. 16, Table 3: Wailuku-Kahului Technical Report
County of Maui, November, 1981

Table 2-6B

Population Projections - 1960 to 2000
Maui County Total Residential Population

	Year	Population	Percent Change
Actual[1]	1960	42,855	
	1970	46,156	7.7%
	1980	71,337	53.8%
Projected[2]	1985	86,121	14.8%
	1990	100,404	16.6%
	1995	116,274	15.8%
	2000	131,932	13.5%

1. DPED, Statistical Report 143

2. DPED, Revised Population and Economic Projections
1975 - 2000 (March 1, 1978)
Series II-F, officially recommended for planning purposes,
adjusted upward by 5.8%

Source: Table 1, p. 12 [2.23]

V. ECONOMIC CHARACTERISTICS

A. Employment

Table 2-9 shows overall employment and unemployment trends for the island of Maui from 1977 through 1981. The data shows that the civilian labor force for the island has increased and unemployment has generally decreased over five years.

B. Major Employment Generators [2.30]

The major sources of jobs are provided by tourism, agriculture, space research and service industries. As a matter of fact in 1982, tourism helped counter the weakness in the construction, sugar, and pineapple industries. As for agriculture, in 1981, sugar receipts werre down due to large worldwide surpluses. The total agricultural receipts for Maui County in 1981 totaled $115.3 million, down 27.6% from the record $159.3 million achieved in 1980. The drop was accounted for entirely by sugar, with the value of unprocessed sugar cane falling 50% to $50.6 million in 1981.

Pineapple showed a gain of 10% in receipts for harvested fruit in 1981. The other agricultural crops showing increased gains include diversified agriculture with receipts increasing 12.1% to $24.8 million. Livestock sales accounted for most of the gain in in diversified agriculture followed by vegetable, melon, forage and seed corn. [Please refer to Tables 2-10, 2-11, 2-12 and 2-13 for specifics on jobs provided by the major industries.]

TABLE 2-7

RACE BY CENSUS TRACTS: 1980[1]

	Census Tracts				
	309 %	310 %	311 %	312 %	313 %
White	1341 (20.5)	1156 (28.0)	1727 (16.6)	523 (20.1)	69 (12.1)
Black	11 (0.2)	2 (-0-)	22 (0.2)	3 (0.1)	0 (-0-)
American Indian	4 (0.1)	7 (0.2)	7 (0.1)	0 (-0-)	0 (-0-)
Eskimo	0 (-0-)	0 (-0-)	1 (-0-)	0 (-0-)	0 (-0-)
Aleut	0 (-0-)	0 (-0-)	0 (-0-)	0 (-0-)	0 (-0-)
Japanese	1898 (29.0)	1761 (42.6)	3505 (33.6)	1383 (53.2)	80 (14.1)
Chinese	153 (2.3)	132 (3.2)	175 (1.7)	84 (13.2)	5 (0.9)
Filipino	1186 (18.1)	267 (6.5)	3441 (33.0)	233 (9.0)	301 (52.6)
Korean	53 (.8)	29 (0.7)	56 (0.5)	17 (0.7)	4 (0.7)
Asian Indian	3 (-0-)	0 (-0-)	7 (0.0)	0 (-0-)	0 (-0-)
Vietnamese	8 (0.1)	1 (-0-)	3 (0.1)	0 (-0-)	0 (-0-)
Hawaiian	1495 (22.9)	613 (14.8)	1014 (9.7)	289 (11.1)	65 (11.4)
Guamanian	4 (0.1)	0 (-0-)	0 (-0-)	2 (0.1)	0 (-0-)
Samoan	14 (0.2)	5 (.1)	14 (0.1)	3 (0.1)	1 (0.2)
Other	372 (5.7)	161 (0.1)	452 (4.3)	65 (2.5)	47 (8.2)
TOTAL:	6,542	4,132	10,424	2,602	572

[1] The Geographic Distribution of Hawaii's Racial Groups, 1970 and 1980 Statistical Report 152, January 15, 1982 ,Table 3. p. 20 & 25.

Table 2-8

Population Estimates and Projections, 1978-1985
By Age, Sex, Military/Civilian Status, Island, Subarea and County

	1981			1982			1983			1984			1985		
	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE
0-4	3880	2058	1822	4035	2141	1894	4189	2223	1967	4344	2305	2039	4499	2387	2112
5-9	5187	2724	2464	5394	2832	2562	5601	2941	2660	5808	3050	2758	6015	3158	2857
10-14	5281	2672	2608	5491	2779	2713	5702	2885	2817	5913	2992	2921	6123	3099	3025
15-19	5491	2714	2776	5710	2823	2887	5929	2931	2998	6148	3040	3108	6367	3148	3219
20-24	5649	2865	2784	5874	2979	2895	6099	3093	3006	6325	3208	3117	6550	3322	3228
25-29	5057	2437	2621	5259	2534	2725	5461	2631	2830	5662	2728	2934	5864	2826	3039
30-34	4143	2006	2137	4309	2086	2222	4474	2166	2308	4639	2246	2393	4804	2326	2478
35-39	3342	1510	1832	3476	1570	1905	3609	1631	1979	3742	1691	2052	3876	1751	2125
40-44	3534	1574	1960	3674	1637	2038	3815	1699	2116	3956	1762	2194	4097	1825	2272
45-49	3820	1812	2008	3972	1884	2088	4124	1956	2168	4277	2029	2248	4429	2101	2328
50-54	3426	1808	1618	3563	1881	1682	3699	1953	1747	3836	2025	1811	3972	2097	1876
55-59	2972	1613	1359	3091	1678	1413	3209	1742	1467	3328	1806	1522	3446	1870	1576
60-64	2759	1417	1342	2869	1474	1396	2979	1530	1449	3089	1586	1503	3199	1643	1556
65-69	2001	1158	842	2080	1204	876	2160	1251	910	2240	1297	943	2320	1343	977
70-74	1975	1074	901	2054	1117	937	2133	1159	973	2211	1202	1009	2290	1245	1045
75+	1675	750	925	1742	780	962	1809	810	999	1876	840	1036	1943	870	1073
TOTAL	60192	30192	29999	62593	31399	31195	64992	32601	32394	67394	33807	33588	69794	35011	34786

Source: p. 101-102, Hawaii State Health Planning and Development Agency, November 1979 [2.28]

Table 2-9

CIVILIAN LABOR FORCE EMPLOYMENT STATUS

ISLAND OF MAUI
1977-1980

YEAR	CIVILIAN LABOR FORCE	AVERAGE ANNUAL EMPLOYED	AVERAGE ANNUAL UNEMPLOYED	% UNEMPLOYED
1977	27,200	25,300	1,900	7.0
1978	27,700	25,800	1,900	6.8
1979	28,650	27,050	1,600	5.6
1980	32,100	30,500	1,600	4.9
1981	33,650	31,750	1,950	5.7

Source: Table 261, p. 277
1982 The State of Hawaii Data Book
DPED November, 1982

Table 2-10 [2.20]

1978-1979

JOB COUNT

REVISED

TABLE 38-A. JOBCOUNT BY INDUSTRY
MAUI ISLAND
1978

Years 1978	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual Avg.
TOTAL NON-AGR. WAGE & SALARY JOBS	21,700	22,300	22,350	22,300	22,300	22,300	23,950	24,050	23,600	23,650	23,950	24,300	23,200
Contract Construction	1,300	1,300	1,400	1,450	1,550	1,650	1,650	1,700	1,700	1,700	1,700	1,750	1,550
Manufacturing	1,950	2,250	2,150	2,100	2,100	2,000	2,650	2,500	2,050	1,850	1,900	2,000	2,150
Trans., Comm., Utilities	1,350	1,350	1,400	1,400	1,350	1,400	1,350	1,400	1,400	1,450	1,450	1,450	1,400
Trade	5,800	5,900	5,950	5,650	5,850	5,850	6,200	6,200	6,200	6,100	6,250	6,450	6,000
Wholesale	600	600	600	600	600	650	600	650	600	600	600	600	600
Retail	5,250	5,300	5,350	5,050	5,050	5,200	5,550	5,600	5,600	5,500	5,650	5,850	5,400
Finance, Ins. & Real Est.	1,750	1,750	1,750	1,700	1,750	1,750	1,750	1,800	1,800	1,800	1,850	1,850	1,800
Services & Miscellaneous	6,050	6,150	6,200	6,350	6,400	6,400	6,450	6,450	6,850	7,200	7,200	7,200	6,550
Hotels	3,050	3,100	3,100	3,250	3,250	3,250	3,300	3,300	3,600	3,800	3,850	3,900	3,400
Other Services & Misc.	3,000	3,050	3,100	3,100	3,150	3,150	3,150	3,150	3,250	3,400	3,350	3,300	3,200
Government	3,500	3,600	3,650	3,650	3,650	3,700	3,900	4,000	3,800	3,600	3,600	3,600	3,700
Federal	250	250	250	250	250	250	250	250	250	250	250	250	250
State	2,300	2,350	2,350	2,350	2,350	2,350	2,350	2,350	2,350	2,350	2,350	2,350	2,350
Local	1,000	1,050	1,100	1,100	1,100	1,150	1,350	1,400	1,250	1,000	1,000	1,000	1,100
AGRICULTURE													
NON-AGR. SELF-EMP., UNPAID FAMILY WORKERS & DOMESTICS	1,950	2,000	2,050	2,050	2,100	2,100	2,250	2,300	2,050	2,050	2,050	2,150	2,100
AGR. SELF-EMP., UNPAID FAMILY WORKERS													
LABOR DISPUTES	0	150[1/]	0	0	0	0	0	[2/]	0	0	0	0	*

Labor disputes involving: 1/ construction workers; 2/ service employees.
* Less than 50.
NOTE: Data rounded to nearest 50.
Totals may not add due to rounding.

TABLE 38-B. JOBCOUNT BY INDUSTRY
MAUI ISLAND
1979

Years 1979	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual Avg.
TOTAL NON-AGR. WAGE & SALARY JOBS	24,450	24,850	25,100	24,600	24,450	24,800	25,950	26,000	25,150	24,900	25,100	25,600	25,050
Contract Construction	1,700	1,650	1,650	1,700	1,850	1,950	1,950	2,100	2,000	1,950	1,950	1,850	1,850
Manufacturing	2,050	2,100	2,100	2,100	2,050	2,350	2,450	2,400	2,100	1,900	2,100	2,150	2,150
Trans., Comm., Utilities	1,450	1,450	1,500	1,450	1,450	1,400	1,400	1,400	1,450	1,450	1,550	1,550	1,450
Trade	6,350	6,600	6,650	6,550	6,600	6,700	6,950	6,750	6,550	6,450	6,550	6,650	6,600
Wholesale	650	700	700	700	700	700	700	700	650	700	700	700	700
Retail	5,700	5,900	5,950	5,900	5,900	6,000	6,250	6,000	5,900	5,800	5,850	5,950	5,900
Finance, Ins. & Real Est.	1,900	1,900	1,950	1,950	1,950	2,000	2,000	2,000	2,000	2,100	2,100	2,050	2,000
Services & Miscellaneous	7,350	7,500	7,600	7,200	6,950	6,800	7,400	7,350	7,450	7,550	8,000	8,000	7,450
Hotels	4,000	4,100	4,150	3,800	3,550	3,400	3,950	4,050	4,050	4,150	4,500	4,500	4,000
Other Services & Misc.	3,350	3,400	3,400	3,400	3,400	3,400	3,450	3,300	3,350	3,450	3,500	3,500	3,400
Government	3,600	3,650	3,650	3,600	3,650	3,550	3,750	3,850	3,650	3,500	3,000	3,500	3,600
Federal	250	250	250	250	250	250	250	250	250	250	250	250	250
State	2,350	2,400	2,350	2,350	2,350	2,300	2,350	2,400	2,300	2,300	2,100	2,350	2,300
Local	1,000	1,050	1,050	1,000	1,000	1,000	1,150	1,200	1,100	900	700	900	1,000
AGRICULTURE													
NON-AGR. SELF-EMP., UNPAID FAMILY WORKERS & DOMESTICS	2,100	2,200	2,200	2,100	2,250	2,300	2,400	2,300	2,150	2,150	2,150	2,150	2,200
AGR. SELF-EMP., UNPAID FAMILY WORKERS													
LABOR DISPUTES	0	0	0	0	0	0	0	0	0	0	450[1/]	0	*

Labor dispute involving: 1/ state and local government employees.
* Less than 50.
NOTE: Data rounded to nearest 50.
Totals may not add due to rounding.

TABLE 2-11 [2.29]

1980-1981

JOB COUNT

TABLE 2B-C. [illegible]
[illegible]
1980

Years 1980	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual Avg.
TOTAL NON-AGR. WAGE & SALARY JOBS	35,800	36,600	36,800	36,950	37,950	37,100	37,300	37,650	36,250	36,100	36,650	36,650	36,750
Contract Construction	1,950	2,100	2,100	2,050	2,050	2,000	1,950	1,950	1,600	1,500	1,350	1,350	1,850
Manufacturing	2,350	2,300	2,250	2,650	2,650	2,950	3,350	3,100	2,650	2,200	2,350	2,300	2,650
Trans., Comm., Utilities	1,650	1,300	1,300	1,300	1,350	1,550	1,500	1,500	1,350	1,600	1,600	1,600	1,550
Trade	8,900	6,850	6,900	6,950	6,850	6,850	6,800	6,750	6,600	6,550	6,600	6,700	6,750
Wholesale	700	650	650	650	650	650	650	650	600	600	600	600	650
Retail	6,200	6,250	6,300	6,250	6,200	6,200	6,250	6,100	5,950	5,950	6,000	6,100	6,150
Finance, Ins. & Real Est.	2,050	2,100	2,100	2,000	2,050	2,050	2,100	2,150	2,150	2,100	2,150	2,150	2,100
Services & Miscellaneous	7,350	7,450	7,550	8,100	8,300	8,100	8,000	8,250	8,250	8,650	8,650	8,600	8,050
Hotels	3,900	3,950	3,950	4,600	4,800	4,600	4,500	4,750	4,750	4,850	4,900	4,900	4,350
Other Services & Misc.	3,450	3,550	3,550	3,500	3,500	3,500	3,500	3,500	3,500	3,800	3,750	3,550	3,500
Government	3,300	3,650	3,900	3,700	3,650	3,350	3,850	4,000	3,700	3,700	3,700	3,750	3,700
Federal	250	250	250	300	300	250	250	250	250	250	250	250	250
State	2,300	2,350	2,350	2,350	2,400	2,300	2,350	2,500	2,400	2,450	2,450	2,500	2,400
Local	900	1,050	1,100	1,000	1,000	1,000	1,200	1,250	1,000	1,000	1,000	1,050	1,050
AGRICULTURE													
NON-AGR. SELF-EMP., UNPAID FAMILY WORKERS & DOMESTICS	2,300	2,450	2,750	2,450	2,550	2,500	2,700	2,600	2,400	2,450	2,450	2,600	2,500
AGR. SELF-EMP., UNPAID FAMILY WORKERS													
LABOR DISPUTES	0	0 1/	0 1/	0 1/	0	0	0	0	100 1/	0	0	0	50

Labor disputes involving: 1/ wholesale firm employees; 2/ construction workers.
* Fewer than 50.
NOTE: Data rounded to nearest 50.
Totals may not add due to rounding.

5/82

TABLE 2B-D. [illegible]
MAUI ISLAND
1981

Years 1981	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual Avg.
TOTAL NON-AGR. WAGE & SALARY JOBS	37,100	37,050	37,350	37,250	38,950	37,300	37,250	37,150	36,600	36,400	36,600	37,650	37,050
Contract Construction	1,750	1,700	1,650	1,600	1,600	1,500	1,500	1,400	1,350	1,300	1,250	1,250	1,500
Manufacturing	2,200	2,150	2,100	2,050	2,050	1,950	2,000	1,900	1,950	1,800	2,050	1,850	2,050
Trans., Comm., Utilities	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,350	1,350	1,350	1,500
Trade	6,850	6,900	7,000	7,000	6,900	7,250	7,100	7,150	7,000	6,900	7,000	7,200	7,000
Wholesale	600	600	600	600	600	600	650	600	600	600	600	600	600
Retail	6,250	6,300	6,350	6,400	6,300	6,600	6,500	6,500	6,400	6,300	6,400	6,600	6,400
Finance, Ins. & Real Est.	2,350	2,350	2,350	2,350	2,350	2,350	2,350	2,350	2,300	2,300	2,300	2,300	2,350
Services & Miscellaneous	8,400	8,450	8,600	8,850	8,650	8,450	8,350	8,600	8,750	8,850	8,750	9,450	8,750
Hotels	4,900	4,950	5,050	5,000	4,900	4,750	4,650	4,750	4,850	5,000	5,050	5,700	4,950
Other Services & Misc.	3,700	3,700	3,750	3,850	3,750	3,700	3,700	3,850	3,900	3,850	3,700	3,750	3,750
Government	3,700	3,750	3,850	3,850	3,800	3,750	4,050	4,050	3,700	3,700	3,750	3,750	3,800
Federal	250	250	250	250	250	250	250	250	250	250	250	250	250
State	2,450	2,450	2,550	2,550	2,500	2,450	2,550	2,550	2,450	2,450	2,500	2,500	2,500
Local	1,050	1,000	1,050	1,050	1,050	1,050	1,250	1,250	1,000	1,000	1,000	1,000	1,050
AGRICULTURE													
NON-AGR. SELF-EMP., UNPAID FAMILY WORKERS & DOMESTICS	2,600	2,650	2,500	2,450	2,450	2,550	2,600	2,550	2,600	2,600	2,650	2,550	2,500
AGR. SELF-EMP., UNPAID FAMILY WORKERS													
LABOR DISPUTES	0	0	0	0	0	0	0	1/	1/	1/	0	0	*

Labor disputes involving: 1/ federal government employees.
* Fewer than 50.
NOTE: Data rounded to nearest 50.
Totals may not add due to rounding.

5/82

Table 2-12

SUGAR INDUSTRY JOBCOUNT

MAUI COUNTY
1972-1981

YEAR	AVERAGE ANNUAL SUGAR JOBS	TOTAL AGRICULTURAL JOBS	% OF TOTAL AGRICULTURAL JOBS
1972	1,350	3,600	38%
1973	1,350	3,400	40%
1974	1,150	3,200	36%
1975	1,350	3,350	40%
1976	1,350	3,250	42%
1977	1,250	3,250	39%
1978	1,200	3,400	35%
1979	1,200	3,150	38%
1980	1,200	3,150	38%
1981	1,350	3,450	39%

Source: Tables 32-C Jobcount by Industry 1980 52-C
Tables 32-D Jobcount by Industry 1981 52-D

Table 2-13

PINEAPPLE INDUSTRY JOBCOUNT

MAUI COUNTY
1972-1981

YEAR	AVERAGE ANNUAL PINEAPPLE JOBS	TOTAL AGRICULTURAL JOBS	% OF TOTAL AGRICULTURAL JOBS
1972	1,850	3,600	51%
1973	1,750	3,400	50%
1974	1,500	3,200	47%
1975	1,400	3,350	42%
1976	1,300	3,250	40%
1977	1,450	3,250	45%
1978	1,550	3,400	46%
1979	1,500	3,150	48%
1980	1,500	3,150	48%
1981	1,450	3,450	42%

Source: Tables 32-C Jobcount by Industry 1980 52-C
Tables 32-D Jobcount by Industry 1981 52-D

REFERENCES TO SECTION 2

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[2.4] Department of Geography. University of Hawaii. 1973. Atlas of Hawaii. The University Press of Hawaii, Honolulu, Hawaii.

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[2.11] Op. Cit. [2.4]

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[2.17] Preliminary Report on The Water Resources of the Wailuku Area Maui. Circular C61. USGA and DLNR 1970.

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Land Use Plans Policies Controls

3

SECTION 3

THE RELATIONSHIP OF THE PROPOSED ACTION TO LAND USE PLANS, POLICIES AND CONTROLS FOR THE AFFECTRED AREA

I. LAND USE

A. Existing Land Use

1. Project Site

The site is vacant and currently used for pasture. The site is overgrown with kiawe and koa haole trees.

2. Adjacent Areas

The areas surrounding the project site are used as residential areas. The Department of Hawaiian Homes Lands currently contains 89 existing single family houses and lots with an additional 95 lots proposed. The development will be complete when the 95 homes are constructed.

To the west is a proposed housing project of approximately 300 single and multi-family units on about 40 acres. This project is part of the proposed Piihana Project District as part of the Wailuku-Kahului Community Plan.

Immediately to the north is the Waiehu Heights subdivision consisting of approximately 398 single family detached lots.

The overall land use for the island of Maui is presented in Table 3-1.

B. Land Use Designations

1. State Land Use Districts

a. Project Site

The entire project site (approximately 134 acres) is located within State Land Use designation Urban (U). The proposed housing project is a permitted use within this designation. [Please refer to Figure 3-1]

b. Adjacent Areas

The Waiehu-Paukukalo area is relatively close to the Wailuku-Kahului urban area. The project site and the Waiehu-Paukukalo area is a logical extension for future residential development.

TABLE 3-1

EXISTING LAND USE

ISLAND OF MAUI: 1972

LAND USE[1]	ACREAGE	PERCENT
Residential	17,292	3.53
Manufacturing	774	0.16
Manufacturing Services and Warehousing[2]	657	0.13
Commercial[3]	233	0.05
Services[4]	30,986	6.32
Social and Cultural[5]	1,302	0.26
Recreation[6]	18,778	3.83
Agriculture	197,900	40.37
Transportation[7]	776	0.16
Unused Open Space Areas[8]	221,534	45.19
TOTAL:	490,234	100.00%

(1) Excludes public streets and highways.
(2) Includes warehousing, construction services, and public utilities.
(3) Retail and wholesale trade.
(4) Includes commercial amusement and recreation, hotels, military installations, government offices, parking, cemeteries, personal services, business and repair services, professional services, an finance, insurance and real estate.
(5) Educational, cultural and religious.
(6) Excludes commercial amusement and recreation services.
(7) Includes airports, docks, and land transportation facilities.
(8) Includes vacant land, forest reserve, lakes, steep land, and undedicated streets.

SOURCE: Department of Planning and Economic Development, State of Hawaii. Hawaii. 1980. The State of Hawaii Data Book: 1982. Table 150, page 174.

PROJECT SITE

LAND USE

FIGURE 3-1

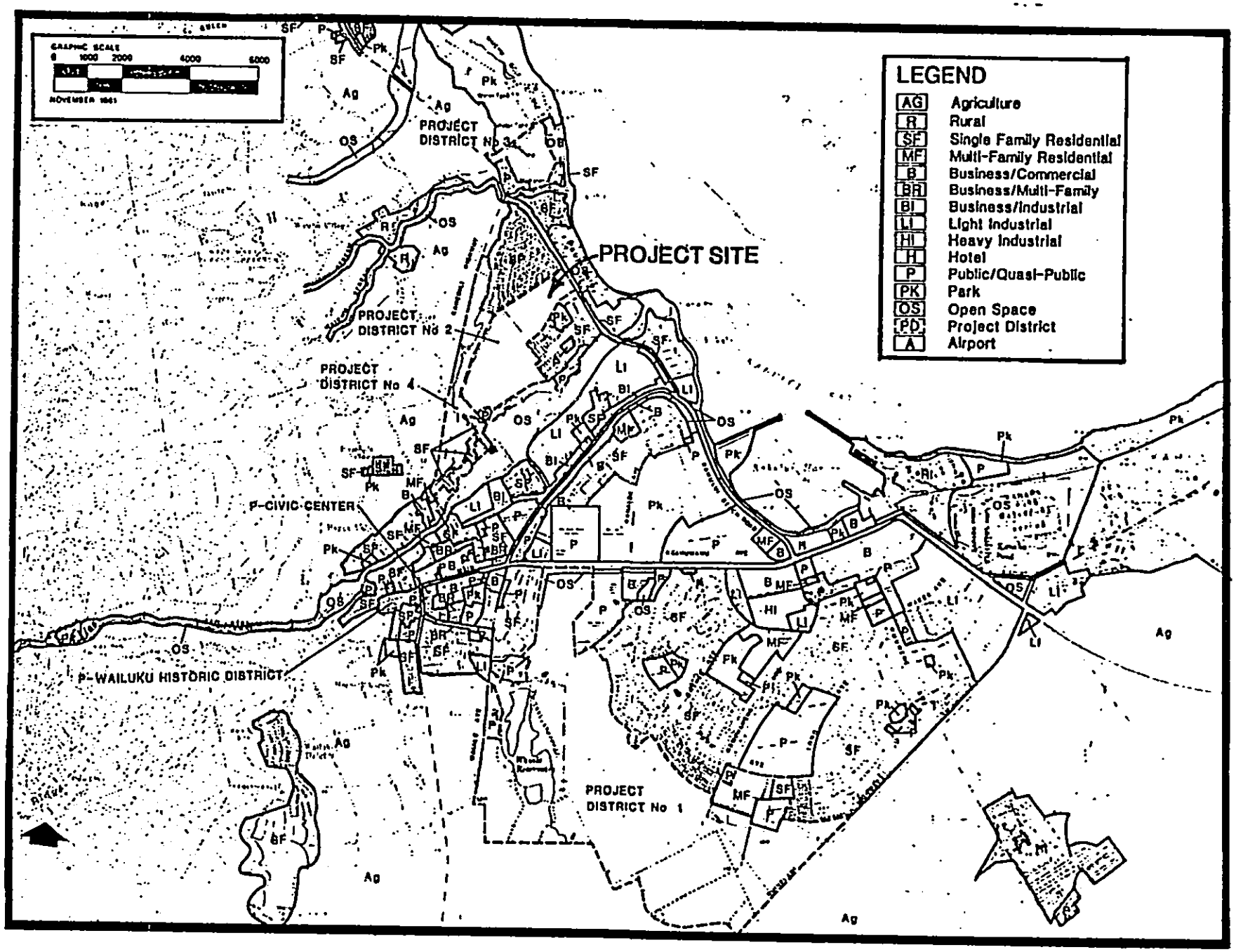

FIGURE 3-2

WAILUKU-KAHULUI COMMUNITY PLAN

2. County of Maui

a. Project Site

1. Wailuku-Kahului Community Plan [3.2]

The project site is designated as Project District No. 2 on the Wailuku-Kahului Community Plan (proposed). [Refer to Figure 3-2]

This project district is designated as a residential area which will fill in an area between the existing Waiehu Heights subdivision and Hawaiian Homes subdivision.

2. Wailuku-Kahului General Plan [3.8]

The Wailuku-Kahului General Plan Statement on Project Districts:

"An inherent flaw in the traditional long-range planning process is the inability to provide for the flexible and creative design of large parcels of land under single ownership that lie in a logical path of expansion. General Plan establishment of use relationships, and resultant land use patterns within these parcels are usually premature and lacking in adequate development detail. This preclusion of design flexibility becomes even more unsatisfactory in the light of recent State Supreme Court decision relative to General Plan amendments."

"The lack of positive General Plan direction for the location of such single parcel large scale developments limits pre-planning of utilities, transport and other public services and facilities. The General Plan should indicate the most desirable location for potential large scale developments to allow efficient planning of public service and facilities rather than waiting for the owners to initiate such projects in locations of their choice and ask that the public facilities be adjusted in accordance."

"To resolve these dificiencies in general planning technique, the establishment of Project Districts 1 and 2 is recommended. The districts are located and defined within the context of the overall Land Use Plan. Within the Project District the actual physical configuration would be determined by design submission, review and approval process according

to pre-established parameters necessary to integrate the project into the overall Plan and the attendant public service systems and facilities. The Land Use Plan, in addition to locating and defining the boundaries of each Project District, establishes program criteria indicating amount and type of permitted and conditional uses, proportions of open space, public facilities to be included such as schools, etc.; regardless of the physical configuration by which the program is satisfied."

b. Adjacent Area

As previously described, the area surrounding the project site is or will be residential areas.

To accomplish the need for additional residential areas, major land additions designated as project districts have been master planned for the Wailuku-Kahului Community Plan (proposed). The key is that flexibility will be the approach used in the planning of the project districts. The approach calls for a mixture of housing types and supporting community resources such as schools, parks open space and commercial services. Also, modifications to development standards will be considered so that economy in the development costs will possible and housing can be targeted to a full range of income groups.

The project districts were designated on the basis of various factors. Major residential expansion areas are contiguous extensions of existing neighborhoods; are near existing public services, i.e., sewers, water, transportation and places of employment; minimizes impacts to agricultural land resources; and respects previous General Plans.

II. GOVERNMENTAL POLICIES

A. State Plans and Controls

1. The Hawaii State Plan [3.3]

The Hawaii State Plan was adopted in May, 1978. The overall theme of the plan encompasses several basic principals

integral to Hawaii's society, which ranges from "the right of every individual and family to be independent and self-reliant" to the "acknowledgement of the interdependence of every member of the community." These independent rights are important, but must be viewed within the social context and should not be detrimental to the community as a whole. Many changes are confronting the State, and while it is not possible to stop change, it is important to attempt to preserve values important to Hawaii's people, such as traditional values like "ohana" and the aloha spirit.

Goals for the State are in the areas of economy, physical environment, and physical, social and economic well-being and represent ideal end-states describing desired social, economic and physical conditions to be sought for Hawaii's people. The following three Goals describe the social, economic and physical conditions for Hawaii:

- "a strong, viable economy, characterized by stability, diversity, and growth, that enables the fulfillment of the needs and expectations of Hawaii's present and future generations."

- "a desired physical environment, characterized by beauty, cleanliness, quiet, stable natural systems and uniqueness, that enhances the mental and physical well-being of the people."

- "physical, social, and economic wellbeing, for individuals and families in Hawaii, that nourishes a sense of community responsibility, of caring and participation in community life."

Specific objectives and policies set forth cover the areas of population, the economy, the physical environment, facility systems, and socio-cultural advancement.

Of the many objectives and policies set forth in the State Plan, only those directly applicable to the proposed project are presented in this section.

Policies regarding "the physical environment - land, air, and water quality" include the following:

Section 13 (b)(5) "Reduce the threat to life and property from erosion, flooding, tsunamis, earthquakes, and other natural or man-induced hazards and disasters."

Section 13 (b)(7) "Encourage urban developments in close proximity to existing services and facilities."

The project site is located outside of potential tsunami and flood prone areas. The project site is located in an area currently served by water, sewer, electrical, telephone and transportation systems. The project site is in close proximity to existing services.

Objectives and policies regarding "sociocultural advancement - housing" include the following:

OBJECTIVES

Section 19 (a)(1) "Greater opportunities for Hawaii's people to secure reasonably priced, safe, sanitary, livable homes located in suitable environments that satisfactorily accommodate the needs and desires of families and individuals."

Section 19 (a)(2) "The orderly development of residential areas sensitive to community needs and other land uses."

POLICIES

Section 19 (b)(2) "Stimulate and promote feasible approaches that increase housing choices for low-income, moderate-income, and gap-group households."

Section 19 (b)(3) "Increase homeownership and rental opportunities and choices in terms of quality, location, costs, densities, style, and size of housing."

The proposed project has been designed and planned to meet all or most of the objectives and policies state thus far. The project will increase housing choices.

2. State Housing Plan [3.5]

This proposed plan further defines the Hawaii State Plan in its objectives and policies for socio-cultural advancement in the area of housing. Overall State Plan objectives and policies applicable to the proposed project have been previously presented in this section under, "II.A.1. The Hawaii State Plan."

Many of Hawaii's people have urgent housing needs. Many low and moderate income families pay more for housing than they can afford; many are unable to reach their goal of owning their own home; and a significant number of families still live in substandard or crowded conditions despite improvement in recent years.

This plan presents actions to guide both government and private sector efforts to implement the objectives, policies, and priority directions of the Hawaii State Plan, related to housing.

B. County Plans and Controls

1. The Maui County General Plan [3.7]

Of the many objectives and policies presented in the General Plan, those probably most applicable to the proposed project would concern Population, Land Use, Urban Design, Agriculture, and Housing. Only those policies most applicable to the proposed project are presented:

POPULATION

Objective:

"To plan the growth of resident and visitor populations so as to avoid social, economic, and environmental disruptions."

Policies:

"Seek to perpetuate the unique life-styles of our people."

"Ensure the stability of population growth so that the County's economic growth will be stable and the expansion of public and private support systems will not be overly burdensome on our natural resources."

"Provide for population density and distribution patterns which are in balance with our social and economic environment."

LAND USE

Objectives

"To use the land within the County for the social and economic betterment of the County's residents."

"To preserve existing geographic, cultural, and traditional lifestyles through careful and effective use of land."

Policies

"Discourage the conversion of agricultural lands to non-agricultural uses."

"To protect agricultural lands from urban encroachment."

"Provide for compatible alternative uses on non-productive agriculture lands."

"Guide land use development patterns so that they sympathize with natural topographic features, eliminate as much as possible environmental hazards and enhance scenic amenities, without depleting natural resources."

"Encourage land use methods that will help provide a variety of housing styles and locations."

"Provide a range of compatible land uses sufficient to meet individual, community, regional and county needs."

"Encourage the 'most reasonable and beneficial use' of land by discouraging practices that promote 'the highest and best use' concept of land use."

URBAN DESIGN

Objectives

"To see that all developments are well-designed and are in harmony with their surroundings."

"To encourage developments which reflect the character of the County and the culture of its people."

Policies

"Establish urban design guidelines and standards which will meet our unique local needs."

"Require that appropriate principles of urban design be observed in the planning of all new developments."

