

JOHN WAIHEE
GOVERNOR



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IN REPLY REFER TO:
93:DEV/0124

January 11, 1993

93 JAN 12 P1:53

TO: The Honorable Brian J. J. Choy, Director
Office of Environmental Quality Control

FROM: *Joseph K. Conant*, Executive Director
Housing Finance and Development Corporation

SUBJECT: Negative Declaration for Offsite Infrastructural
Components, Lahaina Master Planned Project Tax Map
Keys:

4-5-21: 04 por. Wahikuli - Lahaina, Maui, Hawaii
4-5-21: 07 por. Wahikuli - Lahaina, Maui, Hawaii
4-5-21: 03 por. Wahikuli - Lahaina, Maui, Hawaii
4-5-11: 01 por. Wahikuli - Lahaina, Maui, Hawaii

The Housing Finance and Development Corporation (HFDC) has reviewed the comments received during the 30-day public comment period which began on November 18, 1992. The HFDC has determined that this project will not have significant environmental effect and has issued a negative declaration. Please publish this notice in the January 23, 1993 OEQC Bulletin.

We have enclosed a completed OEQC Bulletin Publication Form and four copies of the final EA.

Please contact Neal Wu at 587-0538 if you have any questions.

1993-01-23-MA-PEA-Lahaina Master Planned Project

JAN 23 1993

FILE COPY

Final Environment Assessment
and Negative Declaration
Offsite Infrastructural Components
Lahaina Master Planned Project

Wahikuli-Lahaina, Maui, Hawaii

December 1992

**FINAL ENVIRONMENTAL ASSESSMENT
AND NEGATIVE DECLARATION
FOR OFFSITE INFRASTRUCTURAL COMPONENTS
LAHAINA MASTER PLANNED PROJECT
WAHIKULI-LAHAINA, MAUI, HAWAII**

December 1992

**Prepared for: State of Hawaii
Housing Finance Development Corporation**

Prepared by: PBR HAWAII

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APPENDIX G -	Notice of Accepted Environmental Impact Statement, Lahaina Wastewater Treatment Plant Expansion - OEQC Bulletin
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ENVIRONMENTAL ASSESSMENT
FOR
OFFSITE INFRASTRUCTURE: LAHAINA MASTER PLANNED COMMUNITY
LAHAINA, MAUI

October 1992

The Applicant

APPLICANT:

Housing Finance and Development Corporation
677 Queen St., Suite 300
Honolulu, Hawaii 96813

Mr. Joseph Conant
Executive Director

LAND OWNER:

State of Hawaii
Various Land Owners*

AGENCIES CONSULTED IN
MAKING REPORT:

County of Maui
Planning Department
Department of Public Works
Department of Human Services
Department of Water Supply

State of Hawaii
Department of Transportation
Department of Education
Department of Health
Department of Land and Natural Resources

Federal Agencies

U.S. Army Corps of Engineers

* Easements or other access to be negotiated by the State of Hawaii where necessary.
See Tax Map Key and Owner table for details.

The Application

In the matter of the Application of)
HOUSING FINANCE AND DEVELOPMENT CORPORATION)
To prepare an Environmental Assessment)
for the proposed Offsite Infrastructural Components)
Maui Tax Map Key 4-5-21: Por. 4, Por. 7, Por. 3;)
4-5-11: Por. 1)
at Lahaina, Island of Maui, State of Hawaii.)

THE APPLICANT

Housing Finance and Development Corporation
677 Queen Street, Suite 300
Honolulu, Hawaii
(808) 543-6806

Agent: PBR HAWAII
1042 Fort Street Mall, Suite 300
Honolulu, Hawaii 96813
(808) 521-5631

THE APPLICATION

This matter arises from an Environmental Impact Statement (herein referred to as the EIS) previously prepared for the Lahaina Master Planned Community filed by the State Housing Finance and Development Corporation and accepted in February of 1990 by the State of Hawaii. Pursuant to Hawaii Revised Statutes (HRS) 343, and Chapter 200, Sections 11-200-9 through 13(b), in the Environmental Impact Statement Rules of the State Department of Health, the Housing Finance and Development Corporation ("Applicant"), herein submits an environmental assessment for the Offsite Infrastructural Components of the Lahaina Master Planned Community, situated at Lahaina, Island of Maui, and further identified by Maui Tax Map Keys (TMK) and by study area, i.e. Water System Source Development, and Drainage and Irrigation Improvement Areas. Figures 1, 2 and 3 provide location and Tax Map Key details. Table 1 shows study areas by TMK and provide applicable ownership information.