"Encourage the creation of distinctive community identity, in both new and existing developments."

"Prepare and support appropriate urban design principles, standards and guidelines."

HOUSING

Objective

"To provide a choice of attractive, sanitary and affordable homes for all our people."

Policies

"Encourage the construction of housing in a variety of price ranges and geographic locations."

"Expand the County-wide housing programs."

"Establish guidelines and programs to minimize speculation on real property."

"Make full use of worthwhile State and Federal programs that provide financial assistance to renters and home buyers."

"Streamline the governmental review process for residential housing development projects."

"Encourage the use of innovative building methods so as to lower housing costs."

The proposed project is consistent with the adopted Maui County General Plan objectives and policies stated for Population, Land Use, Urban Design, and Housing.

Regarding population, land use, and housing, the proposed project will help to provide opportunities for affordable housing for the people. It is also proposed for an area where the surrounding area is or will be used for residences.

The project generally conforms to the existing general plan and proposed community plan.

REFERENCES TO SECTION 3

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[3.8] Wailuku Kahului General Plan. October 1972. Prepared for The Maui County Planning Commission by Eckbo, Doan, Austin & Williams. p. 40 and 41.

4 Probable Environmental Effects

SECTION 4

ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATIVE MEASURES TO MINIMIZE ADVERSE IMPACTS

This section presents a discussion of environmental impacts anticipated to result from the proposed action. This discussion of anticipated impacts is based on the information presented in the first three sections of this report.

I. INTRODUCTION

This section discusses the anticipated impacts from implementation of the proposed project, which are presented as either primary or secondary impacts, both short-term and long-term.

Primary impacts are those expected to result directly from the proposed project. Short-term primary impacts are usually construction-related, and therefore, temporary. Primary long-term impacts are those anticipated to result directly after development of the proposed project.

Secondary impacts are those which may be indirect results of the proposed project. Short-term secondary impacts are those which result during construction and long-term impacts are those which can indirectly result after completion of the project.

II. PRIMARY IMPACTS OF THE PROPOSED PROJECT

This discussion presents factors which are expected to be affected directly by the the proposed project. Discussion of each parameter will include short-term and long-term impacts anticipated from the implementation of the proposed project.

A. Physical Parameters

1. Geology and Soils

Construction activities are not expected to cause adverse impacts to the geology or soils of the site. The geology and soils of the project site are essentially litified sand dunes. However, the soils as described in Section 2 of this report are characterized as susceptible to wind erosion if the surface vegetation is removed.

This being the case, the project construction specification for the clearing activities will require that only portions of the site be cleared at any given time and that a water sprinkling system be installed to keep the cleared area moist. This will hasten the regrowth of the surface vegetation and decrease soil erosion by wind.

No long term adverse environmental impacts are anticipated after the project has been completed.

2. Noise

During construction there will be an inevitable increase in the ambient noise level. The noise levels which can be expected during construction are presented in Figure 4-1. After completion of the construction phase, noise levels will decrease.

The project site is, however, located within the glide path of the Kahului Airport and is exposed to the noise from aircrafts. The noise is not intolerable and in most instances the noise levels will not disturb most of the people. There have not been significant noise complaints from existing residents living in the adjacent areas. This can be attributed to the fact that most of the aircrafts are landing during periods of the day when most of the people are working and the flights do not normally occur during the late evening hours. Another important factor is that the planes only overfly the project area during landings and not during takeoffs.

3. Climate

The climatic conditions do not preclude the use of the site as a residential area. Nor will the project site adversly affect the microclimatic conditions.

4. Hydrology

a. Surface Water

The proposed project will not have an impact on any streams as none are located within the project site.

b. Flooding

No flooding problems are anticipated on the project site. The site is located outside of the potential tsunami and Iao Stream flood inundation zone. With the proposed drainage improvements to be implemented the proposed project will not adversely affect any downstream properties.

c. Ground Water

There is a thin basal ground water resource located beneath the project site. However, this is a thin lens of brackish water which cannot be used for drinking or irrigation of agricultural crops. The project will not adversely affect this ground water resources.

5. Water Quality

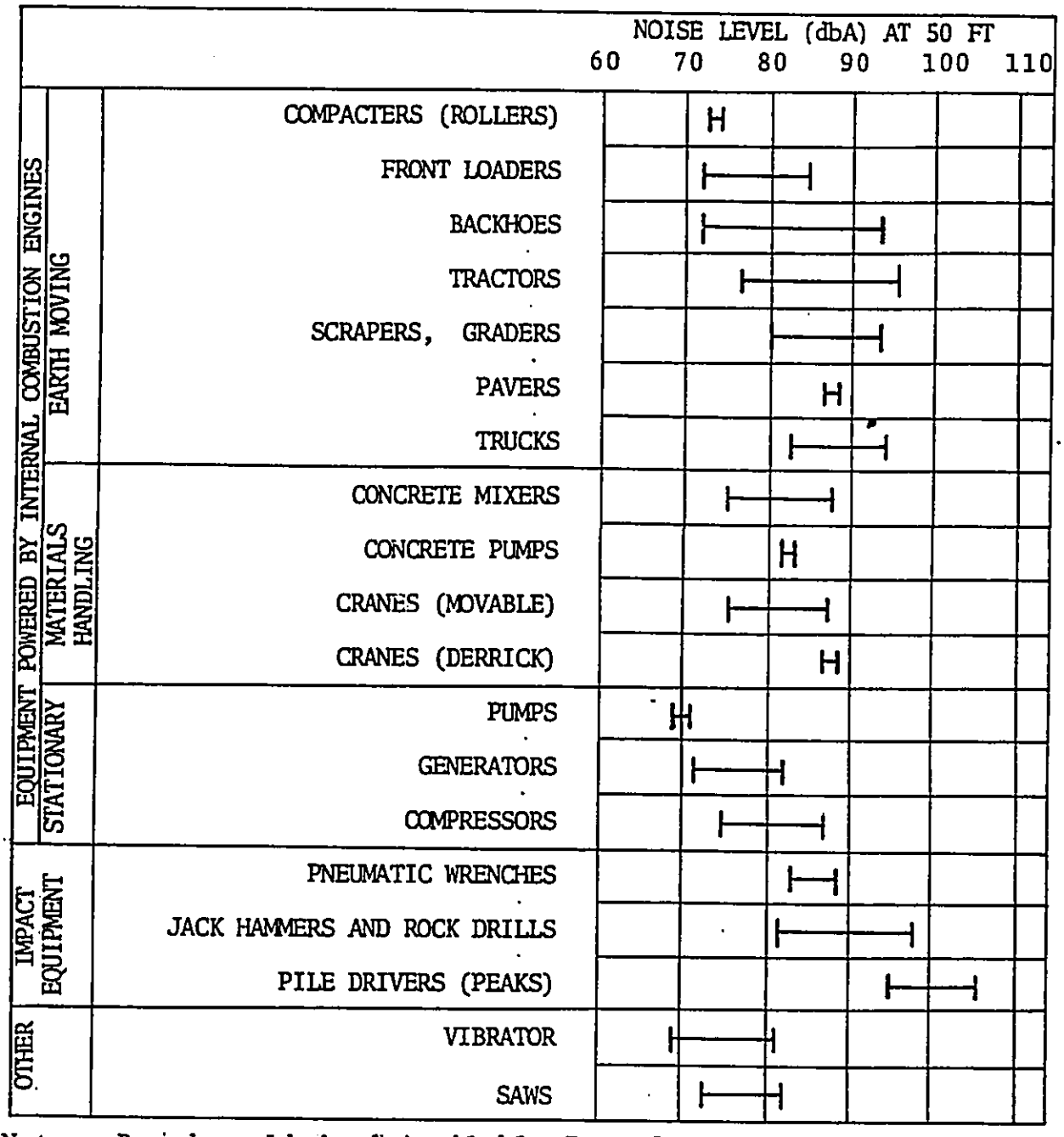
The project is located away from Iao stream and is separated from the near shore waters by Waiehu Beach Road and the Paukukalo land mass. The project site is located outside of the Shore Line Management Area (SMA) designated by the County of Maui. However, the future drainage system for the entire project requires improvements to be made to the existing drainage system located within the SMA area. These improvements are not anticipated to have a short or long term environmental impact on the nearshore water quality.

6. Seismic Potential

The homes to be constructed on the project site will be built according to Uniform Building Coad (UBC), which includes earthquake criteria for Sesmic Zone 2. Therefore, building to this standard should suffice as a short and long term mitigative measure.

FIGURE 4-1

CONSTRUCTION EQUIPMENT NOISE RANGES



Note: Based on Limited Available Data Samples

Source: Noise From Construction Equipment and Operations Building Equipment, and Home Appliances, EPA, 1971

7. Mineral Resource

The project site is located on a litified sand dune. It is not known whether the sand can be used for the manufacture of concrete. However, the sand can be used for fill material.

8. Watershed

The project site is located outside of a watershed area and any environmental impacts are therefore precluded.

9. Agriculture

No impacts on agriculture are anticipated as a result of the project. There are no agricultural operations on the site and the site has not been used for agricultural activities. The project site is not considered as prime agricultural lands.

10. Ranching

The project site is used for pasture, approximately 20 cattle were observed. The exact number, lower or higher, depends on the amount of vegetation available as a food source.

There will be sufficient time to relocate the ranching activities to another location. Therefore, there is no immediate adverse environmental impact to the ranching activity.

11. Visual Characteristics

The project site is visible from Waiehu Beach Road, the lookout at Hea Place and from the Hawaiian Homes subdivision. The present views are that of the Kiawe forested area. Upon completion of the proposed project,.the views will essentially be that of a residential subdivision.

12. Air Quality

There are no major sources of air pollution adjacent to the project site. However, during the clearing activities, fugitive dust may be a problem unless mitigative measures such

as the installation of a sprinkling system and use of water wagons to keep the dust within the project border.

The use of water wagons during clearing activities and the installation of sprinkling systems for fugitive dust control have been effectively used for identical construction activities on properties adjacent to the project site.

13. Surface Water

The runoff from the project site is approximately 155 cfs. To handle the future storm runoff (250 cfs), an interceptor ditch between the project site and the existing Hawaiian Home Lands subdivision will be constructed which will connect to a 200-foot lined drainage channel and 800 feet of 60-inch RCP terminating at a new outlet to the ocean. The final plans have not been prepared for the disposal of the storm runoff water.

B. Biological Parameters

1. Flora

A biological reconnaissance was conducted to determine the plant composition of the project area. Based on the findings of the preliminary reconnaissance, no significant impact on the flora is anticipated from the implementation of the project. There are no endangered species of plants on the site and most of the plants and trees found growing on the project site are representative of introduced plants commonly found growing in similar habitats.

2. Fauna

The project site does not contain rare or endangered species of animals nor is the site a unique wildlife habitat. Therefore, no significant environmental impacts to animal life is anticipated from the implementation of the proposed action.

C. Infrastructure

1. Water

Existing water service to the project area is provided by the County of Maui. The proposed project will require the installation of a two-level water system. The high-level system will be serviced from the existing Mokuhau Well (291.65mgd) and the low-level system from the Waihee/Waiehu Wells (51.46mgd) via the 1.0MG storage tank.

The improvements to the transmission line, installation of an onsite storage tank, and internal water distribution system will be constructed in phases to meet project the requirements. There should be no long term environmental impacts to the water distribution system. The estimated water use by the project is 776,000gpd. (Average daily use calculated by: 680 units x 1,000gpd = 680,00gpd plus 120 units x 800gpd = 96,000gpd, totals to 776,000gpd).

2. Liquid Waste

The County of Maui operates a waste water treatment plant in Kahului and maintains the major sewer collection system along Waiehu Beach Road. The existing County sewer line is adequate to convey the sewer from the proposed project [543,200gpd (70% of 776,00gpd)]; however, the pumping capacity will need to be increased with the implementation of this project.

3. Solid Waste

The amount of solid waste to be generated from the proposed project assumes 4 pounds per person per day, 3.12 people per home and 800 units. The amount of solid waste generated from the project site at full development and occupancy is 10,560 pounds per day.

4. Utilities

The project site is located in an area presently served by major electrical, telephone and gas utilities. There should

be no major problems in providing these services. There is sufficient time for the utility companies to phase in the project into their overall planning process.

5. Police

The project site is presently served by the Maui County Police Department and no major problems are anticipated in including the project site within the area currently patrolled by the police department. Police services maybe required at times during peak hour congestion.

6. Fire

The project site is presently served by the Maui County Fire Department, no major problems are anticipated in providing fire protection for the project area. The completion of the proposed project will aid in alleviating the potential of brush fires during the summer months.

7. Parks and Recreation

There are several parks and recreational facilities in the vicinity of the project site. The project plans also call for the construction of a park (4.6 acres) on the project site. There should be no significant impacts on the recreational lands and/or facilities.

8. Medical

The project site is presently served by medical and dental clinics located within the Kahului-Wailuku area as well as the Maui Memorial Hospital. There should be no significant impacts on these facilities and on the services..

9. Shopping Area

The development of the residences will have a impact on the shopping complexes located in the Kahukui-Wailuku areas. These centers and to a minor degree the small shops located in Waiehu-Paukukalo would undoubtedly benefit from the development of the project.

10. Archaeological/Historical

No archaeological sites have been located on the project site. The absence of surface archaeological sites precludes impacts. However, in the event subsurface archaeological sites or artifacts are uncovered during the clearing activities, the state will be immediately notified and appropriate action taken.

11. Schools

The amount of students from the proposed development has been estimated by the State Department of Education.

GRADE	APPROXIMATE ENROLLMENT OF STUDENTS
K-5	100-200
6-8	40-80
9-12	40-80

The existing school system can accomodate the projected increase of students. Grades K-8 students will attend Waihee Elementary-Intermediate School, and grades 9-12 students will attend Baldwin High School.

12. Access and Traffic

During the construction phase of the project, minor traffic inconvenience will be experienced along Waiehu Beach Road and Kahekili Highway. All applicable safety precautions will be adhered to for the safety of the motorists.

The long term traffic impacts will not be adverse based on initial projections. The design capacity of Kahekili Highway is 1,500 vph, and 1,940 vph for Waiehu Beach road. The total traffic to be generated from the project site, plus the existing traffic, is 920 vph for Waiehu Beach Road. The total traffic from the project site, plus the existing traffic, is 436 vph for Kahekili Highway.

In summary, the total traffic, projected and existing, is below the design capacity of the roads. This is not to imply that there will not be minor inconveniences in the traffic flow patterns if everyone were to use the roads simultaneously.

13. General

The design of the infrastructural items (sewer drainage, etc.), to save initial construction cost will be coordinated with the County to minimize the increased operation and maintenance costs.

D. Economic and Housing Impacts

1. Economic Impacts

The major economic impact will occur during the construction phase of the project. If the entire project were to proceed in one phase the estimated construction cost for the buildings is $31 million. Using an estimated 1.6 economic multiplier, this translates into an estimated $49.6 million entering the local economy.

2. Housing

The addition of the 800 units will increase the housing opportunities for the lower and moderate income families and the elderly. This will be a significant long term beneficial impact.

III. SECONDARY ENVIRONMENTAL IMPACTS

A. Anticipated Short-Term Impacts

Secondary short-term impacts will occur during the construction phase of the project. Most or all of these impacts will affect the smaller contractors involved in the home building industry and the material suppliers.

B. Anticipated Long-Term Impacts

1. Economic Characteristics

a. Property Taxes

Property tax revenues will increase after construction of the proposed project. The exact increase is

not known at this time, but the tax will undoubtedly be greater than what is currently being paid from the existing property. This increase in the tax base may be considered a positive to the state and local government.

b. Shopping Centers and Local Merchants

The residents will require services (medical, dental, etc.). The residents will also patronize the local shops and the shopping centers.

2. Population Increase

The project has been designed to meet the existing housing needs of Maui residents. As such, most of the new residents will be from Maui. It is not aniticipated that this project will create a significant increase in the overall population of Maui, rather, there will be a redistribution of the population from one portion of the island to another.

There are many homes shared by two or more families. When homes become available, one or more families will move to the new homes.

3. Demographic Characteristics

The ethnic and age characteristics of the potential owners are very difficult to predict. However, it is reasonable to assume that most of the single family owners will be middle income families. There will be elderly housing, rental units for young couples with or without children, and single parents.

Adverse Environmental Effects

5

SECTION 5

PROBABLE ADVERSE ENVIRONMENTAL IMPACTS WHICH CANNOT BE AVOIDED

This section briefly describes the probable adverse environmental impacts and mitigative measures, when applicable and the rationale for proceeding with the proposed action, nothwithstanding unavoidable effects.

I. PRIMARY IMPACTS

The site work, clearing and grading, will have a short-term environmental impact. The adverse impact such as fugitive dust from the grading and clearing activities can be mitigated by using water wagons, sprinkling systems and standard grading techniques. Also, a grading plan stipulating erosion control measures will be filed with the County of Maui. This plan must be approved prior to grading and clearing activities.

Construction noise is unavoidable, but provisions such as requiring the contractor to have all equipment equipped with approved mufflers will be effective in preventing excessive noise problems.

The traffic impacts during the transportation of the heavy equipment to the project site can be mitigated by moving the equipment during the non-peak traffic hours. The heavy equipment once transported to the project site, will not cause traffic or safety problems to the area residents.

II. SECONDARY IMPACTS

No unavoidable adverse secondary environmental impacts are anticipated from the proposed project.

6 Alternatives

SECTION 6

ALTERNATIVES TO THE PROPOSED ACTION

This section discusses the alternatives of the proposed action that have been considered.

Certainly, there are various alternatives available for any proposed action. However, in this case, the alternatives are limited. The land is owned by the State of Hawaii and there is no governmental land available in the proximity of the project site for the development of this project.

I. NO ACTION

The alternative of "no action" would mean the land will remain in its present state as described in Sections 1 and 2 of this report. Any beneficial or adverse impacts resulting from the project will not occur.

This alternative is not a preferred alternative because there is a critical housing shortage.

II. ALTERNATIVE SITES

Alternative sites would require the purchase of land from private landowners and possibly the conversion of productive agricultural land to urban use. This alternative is possible but the cost in money and time would be prohibitive.

III. ALTERNATIVE PROJECT

A. Density

The density of the project is guided by the community plan and acceptable planning standards. The "Project District" designation was established to create large parcels of land which could be integrally planned. The allowed density is six dwelling units per acre.

High density development on a large scale and building heights higher than two-story would not have achieved the objectives of the project.

B. Planning and Land Use

The project district indicates residential areas but allows a flexible approach for planning rather then specific land use designations. A variety of residental housing types, as well as public

open spaces, parks and facilities are intended in accordance with the specific project district description. In this case, the project area will contain residential uses with a mixture of housing types including park, open space and community facilities.

The only alternatives considered were a school site (10 acres) and a commerical site (1 acre). The school site was eliminated because the existing schools are adequate to meet the needs of the children from the project site. The commerical site was eliminated because the designation of a commercial development could be construed as spot zoning and may not be in conformance with County planning policy. Also, the commercial area could divert business away from existing stores - offering similar goods and services.

IV. ALTERNATIVE CONSTRUCTION METHODS TO REDUCE COSTS

Alternative construction methods are being investigated to reduce the cost of the entire project.

The cost reductions being explored are in the construction of roadway, drainage sewer, water, electrical and telephone systems. Please refer to Appendix D for a summary of the possible cost reduction methods being evaluated.

Commitment of Resources

7

SECTION 7

IRREVERSIBLE AND IRRETRIVABLE COMMITTMENT OF RESOURCES

This section considers the committment of the resources that will be made if the project is implemented.

The completion of each phase of the project will add a progressive and permanent committment of resources for each phase of development. During the construction phase, the project will involve the committment of labor, capital and raw materials.

Over the entire project life, greater than fifty years, the now vacant land will be converted to urban uses. The use of this land for residences will remain unless the structures were demolished or there were to be a change in the land use.

The labor and materials for the construction of the project will be irretrievably committed. The human resources and energy expended to maintain and service the project would be irretrievable.

The state and local governments have a long-term financial committment to public facilities, services and programs in the area, such as fire, police and recreational programs.

Short Term Uses · Long Term Productivity

8

SECTION 8

THE RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

This section will include a brief discussion of the extent to which the action involves the trade-off between short-term environmental gain at the expense of long-term losses, or visa versa, and a discussion of the extent to which the action forecloses future options, narrows the range of beneficial uses of the environment, or poses long-term risks to health and safety.

The implementation of the proposed project will have short-term environmental impacts. These impacts are related to the construction phase of the project. The short-term impacts will result in increased air pollution from dust, noise, minor traffic disruptions. The clearing activities will remove the existing vegetation. The wildlife habitat, even though not a significant habitat, will be removed from use by the birds and other animals.

The proposed project does not pose long-term risks to health and safety. The proposed sewer, drainage, and access improvement will mitigate any long-term risks to health and safety of the future residents. Furthermore, the project site will continue to be controlled by applicable governmental regulations.

Government Polices to Offset Adverse Effects

9

SECTION 9

AN INDICATION OF WHAT OTHER INTERESTS AND CONSIDERATIONS OF GOVERNMENTAL POLICIES INVOLVED TO OFF-SET THE ADVERSE ENVIRONMENTAL AFFECTS OF THE PROPOSED ACTION

As indicated in a previous section, "Anticipated Environmental Impacts and Mitigative Measures to Minimize Adverse Impacts," adverse impacts will be associated with the construction of the on-site water, sewer, drainage, and road systems. Sufficient government controls as mandated by the grading plans and subdivision plans will be enforced to mitigate any adverse environmental impacts.

The project area is located between two existing residential areas which have numerous years and have not resulted in any discernable significant long-term adverse impacts. The proposed use of the area for housing is in compliance with government plans for the area, and will help meet some of the housing needs of the area.

The project is of a magnitude which will result in significant economic benefits for the community, in terms of jobs, etc., it will generate additional tax revenues as a result of the conversion of the unused vacant parcel of land into house lots.

Approvals

10

SECTION 10

LIST OF NECESSARY APPROVALS

The preliminary plan as presently proposed, has been accepted and approved by the HHA. It has also received a resolution in support of the project by the Maui County Council. In addition, numerous meetings were held with various affected departments and the administration of Maui County.

To the extent that the project is non-conforming to County of Maui standards, the HHA will seek to effect the exemption of the project therefrom under the provisions of Chapter 359G of the HRS which requires, among other things, the prior approval of the project by the legislative body of the county in which the project is to be developed.

AGENCY	PERMIT	STATUS
State HHA	Preliminary Plan Approval	Approved
Maui County Council	Conceptual Plan Approval	Approved
	Final Plan Approval	Pending
Governor State of Hawaii	Environmental Impact Statement	Pending
Maui County (Permits)	Grading	Pending
	Subdivision	Pending
	Electrical	Pending
	Water	Pending
	Sewer	Pending

Organizations and Persons Consulted

11

SECTION 11

ORGANIZATIONS AND PERSONS CONSULTED DURING THE PREPARATION NOTICE PHASE

The following list includes those agencies and organizations to whom Preparation Notices were sent or comments received during the review process. Those with an asterisk sent in written comments, and the comments and corresponding responses are presented on the indicated pages.*

	Page
Federal	
U.S. Army Corps of Engineers	
*U.S. Department of Agriculture, Soil Conservation Service	11-3
U.S. Department of Interior, Fish and Wildlife Services	
U.S. Department of Housing and Urban Development	
*U.S. Geological Survey	11-4
State	
Department of Agriculture	
Department of Education	
*Department of Health	11-5
*Department of Land and Natural Resources	11-6
Department of Planning and Economic Development	
Department of Transportation	
*Office of Environmental Quality Control	11-9
Department of Hawaiian Home Lands	
*Environmental Center (U.H.)	11-10
Water Resources Research Center (U.H.)	
County of Maui	
*Mayor's Office	11-13
County Council	
*Department of Human Concerns	11-14
*Department of Public Works	11-16
*Department of Water Supply	11-19
Department of Parks and Recreation	
*Planning Department	11-20
Maui County Fire Department	
*Maui County Police Department	11-23
Department of Economic Development	
County Council	
Others	
Hawaiiana Investment Co. Inc.	
ILWU	
Waiehu Heights Assoc. (c/o Kay Abdul Realtors, Inc.)	
ILWU Local 42	

Page

Others Cont'd

Paukukalu Hawaiian Homes Association
*Maui Electric 11-25
*Hawaiian Telephone Co. 11-27
*Kay Abdul Realtors, Inc. 11-29
*The Sierra Club 11-30

United States Department of Agriculture

Soil Conservation Service

P.O. Box 50004
Honolulu, Hawaii
96850

Jun 3 10 39 '83

June 7, 1983

Hawaii Housing Authority
P.O. Box 17907
Honolulu, Hawaii 96817

Dear Sir:

Subject: EIS Preparation Notice for the Waiehu Planned Development, Waiehu, Maui

We have no comments to make on subject notice.

Thank you for the opportunity to review the document.

Sincerely,

FRANCIS C.H. LUM
State Conservationist

11-3

GEORGE R. ARIYOSHI
Governor

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

Paul A. Tom
EXECUTIVE DIRECTOR

WILLIAM A. HALL
ASST. EXEC. DIRECTOR

IN REPLY REFER
TO: 83:DEV/3185

July 11, 1983

Mr. Francis C. H. Lum
State Conservationist
U. S. Department of Agriculture
Soil Conservation Service
P. O. Box 50004
Honolulu, Hawaii 96850

Dear Mr. Lum:

SUBJECT: Waiehu Planned Development Environmental Impact Statement Preparation Notice (Letter dated June 7, 1983)

We appreciate your review of the document; please be assured that your letter will be incorporated into the Environmental Impact Statement.

Sincerely,

Kenneth Harada
Original Signed

KENNETH HARADA
Project Coordinator

KH:jk

cc: ✓Environment Impact Study Corp. -
Mr. Marvin Miura

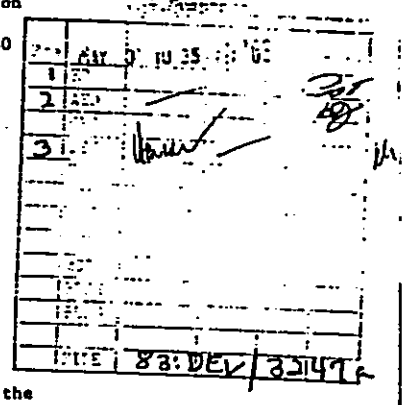
11-4

United States Department of the Interior

GEOLOGICAL SURVEY

Water Resources Division
P.O. Box 50166
Honolulu, Hawaii 96850

May 3, 1983



Mr. Rex D. Johnson
Assistant Executive Director
Hawaii Housing Authority
Department of Social Services and Housing
State of Hawaii
P. O. Box 17907
Honolulu, Hawaii 96817

Dear Mr. Johnson:

Subject: EIS Preparation Notice for the
Waiehu Planned Development, Waiehu, Maui

The Hawaii District Office of the U.S. Geological Survey, Water Resources Division, has reviewed the subject EIS preparation notice and has no comments at this time.

Thank you for giving us an opportunity to review the preparation notice.

Aloha,

for Stanley F. Kapustka
District Chief

GEORGE R. ARIYOSHI
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

Paul A. Tom
EXECUTIVE DIRECTOR

WILLIAM A. HALL
ASST. EXEC. DIRECTOR

IN REPLY REFER
TO: 83:DEV/3160

July 11, 1983

Mr. Stanely F. Kapustka
District Chief
U. S. Department of the Interior
Geological Survey
Water Resources Division
P. O. Box 50166
Honolulu, Hawaii 96850

Dear Mr. Kapustka:

SUBJECT: Waiehu Planned Development Environmental
Impact Statement Preparation Notice

We appreciate your review of the document and your letter will be incorporated into the Environmental Impact Statement. A copy will be sent to you.

Sincerely,

Kenneth Harada
Original Signed

KENNETH HARADA
Project Coordinator

KH:jk

cc: √Environment Impact Study Corp. -
Mr. Harvin Miura

GEORGE R. ARIYOSHI
GOVERNOR OF HAWAII

CHARLES G. CLARK
DIRECTOR OF HEALTH

JOHN P. CHALMERS, M.D.
DEPUTY DIRECTOR OF HEALTH

HENRY M. THOMPSON, M.A.
DEPUTY DIRECTOR OF HEALTH

MELVIN K. KOIZUMI
DEPUTY DIRECTOR OF HEALTH

ADELINA MADRID SHAW, M.A., J.D.
DEPUTY DIRECTOR OF HEALTH

In reply, please refer to:
File: EPHSD-SS

STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. BOX 3378
HONOLULU, HAWAII 96801-9904

May 16, 1983

Mr. Rex D. Johnson
Assistant Executive Director
Hawaii Housing Authority
Department of Social Services
and Housing
P. O. Box 17907
Honolulu, Hawaii 96817

Dear Mr. Johnson:

Subject: Request for Comments on Proposed Environmental Impact Statement (EIS) for Waiehu Planned Development, Waiehu, Maui

Thank you for allowing us to review and comment on the subject proposed EIS. Please be informed that we do not have any comments or objections to this project at this time.

We realize that the statements are general in nature due to preliminary plans being the sole source of discussion. We, therefore, reserve the right to impose future environmental restrictions on the project at the time final plans are submitted to this office for review.

Sincerely,

MELVIN K. KOIZUMI
Deputy Director for
Environmental Health

GEORGE R. ARIYOSHI
GOVERNOR

Paul A. Tom
EXECUTIVE DIRECTOR

WILLIAM A. HALL
ASST. EXEC. DIRECTOR

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

IN REPLY REFER TO:

July 11, 1983

MEMORANDUM

TO: The Honorable George G. Clark, Director
Department of Health

ATTN: Mr. Melvin K. Koizumi, Deputy Director
Environmental Protection and Health Services Division

FROM: Rex D. Johnson, Assistant Executive Director

SUBJECT: Waiehu Planned Development Environmental Impact Statement Preparation Notice
EPHSD-SS (May 16, 1983)

We appreciate your review of the document; please be assured that your letter will be incorporated into the Environmental Impact Statement and a copy will be sent to you.

REX D. JOHNSON
Original Signed
Assistant Executive Director

RH:jk

cc: √Environment Impact Study Corp. -
Mr. Marvin Miura

GEORGE R. ARIYOSHI
Governor of Hawaii

SUSUMU ONO, Chairman
Board of Land & Natural Resources
EDGAR A. HARASU
Deputy to the Chairman

DIVISIONS:
AQUACULTURE DEVELOPMENT PROGRAM
AQUATIC RESOURCES
CONSERVATION AND RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

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

MAY 12 1983

Your: 83:DEV/1643

Honorable Paul A. Tom
Executive Director
Hawaii Housing Authority
P. O. Box 17907
Honolulu, Hawaii 96817

Attention: Mr. Ken Harada

Dear Mr. Tom:

Thank you for notifying us that an environmental impact statement is being prepared for the Waiehu housing project. We have a number of concerns which the statement should address.

Historic Sites:

We feel that adequate archaeological work, including survey and testing, has been conducted to insure that no known cultural resources will be impacted during the construction of this project. However, we concur that there is a high probability that grading and trenching during construction may uncover burials that cannot be located at the level of the testing performed. If any cultural remains or burials are uncovered during construction, work should be stopped in that area and our historic sites office in Honolulu (548-6408) should be notified immediately. Hawaii Housing Authority should be prepared to contact an archaeologist, as well as our historic sites office, in the event that any previously unidentified sites or remains are encountered.

Recreation:

There are no known public recreation concerns other than to protect the integrity of Halekii-Pihana State Monument. The subject development does not abut this State park, but is nearby at the mauka end of the park. The undeveloped land around the park is needed for a buffer. Archaeologic work in the area may be of value in understanding and interpreting the heiaus.

Ownership:

The site is presently owned by the State of Hawaii. There should be an explanation in the environmental impact statement indicating how Hawaii Housing Authority intends to acquire the property.

Sincerely,

SUSUMU ONO
Chairman of the Board
and
State Historic Preservation Officer

GEORGE R. ARIYOSHI
Governor

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

Paul A. Tom
Executive Director

WILLIAM A. HALL
Dep. Exec. Director

IN REPLY REFER TO:

July 14, 1983

MEMORANDUM

TO: The Honorable Susumu Ono, Chairman of the Board and
State Historic Preservation Officer
Department of Land and Natural Resources

FROM: Rex D. Johnson, Assistant Executive Director

SUBJECT: Waiehu Planned Development Environmental Impact
Statement Preparation Notice

We appreciate your review of the document and your continued valuable input. The following responses are provided to your comments.

Comment: "Historic Sites:"

"We feel that adequate archaeological work, including survey and testing, has been conducted to insure that no known cultural resources will be impacted during the construction of this project. However, we concur that there is a high probability that grading and trenching during construction may uncover burials that cannot be located at the level of the testing performed. If any cultural remains or burials are uncovered during construction, work should be stopped in that area and our historic sites office in Honolulu (548-6408) should be notified immediately. Hawaii Housing Authority should be prepared to contact an archaeologist, as well as our historic sites office, in the event that any previously unidentified sites or remains are encountered."

Response:

We will be prepared to stop work (in affected area) in the event previously unidentified cultural remains or burials are uncovered during construction. Your office and an archaeologist would then be contacted immediately after such findings.

Comment: "Recreation:"

"There are no known public recreation concerns other than to protect the integrity of Halekii-Pihana State Monument. The subject development does not abut this State park, but is nearby at the mauka end of the park. The undeveloped land around the park is needed for a buffer. Archaeologic work in the area may be of value in understanding and interpreting the heiaus."