An Environmental Assessment for Offsite Infrastructural Components completed in June of 1991 (referred to herein as June 1991 EA) covered a portion of the Water System and Booster Pump Station improvements, as well as certain drainage and highway improvements. This EA supplements the accepted Environmental Impact Statement and the June 1991 Environmental Assessment. Additional wells are proposed and other drainage and irrigation improvements are now planned. Refer to Appendix A for the published negative declaration of the June 1991 EA.

TABLE 1

TAX MAP KEY AND OWNER BY STUDY AREA

Water System Area (Well sites)

TMK 4-5-21: 04 portion - State of Hawaii

Drainage Improvements

Northern Drainage Site

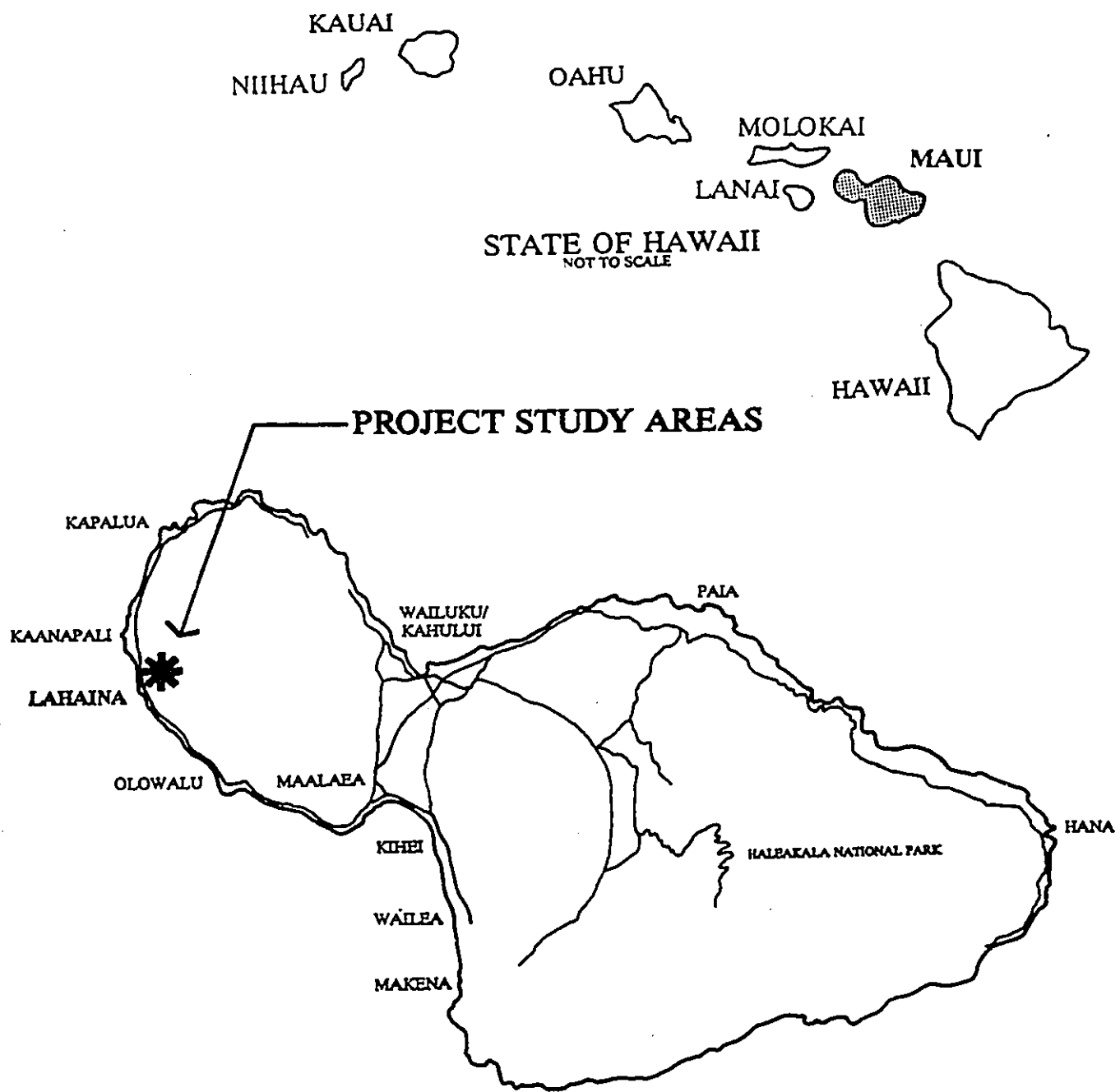
TMK 4-5-21: 03 portion, 07 portion - State of Hawaii

Southern Drainage Site

TMK 4-5-11: 01 portion - Hawaii Omori Corporation

Wastewater Reclamation

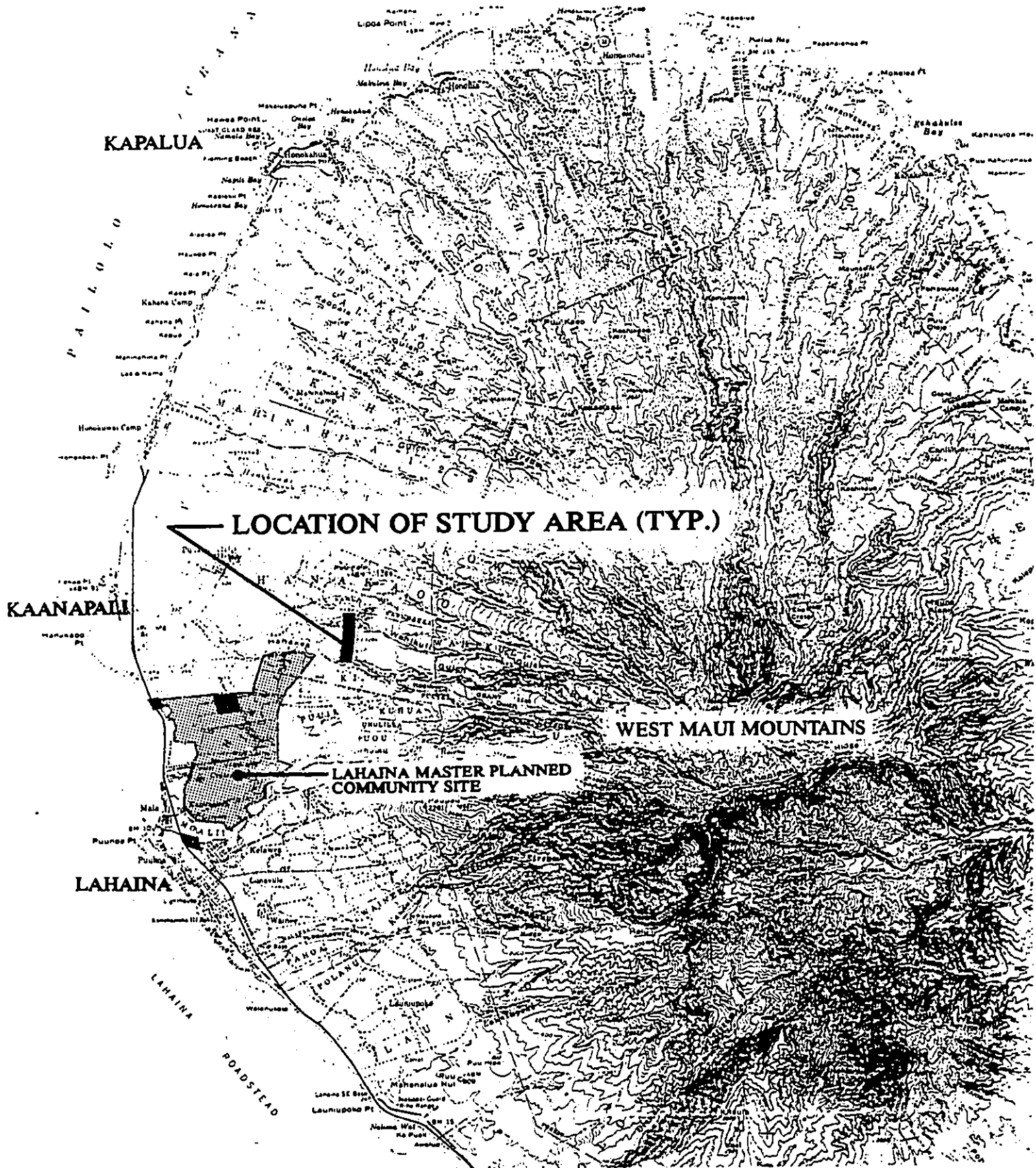
TMK 4-5-21: 04 portion - State of Hawaii