Response:

We have instructed the consultants to work with your staff to clarify and identify the need for a buffer.

Comment: "Ownership:"

"The site is presently owned by the State of Hawaii. There should be an explanation in the environmental impact statement indicating how Hawaii Housing Authority intends to acquire the property."

Response:

The exact details and conditions for the acquisition of the land from the State will be explained in the EIS.

Your letter will be incorporated into the Environmental Impact Statement and a copy will be sent to you.

REX D. JOHNSON
Original Signed
Assistant Executive Director

*d:jk

cc: √Environment Impact Study Corp. -
Mr. Marvin Miura
Woolsey, Miyabara & Associates, Inc. -
Mr. Michael Miyabara

MAY 16 2 53 PM '83

STP
8.9052

May 12, 1983

11-8

MEMORANDUM

TO: Mr. Rex D. Johnson, Ass't. Executive Director
Department of Social Services and Housing
Hawaii Housing Authority

FROM: Director of Transportation

SUBJECT: EIS PREPARATION NOTICE FOR THE WAIEHU PLANNED DEVELOPMENT, WAIEHU, MAUI

Thank you for the opportunity to review and comment on the subject document.

The traffic assessment presented in the EIS Preparation Notice appears to be reasonable. We concur that the State facilities in the area should be able to adequately accommodate the proposal.

Ryokichi Higashionna

Ryokichi Higashionna

GEORGE R. ARIYOSHI
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

Paul A. Tom
EXECUTIVE DIRECTOR

WILLIAM A. HALL
ASST. EXEC. DIRECTOR

IN REPLY REFER
TO:

July 11, 1983

MEMORANDUM

TO: The Honorable Ryokichi Higashionna, Ph.D., Director
Department of Transportation

FROM: Rex D. Johnson, Assistant Executive Director

SUBJECT: Waiehu Planned Development Environmental Impact Statement Preparation Notice

We appreciate your review of the document and your continued valuable input. We offer the following response to your comment.

Comment

"The traffic assessment presented in the EIS Preparation Notice appears to be reasonable. We concur that the State facilities in the area should be able to adequately accommodate the proposal."

Response

Thank you for confirming that the State facilities in the area should be able to accommodate the additional traffic.

We have requested the project engineer to coordinate the preliminary plans with your department.

Your letter will be incorporated into the Environmental Impact Statement and a copy will be sent to you.

REX D. JOHNSON
Original Signed
Assistant Executive Director

KH:jk

cc: √ Environment Impact Study Corp. -
Mr. Marvin Miura

GEORGE R. ARIYOSHI
GOVERNOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
500 ALEXANDRIA STREET
ROOM 301
HONOLULU, HAWAII 96813

JACQUELINE PARNELL
DIRECTOR
TELEPHONE NO.
548-6915

HOUSING AUTHORITY
MAY 24 1 37 PM '83

May 23, 1983

11-9

Mr. Ken Harada
Hawaii Housing Authority
P.O. Box 17907
Honolulu, Hawaii 96817

Dear Mr. Harada:

Subject: EIS Preparation Notice for the Waiehu Planned Development, Waiehu, Maui

We have reviewed your preparation notice and have no substantive comments at the present time.

Sincerely,

Jacqueline Parnell

Jacqueline Parnell
Director

GEORGE R. ARIYOSHI
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

Paul A. Tom
EXECUTIVE DIRECTOR
WILLIAM A. HALL
ASST. EXEC. DIRECTOR

IN REPLY REFER
TO:

July 11, 1983

MEMORANDUM

TO: The Honorable Jacqueline Parnell, Director
Office of Environmental Quality Control

FROM: Rex D. Johnson, Assistant Executive Director

SUBJECT: Waiehu Planned Development Environmental Impact Statement Preparation Notice (Letter dated May 23, 1983)

We appreciate your review of the document; please be assured that your letter will be incorporated into the Environmental Impact Statement and a copy will be sent to you.

REX D. JOHNSON
Original Signed
Assistant Executive Director

RDJ:jk

cc: Environment Impact Study Corp. -
Mr. Marvin Miura

University of Hawaii at Manoa

Environmental Center
Crawford 317 • 2550 Campus Road
Honolulu, Hawaii 96822
Telephone (808) 948-7361

May 20, 1983
PN:0022

Mr. Ken Harada
Hawaii Housing Authority
P.O. Box 17907
Honolulu, Hawaii 96817

11-10

Dear Mr. Harada:

EIS Preparation Notice
Waiehu Planned Development
Waiehu, Maui

Thank you for the opportunity to review the above cited document. The Environmental Center has done a brief in-house staff assessment of the types of concerns most frequently cited for projects of this nature. Our standard, broad based University review will be undertaken at the draft EIS stage.

Archaeology Section

Given the conclusions presented in Appendix B with regard to the high potential for burials in the sand dune formations, the statement in paragraph 1, page 4-9 stating "the absence of surface archaeological sites precludes impacts" may be inappropriate. As mentioned, in Appendix B, page 11, "sand dunes were always prime areas for burials, and this possibility for the study area is intensified by the high quality of the surrounding cultural land." We suggest that subsurface testing be conducted in the dune area and the locations and results be presented in the DEIS. A reconnaissance survey of coring and/or test pit excavation at dune sites planned to be impacted during site grading and ground preparation may reduce or prevent damage to potentially valuable archaeological remains present and help to avoid costly delays in construction should burials be encountered. We further suggest that section 4-9 dealing with the probable environmental impacts be expanded in the DEIS to reflect the information and conclusions drawn by the consultant who prepared Appendix B.

Biological Parameters

It would be helpful if an expansion and discussion were provided as to the significance of the species lists in Appendix A to the biological ecosystem. A summary of what the identified species relationships are to the proposed project would also be helpful.

Appendix D

Many of the possible cost reduction methods described in Appendix D may result in significantly lower standard[illegible] for residents. This [illegible]

that the DEIS discuss, for example: the social impacts of crowding lower income families with traditionally larger families into smaller lots with less open space; the possible safety hazards for children and adult pedestrians resulting from the elimination of curbs and sidewalks; the increase in future use and maintenance problems as a result of reduced sewer pipe size; the effect of greater fire hydrant spacing on fire safety and fire insurance rates; the aesthetic and safety considerations associated with overhead utilities (utility poles create even more hazard on substandard streets). If the suggested cost reduction methods are included in the DEIS and are going to be considered a viable alternative of the official plan for development, than a full and complete analysis needs to be provided in the DEIS of their physical and social impacts on the potential inhabitants of the project.

Agriculture

State policy strongly promotes the conservation of agricultural lands and the development and growth of diversified agriculture to reduce Hawaii's dependance on importation of agricultural products. It appears that the land to be developed is similar to adjoining agricultural land zoned "other important agricultural land." It is stated, "the project site is located within state land use designation urban (U)" (p. 3-1). Yet, as can be noted in Figure 2-8 the parcel is surrounded on all except its makai side by predominantly prime agricultural lands. Thus the geographical location of this development conflicts with the land use policy of Maui county by accelerating urban encroachment on agricultural lands.

This development, although socially beneficial in view of the housing shortage for lower and middle income families on Maui, does have an impact on Hawaii's continually diminishing agricultural lands. In spite of the present urban zoning, development of this site for residential use will cause an irreversable loss of approximately 133.5 acres of potentially productive agricultural land. We suggest that loss of agricultural land should be addressed in the DEIS. To mitigate this loss, promotion of plantings that are food producing is suggested as a possibility. Edible landscaping is a way to blend land use into an environmentally, economically as well as asthetically beneficial compromise.

Traffic

The level of service for the design capacity indicated should be included in the DEIS.

General comments

Since the project is to meet the low and moderate income and gap group housing needs, it may be valuable to consider solar water heaters in the design. Conservation of energy as well as long term economic savings have potential if the solar characteristics of the site are appropriate. The DEIS could address this possibility and provide the necessary climatic information to indicate whether or not solar water heating is feasible.

Yours truly,

Doak C. Cox
Director

cc: Jacquelin Miller
[illegible]

GEORGE R. ARIYOSHI
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

Paul A. Tom
EXECUTIVE DIRECTOR

WILLIAM A. HALL
ASST. EXEC. DIRECTOR

IN REPLY REFER
TO:

July 12, 1983

MEMORANDUM

TO: Dr. Doak C. Cox, Director
University of Hawaii at Manoa - Environmental Center

FROM: Rex D. Johnson, Assistant Executive Director

SUBJECT: Waiahu Planned Development Environmental Impact Statement Preparation Notice (Letter dated May 20, 1983)

We appreciate your interest in the project. The following responses are provided in the same order of your comments.

Comment: "Archaeology Section"

Response:

The consultant responsible for the preparation of the Environmental Impact Statement for this project also prepared the archaeological reconnaissance. Since 1981, additional archaeological work was conducted in the adjacent area, including subsurface testing and monitoring during ground clearing and excavation activities. Based on the onsite observation and monitoring, the archaeologist does not recommend subsurface testing in the dune area and is in agreement with the statement found on page 4-9.

Comment: "Biological Parameters"

Response:

When applicable and possible, information on the significance of the species list in Appendix A to the biological ecosystem will be included and summarized in the text.

11-11

Comment: "Appendix D"

Response:

The cost reduction items are preliminary and no firm decision has been made as to which items will be implemented.

Each item described in the appendix will be studied and evaluated before implementation. The cost saving items will not lower the standard of living nor will safety and health standards be compromised.

We will be happy to discuss in detail the cost saving items, the reasons for existing standards and the proposed cost saving measures which can be implemented without sacrificing safety or health standards.

The primary objective of the proposed project is to provide shelter for people, we believe that this can only be accomplished by using innovative planning and construction designs to reduce project costs.

We further believe that social impacts of crowding exists on Maui for a certain segment of the society because many families are required to live under one roof. This project can only help to alleviate this undesirable situation.

Comment: "Agriculture"

Response:

We believe that the land use question of urban encroachment on agriculture land should be handled on a case by case basis and that the proper forum for this discussion is at the State land use level and should be handled by the Land Use Commission, the County Planning Commission and the appropriate line agencies.

The proposed project conforms to applicable planning documents.

Comment: "Traffic"

Response:

The level of service for the design capacity has not been evaluated by a traffic engineer. It is estimated that the

existing level of service is B; during the first phase of the project, the level of service will drop to C and during peak hours may drop to D.

Comment: "General Comments"

Response:

The first priority of the project, and the major cost item is the construction of the building. The inclusion of solar heaters or heat pumps will be considered during the final design phase. The use of solar hot water heaters is possible and currently used by individuals in the adjacent areas.

11-1

Please contact Kenneth Harada, Project Coordinator, should you require clarification and if a meeting is required to provide additional information.

REX D. JOHNSON
Original Signed
Assistant Executive Director

:lrjk

cc: ✓Environment Impact Study Corp. -
Mr. Harvin Miura

HANNIBAL TAVARES
Mayor
TELEPHONE 244-7888

OFFICE OF THE MAYOR
COUNTY OF MAUI
WAILUKU, MAUI, HAWAII 96793

RECEIVED
HAWAII HOUSING AUTHORITY
APR 29 10 55 AM '83

April 26, 1983

Mr. Ken Harada
Hawaii Housing Authority
P. O. Box 17907
Honolulu, Hawaii 96817

Dear Mr. Harada:

Re: EIS Preparation Notice
Waiehu Planned Development, Waiehu, Maui

This is to acknowledge receipt of the EIS Preparation Notice for the subject housing project.

We will reserve our comments upon review of the pending EIS.

Very truly yours,

Ralph Masuda

RALPH MASUDA
Executive Assistant

Suspense

Rts		Info Comment	Coord	Act	Init
1	ED				
2	AED	✓			
	CFO		✓		
3	DEV			✓	
	ENG				
	FIN				
	LPDF				
	LEGAL				
	WOT				
	PERS				
	PLNG				
	FILE	83:DEV/3121a			

11-13

GEORGE R. ARIYOSHI
Governor

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

Paul A. Tom
Executive Director

William A. Hall
Asst. Exec. Director

IN REPLY REFER
TO:
83:DEV/3163

July 11, 1983

Mr. Ralph Masuda
Executive Assistant
Office of the Mayor
County of Maui
Wailuku, Maui, Hawaii 96793

Dear Mr. Masuda:

SUBJECT: Waiehu Planned Development Environmental Impact Statement Preparation Notice

Your letter dated April 26, 1983 will be incorporated into the Environmental Impact Statement and a copy will be sent to you.

We look forward to receiving your comments on the Environmental Impact Statement.

Sincerely,

Kenneth Harada
Original Signed

KENNETH HARADA
Project Coordinator

KH:jk

cc: ✓ Environment Impact Study Corp. -
Mr. Marvin Miura

DEVELOPMENT COPY

HANNIBAL TAVARES
Mayor

VINCE BAGOYO, JR.
Director of Human Concerns
Phone: 244-7805

County of Maui
DEPARTMENT OF HUMAN CONCERNS
200 South High Street
Wailuku, Maui, Hawaii 96793

April 28, 1983

Rte		Subject: EIS Comment
1	ED	
2	AED	✓ 30
	CPO	
3	DEV	✓
	SHG	
	FIS	
	LROP	
	LEGAL	
	MGT	
	P&RS	
	FLPG	
	FILE	83:DEV/3206

Mr. Kenneth Harada
Project Coordinator
Hawaii Housing Authority
Department of Social Services
and Housing
State of Hawaii
P. O. Box 17907
Honolulu, Hawaii 96817

11-14

Dear Mr. Harada:

Subject: EIS Preparation Notice for the Waiehu Planned Development

We have reviewed your EIS Preparation Notice for the Waiehu Planned Development and would like to offer the following comments:

1. Page 1-3, Paragraph IIIA - The total project cost estimate should be $69,060,000 instead of $61,060,000. JUN 2 0 1983

2. Page 11-1, Under County of Maui - The Department of Planning should be listed on a separate line from the Department of Human Concerns. JUN 2 0 1983

3. Page C-15 (Existing Public Housing Projects - Maui County). The information should be amended by adding the following: JUN 2 0 1983

Project	Program Assistance	No. of Units
Hale Mahaolu-Phase II	HUD 202/8	180
Molokai Elderly	HUD 202/8	80
Molokai Puu Hauoli	FmHA 502	90
Lanai Lalakoa II	FmHA 502 & HUD	57
Waiehu Ho'hui Ana	FmHA 502	65

4. Page C-16 (Planned Public Housing Projects - Maui County). The information should be revised as follows: JUN 2 0 1983

   a. West Maui Housing Project - Planned units is 72.

   b. Lahaina Housing Project - Estimated planned units is 120.

   c. Upper Paia Housing Project - Planned units is 207.

   d. Luana Gardens-Phase I Subdivision - Planned units is 88.

   e. Luana Gardens - Phase II Housing Project - Now available units is 60.

   f. Luana Gardens-Phase III Housing Project - Now available units is 62.

   g. Kahului Housing Project (Hale Laulea) - Planned units is 64.

Please call Mr. Edwin Okubo of our Housing Division if you have any question.

Very truly yours,

VINCE BAGOYO, JR.
Director of Human Concerns

cc: Mr. Edwin Okubo

GEORGE R. ARIYOSHI
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

Paul A. Tom
EXECUTIVE DIRECTOR

WILLIAM A. HALL
ASST. EXEC. DIRECTOR

IN REPLY REFER
TO: 83:DEV/3159

July 11, 1983

11-15

Mr. Vince Bagoyo, Jr.
Director
Department of Human Concerns
County of Maui
200 South High Street
Wailuku, Maui, Hawaii 96793

Dear Mr. Bagoyo:

SUBJECT: Waiehu Planned Development Environmental Impact Statement Preparation Notice

We appreciate your review of the document and your continued valuable input.

The comments and corrections contained in your letter dated April 28, 1983 will be incorporated in the Environmental Impact Statement and a copy will be sent to you.

Sincerely,

Kenneth Harada
Original Signed

KENNETH HARADA
Project Coordinator

KH:jk

cc: Environment Impact Study Corp. -
Mr. Marvin Miura

HANNIBAL TAVARES
Mayor

RALPH HAYASHI, P.E.
Director of Public Works

LESTER NAKASATO, P.E.
Deputy Director of Public Works

COUNTY OF MAUI
DEPARTMENT OF PUBLIC WORKS
200 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793

DIVISIONS
Engineering
Highway Construction and Maintenance
Land Use and Codes Administration
Waste Management

May 20, 1983

Mr. Ken Harada, Project Coordinator
Hawaii Housing Authority
P. O. Box 17907
Honolulu, HI 96817

II-16

Subject: EIS Preparation Notice for the
Waiehu Planned Development, Waiehu, Maui

Dear Mr. Harada:

The following is our comments on the proposed project.

1) There should be additional discussion on Access and Traffic as follows:

   A. Interconnection of internal streets to adjoining subdivisions and future stubout to Piihana Road.

   B. Use of Paukukalo Park and access from development.

2) The inclusion of Appendix D on cost savings raises numerous questions of its intent within the document as leading to actual implementation or being merely informational.

   The appendix refers to numerous exhibits which were not included in the document. The appendix discusses only the short-term cost savings and does not address the long-term costs.

   For example, the combination of reducing rainfall intensity and eliminating curbs and gutters could lead to serious erosion and subsequent liability and maintenance problems. The use of sub-minimum pipe sizes may lead to future matching/replacement problems as well as presenting cleaning difficulties and added costs.

3) The discussion on Liquid Wastes needs elaboration. The system was found to be inadequate in 1980.

4) The information contained in Appendix C appears dated and needs updating. A few examples are as follows:

   A. Page C-11, last paragraph.
   B. Page C-13, Table 7.
   C. Page C-14, last paragraph.
   D. Pages C-16, 17, 18, Tables 9, 10, 11, respectively.

5) In a general observation the Notice also contains numerous misspellings/typos and inconsistencies that need correction. A few examples follow.

   A. Calling the area leeward in page 2-10.
   B. 10 year fiscal year (1972-1982) on page 1-1.
   C. On page 2-34, Table 2-9, what column is correct for the years 1979, 1980, and 1981?
   D. On page 4-7 using 820 units for water consumption computation.

Thank you for the opportunity to comment. We will be available to consult with you in the preparation of the EIS.

Very truly yours,

RALPH HAYASHI
Director of Public Works

SSG:gs

GEORGE R. ARIYOSHI
Governor

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

Paul A. Tom
EXECUTIVE DIRECTOR

WILLIAM A. HALL
ASST. EXEC. DIRECTOR

IN REPLY REFER
TO: 03:DEV/3203

July 12, 1983

Mr. Ralph Hayashi, Director
Department of Public Works
County of Maui
200 South High Street
Wailuku, Maui, Hawaii 96793

11-17

Attention: Mr. Stanley Goshi

Dear Mr. Hayashi:

SUBJECT: Waiehu Planned Development Environmental Impact Statement Preparation Notice (Letter dated May 20, 1983)

We appreciate your interest in the project. The following are responses to your comments.

Comment:

"1) There should be additional discussions on Access and Traffic as follows:

A. Interconnection of internal streets to adjoining subdivisions and future stubout to Piihana Road.

B. Use of Paukukalo Park and access from development."

Response:

There will be no interconnection between the adjacent Waiehu Heights and Hawaiian Homes Subdivisions.

Paukukalo Park will not be used by the residents of the proposed project. Park and recreational facilities will be provided within the project site.

Comment:

"2) The inclusion of Appendix D on cost savings raises numerous questions of its intent within the document as leading to actual implementation or being merely informational."

Response:

The inclusion of the information contained in Appendix D on the cost savings is intended to give the reader some background information on the preliminary plans to save on the construction costs without sacrificing health and safety requirements.

The exhibits referred to in the Appendices were not included because the actual reports were lengthly and the reproduction costs would have been significant. The copies of the two documents are available for your use.

The long-term maintenance costs are not addressed in the appendices nor the documents. The actual costs have not been calculated but you are correct in that there will be slightly higher maintenance costs over the life of the project.

Comment:

"The appendix refers to numerous exhibits which were not included in the document. The appendix discusses only the short-term cost savings and does not address the long-term costs."

"For example, the combination of reducing rainfall intensity and eliminating curbs and gutters could lead to serious erosion and subsequent liability and maintenance problems. The use of sub-minimum pipe sizes may lead to future matching/replacement problems as well as presenting cleaning difficulties and added costs."

Response:

We do not anticipate serious erosion problems nor liability and significant maintenance problems. We have never advocated the use of sub-minimum pipe sizes, the size of the pipes is based on hydraulic calculations which determines the optimum size of the pipe for any given situation.

Comment:

"3) The discussion on Liquid Wastes needs elaboration. The system was found to be inadequate in 1980."

Response:

We have instructed the consulting engineer to meet with your staff to determine the status of the sewer lines.

Comment:

"4) The information contained in Appendix C appears outdated and needs updating."

Response:

The information contained in the Appendix was used in the EIS Preparation Notice as background information. This information was extracted from two documents prepared in 1981 and used for the preliminary evaluation of the project. The project is still viable and needed even if the information were to be updated.

Comment:

"In a general observation the Notice also contains numerous misspellings/typos and inconsistencies that need correction."

Response:

The document will be revised.

Please contact Kenneth Harada, Project Coordinator, if specific information is needed. I have requested the consulting engineer to meet with your staff to clarify specific items prior to the preliminary engineering plans.

Your letter will be incorporated into the Environmental Impact Statement and a copy will be sent to you.

I would like to personally thank you for taking the time to meet with our consultants.

Sincerely,

REX D. JOHNSON
Original Signed

REX D. JOHNSON
Assistant Executive Director

RDJ:jk

MAY 10 11 35 AM '83

DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
P. O. BOX 1109
WAILUKU, MAUI, HAWAII 96793

May 5, 1983

Hawaii Housing Authority
Department of Social Services
& Housing
State of Hawaii
P. O. Box 17907
Honolulu, HI 96817

II-19

Subject: EIS PREPARATION NOTICE FOR THE
WAIEHU PLANNED DEVELOPMENT
WAIEHU, MAUI - TMK 3-3-01:10 & 92

Gentlemen:

Please be advised that we do not have any comments on the subject notice.

Sincerely,

William S. Haines
Director

CK/tm

Suspense

Rte		Info Comment	Coord	Act	Init
	ED				
1	AED				
	CFO				
2	DEV				
	ENG				
	SYS				
	LDEF				
	LEGAL				
	MGT				
	PERS				
	PLNG				
	FILE	83:DEV/3380a			

DEVELOPMENT COPY

GEORGE R. ARIYOSHI
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

Paul A. Tom
EXECUTIVE DIRECTOR

WILLIAM A. HALL
ASST. EXEC. DIRECTOR

IN REPLY REFER
TO: 83:DEV/3158

July 11, 1983

Mr. William S. Haines
Director
Department of Water Supply
County of Maui
P. O. Box 1109
Wailuku, Maui, Hawaii 96793

Dear Mr. Haines:

SUBJECT: Waiehu Planned Development Environmental
Impact Statement Preparation Notice

We appreciate your review of the document and your continued valuable input.

Your letter will be incorporated into the Environmental Impact Statement and a copy will be sent to you.

Sincerely,
Kenneth Harada
Original Signed

KENNETH HARADA
Project Coordinator

KH:jk

cc: Environment Impact Study Corp. -
Mr. Marvin Miura

MAUI PLANNING COMMISSION
Stanley Okamoto, Chairman
Victoria Chung, Vice Chairman
Zadoc Brown
Joseph Felipe
Joseph J. Franco
David T. Fukuda
Lon Z. Halog
Marlene Kaaihue
Roy Suda
Ralph Hiyashi, Ex-Officio
William Haines, Ex-Officio

RECEIVED
HAWAII HOUSING
AUTHORITY
MAY 23 10 54 AM '83

COUNTY OF MAUI
PLANNING DEPARTMENT
200 S. HIGH STREET
WAILUKU, MAUI, HAWAII 96793

HANNIBAL TAVARES
Mayor

TOSH ISHIKAWA
Planning Director

CHRISTOPHER L. HART
Deputy Planning Director

May 19, 1983

Mr. Rex D. Johnson
Assistant Executive Director
Hawaii Housing Authority
P. O. Box 17907
Honolulu, HI 96817

Attn: Mr. Ken Harada

Dear Mr. Johnson:

Re: Waiehu Planned Development - EIS Preparation Notice

The Maui County Planning Department offers the following comments regarding the proposed project at Waiehu, Maui:

1. The proposed project should be fully described in terms of phasing, densities, zero lot line concept, subdivision layout, elderly and rental housing as well as amenities, infrastructure and cost reduction measures.

2. The section on the description of the affected environment (section 2) needs to be updated regarding drainage, mineral resources, liquid and solid waste, population/demographics, etc.

3. In relating the proposed project to land use plans, policies and controls, section 3 should be expanded to relate to the existing Wailuku-Kahului General Plan and to the Wailuku-Kahului Urban Complex. In addition, the report should show a relationship of the proposed project with the State Housing Plan and County General Plan.

4. Section 4 relating to probable environmental effects needs to be reviewed to correct statements that are inaccurate.

5. The statement relating to density in Section 6 should be related to the Wailuku-Kahului Community Plan recommendations.

6. Section 11 - Other organizations such as the Hawaii National Guard, County Department of Parks & Recreation and Paukukalo Hawaiian Homes Association should be consulted.

7. Appendix Section - If appendix "C" is to be included in the EIS, it should be updated. Appendix "D" should be revised to indicate the most probable cost reduction methods that Hawaii Housing Authority will pursue. Further, the references cited in this appendix should be included to avoid confusion.

Thank you for the opportunity to review and comment on the proposed action. Should there be any questions, please contact me at any time.

Very truly yours,

TOSH ISHIKAWA
Planning Director

JC:hk

GEORGE R. ARIYOSHI
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

Paul A. Tom
HOUSING DIRECTOR

WILLIAM A. HALL
ASST. HSG. DIRECTOR

IN REPLY REFER
TO: 83:DEV/3202

July 12, 1983

Mr. Tosh Ishikawa
Planning Director
County of Maui
Planning Department
200 South High Street
Wailuku, Maui, Hawaii 96793

11-21

Dear Mr. Ishikawa:

SUBJECT: Waiehu Planned Development Environmental Impact Statement Preparation Notice (Letter dated May 19, 1983)

We appreciate your interest in the project. Your valuable comments have been reviewed and we have the following responses to offer:

Comment:

"1. The proposed project should be fully described in terms of phasing, densities, zero lot line concept, subdivision layout, elderly and rental housing as well as amenities, infrastructure and cost reduction measures."

Response:

Additional information will be provided as you have suggested.

Comment:

"2. The section on the description of the affected environment (section 2) needs to be updated regarding drainage, mineral resources, liquid and solid waste, population/demographics, etc."

Response:

Where applicable and if information is available, the document will be revised.

Comment:

"3. In relating the proposed project to land use plans, policies and controls, section 3 should be expanded to relate to the existing Wailuku-Kahului General Plan and to the Wailuku-Kahului Urban Complex. In addition, the report should show a relationship of the proposed project with the State Housing Plan and County General Plan."

Response:

Section 3 of the report will be revised following your suggestions.

Comment:

"4. Section 4 relating to probable environmental effects needs to be reviewed to correct statements that are inaccurate."

Response:

Section 4 will be reviewed and updated as required.

Comment:

"5. The statement relating to density in Section 6 should be related to Wailuku-Kahului Community Plan recommendations."

Response:

The density statement found in Section 6 will be revised and related to the Wailuku-Kahului Community Plan recommendations.

Comment:

"6. Section 11 - Other organizations such as the Hawaii National Guard, County Department of Parks & Recreation and Paukukalo Hawaiian Homes Association should be consulted."

Response:

The list will be updated.

Comment:

"7. Appendix Section - If appendix "C" is to be included in the EIS, it should be updated. Appendix "D" should be revised to indicate the most probable cost reduction methods that Hawaii Housing Authority will pursue. Further, the references cited in this appendix should be included to avoid confusion."

Response:

The information contained in Appendix C & D was included in the Preparation Notice to give the reviewer background information on the preliminary plans. The actual reports were not included because of length and reproduction costs. The two documents in their entirety will be made available to you, if requested.

The cost savings items contained in Appendix D are preliminary plans to save on the construction costs without sacrificing health and safety requirements.

The information contained in the appendices was extracted from documents prepared in 1981. The project is still viable and needed even if the information were to be updated.

Please contact Kenneth Harada, Project Coordinator, if specific information is needed, as I have requested the consulting engineer to meet with the County to clarify specific items prior to the preliminary engineering plans.

Your letter will be incorporated into the Environmental Impact Statement and a copy will be sent to you.

I would like to personally thank you for taking the time to meet with our consultants.

Sincerely,

REX D. JOHNSON
Original Signed
REX D. JOHNSON
Assistant Executive Director

KH:jk

cc: ✓Environment Impact Study Corp. -
Mr. Marvin Miura

POLICE DEPARTMENT
COUNTY OF MAUI
P. O. BOX 1029
WAILUKU, HAWAII 96793
AREA CODE (808) 244-7811

JOSEPH CRAVALHO
CHIEF OF POLICE

OUR REFERENCE
ST/yyc
YOUR REFERENCE

May 18, 1983

111-23

Mr. Kenneth Harada, Project Coordinator
Department of Social Services and Housing
The Hawaii Housing Authority
Post Office Box 17907
Honolulu, Hawaii 96817

Dear Mr. Harada:

SUBJECT: EIS Preparation Notice for the Waiehu Planned Development, Waiehu, Maui

Waiehu Planned Development proposes a land development for 134 acres of land located between Waiehu Heights and Hawaiian Homes subdivisions. The development will include 680 single family detached and single family zero lot line dwellings, 60 single story elderly housing and 60 rental apartments. The entire project is planned in three phases which will be completed in approximately ten to twenty years.

Law enforcement concerns with the proposed development includes (1) the effect of increased vehicular traffic on existing highways, (2) access to the proposed development, and (3) police service.

The first increment of the project will include about 150 units and the only access will be Waiehu Beach Road. Traffic survey conducted by Environmental Impact Study Corporation reveals vehicular traffic count on Waiehu Beach Road during peak hours is 523 vehicles in the morning and 587 vehicles in the afternoon. Waiehu Beach Road's design capacity for Kahekili Highway located west of the development is 1,500 vehicles and its peak hour vehicular traffic is 138 cars. Estimating two cars per family, the capacity for both highways is beyond the projected influx of traffic for the first increment. However, upon completion of the second and third phases of development, undoubtedly 800 units, with a corresponding increase in cars, will affect vehicular traffic. A second access to the development will be required.

According to the study, Kahekili Highway "at present is not accessible due to the existing sand dune and other lands under private ownership." The county is in favor of a commuter road between Waiehu Beach Road and Kahekili Highway. Also, other alternative routes such as Piihana Road is being considered. We should suggest that following the completion of the second phase of development, a second access be completed prior to proceeding to the third phase. Two routes to the area are essential so vehicles entering/exiting the subdivision during peak hours will not create traffic problems on either highway or feeder streets. In addition, response time for emergency vehicles will be shorter due to access from both Kahekili Highway and Waiehu Beach Road.

Police service to the area for the first and maybe second phase of development will not be affected. Police administrators may have to evaluate their deployment of manpower following the third phase of development.

One glaring shortcoming of this study is the lack of comments and data with respect to the impact of vehicular traffic from adjacent subdivisions on existing highways. Residents residing in Hawaiian Homes and Waiehu Heights subdivisions also utilize Waiehu Beach Road and Kahekili Highway. How many units will be or are planned for Waiehu Heights and Hawaiian Homes? How many additional vehicles can we expect on both roadways for these planned developments? Is there a time frame for the mentioned developments?

Thank you for the opportunity to submit comments on the planned developments.

Very truly yours,

JOSEPH CRAVALHO
Chief of Police

GEORGE R. ARIYOSHI
Governor

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

Paul A. Tom
Executive Director

WILLIAM A. HALL
Asst. Exec. Director

IN REPLY REFER
TO: 83:DEV/3136

July 11, 1983

Mr. Joseph Cravalho
Chief of Police
County of Maui
Wailuku, Maui, Hawaii 96793

Dear Mr. Cravalho:

SUBJECT: Waiehu Planned Development Environmental Impact Statement Preparation Notice (Letter dated May 18, 1983)

We appreciate your interest in the project. Your valuable comments have been reviewed and we have the following responses to offer:

Comment: "(1) the effect of increase vehicular traffic"
"(2) access to the proposed development"

Response:

We agree that a second access to the project site will be required prior to, or during, the construction of the second phase of the project.

The new access from Kahekili Highway will provide shorter response times for emergency vehicles and will help in alleviating traffic problems during peak hours.

Comments: "(3) police service"

Response:

We will provide estimates on future population which can be used by your department to evaluate the impacts of the project on police service.

11-24

Comment:

"One glaring shortcoming of this study is the lack of comments and data with respect to the impact of vehicular traffic from adjacent subdivisions on existing highways. Residents residing in Hawaiian Homes and Waiehu Heights Subdivisions also utilize Waiehu Beach Road and Kahekili Highway. How many units will be or are planned for Waiehu Heights and Hawaiian Homes? How many additional vehicles can we expect on both roadways for these planned developments? Is there a time frame for the mentioned developments?

Response:

The traffic impacts from the Waiehu Heights and Hawaiian Homes Subdivisions were not evaluated by a traffic engineer.

Please contact me should you have additional questions or if we can provide any additional information.

I would like to personally thank you for taking the time to meet with our environmental consultant.