**FIGURE 1
ISLAND LOCATION MAP
LAHAINA OFFSITE INFRASTRUCTURE EA**

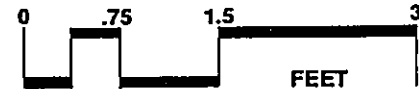


10/92 **PBR**



SOURCE: USGS 1957

FIGURE 2
REGIONAL LOCATION MAP
LAHAINA OFFSITE INFRASTRUCTURE EA



PIBR
HAWAII
10/92

SOURCE: TAX MAP KEY OFFICE, MAY 17, 1991

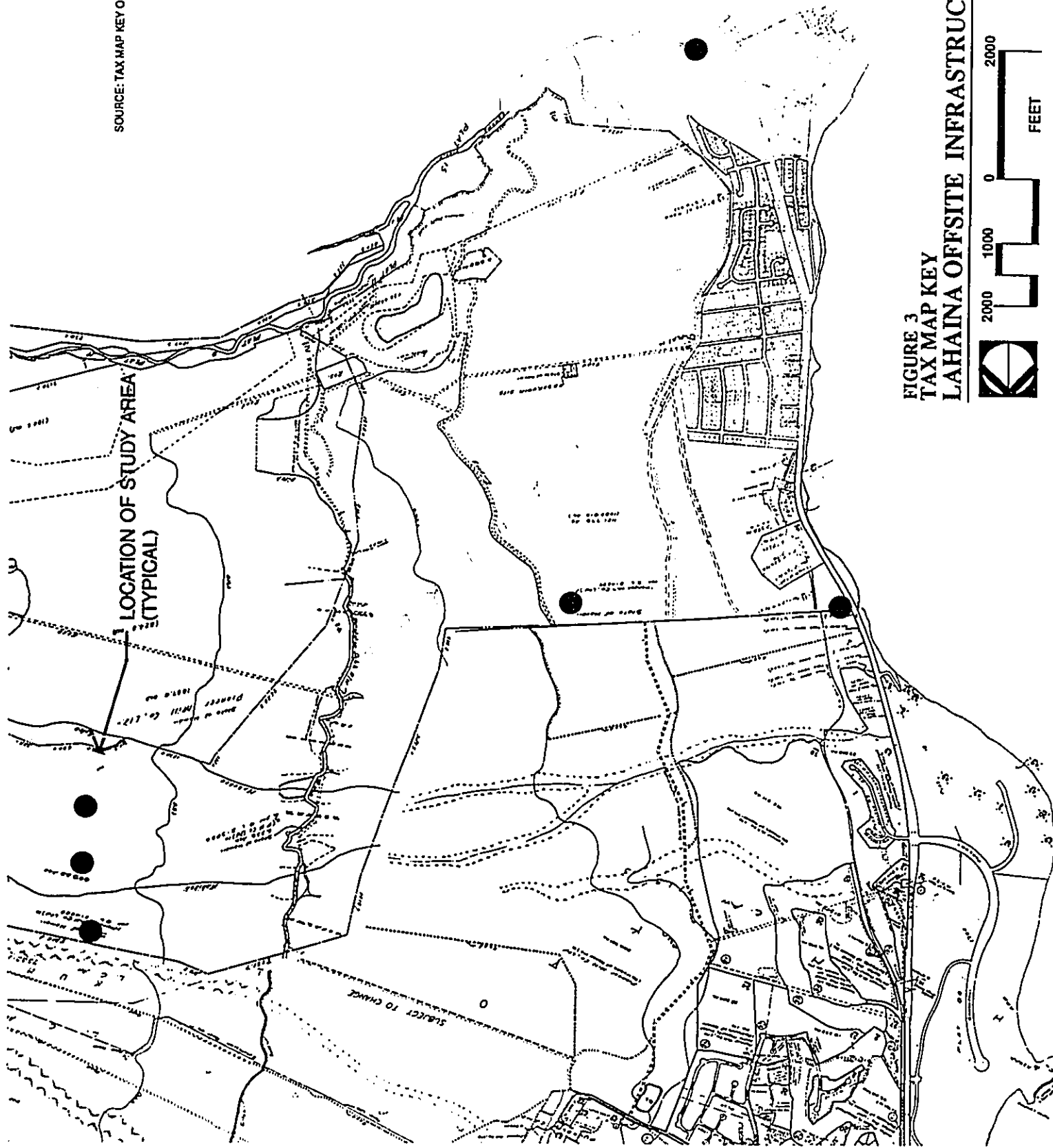


FIGURE 3
TAX MAP KEY
LAHAINA OFFSITE INFRASTRUCTURE EA



10/92

PURPOSE OF THE APPLICATION

The 1990 EIS, June 1991 EA, and this Environmental Assessment (EA), are herein submitted in support of the Housing and Finance Development Corporation's (HFDC) improvement of offsite potable water source development to facilitate a well site, tank site, access and utility easement exchange between Pioneer Mill and the State (see attached Appendix H for December 18, 1992 Board approval and details), implementation of a waste water reclamation plan and drainage improvements. These improvements are necessary for the development of Village I in the Lahaina Master Planned Community and ultimate project buildout. The proposed offsite potable water source development would be located in TMK 4-5-21: 04 por., while the drainage improvements involve TMK's 4-5-21: 03 por. and 07 por. and TMK 4-5-11: 01 por.. The waste water reclamation site is within the Lahaina Master Planned Community in TMK 4-5-21: 04 por.. Refer to Table 1 for TMK and owner information.

This EA has also been prepared in support of the various permit applications that may be required to allow for construction of the proposed project, and to provide the necessary environmental review prior to the expenditure of State funds for capital improvements.

A description of the affected environment, proposed mitigation measures, assessment of possible environmental impacts, and the reasons supporting those determinations are provided. The information contained in this EA has been developed from site visits, studies conducted specifically for this document, the Lahaina Master Planned Community EIS, and June 1991 offsite EA, as well as generally available information regarding the environmental characteristics of the project site and the surrounding area.

APPROVING AGENCY

State of Hawaii
Housing Finance and Development Corporation

CONSULTING AGENCIES

County of Maui
Planning Department
Department of Public Works
Department of Human Services
Department of Water Supply

State of Hawaii
Department of Transportation
Department of Health
Department of Land and Natural Resources

Description

GENERAL DESCRIPTION

Description of the Property

1. The proposed Lahaina Master Planned Project lands are located adjacent to the Civic Center and Wahikuli subdivision area mauka of near Lahaina Town, and north of the existing Kelawea subdivision and Lahainaluna High School. Figures 1 and 2 provide regional location information.