Sincerely,

REX D. JOHNSON
Original Signed
REX D. JOHNSON
Assistant Executive Director

KH:jk

cc: ✓Environment Impact Study Corp. -
Mr. Marvin Miura

MAUI ELECTRIC COMPANY, LTD.

CUST
M-W

Suspense

Rts	Comment	Coord	Act	Init
1 ED				
2 ED				
3				

83 DEV 3683

April 27, 1983

STATE OF HAWAII
Dept. of Social Services and Housing
Hawaii Housing Authority
P. O. Box 17907
Honolulu, Hawaii 96817

ATTENTION: Mr. Ken Harada, Project Coordinator

SUBJECT: EIS Preparation Notice for the Waiehu Planned Development
Waiehu, Maui

This letter acknowledges receipt of your April 22, 1983 submittal for subject development.

We have reviewed your agency's EIS Preparation Notice and note that the proposed development area (Tax Map Key 3-3-01:10 and 90) will contain, when completed, approximately 800 units with a tentative completion timetable of 10 to 20 years.

We foresee no major problems at this time in providing electrical service as development occurs. We anticipate the respective engineering consultant will coordinate with our Company at the appropriate time regarding design coordination requirements for this development.

Enclosed is your EIS Preparation Notice booklet which we assume you wish to retain for your agency's use.

T. M. SATO
Manager, Engineering

TMS:rt

Enc.

DEVELOPMENT COPY

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

Paul A. Tom
EXECUTIVE DIRECTOR

IN REPLY REFER
TO: 83:DEV/3161

July 11, 1983

Mr. Tom Sato
Manager
Maui Electric Company, Ltd.
210 Kam Avenue
Kahului, Maui, Hawaii 96732

Dear Mr. Sato:

SUBJECT: Waiehu Planned Development Environmental Impact Statement Preparation Notice

We appreciate your valuable comments and offer the following responses.

Comment

"We have reviewed your agency's EIS Preparation Notice and note that the proposed development area (Tax Map Key: 3-3-01:10 and 90) will contain, when completed, approximately 800 units with a tentative completion timetable of 10 to 20 years."

"We foresee no major problems at this time in providing electrical service as development occurs. We anticipate the respective engineering consultant will coordinate with our Company at the appropriate time regarding design coordination requirements for this development."

Response

Thank you for confirming that electrical services can be provided. The project engineer will coordinate the electrical plans with your company. We wish to note, however, that the 10 to 20 years timetable is based on very preliminary projections. At good market conditions, a timetable of 10 years would be reasonable.

Your letter will be incorporated into the Environmental Impact Statement and a copy will be sent to you.

Sincerely,

KENNETH HARADA
Project Coordinator

KH:jk

cc: √Environment Impact Study Corp. -
Mr. Marvin Miura

11-26

May 16, 1983

Hawaii Housing Authority
P.O. Box 17907
Honolulu, HI 96817

SUBJECT: EIS Preparation Notice for the Waiehu Planned Development
Waiehu, Maui

Dear Mr. Ken Harada:

11 - 27

We appreciated the opportunity we received to review and comment on the Waiehu Planned Development Project as submitted to us on April 22, 1983. As requested, the following are some view points we have on said project.

Section 1 - Proposed Project

The entire project is located within our base rate service area.

Section 2 - Affected Environment

Telephone service is available for existing customers in the surrounding area and can be made available for future homes within the development.

Section 3 - Land Use Plans, Policies, Controls

The project site is in close proximity to our existing facilities.

Section 4 - Probable Environmental Effects

Existing telephone facilities are not adequate to serve the future requirement, however, with sufficient time for our planning process, we do not foresee any major problem in providing the necessary relief.

Section 6 - Appendix "D" Alternatives

Although we concur with your recommendation for overhead utilities throughout the development, the elimination of curbs along minor interior roadways where utility poles will be located, will create a potential vehicle hazard.

If any questions or the need for additional information arises, please contact our Engineering Department at 242-5102.

Sincerely,

John J. Wilson
Island Manager-Maui

JJW/mk

Enclosure

GEORGE R. ARIYOSHI
Governor

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

Paul A. Tom
Executive Director

William A. Hall
Asst. Exec. Director

IN REPLY REFER
TO: 83:DEV/3184

July 11, 1983

11-28

Mr. John J. Wilson
Island Manager - Maui
Hawaiian Telephone
P. O. Box 370
Wailuku, Maui, Hawaii 96793

Dear Mr. Wilson:

SUBJECT: Waiehu Planned Development Environmental Impact Statement Preparation Notice (Letter dated May 16, 1983)

We appreciate your review of the document; please be assured that your letter will be incorporated into the Environmental Impact Statement and a copy will be sent to you.

Your concern regarding potential vehicle hazards due to the elimination of curb and gutters (along the minor interior roadways) will be evaluated during the preliminary engineering phase of the project.

Sincerely,

Kenneth Harada
Original Signed

KENNETH HARADA
Project Coordinator

KH:jk

cc: Environment Impact Study Corp. -
Mr. Marvin Miura

Kay Abdul Realtors, Inc.
Residential, Commercial, Industrial
Investments & Development

JUL 3 11 24

June 28, 1983

Hawaii Housing Authority
P.O. Box 17907
Honolulu, Hawaii 96817

Attn: Ken Harada

11-29

Gentlemen:

We have received your Environmental Impact Statement, Notice of Preparation, for the Waiehu Planned Development.

The overall concept and layout of the development is quite attractive. However, we would like to discuss the following pertinent points with you:

- the matter of density. We question having 95 acres of single family detached units with 5.3 units per acre or 500 units along the rim. Our experience in developing slopes and hillsides indicates there is a considerable reduction in density as compared with flatland.

- allocation of roadways. Generally 20% or 26 acres, in this case, would be required rather than the 6 acres shown on the plan.

- the grading of the land. In our conversation you indicated minimum grading would be required but with a 20 - 25 % grade along the rim, we feel considerable grading is needed.

- providing underground utilities. In a development of this density, massive crisscrossing of overhead electrical and telephone wires would have an adverse impact environmentally and functionally.

Thank you for referring the matter to me for comment. I shall be happy to discuss the matter further at your convenience.

Very truly yours,
Kay Abdul Realtors, Inc.
Kay Abdul

1351-5 LOWER MAIN STREET WAILUKU, MAUI, HAWAII 96793 TELEPHONE: 244-7676

GEORGE R. ARIYOSHI
Governor

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

Paul A. Tom
EXECUTIVE DIRECTOR

WILLIAM A. PAUL
ASST. EXEC. DIRECTOR

IN REPLY REFER
TO: 83:DEV/3151

July 11, 1983

Ms. Kay Abdul
Realtors, Inc.
1351-5 Lower Main Street
Wailuku, Maui, Hawaii 96793

Dear Ms. Abdul:

SUBJECT: Waiehu Planned Development - Environmental Impact Statement Preparation Notice

Your letter of June 28, 1983 is hereby acknowledged.

Due to the technical nature of your comments, please be advised that your letter will be referred to the civil engineer for consideration during the preliminary engineering phase of the project.

Thank you for your interest in the project; please call me at 848-3240 should you require further information on the subject matter.

Sincerely,

Kenneth Harada
Original Signed
KENNETH HARADA
Project Coordinator

cc: Woolsey, Miyabara & Associates, Inc.
✓Environment Impact Study Corp.
R. T. Tanaka Engineers, Inc.

11-30

MAY 13 10 52 AM '83

Maui Group, Hawaii Chapter
The Sierra Club
P. O. Box 416
Haiku, Maui, Hawaii 96702
May 11, 1983

Mr. Kenneth Harada
Hawaii Housing Authority
P. O. Box 17907
Honolulu, HI 96817

Dear Mr. Harada:

Please list this organization as a Consulted Party in the EIS preparation for WAIEHU PLANNED DEVELOPMENT, Maui. Our comments will be made by the Conservation Committee with proper authorization of the Maui Group Executive Committee.

Sincerely yours,

John Bose, II
Conservation Chair, for
the Executive Committee

Suspense

Rec		Info	Act
1	ED		
2	ASO		
3			
	PLNG		
	FILE	83:DEV/3479	

GEORGE R. ARIYOSHI
Governor

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

Paul A. Tom
EXECUTIVE DIRECTOR

WILLIAM A. HALL
ASST. EXEC. DIRECTOR

IN REPLY REFER TO: 83:DEV/3162

July 11, 1983

Mr. John Bose, II
Conservation Chair
Maui Group, Hawaii Chapter
The Sierra Club
P. O. Box 416
Haiku, Maui, Hawaii 96702

Dear Mr. Bose:

SUBJECT: Waiehu Planned Development Environmental Impact Statement Preparation Notice

Your request to be a consulted party in the EIS process is appreciated and your comments will be welcomed.

Your letter dated May 11, 1983 will be incorporated into the Environmental Impact Statement and a copy will be sent to you.

Sincerely,

Kenneth Harada
Original Signed

KENNETH HARADA
Project Coordinator

KH:jk

cc: Environment Impact Study Corp. -
Mr. Marvin Miura

Organizations and Persons Consulted

12

SECTION 12

ORGANIZATIONS AND PERSONS CONSULTED IN THE PREPARATION OF THE EIS

The following list includes those agencies and organizations to whom the Environmental Impact Statements were sent or from whom comments were received during the EIS review period. Those with an asterisk sent in written comments, and the comments and corresponding responses are presented on the indicated pages.*

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Planning Department	
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County Council	

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ILWU	
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ILWU Local 42	
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*American Lung Association of Hawaii	12-35

DEPARTMENT OF THE ARMY
PACIFIC OCEAN DIVISION, CORPS OF ENGINEERS
FT. SHAFTER, HAWAII 96858

September 27, 1983

Mr. Kenneth Harada, Project Coordinator
Hawaii Housing Authority
P.O. Box 17907
Honolulu, Hawaii 96817

Dear Mr. Harada:

Thank you for the opportunity to review and comment on the environmental impact statement for Waiehu Planned Development. The following comments are offered:

a. A Department of the Army permit is not required.

b. The proposed housing development site in Waiehu, Maui is located in an area of minimal flooding of Zone C designation, according to the flood hazard map for the project area prepared as part of the Flood Insurance Study for Maui County by the Federal Insurance Administration. Enclosure 1 is the Flood Insurance Rate Map identifying the flood-prone areas in the vicinity of the proposed development, and showing the location of the proposed project site.

Sincerely,

Kisuk Cheung
Chief, Engineering Division

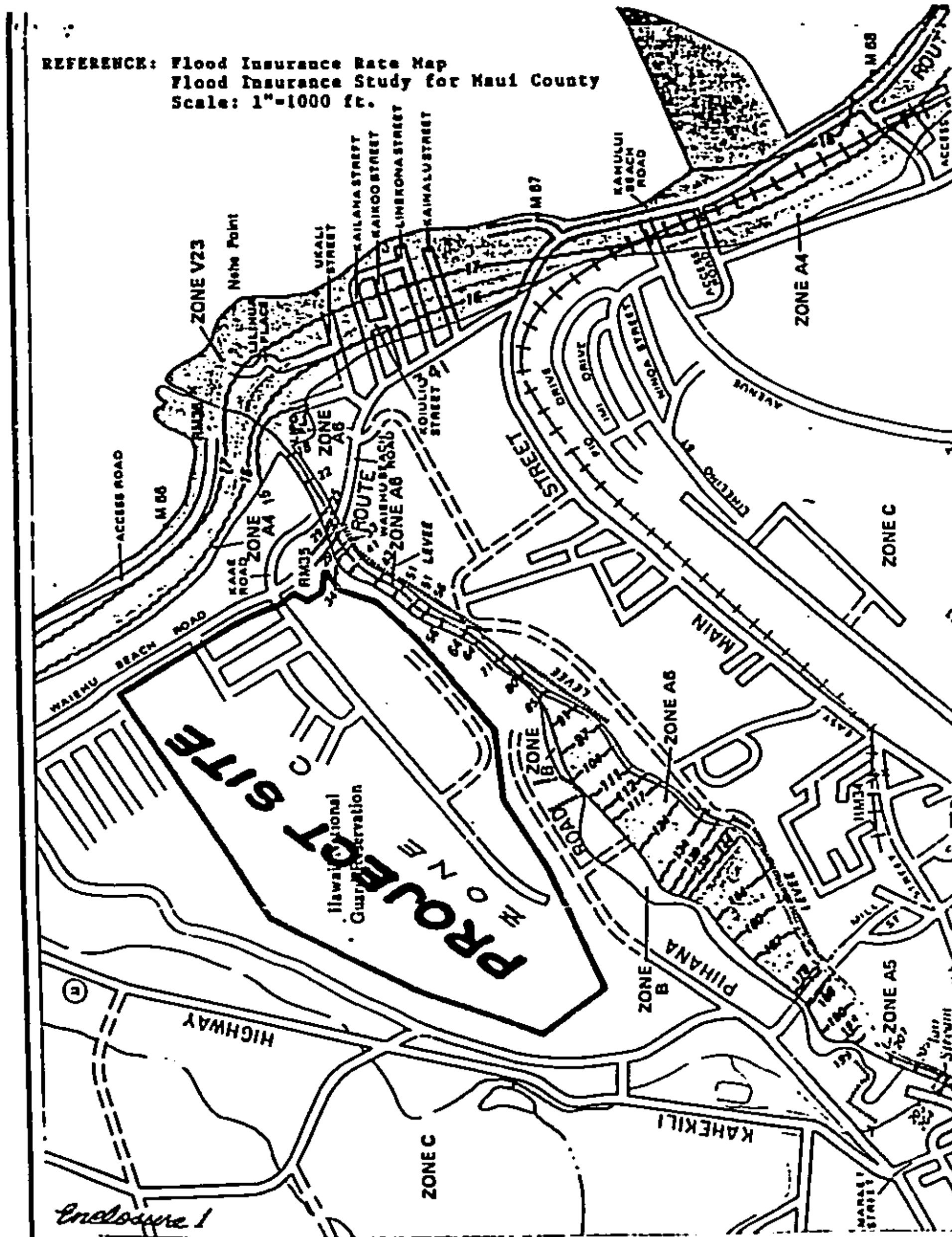
Enclosure

Surpense

Rte		Info Comment	Coord	Act	Init
1	ED				
	AED				
	CFO				
2	DEV				
	[illegible]				
	PGT				

DEVELOPMENT COPY

12- 3



GEORGE R. ARIYOSHI
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

PAUL A. TOM
EXECUTIVE DIRECTOR

IN REPLY REFER
TO:
83:DEV/599E

December 14, 1983

12-4

Mr. Kisuk Cheung
Chief, Engineering Division
Department of the Army
Pacific Ocean Division,
Corps of Engineers
Fort Shafter, Hawaii 96858

Dear Mr. Cheung:

SUBJECT: Waiehu Planned Development Environmental Impact Statement

We appreciate your review of the Environmental Impact Statement and the valuable analysis provided by your staff.

The information you have provided will be conveyed to the civil engineer.

Your letter and enclosure will be incorporated into the Revised Environmental Impact Statement.

Sincerely,

KENNETH HARADA
Project Coordinator

cc: √Environment Impact Study Corp.
Attn: Dr. Marvin Miura

Woolsey, Miyabara & Associates, Inc.
Attn: Mr. Michael Miyabara

R. T. Tanaka Engineers, Inc.
Attn: Mr. Robert T. Tanaka

Dr. Miura

United States Department of Agriculture | Soil Conservation Service | P.O. Box 50004 Honolulu, Hawaii 96850

October 3, 1983

Ms. Letitia N. Uyehara
Interim Director
Office of Environmental Quality Control
550 Halekauwila St., Rm. 301
Honolulu, Hawaii 96813

12-5

Dear Ms. Uyehara:

Subject: EIS for the Waiehu Planned Development, Waiehu, Maui, Hawaii

We have no comments to make on the subject environmental impact statement.

Thank you for the opportunity to review the document.

Sincerely,

FRANCIS C.H. LUM
State Conservationist

cc:
Kenneth Harada, Project Coordinator
Department of Social Services
Hawaii Housing Authority
P.O. Box 17907
Honolulu, Hawaii 96817

Dr. Marvin T. Miura
Environment Impact Study Corporation
2850 Paa Street, Suite 202
Honolulu, Hawaii 96819

RECEIVED
OCT 6 1983
EISC

The Soil Conservation Service is an agency of the Department of Agriculture

GEORGE R. ARIYOSHI
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

PAUL A. TOM
EXECUTIVE DIRECTOR

IN REPLY REFER TO: 83:DEV/5325

November 7, 1983

Mr. Francis C. H. Lum
State Conservationist
U: S. Department of Agriculture
P. O. Box 50004
Honolulu, Hawaii 96850

Dear Mr. Lum:

SUBJECT: Waiehu Planned Development Environmental Impact Statement

We appreciate your review of the document. Your letter will be incorporated into the Revised Environmental Impact Statement.

A copy of the Revised Environmental Impact Statement will be sent to you for review and comment.

If any questions should arise, please contact me at 848-3240.

Sincerely,

KENNETH HARADA
Project Coordinator

cc: Woolsey, Miyabara & Associates, Inc.
Attention: Mr. Michael Miyabara

✓Environment Impact Study Corp.
Attention: Mr. Harvin Miura

United States Department of the Interior

FISH AND WILDLIFE SERVICE
500 ALA MOANA BOULEVARD
P.O. BOX 50167
HONOLULU, HAWAII 96850

IN REPLY REFER TO:
ES
Room 6307

SEP 15 1983

Ms. Letitia N. Uyehara
Office of Environmental Quality Control
550 Halekauwila Street, Room 301
Honolulu, Hawaii 96813

Re: EIS Waiehu Planned Development

12-

Dear Ms. Uyehara:

The Service has reviewed the subject EIS and has found that it lacks important information which is necessary to adequately evaluate environmental impacts. Specifically, the document has no description of the proposed drainage system improvements within the planned development, nor does it contain an assessment of drainage effects on receiving water quality. We recommend that the EIS be revised to include this information, and to address the following comments:

1. Section 3 adequately describes most adjacent land uses, but does not describe the parcel immediately seaward of the project area. Paukukalo marsh, a wetland, is listed in the U.S. Army Corps of Engineers, Honolulu District's wetland vegetation report for Hawaii.

2. Vague references to a drainage system are made on page 4-3 of the EIS, however, no descriptions or drawings of the system are offered. Where will urban runoff be directed? How will site drainage affect Paukukalo marsh? What chemical constituents are expected to be present in runoff from this subdivision, and how will they influence the quality of the receiving water?

3. Portions of Paukukalo marsh are used to grow wetland dependent crops (e.g. onochoi). If site drainage enters the marsh, how will this affect these crops?

4. On page II-1 of the EIS, an indication is made that the Fish & Wildlife Service responded to the EIS preparation notice and that our remarks appear on page II-4. However, only the response from U.S. Geological Survey appears on page II-4. To date, the Service cannot locate any record of a response to the preparation notice, nor do our files show that a copy of the preparation notice was ever received.

We trust that these discrepancies will be corrected in a revised EIS. Thank you for the opportunity to comment.

Sincerely yours,

/s/

William E. Kramer
Acting Project Leader
Office of Environmental Services

cc: EPFS - UPPO
HDF&W
HDAR
EPA, San Francisco
Mr. Kenneth Hareda
Dr. Marvin T. Miura

CONSERVE AMERICA'S ENERGY

RECD
SEP 19 1983
EISC

GEORGE R. ARYOSHI
Governor

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

PAUL A. TOM
Executive Director

IN REPLY REFER

TO: 83:DEV/6069

December 19, 1983

Mr. William B. Kramer
Acting Project Leader
U. S. Department of the Interior
Fish and Wildlife Service
300 Ala Moana Blvd.
P. O. Box 50167
Honolulu, Hawaii 96850

12-7

Dear Mr. Kramer:

SUBJECT: Waiehu Planned Dvelopment Environmental Impact Statement

We appreciate your review of the Environmental Impact Statement (EIS) and provide the following responses to your comments.

Comment:

"The Service has reviewed the subject EIS and has found that it lacks important information which is necessary to adequately evaluate environmental impacts. Specifically, the document has no description of the proposed drainage system improvements within the planned development, nor does it contain an assessment of drainage effects on receiving water quality. We recommend that the EIS be revised to include this information, and to address the following comments: ...."

Response:

The information and preliminary layout of the internal drainage system as well as other infrastructural items, sewer, water, internal roadways, utilities was contained in a detailed planning document prepared in 1982 by Woolsey, Miyabara & Associates. The document was submitted to the County of Maui for their review and comment. This review process is still

ongoing and various drainage options are being formulated to keep the construction costs down. Attached to this letter are copies of the most recent plans for handling the drainage from the development. In either option, no direct discharge into the ocean is being proposed. The drainage system will follow existing County easements and the storm water will be discharged into an area currently used for receiving storm water.

Comment:

"1. Section 3 adequately describes most adjacent land uses, but does not describe the parcel immediately seaward of the project area. Paukukalo Marsh, a wetland, is listed in the U. S. Army Corps of Engineers, Honolulu District's Wetland Vegetation Report for Hawaii."

Response:

We believe that the Paukukalo wetland listed in the U. S. Army Corps of Engineers is located further northward from the project site.

Comment:

"2. Vague references to a drainage system are made on page 4-3 of the EIS; however, no descriptions or drawings of the system are offered. Where will urban runoff be directed? How will site drainage affect Paukukalo Marsh? What chemical constituents are expected to be present in runoff from this subdivision, and how will they influence the quality of the receiving water?"

Response:

The plans for the drainage system were in the preliminary stage and no definitive plans were available when the EIS was prepared. The plans are still in the preliminary stage but two options are being evaluated, as we have stated in our preceding response.

The chemical constituents from the project will be that of a typical urban subdivision and the impacts to the discharge area should be negligible.

No adverse impacts to the receiving waters are anticipated because there will be no direct discharge to the nearshore

waters. Even if there were to be direct discharge of storm water to the nearshore water, the great dilution of the ocean would prevent any degradation of the water quality.

Comment:

"3. Portions of Paukukalo Marsh are used to grow wetland dependent crops (e.g., ongchoi, etc.). If site drainage enters the marsh, how will this affect these crops?"

Response:

The storm water discharge will not affect the marsh or any crops.

Comment:

"4. On page 11-1 of the EIS, an indication is made that the Fish & Wildlife Service responded to the EIS Preparation Notice and that our remarks appear on page 11-4. However, only the response from U. S. Geological Survey appears on page 11-4. To date, the Service cannot locate any record of a response to the Preparation Notice, nor do our files show that a copy of the Preparation Notice was ever received."

Response:

We apologize for the confusion. We were under the impression that a copy of the Preparation Notice was to have been sent to you by another agency.

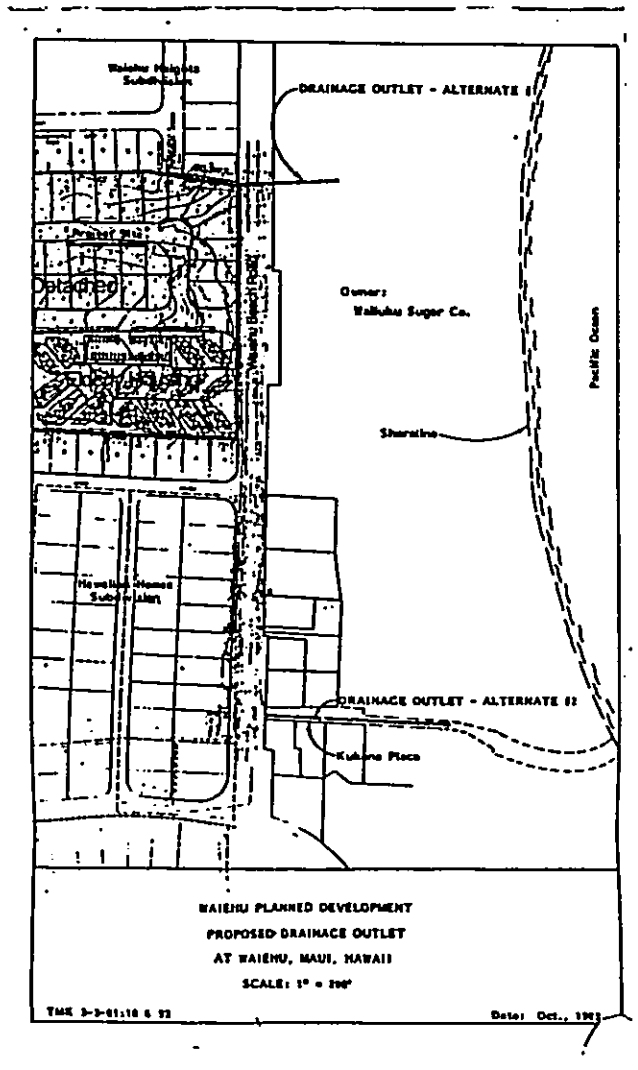
Your letter will be incorporated into the Revised Environmental Impact Statement. Should you have any questions regarding the above, please do not hesitate to contact Ken Harada, Project Coordinator at 848-3240.

Executive Director

Attachment

cc: Dr. Marvin T. Miura
Mr. Michael Miyabara
Mr. Robert T. Tanaka
Office of Environmental Quality Control

12-8



12-9

United States Department of the Interior
GEOLOGICAL SURVEY

Water Resources Division
P.O. Box 50166
Honolulu, Hawaii 96850

September 19, 1983

Ms. Letitia M. Uyehara
Interim Director
Office of Environmental Quality Control
550 Halekauwila Street, Room 301
Honolulu, Hawaii 96813

Dear Ms. Uyehara:

Subject: EIS Preparation Notice for the Waiehu Planned Development, Waiehu, Maui

The Hawaii District Office of the U.S. Geological Survey, Water Resources Division, has reviewed the subject EIS preparation notice and has no comments at this time.

Thank you for giving us an opportunity to review the preparation notice.

Aloha,

Santos Valenciano
Acting District Chief

Enclosure

cc: K. Harada, Dept. of Social Services and Housing
M. Miura, Environment Impact Study Corp.

RECEIVED
SEP 21 1983
EISC

GEORGE R. ARIYOSHI
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

PAUL A. TOM
EXECUTIVE DIRECTOR

IN REPLY REFER

TO: 83:DEV/5325

November 7, 1983

Mr. Santos Valenciano
Acting District Chief
U. S. Department of the Interior
Water Resources Division
P. O. Box 50166
Honolulu, Hawaii 96850

Dear Mr. Valenciano:

SUBJECT: Waiehu Planned Development Environmental Impact Statement

We appreciate your review of the document. Your letter will be incorporated into the Revised Environmental Impact Statement.

A copy of the Revised Environmental Impact Statement will be sent to you for review and comment.

If any questions should arise, please contact me at 848-3240.

Sincerely,

KENNETH HARADA
Project Coordinator

cc: Woolsey, Miyabara & Associates, Inc.
Attention: Mr. Michael Miyabara

✓Environment Impact Study Corp.
Attention: Mr. Marvin Miura

HEADQUARTERS
NAVAL BASE PEARL HARBOR
BOX 110
PEARL HARBOR, HAWAII 96860

IN REPLY REFER TO:
002B:WKL:jam
Ser 2033
20 SEP 1983

Ms. Letitia H. Uyehara, Interim Director
Office of Environmental Quality Control
550 Halekauwila Street, Room 301
Honolulu, Hawaii 96813

Dear Ms. Uyehara:

Environmental Impact Statement (EIS)
Waiehu Planned Development

The EIS for the Waiehu Planned Development has been reviewed and the Navy has no comments to offer. As this command has no further use for the EIS, the EIS is being returned to the Environmental Quality Commission, by copy of this letter.

Thank you for the opportunity to review the EIS.

Sincerely,

M. M. DALLAM
CAPTAIN, CEC, U. S. NAVY
FACILITIES ENGINEER
BY DIRECTION OF THE COMMANDER

Enclosure

Copy to:
Mr. Kenneth Harada, Project Coordinator
Dept. of Social Services, HI Housing Authority

Dr. Marvin T. Miura
Environment Impact Study Corporation

Environmental Quality Commission

RECEIVED
SEP 21 1983
EISC

12-10

GEORGE R. ARIYOSHI
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

PAUL A. TOM
EXECUTIVE DIRECTOR

IN REPLY REFER
TO: 83:DEV/5325

November 7, 1983

Captain M. M. Dallam
CEC, U. S. Navy
Facilities Engineer
Box 110
Pearl Harbor, Hawaii 96860

Dear Captain Dallam:

SUBJECT: Waiehu Planned Development Environmental Impact Statement

We appreciate your review of the document. Your letter will be incorporated into the Revised Environmental Impact Statement.

A copy of the Revised Environmental Impact Statement will be sent to you for review and comment.

If any questions should arise, please contact me at 848-3240.

Sincerely,

KENNETH HARADA
Project Coordinator

cc: Woolsey, Miyabara & Associates, Inc.
Attention: Mr. Michael Miyabara

Environment Impact Study Corp.
Attention: Mr. Marvin Miura

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 15TH AIR BASE WING (PACAF)
HICKAM AIR FORCE BASE, HAWAII 96853

REPLY TO ATTN OF: DEEV (Mr Yamada, 449-1831) 9 SEP 1983

SUBJECT: Environmental Impact Statement for the Waiehu Planned Development

TO: Ms Letita N. Uyehara, Interim Director
Office of Environmental Quality Control
550 Halekauwila Street, Room 301
Honolulu, HI 96813

1. This office has reviewed the subject EIS and has no comment relative to the proposed project.

2. We greatly appreciate your cooperative efforts in keeping the Air Force apprised of your project and thank you for the opportunity to review the document. The EIS is returned for your file.

ROBERT M. OKAZAKI
Chief, Engrg & Envntl Plng Div
Directorate of Civil Engineering

1 Atch
EIS

cc: Mr Kenneth Harada, Project Coordinator
State Dept of Soc Svc & Hsg,
Hawaii Housing Authority
P. O. Box 17907
Honolulu, HI 96817

Dr Marvin T. Miura
Environmental Impact Study Corp
2850 Paa Street, Suite 202
Honolulu, HI 96819

12-11

GEORGE R. ARIYOSHI
Governor

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

PAUL A. TOM
Executive Director

IN REPLY REFER TO: 83:DEV/5325

November 7, 1983

Mr. Robert M. Okazaki
Chief, Engineering and
Environmental Planning Division
Department of the Air Force
Headquarters 15th Air Base Wing (PACAF)
Hickam Air Force Base, Hawaii 96853

Dear Mr. Okazaki:

SUBJECT: Waiehu Planned Development Environmental Impact Statement

We appreciate your review of the document. Your letter will be incorporated into the Revised Environmental Impact Statement.

A copy of the Revised Environmental Impact Statement will be sent to you for review and comment.

If any questions should arise, please contact me at 848-3240.

Sincerely,

KENNETH HARADA
Project Coordinator

cc: Woolsey, Miyabara & Associates, Inc.
Attention: Mr. Michael Miyabara

✓Environment Impact Study Corp.
Attention: Mr. Marvin Miura

U.S. Department of Transportation
United States Coast Guard

Commander
Fourteenth Coast Guard District
(dpl)

Prince Kalanianaole
Federal Building
300 Ala Moana Blvd.
Honolulu, Hawaii 96850
Phone: 546-2861

11000
Serial 587
9 September 1983

Ms. Letitia N. Ulyehara, Interim Director
Office of Environmental Quality Control
550 Halekauwila Street, Room 301
Honolulu, Hawaii 96813

Dear Ms. Ulyehara:

The Fourteenth Coast Guard District has reviewed the Draft Enviornmental Impact Statement (EIS) for the Waiehu Planned Development and has no objection or constructive comments to offer at the present time.

12-12

Sincerely,

J. E. SCHWARTZ
Commander, U. S. Coast Guard
District Planning Officer
By direction of
Commander, Fourteenth Coast Guard District

Copy: Dept. of Social Services, HI Housing Authority
Environment Impact Study Corp.

GEORGE R. ARIYOSHI
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

PAUL A. TOM
EXECUTIVE DIRECTOR

IN REPLY REFER

TO: 83:DEV/5325

November 7, 1983

Commander J. E. Schwartz
District Planning Officer
Fourteenth Coast Guard District
U. S. Department of Transportation
300 Ala Moana Boulevard
Honolulu, Hawaii 96850

Dear Commander Schwartz:

SUBJECT: Waiehu Planned Development Environmental Impact Statement

We appreciate your review of the document. Your letter will be incorporated into the Revised Environmental Impact Statement.

A copy of the Revised Environmental Impact Statement will be sent to you for review and comment.

If any questions should arise, please contact me at 848-3240.

Sincerely,

KENNETH HARADA
Project Coordinator

cc: Woolsey, Miyabara & Associates, Inc.
Attention: Mr. Michael Miyabara

✓Environment Impact Study Corp.
Attention: Mr. Marvin Miura

GEORGE R. ARIYOSHI
GOVERNOR

JACK K. SUWA
CHAIRMAN, BOARD OF AGRICULTURE

SUZANNE D. PETERSON
DEPUTY TO THE CHAIRMAN

State of Hawaii
DEPARTMENT OF AGRICULTURE
1428 So. King Street
Honolulu, Hawaii 96814

Mailing Address:
P. O. Box 22159
Honolulu, Hawaii 96822

September 19, 1983

MEMORANDUM

To: Ms. Latifa M. Uyehara, Director
Office of Environmental Quality Control

Subject: Environmental Impact Statement (EIS) for
Waiehu Planned Development
Hawaii Housing Authority
TMK: 3-3-01: 10 and 92 Waiehu, Maui
Acres: 133.5

The Department of Agriculture has reviewed the subject document and offers the following comments.