The proposed project sites encompass four distinct areas. Two drainage related improvements are located 1) toward the northern makai end of the Lahaina Master Planned Community (LMPC) and are comprised of reinforced concrete box culverts to be located under Honoapiilani Highway near the Lahaina Civic and Recreation Center and adjacent to Wahikuli Park, and 2) a second box culvert crossing south of the Lahaina Master Planned Community within the Hawaii Omori Corporation property. This drainage improvement would be connected to the existing cement lined drainage apron to Kahoma Flood Control Channel.

Mauka and northeast of the LMPC, three new well sites are also proposed. These well sites at an elevation of approximately 1050'. These sites are located north of other well site locations previously proposed in the June 1991 Environmental Assessment.

Within the northeast corner of the LMPC site, a temporary irrigation field for wastewater reclamation from Village 1 will be constructed. Later, a permanent wastewater reclamation area will be permanently established as the golf course is constructed on the site.

2. Presently, land use entitlements for the subject Properties are as follows:

Offsite Potable Water Source Development

- a. State Land Use District: Agriculture
- b. Lahaina Community Plan: Agriculture
- c. County Zoning: AG
- d. Special Management Area: Not Applicable
- e. Other Special Districts: None

Drainage Improvements

- a. State Land Use District: Agriculture & Urban
- b. Lahaina Community Plan: LI and Project District 4
- c. Zoning: R-3 and Ag
- d. Special Management Area: Portions in the Special Management Area

- e. Other Special Districts: None

Wastewater Reclamation Site

- a. State Land Use District: Urban
- b. Lahaina Community Plan: Project District 4
- c. Zoning: Ag
- d. Special Management Area: None
- e. Other Special Districts: None

Figures 4 and 5 depict the location of the proposed improvements as they relate to the LMPC and land use entitlements.

- 3. The project areas described by this Environmental Assessment are necessary in order to implement the Housing Finance and Development Corporation (HFDC) Lahaina Master Planned Community (LMPC). This 1,120 acre planned community is located mauka and adjacent to the town of Lahaina.

Lands adjacent to the proposed project sites are owned by various private land owners and the State of Hawaii. Specifically, the lands proposed for the offsite potable water source development comprised of the three well sites, is owned by the State of Hawaii. Presently, these lands are leased to a subsidiary of Amfac/JMB Hawaii, Inc., Pioneer Mill Company Ltd. for sugar cane cultivation. As such, the property is classified as "Agriculture" by the State Land Use Commission. Lands proposed for the offsite drainage improvements lie within existing drainageways located under Honoapiilani Highway and within lands owned by the State and by Omori Hawaii.