According to our records, we did not receive a copy of the EIS Preparation Notice for the subject project contrary to what is indicated on page 11-1 of the July 1983 Draft EIS. Therefore, our comments should be considered with this in mind.

The references to the parcels' classification according to the Agricultural Lands of Importance to the State of Hawaii (ALISH) system and Soil Conservation Service Soil Survey are correct. The parcels also have a Land Study Bureau Overall Productivity Rating of E58. By this method of classification, the parcels have poor productivity potential for most agricultural uses.

We note that the site is presently used for pasture and grazing of approximately 20 head of cattle (EIS, page 1-3). Will this operation need to be relocated as a consequence of approval and construction of the project? If so, will the operator receive assistance in relocating to a new site?

We are also aware that Wailuku Sugar Company is growing sugarcane in the vicinity of Iao Stream between the project site and Kahului. Sugarcane planting and harvesting operations may be the source of dust, noise, odors and other by-products that may annoy future residents of the project. Prospective residents should be apprised that Chapter 165, HRS (Hawaii Right-to-Farm Act) limits the circumstances under which farming operations may be deemed to be a nuisance in areas zoned by the County for agricultural use.

Thank you for the opportunity to comment.

Jack K. Suwa

SEP 21 1983

JACK K. SUWA
Chairman, Board of Agriculture

cc: Hawaii Housing Authority
Environmental Impact Study Corp.

"Support Hawaiian Agricultural Products"

12-13

GEORGE R. ARIYOSHI
GOVERNOR

PAUL A. TOM
EXECUTIVE DIRECTOR

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

IN REPLY REFER TO:

December 19, 1983

MEMORANDUM

TO: The Honorable Jack Suwa
Chairman, Board of Agriculture

FROM: Paul A. Tom, Executive Director

SUBJECT: Waiehu Planned Development Environmental Impact Statement

We appreciate your review of the document and provide the following responses to your comments.

Comment:

"According to our records, we did not receive a copy of the EIS Preparation Notice for the subject project contrary to what is indicated on page 11-1 of the July, 1983 Draft EIS. Therefore, our comments should be considered with this in mind."

Response:

We apologize for the confusion. We were under the impression that a copy of the Preparation Notice was to have been sent to you by another agency.

Comment:

"The references to the parcels' classification according to the Agricultural Lands of Importance to the State of Hawaii (ALISH) System and Soil Conservation Service Soil Survey are correct. The parcels also have a Land Study Bureau Overall Productivity Rating of #58. By this method of classification, the parcels have poor productivity potential for most agricultural uses."

Response:

We appreciate the additional information on the agricultural productivity potential of the project site.

Comment:

"We note that the site is presently used for pasture and grazing of approximately 20 heads of cattle (EIS, page 1-3). Will this operation need to be relocated as a consequence of approval and construction of the project? If so, will the operation receive assistance in relocation to a new site?"

Response:

The use of the land is under a permit issued by the State Department of Land and Natural Resources. The tenant is aware of the proposed development and uses the land fully aware that the use is from month to month. No relocation assistance will be required when the project is initiated.

12-14

Comment:

"We are also aware that Wailuku Sugar Company is growing sugarcane in the vicinity of Iao Stream between the project site and Kahalui. Sugarcane planting and harvesting operations may be the source of dust, noise, odors and other by-products that may annoy future residents of the project. Prospective residents should be apprised that Chapter 165, HRS (Hawaii Right-to-Farm Act) limits the circumstances under which farming operations may be deemed to be a nuisance in areas zoned by the County for agricultural use."

Response:

Prospective tenants and residents of the development will be notified of Chapter 165, HRS (Hawaii Right-to-Farm Act).

Your letter will be incorporated into the Revised Environmental Impact Statement. Should you have any questions regarding the above, please do not hesitate to contact Ken Harada, Project Coordinator at 848-3240.

Executive Director

cc: Dr. Marvin T. Miura
Mr. Michael Miyabara
Mr. Robert T. Tanaka
Office of Environmental Quality Control

GEORGE R. ARIYOSHI
GOVERNOR

DR. DONNIS H. THOMPSON
SUPERINTENDENT

STATE OF HAWAII
DEPARTMENT OF EDUCATION
P. O. BOX 2360
HONOLULU, HAWAII 96804

OFFICE OF THE SUPERINTENDENT

October 4, 1983

Mrs. Letitia N. Uyehara, Interim Director
Office of Environmental Quality Control
550 Halekauwila Street, Room 301
Honolulu, Hawaii 96813

12-15

Dear Ms. Uyehara:

SUBJECT: Waiehu Planned Development

Our review of the subject development indicates that it will generate the following student enrollment:

SCHOOL	GRADE	APPROXIMATE ENROLLMENT 50-200 Units	800 Units
Waihee Elem./Int.	K-8	20 - 80	150 - 350
Baldwin High	9-12	5 - 25	50 - 150

Other than the initial increment, which is in the 50 to 200 unit range, the subsequent increments will be subject to market demand. We are, therefore, expecting students from the first increment in late 1985 and early 1986. The department can accommodate students from the first phase.

Lacking a definite schedule for the balance of the phases, we would appreciate having the developer keep us informed of their plans as the total number of students projected is beyond the capacity of both Waihee and Baldwin schools. Lead time to provide classroom capacity would be a minimum of three years, preferably four years if possible.

Should there be any questions, please contact Mr. Howard Lau at 737-5231.

Sincerely,

Lloyd K. Higuchi

Donnis H. Thompson
Superintendent of Education

DHT:HL:jl

cc: Mr. James Edington
Maui District
Mr. Kenneth Harada
✓Dr. Marvin Miura

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OCT 11 1983
EISC

AN EQUAL OPPORTUNITY EMPLOYER

GEORGE R. ARIYOSHI
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

PAUL A. TOM
EXECUTIVE DIRECTOR

IN REPLY REFER

TO:

December 19, 1983

MEMORANDUM

TO: The Honorable Donnis H. Thompson
Superintendent-of-Education

FROM: Paul A. Tom, Executive Director

SUBJECT: Waiehu Planned Development Environmental Impact Statement

We appreciate your review of the document and the information provided on the projected student enrollment.

Your department will be kept informed on the plans for the development and the number of units which will be developed over a period of time.

We will endeavor to give you a minimum of four years of lead time to provide the necessary classrooms which will be required to accommodate the development.

Your letter will be incorporated into the Revised Environmental Impact Statement. Should you have any questions regarding the above, please do not hesitate to contact Ken Harada, Project Coordinator at 848-3240.

Paul A. Tom
Executive Director

cc: ✓Dr. Marvin T. Miura
Mr. Michael Miyabara
Mr. Robert T. Tanaka
Office of Environmental Quality Control

GEORGE R. ARIYOSHI
GOVERNOR OF HAWAII

CHARLES B. CLARK
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HAWAII 96801

In reply, please refer to:
EPHSD-SB

September 28, 1983

MEMORANDUM

To: Ms. Letitia Uyehara, Interim Director
Office of Environmental Quality Control

From: Deputy Director for Environmental Health

Subject: Environmental Impact Statement (EIS) for Waiehu Planned Development, Waiehu, Maui

12-16

Thank you for allowing us to review and comment on the subject EIS. On the basis that the project will comply with all applicable Administrative Rules, please be informed that we do not have any objections to this project.

We realize that the statements are general in nature due to preliminary plans being the sole source of discussion. We, therefore, reserve the right to impose future environmental restrictions on the project at the time final plans are submitted to this office for review.

MELVIN K. KOIZUMI

cc: Mr. Kenneth Harada
Dr. Marvin Miura

GEORGE R. ARIYOSHI
GOVERNOR

PAUL A. TOM
EXECUTIVE DIRECTOR

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

IN REPLY REFER TO: 83:DEV/5325

November 7, 1983

MEMORANDUM

TO: Mr. Melvin K. Koizumi, Deputy Director
Department of Health

FROM: Kenneth Harada, Project Coordinator

SUBJECT: Waiehu Planned Development Environmental Impact Statement

We appreciate your review of the document. Your letter will be incorporated into the Revised Environmental Impact Statement.

A copy of the Revised Environmental Impact Statement will be sent to you for review and comment.

If any questions should arise, please contact me at 848-3240.

Project Coordinator

cc: Woolsey, Miyabara & Associates, Inc.
Attention: Mr. Michael Miyabara

Environment Impact Study Corp.
Attention: Mr. Marvin Miura

SEP 2 8 1983

Ms. Latifa N. Uyehara, Interim Director
Office of Environmental Quality Control
550 Halekauwila Street
Honolulu, Hawaii 96813

Dear Ms. Uyehara:

12-17

We have reviewed the environmental impact statement (EIS) for the Kafehu Planned Development and have two concerns to express.

Recreation

The only known recreation concern is to protect the integrity of Halekii-Pihana State Monument. Fortunately, the subject development does not abut the park boundary, but excavation work in the steep sand dune near the park could create erosion problems which could reach the park.

Historic Sites

We concur with the consulting archaeologist's (Environment Impact Study Corp.) recommendation that the "study area does not show surface indications of prehistoric use or occupation" (Appendix B-11). We further concur that the presence of sand dunes in the parcels "implies a high probability of prehistoric burials" (Appendix B-11).

We recommend that the mitigative measures of the consulting archaeologist (Appendix B-12) be modified to read:

1. In the event that burials are discovered during construction activities, the developer shall undertake to have a physical anthropologist and/or archaeologist disinter the remains in a scientific manner enabling recordation of metric and non-metric measurements for each individual burial. Two copies of this report shall be sent to the Department of Land and Natural Resources' historic sites office for review and comment prior to reinterment. The developer shall also ensure compliance to all state and county burial regulations.

2. If any previously unidentified sites or remains (such as artifacts, shell, bone, or charcoal deposits; human burials, rock or coral alignments, pavings, or walls) are encountered, the developer should stop work and contact our historic sites office at 548-7460 immediately.

Sincerely,

Susumu Ono

SUSUMU ONO
Chairperson
Board of Land and Natural Resources
and
State Historic Preservation Officer

cc: DSSH
EIS Corp.

GEORGE R. ARIYOSHI
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

PAUL A. TOM
EXECUTIVE DIRECTOR

IN REPLY REFER

YOU

December 14, 1983

12-18

MEMORANDUM

TO: The Honorable Susumu Ono, Chairman and State Historic Preservartion Officer
Board of Land and Natural Resources

FROM: Paul A. Tom, Executive Director

SUBJECT: Waiehu Planned Development Environmental Impact Statement

We appreciate your review of the document and provide the following responses to your comments.

Comment:

"Recreation"

"The only known recreation concern is to protect the integrity of Halekii-Pihana State Monument. Fortunately, the subject development does not abut the park boundary, but excavation work in the steep sand dune near the park could create erosion problems which could reach the park."

Response:

We are aware of the potential erosion problems and will prepare detailed plans for submission to the County of Maui and other applicable governmental agencies for their review and approval.

Comment:

"Historic Sites"

"We concur with the consulting archaeologist's (Environment Impact Study Corp.) recommendation that the "study area does not show surface indications of prehistoric use or occupation" (Appendix B-11)."

"We further concur that the presence of sand dunes in the parcels "implies a high probability of pre-historic burials" (Appendix B-11)."

"We recommend that the mitigative measures of the consulting archaeologist (Appendix B-12) be modified to read:"

"1. In the event that burials are discovered during construction activities, the developer shall undertake to have a physcial anthropoligist and/or archaeologist disinter the remains in a scientific manner enabling recordation of metric and non-metric measurements for each individual burial. Two copies of this report shall be sent to the Department of Land and Natural Resources' historic sites office for review and comment prior to reinterment. The developer shall also ensure compliance to all state and county burial regulations."

"2. If any previously unidentified sites or remains (such as artifacts, shell, bone, or charcoal deposits, human burials, rock or coral alignments, pavings, or walls) are encountered, the developer should stop work and contact our historic sites office at 548-7460 immediately."

Response:

Your requirements will be conformed with. We will insert the exact working into the construction documents rather than the Environmental Impact Statement. This will therefore be a legal requirement.

Your letter will be incorporated into the Revised Environmental Impact Statement.

Executive Director

cc: √ Environment Impact Study Corp.
Attn: Dr. Marvin Miura

Woolsey, Miyabara & Associates, Inc.
Attn: Mr. Michael Miyabara

Office of Environmental Quality Control
Attn: Ms. Jacqueline Parnell, Director

R. T. Tanaka Engineers, Inc.
Attn: Mr. Robert T. Tanaka

GEORGE R. ARIYOSHI
GOVERNOR

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

RYOKICHI HIGASHIONNA, Ph.D.
DIRECTOR

DEPUTY DIRECTORS
WAYNE J. YAMASAKI
JONATHAN K. SHIMADA, Ph.D.
CHERYL D. SOON

IN REPLY REFER TO:
STP 8.9390

September 20, 1983

12-20

Ms. Letitia N. Uyehara
Interim Director
Office of Environmental Quality Control
550 Halekauwila Street, Room 301
Honolulu, Hawaii 96813

Dear Ms. Uyehara:

Environmental Impact Statement
Waiehu Planned Development
Waiehu, Maui

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

The Statement can be improved and we recommend that it includes a discussion on the anticipated traffic movements at the intersections between the access road and Waiehu Beach Road and between the access road and Kahekili Highway, including an assessment of the kind of intersection improvements necessary to accommodate the vehicular traffic during peak periods.

Very truly yours,

Ryokichi Higashionna

Ryokichi Higashionna
Director of Transportation

✓cc: Dr. Marvin T. Miura

GEORGE R. ARIYOSHI
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

PAUL A. TOM
EXECUTIVE DIRECTOR

IN REPLY REFER

TO:

December 19, 1983

MEMORANDUM

TO: The Honorable Wayne J. Yamasaki
Director, Department of Transportation

FROM: Paul A. Tom, Executive Director

SUBJECT: Waiehu Planned Development Environmental Impact Statement

We appreciate your review of the document and provide the following response to your comment:

Comment:

"The Statement can be improved and we recommend that it includes a discussion on the anticipated traffic movements at the intersections between the access road and Waiehu Beach Road and between the access road and Kahekili Highway, including an assessment of the kind of intersection improvements necessary to accommodate the vehicular traffic during peak periods."

Response:

We agree that additional updated traffic information and specific details on the anticipated traffic movements at the intersections of the project access road and Waiehu Beach Road and Kahekili Highway would improve the document. However, when the initial planning document was prepared in 1981, the data was not updated for the Environmental Impact Statement nor was a traffic survey conducted. We are still in the preliminary planning phase and we have not determined the exact unit count. After this phase has been completed, we will be in a position to estimate the type and number of vehicles expected during the peak hour traffic period. We have requested that the engineering consultant work directly with your agency to determine additional information you may require to evaluate the traffic impacts and design details.

Your letter will be incorporated into the Revised Environmental Impact Statement. Should you have any questions regarding the above, please do not hesitate to contact Ken Harada, Project Coordinator at 848-3240.

Executive Director

cc: √Dr. Marvin T. Miura
Mr. Michael Miyabara
Mr. Robert T. Tanaka
Office of Environmental Quality Control

12-21

GEORGE R. ARIYOSHI
GOVERNOR OF HAWAII

PROJECT OFFICES
WAIMEA OFFICE
P. O. BOX 175
KAMUELA, HAWAII 96743
KEAUKAHA OFFICE
P. O. BOX 833
HILO, HAWAII 96720

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
P. O. BOX 1879
HONOLULU, HAWAII 96805

OCT 11 1983

PROJECT OFFICES
MAUI OFFICE
P. O. BOX 97
KAHULUI, MAUI 96732
MOLOKAI OFFICE
P. O. BOX 186
HOOLEHUA, MOLOKAI 96729
KAUAI OFFICE
P. O. BOX 332
LIHUE, KAUAI 96766

12-22

Ms. Letitia N. Uyehara, Interim
Director
Office of Environmental Quality
Control
550 Halekauwila Street, Room 301
Honolulu, Hawaii 96813

Dear Ms. Uyehara:

SUBJECT: Waiehu Planned Development
Waiehu, Maui

The Department of Hawaiian Home Lands (DHHL) has reviewed the Environmental Impact Statement for the Waiehu Planned Development and has the following comments:

A. Section 1, DESCRIPTION OF THE PROPOSED PROJECT

Figure 1-4, PHASING, PROJECT DISTRIBUTION PLAN, Page 1-9 Kuhio Place is shown as a through street from Waiehu Beach Road through the DHHL's Paukukalo Residence Lots to the connector road for the Waiehu Planned Development (connecting Waiehu Beach Road with Kahekili Highway).

Comments: On September 15, 1981, when the conceptual plan for the Waiehu Planned Development was presented to the Paukukalo Community Association in Paukukalo, Wailuku, Maui, there were strong objections to the tie-in of Kuhio Place to the major thoroughfare. The reasons given were traffic congestion, high speed traffic and danger to children playing in the roadways. The consultant was to research alternative road patterns, such as the deadend of Kuhio Place within the DHHL's Paukukalo Residence Lots and present them to the Paukukalo Community Association. We recommend that these concerns be addressed.

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EISC

B. Section 2, DESCRIPTION OF THE AFFECTED ENVIRONMENT
III-INFRASTRUCTURE, A-Access and Traffic, 1-Access; Page 2-21
"The adjacent Hawaiian Home Lands Paukukalo Residence Lots have been planned with internal streets and roads that adjoin the project site for possible future connection. These include Kuhio Place, Pumehana, Waihona and Kaumualii Streets."

Comments: Kaumualii Street connects to Kealii Drive and had not been planed for future connection to the Waiehu Planned Development.

C. Section 4, ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATIVE MEASURES TO MINIMIZE ADVERSE IMPACTS
II-PRIMARY IMPACTS OF THE PROPOSED PROJECT, A-Physical Parameters, 13-Surface Water; Page 4-6
"The runoff from the project site is approximately 155 cfs. To handle the future storm runoff (250 cfs), an interceptor ditch between the project site and the existing Hawaiian Home Lands subdivision will be constructed which will connect to a 200-foot lined drainage channel and 300 feet of 60-inch RCP terminating at a new outlet to the ocean. The final plans have not been prepared for the disposal of the storm runoff water."

Comments: Peak storm runoff for the 133.5 acre planned development will be approximately 500 cubic feet per second (cfs). Presently, there is an interceptor ditch in the project site that protects the DHHL subdivision, which we understand will be removed and replaced by an underground drainage system when the project site is developed. An easement from Wailuku Sugar Company will be required for the off-site drainage system to the ocean.

Should there be any questions to the above comments, please have your staff contact Mr. Stanley H. S. Wong of our Planning and Construction Branch at telephone 548-2635.

Sincerely yours,

Georgiana K. Padeken
Chairman

GKP:RF:SW:jm

cc: Kenneth Harada, Project Coordinator
Department of Social Services, Hawaii Housing Authority
Dr. Marvin T. Miura
Environmental Impact Study Corporation

GEORGE R. ARIYOSHI
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

PAUL A. TOM
EXECUTIVE DIRECTOR

IN REPLY REFER

TO:

December 19, 1983

MEMORANDUM

12-23

TO: The Honorable Georgiana K. Padeken, Chairman
Board of Hawaiian Home Lands

FROM: Paul A. Tom, Executive Director

SUBJECT: Waiehu Planned Development Environmental Impact Statement

We appreciate your review of the document and offer the following responses to your comments.

Comment:

"On September 15, 1981, when the conceptual plan for the Waiehu Planned Development was presented to the Paukukalo Community Association in Paukukalo, Wailuku, Maui, there were strong objections to the tie-ins of Kuhio Place to the major thoroughfare. The reasons given were traffic congestion, high speed traffic and danger to children playing in the roadways. The consultant was to research alternative road patterns, such as the dead end of Kuhio Place within the Department of Hawaiian Home Lands (DHHL) Paukukalo Residence Lots and present them to the Paukukalo Community Association. We recommend that these concerns be addressed."

Response:

The consultants have recommended that there be no connection through the development and that Kuhio Place be a dead end street.

Comment:

"Kaumualii Street connects to Kealii Drive and had not been planned for future connection to the Waiehu Planned Development."

Response:

No future connections will be made between the project site and the Hawaiian Home Lands Paukukalo Residence Lots.

Comment:

"Peak storm runoff for the 133.5 acre planned development will be approximately 500 cubic feet per second (cfs). Presently, there is an interceptor ditch in the project site that protects the DHHL subdivision, which we understand will be removed and replaced by an underground drainage system when the project site is developed. An easement from Wailuku Sugar Company will be required for the off-site drainage system to the ocean."

Response:

As you have stated, an underground storm drainage system will be installed. An easement from Wailuku Sugar Company is being sought for the drainage system.

Your letter will be incorporated into the Revised Environmental Impact Statement. Should you have any questions regarding the above, please do not hesitate to contact Ken Harada, Project Coordinator at 848-3240.

Paul A. Tom
Executive Director

cc: Dr. Marvin T. Miura
Mr. Michael Miyabara
Mr. Robert T. Tanaka
Office of Environmental Quality Control

University of Hawaii at Manoa

Environmental Center
Crawford 317 • 2550 Campus Road
Honolulu, Hawaii 96822
Telephone (808) 948-7361

October 7, 1983

RE:0389

12-24

Ms. Letitia N. Uyehara, Interim Director
Office of Environmental Quality Control
550 Halekauwila Street
Honolulu, Hawaii 96813

Dear Ms. Uyehara:

Draft Environmental Impact Statement
Waiehu Planned Development
Waiehu, Maui

Thank you for the opportunity to review the above cited document. Included are comments in response to Hawaii Housing Authorities reply of July 12, 1983 which addressed our original comments (May 20, 1983) submitted during the preparation stage of the Waiehu Planned Development Environmental Impact Statement.

This Environmental Center review was prepared with the assistance of Matthew Spriggs, Anthropology; Paul Ekern, Water Resources Research Center; Joseph Morgan and Bryce Decker, Geography; and Jacquelin Miller and Mark Ingoglia, Environmental Center. The following comments are offered for your consideration:

Solar Water Heating

In our earlier comments, we suggested that the EIS examine the feasibility of using solar water heaters to reduce energy consumption for the future residents of the planned development. We are pleased to report that solar measurments at Maui Community College over the past several years indicate that the local solar budget for Waiehu should be relatively high. Therefore good solar heating performance can be expected. We would strongly urge that solar collectors be included in the planned community.

Solar Measurements: Maui Community College

1977	478 cal/cm^2/day
1978	466.63
1979-80	incomplete data
1981	540.8

Archaeology

The revised EIS should describe what methods of subsurface archaeological testing were utilized including maps showing where the sampling was performed. Historical background should be included to substantiate whether, as the archaeologist suggests, the area would have been of little value prehistorically or if the present lack of visible remains is a result of historic land use from agriculture or the military.

Is there Land Commission Award data for the area, previous archaeological work, or historical disruptions to the site? This information is normally considered in planning the initial archaeological surveys and would help the reviewer to assess the adequacy of the archaeological work.

The probability of locating burial sites within the sand dune formations is quite high. In 1978, the Bishop Museum located several burials in an area less than one mile north of the proposed site. The sites were in a dune area of similar soil associations. It would appear to make not only good economic sense but would to demonstrate appropriate cultural sensitivity if an attempt were made to locate burials prior to development. There has been a growing concern in the native Hawaiian community about the destruction of burial sites during development projects. It should be noted that proper archaeological recording and exhumation of burial sites requires considerable time therefore may create costly delays. If burial sites are located, arrangements should be made with the Hawaiian community, perhaps through the Office of Hawaiian Affairs, for the study of any human remains located and their subsequent disposal.

Paleontology

The presence of fossils in the lithified sand dunes within the housing development is also a possibility. This has been the case in similar geologic structures on Molokai. We would suggest that paleontological advice be sought from the Bishop Museum, Alan Ziegler in particular, to ascertain the probability of fossil occurence and the appropriate action to be taken should fossil deposits be encountered.

Thank you for the opportunity to review the DEIS, we look forward to your response.

Yours very truly,

Donk C. Cox
Director

cc: Department of Social Services,
Hawaii Housing Authority
Environment Impact Study Corporation ✓
Alan Ziegler, Bishop Museum
Matthew Spriggs
Paul Ekern
Joseph Morgan
Bryce Decker
Jacquelin Miller
Mark Ingoglia

GEORGE R. ARIYOSHI
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

PAUL A. TOM
EXECUTIVE DIRECTOR

IN REPLY REFER
TO:

December 14, 1983

12-25

MEMORANDUM

TO: Dr. Doak C. Cox, Director
University of Hawaii at Manoa - Environmental Center

FROM: Richard T. Hirata, Development Project Manager

SUBJECT: Waiehu Planned Development
Environmental Impact Statement (Letter dated October 7, 1983)

We appreciate your review of the document and provide the following responses to your comments.

Comment:

"Solar Water Heating"

"In our earlier comments, we suggested that the EIS examine the feasibility of using solar water heaters to reduce energy consumption for the future residents of the planned development. We are pleased to report that solar measurements at Maui Community College over the past several years indicate that the local solar budget for Waiehu should be relatively high. Therefore good solar heating performance can be expected. We would strongly urge that solar collectors be included in the planned community.

Solar Measurements: Maui Community College

1977	478 cal/cm^2/day
1978	466.63
1979-80	incomplete data
1981	540.8"

Response:

We appreciate the information you have provided and will send the information to the consulting engineer for the project who will evaluate the merits of solar water heating.

Comment:

"Archaeology"

"The revised EIS should describe what methods of subsurface archaeological testing were utilized including maps showing where the sampling was performed. Historical background should be included to substantiate whether, as the archaeologist suggests, the area would have been of little value prehistorically or if the present lack of visible remains is a result of historic land use from agriculture or the military."

"Is there Land Commission Award data for the area, previous archaeological work, or historical disruptions to the site? This information is normally considered in planning the initial archaeological surveys and would help the reviewer to assess the adequacy of the archaeological work."

Response:

We will be pleased to set up a meeting with the consulting archaeologist and Dr. Mathew Spriggs to discuss the sampling methods and previous work conducted in the adjacent area. We point out that the archaeological work conducted in the area include the area adjacent to Iao Stream, the Hawaiian Homes Subdivision, the project site and the area between the project site and Kahekili Highway.

Comment:

"The probability of locating burial sites within the sand dune formations is quite high. In 1978, the Bishop Museum located several burials in an area less than one mile north of the proposed site. The sites were in a

dune area of similar soil associations. It would appear to make not only good economic sense but would to demonstrate appropriate cultural sensitivity if an attempt were made to locate burials prior to development. There has been a growing concern in the native Hawaiian community about the destruction of burial sites during development projects. It should be noted that proper archaeological recording and exhumation of burial sites require considerable time therefore may create costly delays. If burial sites are located, arrangements should be made with the Hawaiian community, perhaps through the Office of Hawaiian Affairs, for the study of any human remains located and their subsequent disposal."

12-26

Response:

We are in agreement that there is a high probability of ancient burials within the project area. We have consulted the State Historic Preservation Officer and will follow and adhere to his recommendations.

Comment:

"Paleontology"

"The presence of fossils in the lithified sand dunes within the housing development is also a possibility. This has been the case in similar geologic structures on Molokai. We would suggest that paleontologial advice be sought from the Bishop Museum, Alan Ziegler in particular, to ascertain the probability of fossil occurence and the appropriate action to be taken should fossil deposits be encountered."

Response:

We are aware of the possibility of fossils, especially bird bones which may be found in the lithified sand. Dr. Marvin Miura has periodically monitored a sand mining operation located adjacent to the project site and has recovered human bones but no fossil bird bones. The material will be turned over to the State Department of Land and Natural Resources.

We have instructed our consultant to keep the State and Bishop Museum informed on any significant finds.

Development Project Manager

cc: √Environment Impact Study Corp.
Attn: Dr. Marvin Miura

Woolsey, Miyabara & Associates, Inc.
Attn: Mr. Michael Miyabara

R. T. Tanaka Engineers, Inc.
Attn: Mr. Robert T. Tanaka

Office of Environmental Quality Control
Attn: Ms. Jacqueline Parnell, Director

State of Hawaii
DEPARTMENT OF DEFENSE
OFFICE OF THE ADJUTANT GENERAL
3949 Diamond Head Road
Honolulu, Hawaii 96816

28 SEP 1983

HIKNG

12-27

Ms. Latitia N. Uyehara, Interim Director
Office of Environmental Quality Control
550 Halekauwila Street, Room 301
Honolulu, Hawaii 96813

Dear Ms. Uyehara:

The Waiehu Planned Development Environmental Impact Statement has been reviewed and our resulting comments are being forwarded as requested.

The Environmental Impact Statement should not overlook the fact that State Department of Defense National Guard Facilities, which have been in the area since 1941, will generate certain levels of noise due to workshop activities and vehicular movement. This potential source of noise levels which may or may not impact the newly surrounding community should perhaps be addressed in Section 4-A., Physical Parameters, under sub-section 2 Noise.

Yours truly,

JERRY M. MATSUDA
Major, HANG
Contr & Engr Officer

cc: Mr. Kenneth Harada, DSSH
Dr. Marvin T. Miura, Env. Impact Study Corp.

RECEIVED
SEP 29 1983
EISC

GEORGE R. ARIYOSHI
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

PAUL A. TOM
EXECUTIVE DIRECTOR

IN REPLY REFER

TO:

December 19, 1983

MEMORANDUM

TO: Major Jerry M. Matsuda, Contracting & Engineering Officer
Office of the Adjutant General, Department of Defense

FROM: Paul A. Tom, Executive Director

SUBJECT: Waiehu Planned Development Environmental Impact Statement

We appreciate your review of the document and offer the following response to your comment.

Comment:

"The Environmental Impact Statement (EIS) should not overlook the fact that State Department of Defense, National Guard Facilities, which have been in the area since 1941, will generate certain levels of noise due to workshop activities and vehicular movement. This potential source of noise levels which may or may not impact the newly surrounding community should perhaps be addressed in Section 4-A., Physical Parameters, under sub-section 2. Noise."

Response:

The noise generated from the National Guard Facilities should not significantly affect the project site. We will consider the inclusion of the noise impacts as you have requested into the text of the Statement.

Your letter will be incorporated into the Revised Environmental Impact Statement. Should you have any questions regarding the above, please do not hesitate to contact Ken Harada, Project Coordinator at 848-3240.

Paul A. Tom
Executive Director

cc: Dr. Marvin T. Miura
Mr. Michael Miyabara
Mr. Robert T. Tanaka
Office of Environmental Quality Control

(P)1745.3

SEP 15 1983

Ms. Letitia N. Uyehara
Interim Director
Office of Environmental
Quality Control
550 Halekauwila Street
Room 301
Honolulu, Hawaii 96813

12-28

Dear Ms. Uyehara:

Subject: Waiehu Planned Development
Environmental Impact Statement

We have reviewed the subject environmental impact statement and have no comments to offer.

Thank you for the opportunity to review the environmental impact statement.

Very truly yours,

HIDEO MURAKAMI
State Comptroller

RY:jl
cc: Mr. Kenneth Harada
Dr. Marvin T. Miura

RECEIVED
SEP 19 1983
FISC

GEORGE R. ARIYOSHI
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

PAUL A. TOKI
EXECUTIVE DIRECTOR

IN REPLY REFER

TO: 83:DEV/53:

November 7, 1983

MEMORANDUM

TO: The Honorable Hideo Murakami, State Comptroller
Department of Accounting and General Services

FROM: Richard T. Hirata, Development Project Manager

SUBJECT: Waiehu Planned Development Environmental Impact Statement

We appreciate your review of the document. Your letter will be incorporated into the Revised Environmental Impact Statement.

A copy of the Revised Environmental Impact Statement will be sent to you for review and comment.

If any questions should arise, please contact me at 848-3240.

Richard Hirata
Development Project Manager

cc: Woolsey, Miyabara & Associates, Inc.
Attention: Mr. Michael Miyabara

✓Environment Impact Study Corp.
Attention: Mr. Marvin Miura

GEORGE R. ARIYOSHI
Governor

STATE OF HAWAII
ENVIRONMENTAL QUALITY COMMISSION
550 HALEKAUWILA ST.
ROOM 301
HONOLULU, HAWAII 96813

ROY R. TAKEMOTO
Chairman

TELEPHONE NO.
(808) 548-6915

September 6, 1983

Dear Reviewer:

Attached for your review is an Environmental Impact Statement (EIS) that was prepared pursuant to Chapter 343, Hawaii Revised Statutes and the Rules and Regulations of the Environmental Quality Commission:

12-29

Title: Waiehu Planned Development

Location: Waiehu, Maui

Classification: Agency Action

Your comments or acknowledgement of no comments on the EIS are welcomed. Please submit your reply to the accepting authority or approving agency:

Ms. Letitia N. Uyehara, Interim Director
Office of Environmental Quality Control
550 Halekauwila Street, Room 301
Honolulu, Hawaii 96813

Please send a copy of your reply to the proposing party:

Mr. Kenneth Harada, Project Coordinator
Dept. of Social Services, HI Housing Authority
P.O. Box 17907
Honolulu, Hawaii 96817

AND ✓ Dr. Marvin T. Miura
Environment Impact Study Corporation
2850 Paa Street, Suite 202
Honolulu, Hawaii 96819

Your comments must be received or postmarked by: October 8, 1983.

If you have no further use for this EIS, please return it to the Commission.

Thank you for your participation in the EIS process.

September 9, 1983

→ State Energy Division has no comments at this time.

Takeshi Yoshihara
Takeshi Yoshihara
Energy Program Administrator

GEORGE R. ARIYOSHI
Governor

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

PAUL A. TOM
Executive Director

IN REPLY REFER

TO: 83:DEV/5325

November 7, 1983

Dr. Takeshi Yoshihara
Energy Program Administrator
State Energy Division
335 Merchant Street, Room 110
Honolulu, Hawaii 96813

Dear Dr. Yoshihara:

SUBJECT: Waiehu Planned Development Environmental Impact Statement

We appreciate your review of the document. Your letter will be incorporated into the Revised Environmental Impact Statement.

A copy of the Revised Environmental Impact Statement will be sent to you for review and comment.

If any questions should arise, please contact me at 848-3240.

Sincerely,

K. T. Harada
KENNETH HARADA
Project Coordinator

cc: Woolsey, Miyabara & Associates, Inc.
Attention: Mr. Michael Miyabara

✓ Environment Impact Study Corp.
Attention: Mr. Marvin Miura

HANNIBAL TAVARES
Mayor

RALPH HAYASHI, P.E.
Director of Public Works

LESTER NAKASATO, P.E.
Deputy Director of Public Works

COUNTY OF MAUI
DEPARTMENT OF PUBLIC WORKS
200 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793

DIVISIONS
Engineering
Highway Construction and Maintenance
Land Use and Codes Enforcement
Waste Management

GEORGE N. ARYOSHI
Governor

October 4, 1983

Ms. Leticia N. Uyehara
Interim Director
Office of Environmental
Quality Commission
550 Halekauwila St., Rm. 301
Honolulu, HI 96813

12-30

Dear Ms. Uyehara:

Subject: EIS for Waiehu Heights Development

Comments as follows.

1. Connections or provisions for connection to adjacent developments should be provided as a minimum for emergency access purposes.

2. On the cover sheet for Appendix D-1 add a third paragraph to read as follows.

   "The Hawaii Housing Authority and its consultants will confer with all affected government agencies during the preliminary engineering phase."

3. The subject of Liquid Wastes requires discussion with the staff of the Waste Management Division. It is understood that the discussion will occur before or during the preliminary engineering phase.

Thank you for the opportunity to comment.

Very truly yours,

RALPH HAYASHI
Director of Public Works

SSG:gs

cc: Ken Harada
Marvin Miura

RECEIVED
OCT 6 1983
EISC

JAN 0 6 1984

PAUL A. TOM
EXECUTIVE DIRECTOR

IN REPLY REFER

TO:

83:DEV/602

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

December 14, 1983

Mr. Ralph Hayashi, P. E.
Director of Public Works
Department of Public Works
County of Maui
200 South High Street
Wailuku, Maui, Hawaii 96793

Dear Mr. Hayashi:

SUBJECT: Waiehu Planned Development Environmental Impact Statement

We appreciate your review of the Environmental Impact Statement and provide the following responses to your comments.

Comment:

"1. Connections or provisions for connection to adjacent developments should be provided as a minimum for emergency purposes."

Response:

Connection through the proposed development will be provided. This connection will provide access between Waiehu Beach Road and Kahekili Highway. No access will be provided through the adjacent developments because of strong community objections.

Comment:

"2. On the cover sheet for Appendix D-1 add a third paragraph to read as follows."

"The Hawaii Housing Authority and its consultants will confer with all affected government agencies during the preliminary engineering phase."

Response:

Your request will be complied with.

Comment:

"3. The subject of Liquid Wastes requires discussion with the staff of the Waste Management Division. It is understood that the discussion will occur before or during the preliminary engineering phase."

Response:

We have instructed the civil engineer to continue to meet with your staff before and during the preliminary engineering phase.

Your letter will be incorporated into the Revised Environmental Impact Statement.

Sincerely,

RICHARD T. HIRATA
Development Project Manager

cc: Environment Impact Study Corp.
Attn: Dr. Marvin Miura

Woolsey, Miyabara & Associates, Inc.
Attn: Mr. Michael Miyabara

KH:jk

12-31

12-32

DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
P. O. BOX 1109
WAILUKU, MAUI, HAWAII 96793

September 20, 1983

State of Hawaii
Environmental Quality Commission
550 Halekauwila Street, Room 301
Honolulu, HI 96813

Attn: Ms. Letitia N. Uyehara, Interim Director

Subject: WAIEHU PLANNED DEVELOPMENT, TMK 3-3-01:10 & 92
WAIEHU, MAUI

Dear Ms. Uyehara:

Please be advised that we do not have any comments on this EIS.

Sincerely,

William S. Haines
Director

cc: Mr. Kenneth Harada, Project Coordinator
Dr. Harvin T. Miura

RECEIVED
SEP 26 1983
EISC

GEORGE R. ARIYOSHI
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

PAUL A. TOM
EXECUTIVE DIRECTOR

IN REPLY REFER
TO: 83:DEV/5325

November 7, 1983

Mr. William S. Haines
Director
Department of Water Supply
County of Maui
P. O. Box 1109
Wailuku, Maui, Hawaii 96793

Dear Mr. Haines:

SUBJECT: Waiehu Planned Development Environmental Impact Statement

We appreciate your review of the document. Your letter will be incorporated into the Revised Environmental Impact Statement.

A copy of the Revised Environmental Impact Statement will be sent to you for review and comment.

If any questions should arise, please contact me at 848-3240.

Sincerely,

KENNETH HARADA
Project Coordinator

cc: Woolsey, Miyabara & Associates, Inc.
Attention: Mr. Michael Miyabara

✓Environment Impact Study Corp.
Attention: Mr. Marvin Miura

12-33

CUST
M-W

MAUI ELECTRIC COMPANY, LIMITED

September 19, 1983

STATE OF HAWAII
Environmental Quality Commission
550 Halekauwila Street, Room 301
Honolulu, Hawaii 96813

ATTENTION: Ms. Letitia N. Uyehara
Interim Director

SUBJECT: EIS for the Waiehu Planned Development
Waiehu, Maui, Hawaii

We acknowledge receipt of your September 6, 1983 letter and the related EIS for subject development.

We have no further comments at this time.

Enclosed is your EIS since we are retaining the copy received with a September 6, 1983 letter from Mr. Paul A. Tom (H.H.A.) who also requested our review/comments.

T. M. SATO
Manager, Engineering

TMS:rt

Enc.

cc: Ken Harada w/o enc.
Marvin T. Miura w/o enc.

RECEIVED
SEP 21 1983

GEORGE R. ARIYOSHI
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

PAUL A. TOM
EXECUTIVE DIRECTOR

IN REPLY REFER

TO: 83:DEV/5325

November 7, 1983

Mr. Tom Sato
Manager, Engineering
Maui Electric Company Limited
210 Kam Avenue
Kahului, Maui, Hawaii 96732

Dear Mr. Sato:

SUBJECT: Waiehu Planned Development Environmental Impact Statement

We appreciate your review of the document. Your letter will be incorporated into the Revised Environmental Impact Statement.

A copy of the Revised Environmental Impact Statement will be sent to you for review and comment.

If any questions should arise, please contact me at 848-3240.

Sincerely,

KENNETH HARADA
Project Coordinator

cc: Woolsey, Miyabara & Associates, Inc.
Attention: Mr. Michael Miyabara

Environment Impact Study Corp.
Attention: Mr. Marvin Miura

HAWAIIAN TELEPHONE
GTE

September 19, 1983

State of Hawaii
Environmental Quality Commission
550 Halekauwila Street, Room 301
Honolulu, HI 96813

SUBJECT: Waiehu Planned Development
Waiehu, Maui

Dear Sir:

Thank you for giving us the opportunity to review the final copy of the Environmental Impact Statement for the Waiehu Planned Development project.

We want to acknowledge that we have no comments to add to those previously submitted after our review of the preliminary Environmental Impact Statement.

Enclosed are the two copies of the Environmental Impact Statement provided to us for our review.

Sincerely,

John J. Wilson
Island Manager

JJW/mk

cc: Mr. Kenneth Harada, Project Coordinator
Dept. of Social Services, Hawaii Housing Authority

Dr. Marvin T. Miura
Environmental Impact Study Commission

REC'D
SEP 28 1983
EISC

12-34

GEORGE R. ARIYOSHI
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

PAUL A. TOM
EXECUTIVE DIRECTOR

IN REPLY REFER

TO: 83:DEV/5325

November 7, 1983

Mr. John J. Wilson
Island Manager - Maui
Hawaiian Telephone
P. O. Box 370
Wailuku, Maui, Hawaii 96793

Dear Mr. Wilson:

SUBJECT: Waiehu Planned Development Environmental Impact Statement

We appreciate your review of the document. Your letter will be incorporated into the Revised Environmental Impact Statement.

A copy of the Revised Environmental Impact Statement will be sent to you for review and comment.

If any questions should arise, please contact me at 848-3240.

Sincerely,

KENNETH HARADA
Project Coordinator

cc: Woolsey, Miyabara & Associates, Inc.
Attention: Mr. Michael Miyabara

Environment Impact Study Corp.
Attention: Mr. Marvin Miura

AMERICAN LUNG ASSOCIATION OF HAWAII

RECEIVED
SEP 19 1983
EISC

ENVIRONMENTAL IMPACT STATEMENT REVIEW

. . . an air quality assurance program

Project: Waiehu Planned Development

Date: 9/13/83

To: Ms. Letitia N. Uyehara
Interim Director
Office of Environmental Quality Control

12-35

1. We have reviewed the EIS for the subject project with particular attention to those sections pertaining to air quality. Our detailed comments follow.

2. Page 4-5, Paragraph 12. Air Quality

   The discussion of air quality addresses only short-term impacts and lacks any analysis of long-term effects. The proposed project constitutes an indirect source of air pollution since it attracts motor vehicle activity. The additional motor vehicle activity results in degradation of air quality which should have been quantified in the EIS. The following publications might be useful in preparing such an analysis:

   a. U.S. Environmental Protection Agency. Guidelines for Air Quality Maintenance Planning and Analysis, Volume 9 (Revised): Evaluating Indirect Sources, EPA 450/4-78-001, September 1978

   b. U.S. Environmental Protection Agency. Compilation of Air Pollutant Emission Factors: Highway Mobile Source (Final Report), EPA 460/3--81-005, March 1981

   c. U.S. Environmental Protection Agency. Application of the HIWAY Model for Indirect Source Analysis. User's Manual, EPA-450/3-75-072, August 1975

   There was also no recognition given to the fact that a residential subdivision has indirect impacts in that it requires electrical energy which must be generated by the existing fossil-fuel fired power plants. This results in additional air pollution in the vicinity of the power plants. Solid waste generated by a subdivision must also be disposed of. If it is burned it too results in additional air emissions.

3. Pages 2-21 - 2-23, Paragraph III.A.2. Traffic

   The traffic data cited in the text and in Table 2-2 was from early 1979. Why was 4.5 year old traffic data used, and was any attempt made to update or project it to 1983 levels?

4. Page 4-9, Paragraph 12. Access and Traffic

   The text stated that total traffic for Waiehu Beach Road and Kahekili Highway

STATE OFFICE
245 N. Kukui St.
Hono., Hawaii 96817
Telephone 537-5966

HAWAII COUNTY
Post Office Box 825
Hilo, Hawaii 96720
Telephone 935-1206

KAUAI COUNTY
Post Office Box 1081
Lihue, Hawaii 96766
Telephone 245-6182

MAUI COUNTY
Cameron Center
Wailuku, Hawaii 96793
Telephone 244-5150

would be 920 and 436 vph, respectively. There was no specific mention of time of day that these hourly volumes would occur.

There was no specific discussion of the significant increase in traffic volumes that would result from the proposed project. If, for example, the abovementioned traffic projections were P.M. peak hour volumes, then they would represent percentage increases of 34% and 316%, respectively, over the 1979 volumes reported in Table 2-2 (Page 2-23).

5. Conclusions

   a. An ambient air quality impact analysis should be prepared for inclusion in the EIS prior to its acceptance.

   b. We would like to review the complete traffic analysis which was done in support of this project.

James W. Horrow
Director
Environmental Health

JWH:ma
C4/T8307

cc: DSSH
EIS Corp.

GEORGE R. ARIYOSHI
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

PAUL A. TOM
EXECUTIVE DIRECTOR

IN REPLY REFER

TO:
83:DEV/5997

December 14, 1983

12-36

Mr. James W. Morrow, Director
Environmental Health
American Lung Association
of Hawaii
245 North Kukui Street
Honolulu, Hawaii 96817

Dear Mr. Morrow:

SUBJECT: Waiehu Planned Development Environmental Impact Statement

We appreciate your review of the document and offer the following responses to your comments.

Comment:

"2. 'Page 4-5, Paragraph 12. Air Quality'

"The discussion of air quality addresses only short-term impacts and lacks any analysis of long-term effects. The proposed project constitutes an indirect source of air pollution since it attracts motor vehicle activity. The additional motor vehicle activity results in degradation of air quality which should have been quantified in the EIS. The following publications might be useful in preparing such an anaylsis:'

'a. U.S. Environmental Protection Agency. Guidelines for Air Quality Maintenance Planning and Analysis, Volume 9 (Revised): Evaluating Indirect Sources, EPA 450/4-78-001, September 1978'

'b. U.S. Environmental Protection Agency. Compilation of Air Pollutant Emission Factors: Highway Mobile Source (Final Report), EPA 460/3-81-005, March 1981'

'c. U.S. Environmental Protection Agency. Application of the HIWAY Model for Indirect Source Analysis. User's Manual, EPA-450/3-75-072, August 1975.'"

Response:

No analysis of long term impacts from automobiles on the ambient air quality was conducted for the environmental impact statement. There were numerous factors involved in this decision. First, a subjective decision that the increase traffic would not significantly degrade the ambient air quality because of the wind patterns and strength of the winds blowing in from the sea would dilute and diffuse any air pollutants.

Second, the analysis which would have been conducted as specified in the publications you were kind enough to mention is dependent on traffic estimates. At this time, we are unable to provide specific details on the mix of the units which would be required for a traffic analysis and which in turn would be required for air pollution analysis.

Third, this being a project to provide low and moderate income housing, it was decided to attempt to keep the planning and construction costs to a minimum to provide reasonably priced homes to the public.

Comment:

"There was also no recognition given to the fact that a residential subdivision has indirect impacts in that it requires electrical energy which must be generated by the existing fossil-fuel fired power plants. This results in additional air pollution in the vicinity of the power plants. Solid waste generated by a subdivision must also be disposed of. If it is burned it too results in additional air emissions."

Response:

The air pollution from generating electricity for the proposed project is an area not covered in the environmental impact statement because this subject is properly handled by the Department of Health. We are aware of the fact that Maui Electric has installed new smoke stacks and percipitators to

disperse the air pollutant from the existing Kahului generating power plant and no solid waste (refuse) is burnt for the generation of electricity.

Comment:

"3. 'Pages 2-21 - 2-23, Paragraph III. A.2. Traffic'

'The traffic data cited in the text and in Table 2-2 was from early 1979. Why was 4.5 year old traffic data used, and was any attempt made to update or project it to 1983 levels?'"

"4. 'Page 4-9, Paragraph 12. Access and Traffic'

'The text stated that total traffic for Waiehu Beach Road and Kahekili Highway would be 920 and 436 vph, respectively. There was no specific mention of time of day that these hourly volumes would occur.'

'There was no specific discussion of the significant increase in traffic volumes that would result from the proposed project. If, for example, the above mentioned traffic projections were P.M. peak hour volumes, then they would represent percentage increases of 34% and 316%, respectively, over the 1979 volumes reported in Table 2-2 (Page 2-23).'"

Response:

We are aware of the fact that the traffic data used was from 1979. The data used for the preparation of the environmental impact statement was derived from planning documents prepared in 1981 and the data was not updated to keep costs down. The traffic data and possibly new traffic analysis will be dealt with when additional information such as the type and mix of housing units have been finalized.

Comment:

"5. Conclusions

'a. An ambient air quality impact analysis should be prepared for inclusion in the EIS prior to its acceptance.'

12-37

'b. We would like to review the complete traffic analysis which was done in support of this project.'"

Response:

We do not agree that an air quality impact analysis is required for this project because logic dictates that the project will not severely degrade the ambient air quality. As we have stated previously, the development is located in an area with strong prevailing trade winds which will dilute and disperse any and all pollutants. The project is located in a rural area and not in a heavily congested urban area such as downtown Honolulu, thereby reducing the possibility of severe air pollution from automobiles.

The traffic analysis will be made available to you when and if it is prepared.

Sincerely,

RICHARD T. HIRATA
Development Project Manager

cc: Environment Impact Study Corp.
Attn: Dr. Marvin Miura

Woolsey, Miyabara & Associates, Inc.
Attn: Mr. Michael Miyabara

R. T. Tanaka Engineers, Inc.
Attn: Mr. Robert T. Tanaka

University of Hawaii at Manoa

Water Resources Research Center
Holmes Hall 283 • 2540 Dole Street
Honolulu, Hawaii 96822

1 November 1983

12-38

Ms. Letitia H. Uyehara, Interim Director
Office of Environmental Quality Control
550 Halekauwila Street, Room 301
Honolulu, HI 96813

Dear Ms. Uyehara:

SUBJECT: EIS for Waiehu Planned Development, Waiehu, Maui
July 1983

We have reviewed the subject EIS and have no comment to offer. Thank you for the opportunity to comment. This material was reviewed by WRRC and affiliate personnal.

Sincerely,

Edwin T. Murabayashi

Edwin T. Murabayashi
EIS Coordinator

ETM:jm

cc: Kenneth Harada
Marvin T. Miura

03:DEV/5413

November 14, 1983

Mr. Edwin T. Murabayashi
EIS Coordinator
University of Hawaii at Manoa
Water Resources Research Center
Holmes Hall 283
2540 Dole Street
Honolulu, Hawaii 96822

Dear Mr. Murabayashi:

SUBJECT: Waiehu Planned Development
Environmental Impact Statement

We appreciate your review of the document. Your letter dated November 1, 1983, will be incorporated into the revised Environmental Impact Statement.

A copy of the revised Environmental Impact Statement will be sent to you for review and comment. If any questions should arise, please contact me at 848-3240.

Sincerely,

Kenneth Harada
Original Signed

KENNETH HARADA
Project Coordinator

KH:ym

GEORGE R. ARIYOSHI
GOVERNOR

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

Wayne J. Yamasaki
DIRECTOR

DEPUTY DIRECTORS
Adam D. Vincent
JONATHAN K. SHIMADA, Ph.D.
CHERYL D. SOON

IN REPLY REFER TO:
STP 8.9615

January 9, 1984

MEMORANDUM

TO: Mr. Paul A. Tom, Executive Director
Department of Social Services & Housing

FROM: Director of Transportation

SUBJECT: WAIEHU PLANNED DEVELOPMENT, EIS
TMK: 3-3-01: 10, 92

Thank you for your response to our comments on the project's environmental impact statement.

We note in your response that you will be requesting your engineering consultant to work directly with us to determine additional information that may be required to evaluate the traffic impacts and design details. Please be advised that the responsibility to determine and evaluate traffic impacts lie with the proposing agency. While we will provide whatever assistance possible, our role is primarily that of a reviewing agency to insure that the traffic impacts of a proposal and its mitigation measures are adequately addressed in the EIS.

Should you have any questions, please feel free to contact Mr. Kenneth Au of my staff at 548-6526.

Wayne J. Yamasaki

Rt.		Info Comment	Coord	Act	Init
1	ED				
	AED				
3					

DEVELOPMENT COPY

12-39

GEORGE R. ARIYOSHI
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

PAUL A. TOM
EXECUTIVE DIRECTOR

IN REPLY REFER
TO:

February 21, 1984

MEMORANDUM

TO: The Honorable Wayne J. Yamasaki, Director
Department of Transportation

FROM: Paul A. Tom, Executive Director

SUBJECT: Waiehu Planned Development EIS
Memorandum Dated January 9, 1984

We agree with your comment that the responsibility to determine and evaluate the traffic impacts lie with the proposing agency. We will provide information on the traffic impacts from the proposed project to your agency for review.

Paul A. Tom
Executive Director

cc: Environment Impact Study Corporation
-Dr. Marvin Miura

Maui Group, Hawaii Chapter
The Sierra Club
P. O. Box 416
Haiku, Maui, Hawaii 96708
October 7, 1983

Hawaii Housing Authority
P. O. Box 17907
Honolulu, Hawaii 96817

Comments on Draft Environmental Impact Statement for Waiehu Planned Development, Maui

12-40

Policies of the Maui Group of the Sierra Club support the development of lower cost housing for Maui residents. The Waiehu Planned Development does not appear to be in conflict with our other policies as to land use, community planning or environmental protection. Information is insufficient at this stage to make a judgment on potential archaeological, cultural or historical impacts. From the information available, however, this project appears to be a wise use of land and other resources for a pressing social need.

Very limited subsurface testing and examination of land modifications is by no means sufficient cause to dismiss the possibility of cultural layers being uncovered during the development of the project. We therefore take strong exception to the conclusions embodied in Appendix B, particularly the paragraph beginning on page 11:

> "The only concern is the possibility of encountering burials during site grading and ground preparation. In light of this, the best mitigative measures for this would be the following:
> A. A certified mortician to acquire necessary County forms for exhumation prior to commencement of any construction.
> B. An archaeologist and certified mortician either be on call or on-site during site modification and preparation."

First, the exposure or discovery of <u>any</u> cultural artifacts documenting early Hawaiian use of the area should be cause for immediate cessation of any disturbance until the State Office of Historic Preservation and a certified archaeologist have had an opportunity to evaluate the find. A certified archaeologist should be retained and kept on call throughout all phases of the project having the potential for archaeological finds.

Mitigative measure "A" above implies that remains could be uncovered and left exposed until commencement of actual construction. Exhumation should proceed immediately after archaeological clearance, not wait for subsequent construction phases.

We trust that the final Environmental Impact Statement will adequately address the requirements for historical and archaeological preservation.

John Bose, II
Conservation Chair

GEORGE R. ARIYOSHI
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

PAUL A. TOM
EXECUTIVE DIRECTOR

IN REPLY REFER

TO:

84:DEV/884

February 21, 1984

Mr. John Bose, II
Conservation Chair
Maui Group, Hawaii Chapter
The Sierra Club
P. O. Box 416
Haiku, Maui, Hawaii 96708

Dear Mr. Bose:

SUBJECT: Waiehu Planned Development
Environmental Impact Statement

We appreciate your review of the document and the valuable comments which have been provided by your organization. In response to your organization's concern with regard to possible archaeological artifacts, historical burials and other cultural material; we believe that the recommendations of the consulting archaeologist are sound. However, as a precaution, a certified archaeologist will be on call and/or available on site during ground clearing activities to evaluate any cultural material which could be uncovered during these activities.

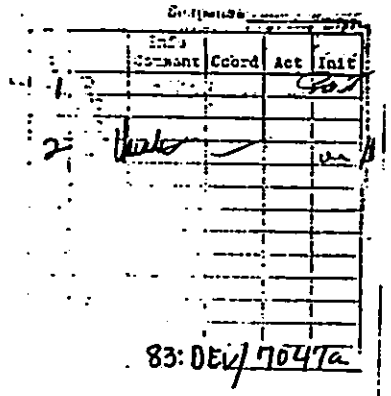
We are in complete agreement with your recommendations that should human remains be uncovered, "Exhumation should proceed immediately after archaeological clearance, not wait for subsequent construction phases."

This agency will insure that all precautions and recommendations of the State Historic Preservation Officer are adhered to.

Sincerely,

KENNETH HARADA
Project Coordinator

cc: Environment Impact Study Corporation
-Dr. Marvin Miura



12-41

September 21, 1983

Ms. Letitia M. Uyehara
Interim Director
Office of Environmental Quality Control
550 Halekauwila Street, Room 301
Honolulu, Hawaii 96813

Dear Ms. Uyehara:

Subject: Waiehu Planned Development

We have reviewed the Environmental Impact Statement (EIS) for the Waiehu Planned Development, and would like to offer the following comments:

1. On the second sheet of the EIS, the TMK number should be shown as 3-3-01:10 and 92.

2. Page 1-2, line 22 - Should read "and adjacent to Waiehu and Paukukalo."

3. Page 1-2, line 34 & 35 - Should read "between the Department of Land and Natural Resources and the Hawaii Housing Authority or purchased."

4. Page 1-3, line 20 - Correct spelling of second word.

5. Page 1-4, line 29 - Should read "A 1.6 acre site will accommodate the required 1.0-MG water ".

6. Page 2-25, line 5 - Should read "Students from grades K-5 through 6-8 will probably be".

7. Page 4-7 - The section on the water system should also address the project's impact at the water sources.

8. Page 6-1, line 22 - Correct spelling of second word.

9. Page 10-1, line 13 - The line on Maui County Council approval should be revised as follows:

PERMIT	STATUS
Conceptual Plan Approval	Approved
Final Plan Approval	Pending

10. Page C-13 - It appears that the projects listed on Table 7 are the planned residential projects which are to be developed by the private sector. If this is correct, the Paukukalo Subdivision, Luana Gardens-Phase I, Luana Gardens-Phase II and Luana Gardens-Phase III projects should be deleted from this table.

11. Page C-15 - The number of units for the Wahikuli Terrace project should be shown as 124.

12. Page C-16 - The Paukukalo Subdivision which is being developed by the Department of Hawaiian Home Lands, should be listed on Table 9.

Ms. Uyehara
pg. 3
Sept. 21, 1983

13. It is suggested that the Hawaii Housing Authority review the data contain in the recently completed report entitled Maui County Housing Study, 1982, as it relates to the data contained in Appendix C of the EIS.

Please have the proposing party contact Mr. Edwin Okubo of our Housing Division if they have any question.

Very truly yours,

VINCE BAGOYO, JR.
Director of Human Concerns

cc: Mr. Edwin Okubo
✓Mr. Kenneth Harada

HANNIBAL TAVARES
Mayor

VINCE BAGOYO, JR.
Director of Human Concerns
Phone 244-7805

County of Maui
DEPARTMENT OF HUMAN CONCERNS
200 South High Street
Wailuku, Maui, Hawaii 96793

Suspense ______

83-DEV 7699a

October 20, 1983

Mr. Kenneth Harada
Project Coordinator
Hawaii Housing Authority
State of Hawaii
P. O. Box 17907
Honolulu, Hawaii 96817

Dear Mr. Harada:

Subject: Waiehu Planned Development Project

Thank you for your October 27, 1983 letter regarding our earlier comments on the subject project. As a response to your letter, we would like to offer the following additional comments:

1. In planning and designing the improvements for the proposed park, please have your engineer consult the County's Director of Parks & Recreation.

2. In the County's proposed Skill Village Subdivision, the FmHA was very inflexable regarding the widths for the road right-of-way and pavement. Therefore, we suggest that your engineer consult with the FmHA on this matter as soon as possible.

Please contact Mr. Edwin Okubo of our Housing Division if you have any question.

Very truly yours,

VINCE BAGOYO, JR.
Director of Human Concerns

ETO:hs

cc: Mr. Edwin T. Okubo

DEVELOPMENT COPY

12-43

GEORGE R. ARIYOSHI
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17907
HONOLULU, HAWAII 96817

PAUL A. TOM
EXECUTIVE DIRECTOR

IN REPLY REFER TO:
84:DEV/885

February 21, 1984

Mr. Vince Bagoyo, Jr.
Director of Human Concerns
Department of Human Concerns
County of Maui
200 South High Street
Wailuku, Maui, Hawaii 96793

Dear Mr. Bagoyo:

SUBJECT: Waiehu Planned Development
Environmental Impact Statement
Letters dated September 21, 1983 and
October 20, 1983

We appreciate your review of the document and offer the following responses.

The comments contained in the letter dated September 21, 1983 were helpful and the changes, when applicable, will be incorporated into the Revised Environmental Impact Statement.

The recommendations that during the planning and design improvements for the park, the consulting engineer consult with the County's Director of Parks and Recreation will be followed.

Your recommendations that the civil engineer consult with the FmHA on the widths for the road right-of-way and pavements will be followed.

Your letters will be incorporated into the Revised Environmental Impact Statement and a copy will be sent to you.

Sincerely,

KENNETH HARADA
Project Coordinator

cc: Environment Impact Study Corporation
-Dr. Marvin Miura

Appendices

APPENDIX A

APPENDIX A

BIOLOGICAL RECONNAISSANCE

JANUARY, 1983

APPENDIX A
FLORA CHECKLIST

For each species, the following information is provided:

1. Family

2. Scientific name

3. Vernacular name

4. Status of the species. The following symbols are employed.

   E endemic to the Hawaiian Islands, i.e., occurring naturally nowhere else in the world.

   I indigenous, i.e., native to the Hawaiian Islands, but also occurring naturally (without the aid of man) elsewhere.

   X exotic, i.e., species of accidental or deliberate introduction after the western discovery of the islands.

   P Polynesian introduction; includes those species brought by the Polynesian immigrants previous to Captain Cook's discovery of the islands.

5. Relative abundance was determined for each species according to the following scale:

   A ABUNDANT, generally the major or dominant species in a given area

   C COMMON, generally distributed throughout a given area in large numbers

   O OCCASIONAL, generally distributed through a major portion of a given area, but in small numbers

   U UNCOMMON, observed uncommonly but more than 10 times in a given area

   R RARE, observed 2 to 10 times in a given area

   S SINGLE, only one specimen observed

   L LOCAL, restricted to a confined area, although within that area it may occur in large numbers

6. Individual transects have been grouped into sectors.

7. Locality symbols used above each column represents the sectors (A, B and C).

CHECK LIST OF PLANTS

SCIENTIFIC NAME	COMMON NAME	STATUS	SECTOR
MONOCOTYLEDONAE			A B C D
GRAMINEAE			
Agrostis alba L.	Redtop	X	U U C
Chloris radiata (L.)Sw.	Radiate fingergrass	X	O C C O
Coix lacchryma-jobi L.	Job's tears	X	U U
Digitaria pruriens	Slender crabgrass	X	U U
Panicum maximum Jacq.	Guinea grass	X	O C C O
Sacchrum officinarum L.	Sugar cane; ko	X	A A
Setaria verticillata (L.) Beauv.	Bristly foxtail	X	O O O
Cenchrus echinatus L.	Common Sandbar		O O O
MUSACEAE			
Musa sp.	Banana	X	O
DICOTYLEDONAE			
ACANTHACEAE			
Thunbergia fragrans Roxs.	White thunbergia	X	O
AMARANTHACEAE			
Amaranthus spinosus L.	Spiny amaranth	X	C C
COMBRETACEA			
Terminalia catappa	False Kamani	X	C
COMPOSITAE			
Verbesina encelioides C (av.) B.&H. ex Grey	Golden crownbeard		O C
Conyza bonariensis L. Cronq.	Hairy horseweed	X	O
Emilia sonchifolia (L.) DC.	Flora's paintbrush	X	O O O O
Sonchus oleraceus L.	Sow thistle	X	O O
Bidens pilosa	Spanish needle	X	C C
CONVOLVULACEAE			
Ipomoea triloba L.	Little bell	X	U
CUCURBITACEAE			
Momordica charrantia var. *Pavel* Crantz.	Balsum apple	X	S U
EUPHORBIACEAE			
Ricinus communis L.	Castor bean; koli	X	O O O O

CHECK LIST OF PLANTS CONT'D

SCIENTIFIC NAME	COMMON NAME	STATUS	SECTOR
			A B C D
DICOTYLEDONAE			
EUPHORBIACEAE			
Aleurites moluccana (L.) Wild.	Kukui		S S R
LIBIATAE			
Leonotis nepetaefolia (L.) Ait. f.	Lion's-ear	X	O O O
LEGUMINOSAE			
Canavalia cathartica Thouars.	Mauna-loa	X	
Cassia leschenaultiana DC.	Japanese tea; lauki	X	O O O O
Cassia occidentalis L.	Coffee senna	X	O O
Crotalaria mucronata	Smooth rattle-pod	X	O O
Crotalaria spectabilis Roth.	Rattle-pod	X	O O
Desmodium sandwicense	Spanish clover	X	O
Dolichos lablab	Lablab bean; Hyacinth bean	X	
Leucaena leucocephala (Lam.) de Wit	Koa-haole	X	A C C A
Prosopis pallida (Humb. & Bonpl.) ex Willd, HBK	Algaroba, Kiawe	X	A A
MALVACEAE			
Abutilon molle	Hairy abutilon	X	O O
MIMOSOIDEAE			
Samanea Saman (Jacq.) Merr	Monkeypod	X	C
PASSIFLORACEAE			
Passiflora foetida L.	Scarlet-fruited passion flower	X	O O O
PROTEAGEAE			
Macadamia tetraphylla	Macadamia	X	A A
PORTULACACEAE			
Portulaca oleracea L.	Purslane; pigweed	X	O O U
STERCULIACEAE			
Waltheria americana L.	Hi'aloa	I	O O O O

CHECK LIST OF PLANTS CONT'D

SCIENTIFIC NAME	COMMON NAME	STATUS	SECTOR			
			A	B	C	D
DICOTYLEDONAE						
VERBENACEAE						
Lantana camara L.	Lantana, latana	X	O	S	C	
SOLANACEAE						
Nicandra physalodes (L.) Gaetron	Apple of Peru	X	S		U	

CHECKLIST - FAUNA

Families are listed alphabetically under birds, mammals, amphibians and reptiles. Genera and species are arranged alphabetically. For each species, the following information is provided:

1. Scientific name

2. Vernacular name

3. Status of the species. The following symbols are employed:

   E endemic to the Hawaiian Islands, i.e., occurring naturally nowhere else in the world.

   I indigenous, i.e., native to the Hawaiian Islands, but also occurring naturally (without the aid of man) elsewhere.

   X exotic, i.e., species of accidental or deliberate introduction after the western discovery of the islands.

   P Polynesian introduction; it includes those species brought by the Polynesian immigrants previous to Captain Cook's discovery of the islands.

4. Relative Abundance:

   Abundant - plentiful; seen with great frequency either within a single habitat or throughout the entire study area.

   Common - general; seen frequently over a wide area but not in exceedingly large numbers.

   Occasional - limited; seen infrequently in the study area or restricted to one habitat or a few habitats.

   Rare - unusual; seldom seen, usually in very low numbers or merely passing through the study area.

   A "P" is used to indicate species that could possibly frequent the study areas or through or over the area due to the close proximity of their habitat from the study area.

5. Locality symbols used above each column represent the sectors (A, B and C).

CHECK LIST OF FAUNA

[Fauna observed, likely present, or which would possibly visit the site]

SCIENTIFIC NAME	COMMON NAME	STATUS	SECTOR
			A B C D
	CLASS AVES		
COLUMBIDAE			
Geopelia striata	Barred dove	X	C C C C
Stretopelia chinensis	Lace-necked dove	X	C C C C
FRINGILLIDAE			
Carpodacus mexicanus frontalis	House finch; linnet	X	C C C C
Cardinalis	Cardinal	X	C O O C
MIMIDAE			
Mimus polyglottos	Mockingbird	X	P D
PHASIANIDAE			
Francolinus pondicerianus	Indian grey francolin	X	C O O C
Phasianus colchicus torquatus	Ring-necked pheasant	X	P P
PLOCEIDAE			
Lnchura punctulata	Spotted munia		P P
Lonchura malacca	Black-headed mannikin	X	P P
Passer domesticus	House sparrow	X	C C C C
STRIGIDAE			
Asio flammeus sandwichensis	Short-eared owl; pueo	E	P P P P
STURNIDAE			
Acridotheres tristis	Common Mynah	X	C C C O
ZOSTEROPIDAE			
Zosterops japonica	Japanese white-eye	X	C C C C

CHECK LIST OF FAUNA CONT'D

[Fauna observed, likely present, or which would possibly visit the site]

SCIENTIFIC NAME	COMMON NAME	STATUS	SECTOR
			A B C D
	CLASS MAMMALIA		
BOVIDAE			
Bos taurus	Cattle		A A
FELIDAE			
Felis catus	Feral Cat; Popoki	X	O O O O
MURIDAE			
Mus musculus	House mouse	X	
	Iole li'ili'i	X	C C C C
Rattus exulans hawaiiensis	Hawaiian rat; Iole	E	P P P P
Rattus norvegicux	Brown rat; Iole, Po'o-wai	X	P P P P
VIVERRIDAE			
Herpestes auropunctatus	Mongoose Iole-manakuku	X	C C C C
BUFONIDAE			
Bufo marinus	Giant neotropical toad, Bufo toad; Poloka	X	P P
	CLASS REPTILIA		A B C
GEKKONIDAE			
Hemidactylus garnotti	Indo-pacific gecko; Fox gecko	P	C C C P
Lepidodactylus lugubris	Mourning gecko	P	P C C P

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APPENDIX B

ARCHAEOLOGICAL RECONNAISSANCE AND SUBSURFACE TESTING

WAIEHU HOUSING DEVELOPMENT
(TMK: 3-3-01:10 and 92)

Waiehu, Maui, Hawaii

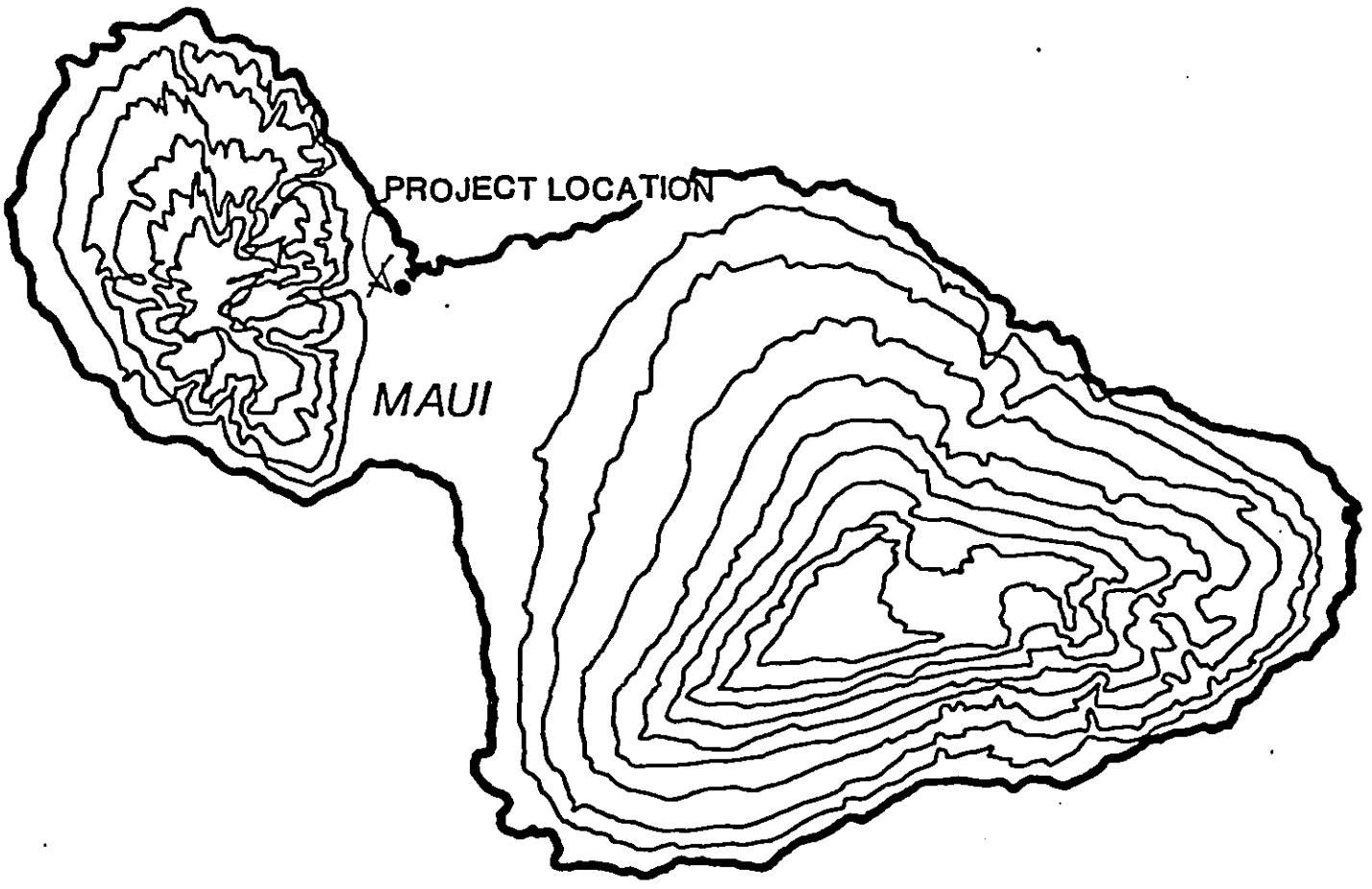
I. GENERAL PROJECT SITE DESCRIPTION

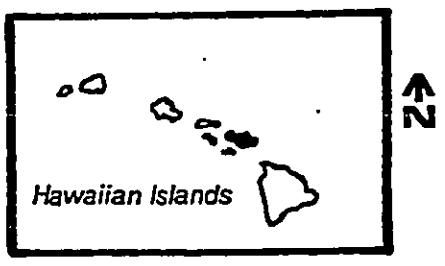
On May 2 and 3, 1981 an archaeological reconnaissance, accompanied with limited subsurface testing, was conducted at the proposed Waiehu housing project site. Refer to Figures 1, 2, and 3.

The soil type at the proposed project site is loose sand underlain with what appears to be a consolidated sand matrix. This sand, combined with limited humus, provides substrate only for a limited, although dense, variety of botanical species. The predominant species noted during the reconnaissance included kiawe (Prosopis pallida), lantana (Lantana camara), koa haole (Leucaena leucocephala), and several grasses. Most of the plants seemed stunted, especially along the upper slopes where vegetation is sparse. Refer to Figure 4 for views of the site.

II. SURFACE ARCHAEOLOGICAL RECONNAISSANCE

The walk-through reconnaissance did not reveal areas indicative of pre-historic use or occupation, despite the project site's location in relation to Haleki'i Heiau and to Pi'ihana Heiau. Refer to Figure 2. However, it should be noted that the area visible from these heiaus is





E.I.S.C.

FIGURE 1
LOCATION
MAP

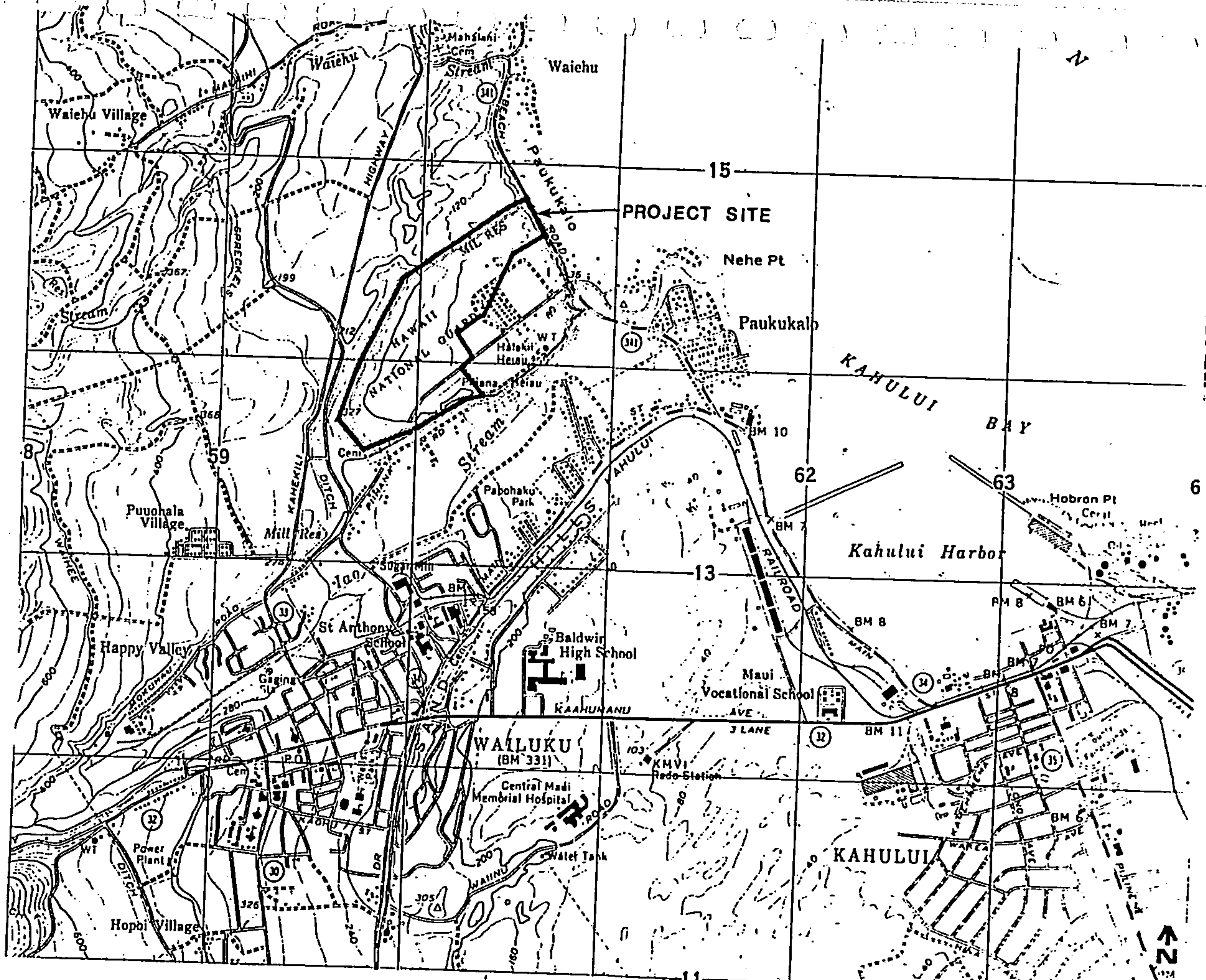

PROJECT SITE
Waiehu
Waiehu Village
Nehe Pt
Paukukalo
KAHULUI BAY
Kahului Harbor
Hobron Pt
Puuohala Village
Mill Res
Sugar Mill
St Anthony School
Happy Valley
Baldwin High School
Maui Vocational School
WAILUKU
Central Maui Memorial Hospital
KMVI Radio Station
Water Tank
Power Plant
Hopoi Village
KAHULUI
Pohaku Park
NATIONAL GUARD
HAWAII
RAILROAD
KAAHUMANU AVE
SPRECKELS
KAHEKILI
DITCH
HIGHWAY
WAIHEE
Stream

FIGURE 2

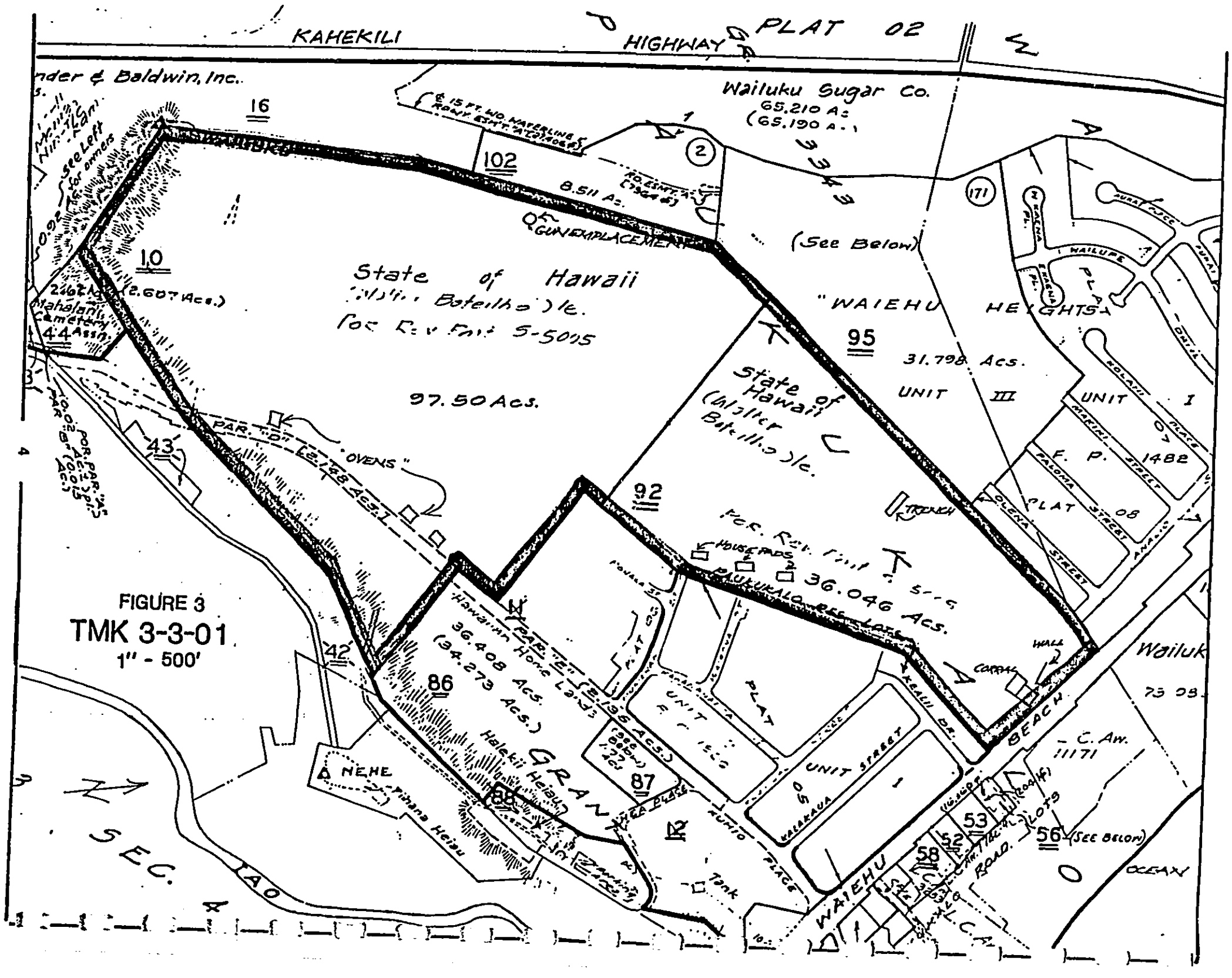

KAHEKILI HIGHWAY
PLAT 02
Wailuku Sugar Co.
65.210 Acs.
(65.190 A.)
16
102
10
State of Hawaii
97.50 Acs.
8.511 Acs.
GUN EMPLACEMENT
(See Below)
"WAIEHU HEIGHTS"
95
31.798 Acs.
UNIT III
UNIT I
State of Hawaii
92
36.046 Acs.
43
42
86
36.408 Acs.
(34.273 Acs.)
87
88
12
PAUKUKALO
WAIEHU
PLAT 08
F. P. 1482
OCEAN
56
(SEE BELOW)
53
52
58
FIGURE 3
TMK 3-3-01
1" - 500'

FIGURE 4-a

View to northeast from western boundary
(view includes portion of Paukukalo)

FIGURE 4-b

View to east from southwest corner of site.
(View includes lower Wailuku)

FIGURE 4-c

View east-southeast from southern boundary showing sand mining on adjacent property

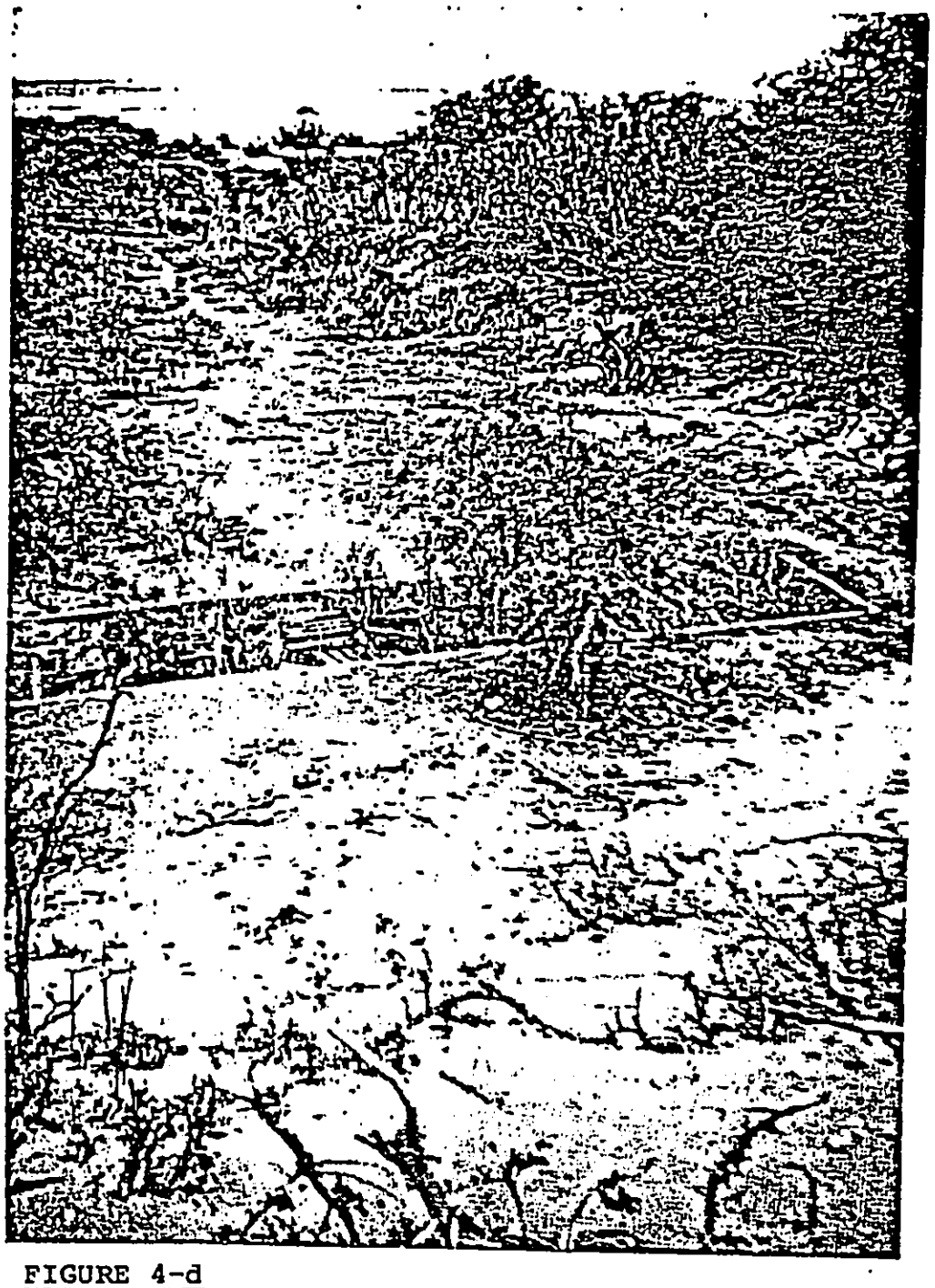


FIGURE 4-d

View northeast towards ocean, including trench. Refer to Figure 3 for approximate location

the region currently in cane production south and east of the project site, between the heiaus and Iao Stream and toward Kahului. Probably, alluvial deposits from Iao Stream provided more suitable agricultural potential. The proposed project site, however, has a loose sand matrix with little humus and would provide poor agricultural potential compared to the surrounding area. Possibly only limited cultivation of sweet potato or secondary crops could have occurred at the project site.

The only surface features encountered during the reconnaissance were those that appeared to be associated with military use during World War II or those associated with later ranching activities.

Three similar structures were located just north of the present jeep trail that traverses the southern portion of the study area, two of which are just inside the fence that crosses the road. These structures, which appear identical in form and construction, consist of half an iron boiler, on concrete foundation walls, cut lengthwise, with one end removed. There appears to be no floors within any of these features. The initial impression of these was that of large ovens. Refer to Figures 3 and 5.

One of these structures, still intact, measures approximately 3 meters (m) x 2 m, with an overall height of approximately 2 m. The stub walls are concrete, approximately .1 m high. It is on these walls that the iron boiler

CORRECTION

THE PRECEDING DOCUMENT(S) HAS BEEN REPHOTOGRAPHED TO ASSURE LEGIBILITY
SEE FRAME(S)
IMMEDIATELY FOLLOWING

the region currently in cane production south and east of the project site, between the heiaus and Iao Stream and toward Kahului. Probably, alluvial deposits from Iao Stream provided more suitable agricultural potential. The proposed project site, however, has a loose sand matrix with little humus and would provide poor agricultural potential compared to the surrounding area. Possibly only limited cultivation of sweet potato or secondary crops could have occurred at the project site.

The only surface features encountered during the reconnaissance were those that appeared to be associated with military use during World War II or those associated with later ranching activities.

Three similar structures were located just north of the present jeep trail that traverses the southern portion of the study area, two of which are just inside the fence that crosses the road. These structures, which appear identical in form and construction, consist of half an iron boiler, on concrete foundation walls, cut lengthwise, with one end removed. There appears to be no floors within any of these features. The initial impression of these was that of large ovens. Refer to Figures 3 and 5.

One of these structures, still intact, measures approximately 3 meters (m) x 2 m, with an overall height of approximately 2 m. The stub walls are concrete, approximately 1 m high. It is on these walls that the iron boiler

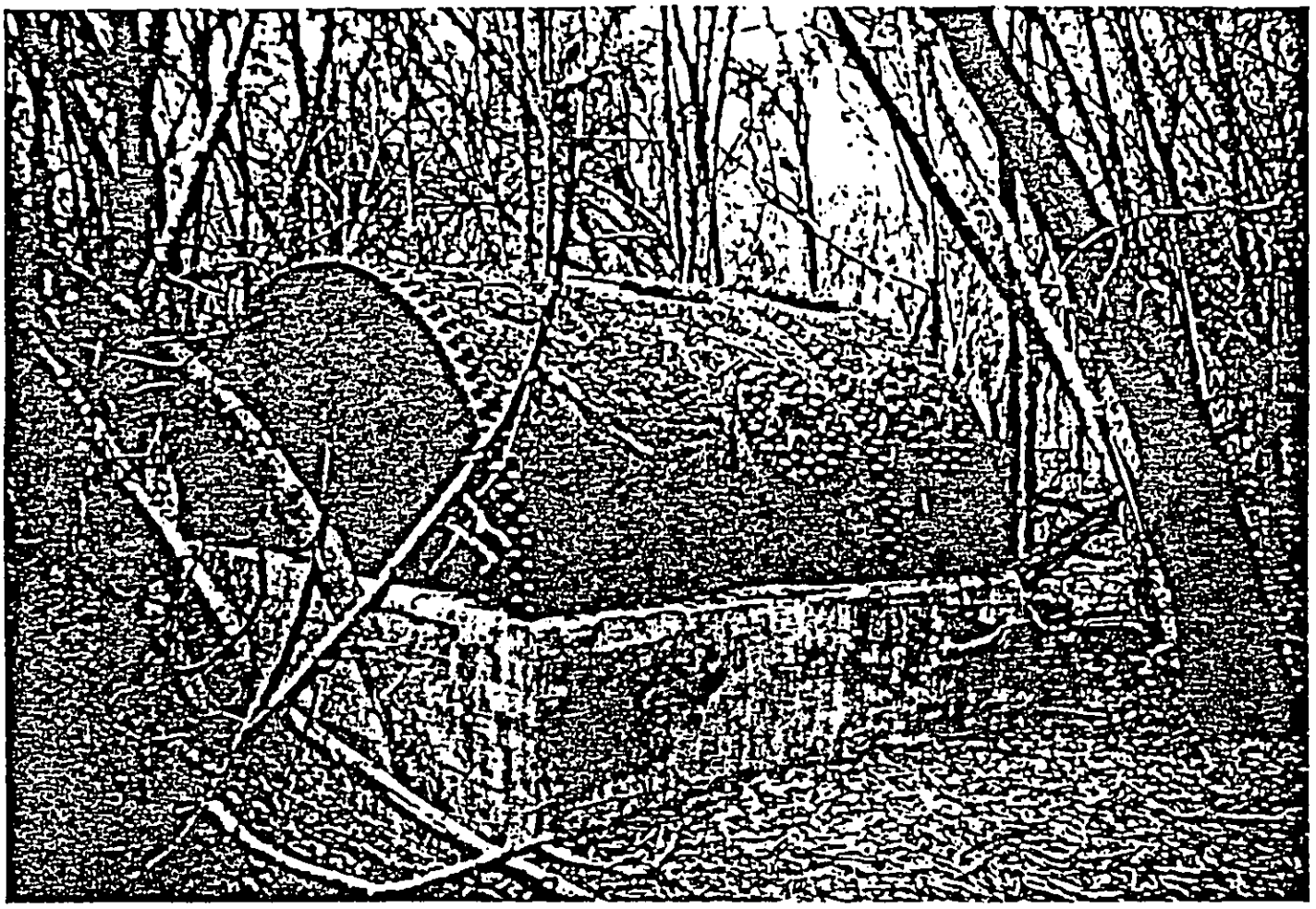


FIGURE 5-a

View of "oven." Refer to Figure 3 for approximate locations.

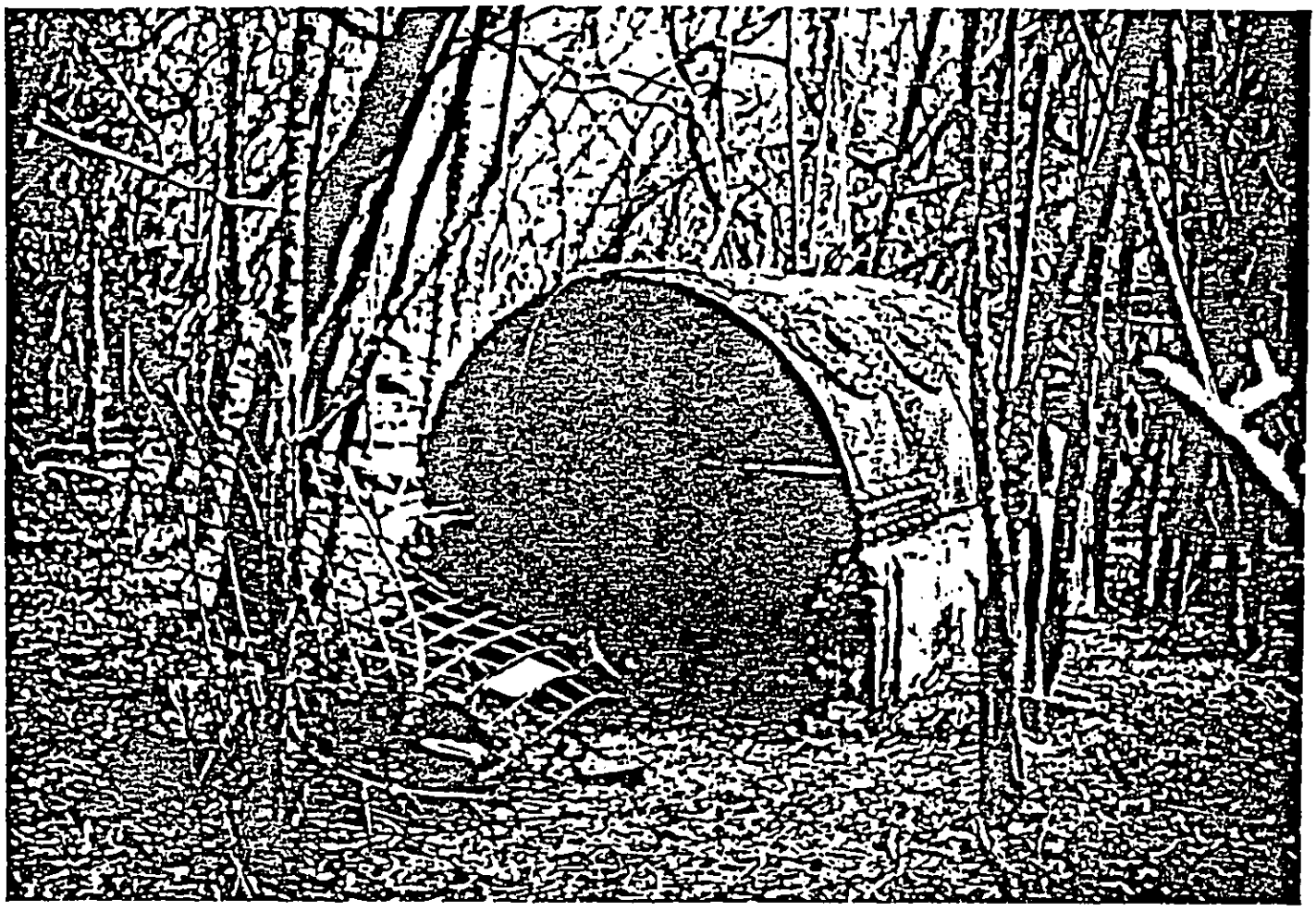


FIGURE 5-b View of "oven."

section, with one end removed, has been placed. Close by and facing the open end was a large grate of welded reenforcing rods, which is of sufficient dimensions to cover the open side of the structure. The other two structures are located within the same general area and although similar in form and overall dimension, are not in as good a condition as the one just described. Various other recent materials such as bottle glass and a 5-gallon military gas can were also in this area.

Approximately 30 m (98 feet) makai of a manhole cover, located along the north ridge crest (apparently part of a water line bisecting the study area), is a small depression, approximately 1 m deep and 1 m in diameter, with large amounts of recent basalt gravel surrounding it. Although it appears to be a machine-gun emplacement, no concrete mounting was observed. Refer to Figure 3.

It is of interest that little indication of military presence was observed in the mauka portion of the study area, since this area was used for assault and landing maneuvers during World War II. Besides the features just mentioned, other features observed throughout the area were recent, such as bottles, toilet bowls, car parts, and other recent debris.

Two historic features were located in the makai portion of the study area. The first of these is approximately 305 m (1000 ft.) from Waiehu Beach Road and 61 m (200 ft.)

from the boundary with Waiehu Heights III Subdivision. This feature is a concrete-lined trench, at least 3 m deep and extending for at least 30 m. In the middle of the trench, forming a bridge, is a small walled-off concrete section with screen doors and barred windows. A spillage pile created from trench construction is immediately mauka of the trench, and sand spill over the ends of the trench make estimation of its true length difficult. Several substantial beam and pully arrangements have been thrown into this trench. The possible purpose of this trench is unclear, but it appears to be of military construction. Refer to Figure 3.

Another feature is located toward the makai end of the study area, approximately 15 m (49 ft.) north of the corral, along Waiehu Beach Road. This feature is a high wall of mortared stone in the form of a short "L". It appears to be of recent construction and is about 10 m long, with the short extension of the "L" being about 3 m long. This wall is about 3 m high and currently serves as a retaining wall, but the original purpose of the wall is uncertain. Refer to Figure 3.

Several recently constructed concrete house pads and debris were located along the edge of the study area, mauka of Paukukalo house lots near Waihona Street and Kealii Drive. Refer to Figure 3. Generally, the makai portions of the study area have experienced recent disturbance from

bulldozing, house construction, rubbish dumping, and other activities.

III. SUBSURFACE TESTING

An important aspect of this reconnaissance was to conduct some subsurface testing of the study area to determine the presence, or absence, of a cultural layer or other indications of prior use of this land area. Test sampling throughout the study area indicated an unusually uniform situation, with 20-35 centimeters of loose sand overlain on what first appeared to be a coral platform. After closer examination of cuts (created by sand mining near Mahalani Cemetery) along the southern ridge, it became evident that the base layer was not coral but a rapidly consolidating sand matrix. This matrix was also observed around existing roots, which implies a rapid rate of consolidation throughout the study area. This could explain the consistent depth of the sand layer throughout the area, which correlates with the initial water table for run-off in this area. No cultural layer was noted in either of the cuts along the northern or southern ridges, nor was there indication of burials or other activities.

The presence of rapidly forming sand matrix, however, has important implications for possible subsurface material. The presence of a subsurface cultural layer appears remote because the study area and surroundings showed no visible indications of such potential. The matrix formation of the

sand, however, indicates that the ridges in the area are actually large sand dune formations, making the presence of burials of high probability.

IV. CONCLUSIONS AND RECOMMENDATIONS

The study area does not show surface indications of prehistoric use or occupation, probably because of the low agricultural potential of the study area which is surrounded by good nearby agricultural land. This lack of use and presence of sand dune formations, however, also implies a high probability of prehistoric burials within the study area. Sand dunes were always prime areas for burials, and this possibility for the study area is intensified by the high quality of the surrounding agricultural land.

Current observations imply that the study area was of limited value during the prehistoric period. Surface sites located during the reconnaissance appear historic and of recent construction, probably associated with military use of the area. These features have no particular significance and further archaeological work is not required. Subsurface testing and examination of various land modifications in the immediate vicinity did not reveal indications of a possible cultural layer.

The only concern is the possibility of encountering burials during site grading and ground preparation. In

light of this, the best mitigative measures for this situation would be the following:

A. A certified mortician to aquire necessary County forms for exhumation prior to commencement of any construction.

B. An archaeologist and certified mortician either be on call or on-site during site modification and preparation.

These measures would enable complete data collection of any burials which might be encountered, while minimizing potential delays for the proposed project.

APPENDIX C

APPENDIX C

HOUSING INVENTORY AND MARKET ANALYSIS

JANUARY, 1983

The material for this appendix is obtained from pages 10 through 34 of the Waiehu Planned Development, Summary Report - Phase I, prepared for the State of Hawaii, Hawaii Housing Authority, by Woolsey, Miyabara & Assoc., Inc., 12 June 1981.

This study was done to establish general planning parameters (1981) for the project and most of the information has not been updated. This material is presented as background information.

HOUSING INVENTORY AND MARKET ANALYSIS

INTRODUCTION

This analysis provides economic and market data to substantiate the need for publicly sponsored housing on the island of Maui. Findings from this analysis will be used to determine appropriate number of units and housing type for the project site. Since providing adequate housing for the lower and moderate income families and the elderly is a primary objective of HHA, the housing

market area used for this analysis encompasses the entire island of Maui and not just the adjacent Wailuku-Kahului region. The primary reason for this broad market area is based on the assumption that the site's convenient location next to the major employment centers of Central Maui would be a major asset in attracting potential participants from all areas of Maui island. In order to determine housing needs, this housing market analysis focuses on three major components:

1. Projected increases in population and households (Demand),
2. Existing and projected housing inventory (Supply), and,
3. Household income characteristics and the ability to pay for housing.

Based on these components, comparisons between demand, supply and ability to pay will be drawn. These conclusions will then be used to determine land requirements for housing and other appropriate support uses for the Waiehu project site in the next phase of the overall planning process.

PROJECTED INCREASES IN POPULATION AND HOUSEHOLDS

POPULATION TRENDS - Past and projected population figures for Maui County are shown in Table 1. The actual residential population increased 7.7% from 42,855 in 1960 to 46,156 in 1970. Over the last decade, the County experienced a dramatic population increase of 54% as it grew to an estimated 1980 population of 71,337.

TABLE 1.

Population Projections -- 1960 to 2000
Maui County Total Residential Population

	Year	Population	% Change
Actual[1]	1960	42,855	
	1970	46,156	7.7
	1980	71,337	53.8
Projected[2]	1985	86,121	14.8
	1990	100,404	16.6
	1995	116,274	15.8
	2000	131,932	13.5

1. DPED, Statistical Report 143
2. DPED, Revised Population and Economic Projections 1975 - 2000 (March 1, 1978) Series II-F, officially recommended for planning purposes, adjusted upward by 5.8%

The 1970's growth rate experienced by Maui County was the fastest of all counties and almost twice the State's 25.5% rate of increase. For this period, net in-migration accounted for about 69% of the increase in population.

Population projections used in this analysis are the DPED Series II-F projections which are recommended for planning purposes. These projections were adjusted to compensate for the 5.8% under estimation between the actual and projected population for 1980. Based on these adjusted projections, Maui County's population is expected to increase to 86,121 in 1985 and 100,404 in 1990.

Maui island, in 1980, accounts for about 89% of the County's total population. This proportion has increased from 83% in 1960 and 84% in 1970, and would most likely continue to steadily increase in the future.

The regional population distribution is shown in Table 2. Central Maui, consisting of Wailuku and Makawao districts, accounts for the largest percentage of the population, however, the Lahaina district has grown at a very fast rate (86.2% population increase between 1970 and 1980).

HOUSEHOLD TRENDS - The number of households and size of households over the past 20 years are shown on Table 3. According to DPED estimates, there were about 19,642 households in 1979 for an average size of 3.31 persons per household. Using this average size and the 1980 polulation of 71,337, the number of households is calculated to be about 21,552.

The decreasing household size - 3.78 in 1960, 3.61 in 1970 and 3.31 in 1979 - corresponds to statewide and national trends toward smaller families and more single or two person households.

TABLE 2.

Population Distribution by Region 1960 to 1980

Region	1960 Pop.	%	1970 Pop.	%	1980 Pop.	%	% Change '60-'70	% Change '70-'80
Hana	1,073	3	969	3	1,419	2	- 9.7	46.4
Makawao	10,409	29	9,979	26	19,230	30	- 4.1	92.7
Wailuku	19,391	54	22,219	57	32,200	51	14.6	44.9
Lahaina	4,844	14	5,524	14	10,287	16	14.0	86.2
Maui Island	35,717		38,691		63,136		8.3	63.2

DPED, Statistical Report 143

TABLE 3.

Household Trends -- 1960 to 1980
Maui County

Year	Population	Households	No./Household
1960[1]	42,855	11,341	3.78
1970[1]	46,156	12,783	3.61
1979[2]	65,072	19,642	3.31
1980[3]	71,337	21,551	3.31

1. DPED, Statistical Report 124
2. DPED, State Data Book 1980, Table 20
3. Calculated by dividing the 1980 population by 3.31

PROJECTED INCREASE IN HOUSEHOLDS - Based on the data presented above, the projected increase in households were calculated up to the year 2000. These calculations assumed that the island population would be about 90% of the County and that the household size would average about 3.3 persons per household up to 1990 and then decrease slightly to 3.2. The net increase in households was derived by subtracting the projected gross increase from the existing 1980 number of households. See Table 4. In effect, the net increase in households can be viewed as those families who would be entering the housing market in the future.

HOUSING INVENTORY - Characteristics of the housing inventory for Maui County are shown in Table 5. Over the last decade the number of housing units has increased about 137% from 14,039 units in 1970 to 33,243 units in 1980. In 1975, roughly 84% of the residential units were single-family detached dwellings. In 1978 however, the percentage decreased to about 62% as more multi-family condominium type units were introduced as alternative housing types.

Of the total housing inventory, it is estimated that about one-third (10,706 units) are condominium units. Of this number, a sizeable proportion are used for non-resident visitors. The Hawaii Visitors Bureau reports that as of February 1981 about 5,107 units or about 48% of the total number of condominiums are offered for visitor use. Assuming an additional number are owned by non-residents as vacation houses, the percentage of condominiums used by non-residents is estimated at about 50% of all condominiums.

TABLE 4.

Projected Increase in Households

	1985	1990	1995	2000
Projected Population County	86,121	100,404	116,274	131,932
Projected Population Maui Island	77,509	90,364	104,647	118,739
Estimated No. of Households	23,488	27,383	32,702	37,106
Net Increase in New Households	1,936	5,831	11,150	15,554

TABLE 6.

Housing Inventory Charcteristics
Maui County -- 1970 to 1979

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Housing Inventory	14,039	14,820	15,636	16,578	17,705	19,283 SF or 85% (1) MF or 15% (1)	21,266	22,470	23,381 SF or 62% (2) MF or 38% (2)	24,576	33,243
New Housing Permits											
Single Family	474	669	832	845	589	795	873	1,081	994	1,010	
Multi Family	583	749	870	1,491	2,644	2,208	229	504	1,330	1,098	
Demolitions	76	94	135	120	45	135	146	99	52	76	
Average Value of Building Permits											
Single Family	8,996	12,986	17,126	18,994	14,956	20,290	23,230	32,269	36,069	40,178	
Multi Family	8,408	11,705	14,933	31,082	75,425	72,449	11,135	23,174	64,184	62,277	

1. DPED, State Data Book, Table 424
2. DPED, State Data Book, Table 414

Deducting the 5,353 units estimated for non-residents from the total housing inventory means that about 27,890 units are available for residents throughout the County. Using the same population ratio of island residents, to county, the island allocation of housing would be about 25,101 units.

BUILDING PERMITS - The volume of building permits and the average dollar value of these permits are indicative of construction activity and cost of new units which are being added to the existing housing stock. Since 1970, multi-family building permits generally kept pace with single-family permits. During the construction boom of the mid-70's, multi-family permits greatly exceeded single-family permits as thousands of condominium units were constructed primarily in the resort areas of West Maui and Kihei.

DEMOLITIONS - Over the last 10 years, demolitions of housing units in Maui County averaged about 97 units per year. Demolished units are a factor of housing demand because they essentially reduce the existing housing supply.

VACANCY RATES - In determining housing demand, vacancy rates indicate the relative health of the housing market. Generally, a 4-5% vacancy rate for permanent residences and a 5-6% rate for rentals are considered desirable for a stable housing supply. At these levels, the housing market is considered to offer adequate housing choices at competitive costs. Although there are no recent data on vacancy rates for Maui, a 1976 postal survey found a vacancy rate of 2.7% for new

and existing residences. Of this amount, only .6% were in existing residences and 2.1% were in new residences just on the market. This low rate indicated a severe housing shortage for that year.

HOUSING TENURE - Housing tenure characteristics for Maui County are shown in Table 6. In 1970, a little more than half of all housing units were owner-occupied. This distribition changed significantly over the last 10 years to where today only 34% are owner-occupied and the other 66% are renter-occupied. Of the renter-occupied units, the private sector accounts for the greatest majority of units.

HOUSING TYPES - In 1978, single-family detached dwellings accounted for 62% of the total housing inventory, while multi-family dwellings represented approximately 38%.

PLANNED RESIDENTIAL PROJECTS - Planned residential projects for the Wailuku and Kahului districts are shown in Table 7. This listing offers a fair representation of what is offered for local residents in the vicinity of the project site. Announced projects in the districts of Napili, Lahaina and Kihei were excluded to avoid counting prospective units intended for non-residents. Of the total 4,088 or so units planned, 251 are under construction, 530 are estimated to be completed in 1982, 166 in 1983 and the remaining 3,141 did not indicate estimated completion dates.

It is significant to note that the high number of announced projects includes the 3,095 Maui Lani residential project by Alexander and Baldwin which recently was denied a land use commission change of zoning request.

TABLE 6.

Housing Tenure
Maui County

Year	All Housing Units	Owner Occupied Units		Renter Occupied Units		
		owned	leased	Private	Fed	State/City
1970	14,039	7,352 (52%)	70 (.01)	6,219 (44)	15 (.01)	383 (3)
1980	33,365	10,669 (32)	618 (2)	21,696 (65)	26 (.01)	356 (1)

DPED, State Data Book, Table 420

TABLE 7.

Planned Residential Projects

Location	No. Lots/Units	TMK	Dev. Est. Date of Completion
Wailuku			
Tokuhisa Apts.	10 units	3-4-18:80	3rd '80 U.C.
Maalea Mermaid	39 units	3-8-14:26	3rd '80 U.C.
Aloysius Klink Apt	10 units	3-8-37:23	4th '80 U.C.
Mount Thomas Condo	32 Units	3-8-37:20 & 21	2nd '81 U.C.
Parkview Manor Condo	14 res. Units	3-4-39:50	2nd '81 U.C.
Paukukalo Sub.	36 Res. Lots	N/A	2nd '82
State HH Lands	59 Res. Lots	N/A	4th '84
Maalaea Landing	26 Res. Units	3-8-14:27 & 30	4th '83
Wailuku Heights Sub.			
Unit 1	270 Res. Lots	3-5-01 por 1	3rd '82
Unit 2	130 Res. Lots	3-5-02 por 3	3rd '83
Waiehu Heights Sub.			
Unit III	146 Res. Lots	3-3-01:95	4th '81
Unit IV	2200 Res. Lots		4th '82
Kahului			
Kuihelani Church Lot Sub A and B	9 Res. Lots	3-8-07:15, 17 & 82	4th '80
Store Village	60 Units	3-7-07:30	1st '82
A and B	2 Res. Lots		
Maui Lani A and B	3095 Res. Lots	3-8-07:74, 109 por 2, por 106, & por 110	N/A
Luana Gardens			
Maui County			
Phase 1	66 Units	3-8-07:por 106	N/A
Phase 2	60 Units		N/A
Phase 3	62 Units		N/A

EXISTING AND PROPOSED PUBLIC HOUSING PROJECTS - Existing public housing projects are listed in Table 8. There are 910 units which were built or are being built with goverment funds. In addition to these units, HHA administers a total of 249 units. Together, public housing projects total 1,159.

According to the Maui County Housing Division, a number of publicly developed residential projects are planned. These are shown in Table 9.

HOUSING COSTS ON THE PRIVATE MARKET - The average sales price over the past 21 months for single-family and multi-family dwellings are shown in Table 10. For the entire island, the average sales price for the last three quarters of 1979 were $158,400 for a single-family dwelling and $142,400 for a multi-family dwelling. For the first quarter of 1980 the sales price increased to $167,600 and $160,300 respectively and subsequently increased for the remainder of the year to $169,100 and $160,800, respectively.

In January 1981, the average sales price dropped to $148,100 for single-family dwellings but increased to $175,900 for multi-family dwellings. The figures for the month of January represent a low volume of sales activity and reflect a decrease in sales price because of the high interest rates. The continued increase of multi-family dwelling sales price is probably indicative of the resort-type condominium unit which can still demand high sales prices.

The sales price range of residential units according to the number of bedrooms are shown on Table 11. According to sales since May of last year, 25% of all three-bedroom, single-family units sold for between $100,000 and $128,000, 29% between $125,000 and $150,000 and 22%

TABLE 8. *

Existing Public Housing Projects -- Maui County

Project	Program Assistance	No. of Units
Hale Mohaolu - Phase II	HUD 202/8	180
Hana	FmHA 502	34
Kauhale Nani	ACT 105/FmHA 502	56
Lahaina	FmHA 502	90
Lahaina Surf	FHA 236	112
Napilihau	ACT 105/FHA 235/FmHA 502	174
Paia Halelani	FHA 235	70
Pomaikai I & II	FmHA 502	75
Wakikuli Terrace	FHA 235	124
Dept. of Hawaiian Homes Lands	Act 105 DHHL	60 5
Molokai Elderly	HUD 202/8	80
Molokai Puu Hauoli	FmHA 502	90
Lanai Lalakea II	FmHA 502 & HUD	57
Waiehu Ho'hui Ana	FmHA 502	65

* Updated June 1983

TABLE 9.*

Planned Public Housing Projects -- Maui County

Project	Now Available	Planned
Hale Piliaoha Subdivision - Haiku	38 Units	
Central Maui Housing Wailuku	68 Lots/ Units Optional	
West Maui Housing Project Maui Land & Pine. Donation		13.5 Acres 72 Units
Lahaina Housing Project Amfac Donation		30 or 7 Acres 120 Units
Upper Paia Housing Project		47 Acres 207 Units
Luaua Gardens		
Phase I		88
Phase II	60	
Phase III	62	
Hana Housing Project		Undetermined
Kahului Housing Project (Hale Laulea)		64 Units

* Updated June 1983

TABLE 10.

Average Sale Price of Residential Units Maui Island -- 1979, 1980, 1981 (Jan.)

District	May 1979 to Dec. 1979				Jan. 1980 to April 1980				May 1980 to Dec. 1980				Jan 1981			
	Single-Family		Multi-Family		Single-Family		Multi-Family		Single-Family		Multi-Family		Single-Family		Multi-Family	
	No.	$	No.	$	No.	$	No.	$	No.	$	No.	$	No.	$	No.	$
Hana	1	125.0	-	-	1	112.0	0	-	1	161.0	0	-	1	149.5	0	-
Makawao	69	155.3	21	200.7	38	168.9	4	187.5	63	175.0	17	213.8	3	152.6	2	181.2
Wailuku	45	136.0	186	115.7	20	126.8	53	119.9	49	147.0	104	130.1	4	144.3	15	119.0
Lahaina	29	201.4	207	168.1	11	242.5	45	194.7	13	224.5	120	179.9	0	0	4	384.6
Entire Area	144	158.4	414	142.4	70	167.6	99	160.3	126	169.1	241	160.8	8	148.1	21	175.0

Multiple Listing Service

TABLE 11.

Sales Price of Residential Property by Number of Bedrooms May 1980 to Jan. 1981

	< $55,000	$55,000-$69,999	$70,000-$84,999	$85,000-$99,999	$100,000-$124,999	$125,000-$149,999	$150,000-$199,999	$200,000-$29,999	$250,000 +
2 or less Bedrooms	(9)	(14)	1 (6)	1 (30)	6 (37)	7 (41)	7 (70)	1 (31)	1 (28)
3 Bedrooms			2	8	20	23	17	4 (1)	5 (3)
4 Bedrooms				1	1	4	4	4	9 (1)
> 4 Bedrooms		1					4	1	3
Total	(9)	1 (14)	3 (6)	10 (30)	27 (37)	34 (41)	32 (70)	10 (32)	18 (32)

Multiple Listing Service
Condominiums in paranthesis

between $150,000 and $200,000. Only 13% sold for less than $100,000 and none sold for less than $70,000.

Condominium units, generally those with 2 or less bedrooms, sold for less. Of the 2 or less bedroom units, the majority sold for between $150,000 - $200,000, however, 8% sold for less than $70,000.

HOUSEHOLD INCOME AND ABILITY TO PAY

Per capita personal income for Maui County increased at an annual rate of 9.1% between 1970 and 1974, and 9.06% between 1975 and 1978. Based on the 9.06% rate of increase, the 1980 per capita income is estimated to be about $9,129.

The average houseold income for Maui County was $5,216 in 1969, $9,643 in 1970 and $13,370 in 1975. To estimate the 1980 average annual household income, the 9.06% rate of increase was applied to the 1975 household income to yield an estimated 1980 average household income of $22,300.

In a 1977 Housing report prepared for HHA and DPED by Daly and Associates, two separate housing need categories and a third, a no need category, were identified. The first category is the low income need group characterized by household size relative to cost of shelter at market rates. The second category is the gap group. These are people who fall in a gap in which their incomes disqualify them from government assisted housing programs but at the same time their incomes are too low for them to meet the minimum income requirements to qualify for conventional financing to purchase a home. Essentially, the people in these two groups are renters who cannot afford to purchase a home.

The third category is the no need group. People in this group have incomes above the gap group or are already homeowners.

Of all the households in the County in 1975, the low income need group was estimated to be about 21.6% while the gap group was estimated at 12.4%. The remaining 66% of the households fell into the no need group.

Applying these same percentages to the estimated number of households in 1980 results in 4,655 households falling in the low income need group and 2,672 in the gap group. These are essentially estimates of renters who may be in the market for a new home.

ABILITY TO PAY - The ability of households to purchase a home is directly related to their annual incomes. In essence, income determines the affordable sales price of the housing unit and the monthly affordable mortgage payment.

Using conventional financing terms as a point of reference, the following Table 12 indicates the affordable price range of housing according to income. Currently, conventional financing includes a 20% downpayment, a 30-year mortgage, a 14% interest rate and a ratio of income to housing cost of 3.5 to 1.

In order to purchase a single-family or multi-family house according to last year's average sales price of over $160,000, the household must have an income of over $60,000. According to the table, the average household with a median income of $22,300 can only afford to purchase a home in the price range of $50,200 to $62,800.

Since current high interest rates and stringent conventional financing terms tend to price the majority of prospective home buyers

TABLE 12.

Affordable Home Prices According to Income Range

Annual Household Income	Maximum Monthly Housing Payments	Affordable Sales Price of Home
$12,000 - $14,999	$ 286 - $ 356	$30,100 - $37,700
$15,000 - 19,999	357 - 457	$37,700 - 50,200
$20,000 - 24,999 *	476 - 594	50,200 - 62,800
$25,000 - 29,999	595 - 713	62,800 - 75,400
$30,000 - 34,999	714 - 832	75,400 - 87,900
$35,000 - 39,999	833 - 951	87,900 - 100,000
$40,000 - 44,999	952 - 1,070	100,000 - 113,000
$45,000 - 49,999	1,071 - 1,080	113,000 - 125,000
$50,000 - 54,999	1,090 - 1,309	125,000 - 138,200
$55,000 - 59,999	1,310 - 1,428	138,200 - 150,700
$60,000 +	1,429 +	150,700 +

* Average

Daly & Associates, Unpublished Report 1981

out of the housing market, many households are seeking alternative means of purchasing or financing a home. For the first time buyer, it is not unusual for parents to co-sign mortgage notes or provide funds for downpayment in order to make the monthly payments affordable. In other cases, credit unions often provide secondary financing or downpayments. Other uncoventional financing includes graduated mortgage payments and the use of State Hula Mae mortgage funds.

COMPARISON OF HOUSING DEMAND VERSUS SUPPLY AND THE ABILITY TO PAY FOR HOUSING

To forecast housing needs in the future, the demand for housing, which is brought about by population increases, is compared to projected changes in the housing inventory.

The method used to derive actual housing demand is as follows:

1. Determine projected Maui County population
2. Determine projected Maui island population
3. Determine estimated number of households
4. Determine net increase in the number of households by subtracting existing households from the projected households
5. Determine additional units to maintain a desirable vacancy rate
6. Determine additional units to replace demolished units
7. Forecasted housing demand = net increase in huseholds + vacancy units + demolished units

The calculations based on this formula are shown in Table 13. According to these estimates, about 2,518 units would be needed in 1985, meaning roughly 500 units for the next 5 years. By 1990, the

TABLE 13.

Housing Demand Projections

		1985	1990	1995	2000
1)	Projected Maui County Population	86,121	100,404	116,274	131,932
2)	Projected Maui Island Population (90% of County)	77,509	90,364	104,647	118,739
3)	Estimated Number of Households (Pop. ÷ by 3.3 for 1985 & 1990 & 3.2 for 1995 & 2000)	23,488	27,383	32,702	37,106
4)	Net increase in new households	1,936	5,831	11,150	15,554
5)	Additional Units needed to Maintain 5% vacancy rate	97	292	558	778
6)	Additional Units to replace 97 demolished units per year	485	970	1,455	1,940
7)	Total Housing Demand	2,518	7,093	13,163	18,272

forecasted demand would increase to 7,093 units, or in this case, over 700 units per year over the next 10 years.

Assuming all of the planned residential projects are constructed as scheduled, which is very optimistic given the uncertainties accociated with development projects, the same 4,000 units could be expected to satisfy housing demand over the next 5 to 6 years.

However, in addition to the projected housing demand, it is also important to note that a sizeable number of unsatisfied demand for housing already exists today. The unsatisfied demand is caused by a number of reasons including the existing severe housing shortage as indicated by the low vacancy rate, the inability of households to qualify for home purchases because of high financing costs, the large percentage of the population in the low income and gap group, and the development of housing types which do not meet the needs of local residents.

The size of the existing unsatisfied demand for housing is difficult to estimate. However, one indication of demand is the number of people on waiting lists for publicly assisted housing or planned projects. According to the County Housing Division, the waiting list for public assistance is about 1,900 households. Response to planned projects were very high according to a Daly and Associates report for the Maui Lani project. In that report, demand was estimated to be about 2,000 units caused largely by current renters, new residents, households presently living together or with relatives and those wishing to upgrade.

If the existing unsatisfied demand were to absorb some of the planned 4,000 or so units, the housing demand would exceed supply in the next 3 to 5 years, if not sooner.

To further aggravate the housing situation, the current high financing costs would tend to discourage construction. In addition, the roughly 46% of all households in the low and gap groups would not be able to afford homes at current prices unless some form of public assistance is provided.

APPENDIX D

APPENDIX D

POSSIBLE COST REDUCTION METHODS*

JANUARY, 1983

The material contained in Appendix D was obtained from pages 22 through 29, Summary Report - Phases 2 and 3, Waiehu Planned Development, State of Hawaii, Hawaii Housing Authority, by Woolsey, Miyabara & Assoc., Inc., 31 March 1982.

This information is preliminary. Further refinement and cost estimates will be available after the preliminary engineering phase.

The Hawaii Housing Authority and its consultants will confer with all affected government agencies during the preliminary engineering phase.

POSSIBLE COST REDUCTION METHODS

Currently, projections indicate that the project, as planned and designed in conformance with existing standards and requirements, does not meet the financial criteria to provide affordable housing. As previously stated, the average per-unit cost stands at approximately $96,338. This is considered beyond the means of low-moderate income and gap group families. The following are some areas where development costs may be reduced:

PROJECT DENSITY - By increasing the density of the planned development from the presently proposed five DUs per acre to the maximum allowable density of six DUs per acre, there can be significant reductions in the areas of on- and off-site development and land costs. For example, on-site costs for 680 units are estimated to be approximately $15,533,245.00, or $22,843.00 per unit. By increasing the total number of units to 800 units, the additional cost would be approximately $2,000.00 per unit or a total of approximately $15,773,245.00 or $19,715.00 per unit. This amounts to a reduction of $3,127.00 per unit.

Off-site costs could be similarly distributed over a greater number of units. For example, present off-site

costs of $2,833,000.00 over 680 units are $4,166.00 per unit, whereas the same off-site costs (this cost would not increase significantly with the additional units) over 800 units are $3,541.00 per unit, or a reduction of approximately $625.00.

Land costs could, in similar fashion, be spread over a larger total. Using an assumed cost of $30,000.00 per acre, the total cost for 134 acres is $4,020,000.00. Spread over 680 units, the per-unit figure is $5,912.00. Using 800 units, this cost is reduced to $5,025.00 or a reduction of $887.00.

In summary, a reduction of approximately $4,639.00 per unit can be realized by increasing the density and total number of units to the allowable maximum.

ROADWAY SYSTEM (EXHIBIT "1") - The main collector road connecting Waiehu Beach Road and Kahekili Highway shall remain to County of Maui Standards, but the remaining minor interior roadway system shall become rural in nature with the elimination of the following:

1.	Curb and Gutter	$350,000.00
2.	Sidewalks	155,000.00
3.	Untreated Base Course	55,000.00
4.	A.C. Pavement	60,000.00

5.	Wheelchair Ramp	30,000.00
	Cost Savings	$650,000.00

The above elimination will have no effect on the public health, safety and welfare.

DRAINAGE SYSTEM (EXHIBITS "2" AND "3") - Exhibit "2" reflects the drainage system meeting the County's requirements and standards in reference to hydraulics and hydrology. With the elimination of the majority of the curb and gutter within the development, swales and inlet structures would be necessary to convey any storm runoff to the outlet.

The cost reductions represent reducing the requirements of structure spacing, increasing the flow width within the roadways, reducing the rainfall requirement from 50-year to ten-year and in some instances to one-year where soil condition permits. There is also a possibility of utilizing dry well systems in isolated areas where a drainage system would be economically impractical.

The following are possible cost reductions utilizing the above recommendations:

1.	Catch Basin	63 @ $6,500.00	$409,500.00
2.	SDMH	9 @ $5,000.00	45,000.00
3.	Reduce 18" to 15"	2,280 feet @ $8.00	18,240.00
4.	Reduce 21" to 18"	1,200 feet @ 8.00	9,600.00
	Cost Savings		$482,340.00

SEWER SYSTEM (EXHIBITS "4" AND "5") - Exhibit "4" reflects the sewer system meeting County of Maui Standards and Regulations.

Exhibit "5" reflects the sewer system with modification of sewer standards, by allowing curve sewerline and wider spacing of manholes; eliminating minimum standards of pipe sizing and letting it be governed by hydraulics.

The following are possible cost reductions utilizing the above recommendations:

1.	Sewer Manholes	40 @ $5,000.00	-$200,000.00
2.	Reduce 8" to 6"	1,700 feet @ $5.00	- 8,500.00
3.	Add Service Lateral	60 @ $750.00	+ 45,000.00
4.	Add Markers	205 @ $10.00	+ 2,050.00
	Cost Savings		$161,450.00

WATER SYSTEM (EXHIBITS "6" AND "7") - Exhibit "6" reflects the water system based on the requirements of the Rules and Regulations and Water Standards.

Exhibit "7" reflects the water system with modifications of the Water Rules and Regulations by allowing pipe sizing .on the basis of hydraulics and fire flow requirements by design criteria based on actual flow data and also increasing fire hydrant spacing.

The following are possible cost reductions utilizing the above recommendations:

1.	Fire Hydrant	20 @ $1,500.00	-$ 30,000.00
2.	6" Gate Valve w/SVB	20 @ $750.00	- 15,000.00
3.	Add Service Lateral	60 @ $750.00	+ 45,000.00
4.	Reduce 12" to 8"	2,280 feet @ $15	- 34,000.00
5.	Reduce 8" to 6"	1,080 feet @ $10	- 10,800.00
6.	Reduce 6" to 4"	720 feet @ $10.00	- 7,200.00
	Cost Savings		$ 52,200.00

ELECTRICAL AND TELEPHONE (EXHIBIT "8") - The main collector road connecting Waiehu Beach Road and Kahekili Highway will have the primary system overhead with secondary services to the lots along the main roadway to be underground.

The remaining roads within the development will have a totally overhead system.

The following is possible cost reduction based upon these recommendations:

1. Main Collector Road		
a. Overhead cost per unit	140 @ $500.00	$ 70,000.00
b. Underground cost per unit	140 @ $500.00	70,000.00
2. Minor Street (Overhead System)		
a. Overhead cost per unit w/service	660 @ $500.00	330,000.00
b. Service fee	800 @ $250.00	200,000.00
Total Cost		$670,000.00

Cost Savings = $2,044,725.00 - $670,000.00 = $1,374,725.00.

SHARING OFF-SITE COSTS - Because some off-site requirements benefit not only the project, but also potential future developments, some of these costs could be shared among landowners benefitting from these improvements or rebated at a later date when their projects come on-line.

CONVERTING OFF-SITE COSTS TO PUBLIC WORKS PROJECTS - The costs of some major off-site work could be taken out of development costs and funded as public works projects. Examples could be the construction of

the water storage tank, the construction of the major connector road linking Waiehu Beach Road and Kahekili Highway, and off-site drainage improvements. Cost reductions could amount to approximately $2,800,000.00.

REDUCTION IN RAW LAND COSTS - Current projections are based on land acquisition at $30,000 per acre. Any reduction in this cost would directly lower the per-unit cost.

Also, deferral of all or a portion of land costs in the form of leasehold arrangements would achieve lower costs.

USE OF ALTERNATE CONSTRUCTION METHODS AND/OR MATERIALS - In order to reduce the building costs, new housing construction types may have to be explored. Ideas such as prefabricated or modular homes, or expandable homes may reduce building costs appreciably.

EXEMPTION FROM WATER SOURCE ASSESSMENT - This item calls for total elimination of any source development fees. If this idea is unacceptable to the County Water Department, perhaps a direct source development project undertaken by the developer in lieu of an assessment charge may require a lesser expenditure. If the assessment fee is waived, a savings of $2,160,000 can be realized. (Since the estimate was prepared, it has been

verified with the County of Maui that this assessement is waived for publicly assisted projects.)

GENERAL EXCISE TAX EXEMPTION - This exemption amounts to a savings on the project costs of aproximately $1,802,000.

SUMMARY

The following are the total cost reductions based upon the recommendations listed:

		Lump Sum	Per Unit
1.	Project Density		$ 4,639.00
2.	Roadway System	$ 650,000.00	813.00
3.	Drainage System	482,340.00	603.00
4.	Sewer System	161,450.00	202.00
5.	Water System	52,200.00	65.00
6.	Electrical & Telephone	1,374,725.00	1,718.00
7.	Off-Site Costs to Public Works	2,800,000.00	3,500.00
8.	Water Source Assessment	2,460,000.00	2,125.00
9.	GET Exemption	1,802,000.00	2,253.00
	Total Cost Reduction	$9,482,715.00	$16,493.00