In summary, the surrounding Land Uses are as follows:

- a. North: Urban/Residential - Lahaina Wastewater Treatment Plant and sugar cane fields
- b. East: West Maui Mountain foothills
- c. South: Lahaina Master Planned Community
- d. West: Shoreline

- 4. Presently, the primary use of the well project area is related to sugar cane cultivation. The proposed drainage culverts would be located under Honoapiilani Highway and within property owned by Omori. The temporary site, as well as the permanent area for the wastewater reclamation site, are situated on State owned property.

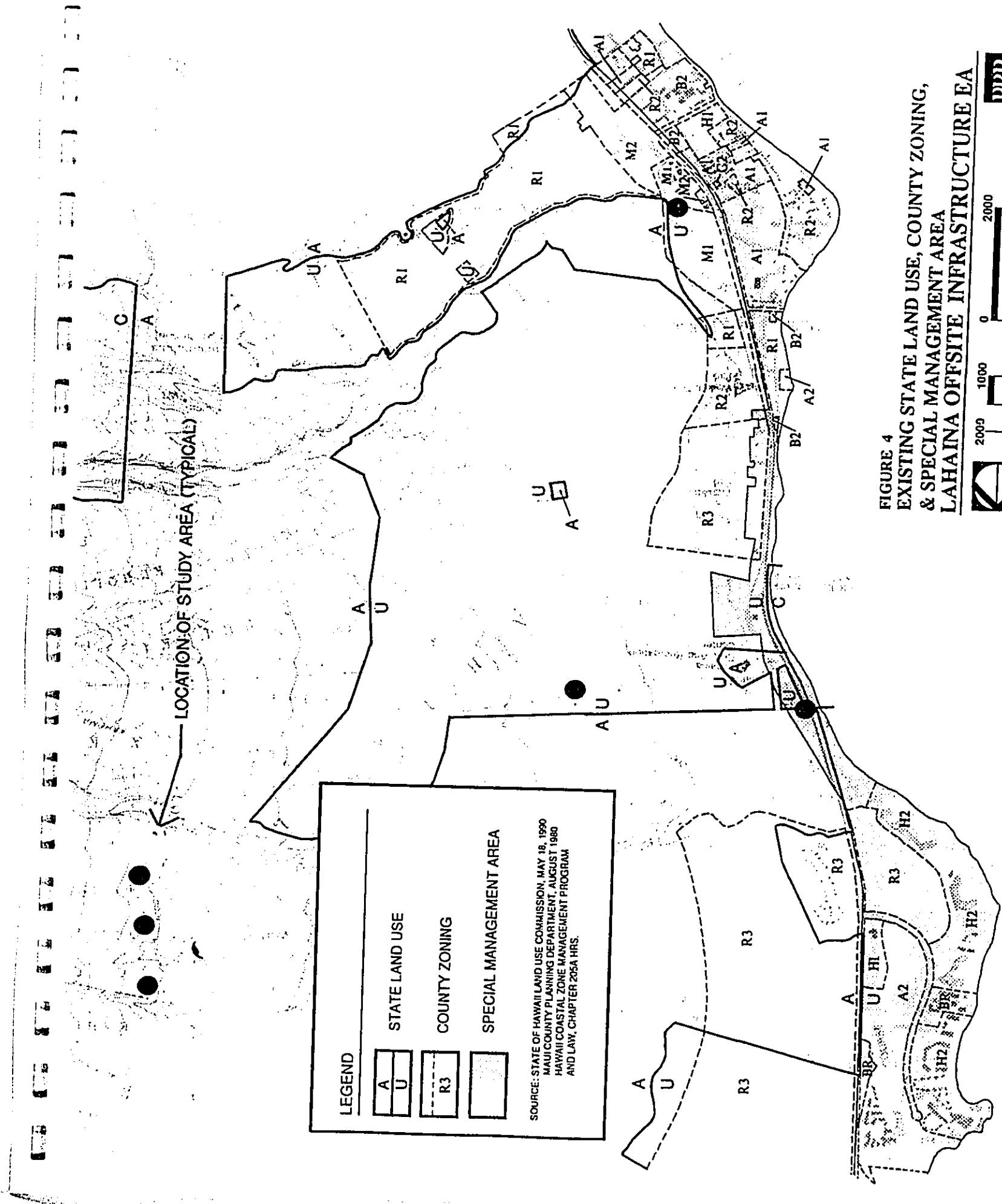
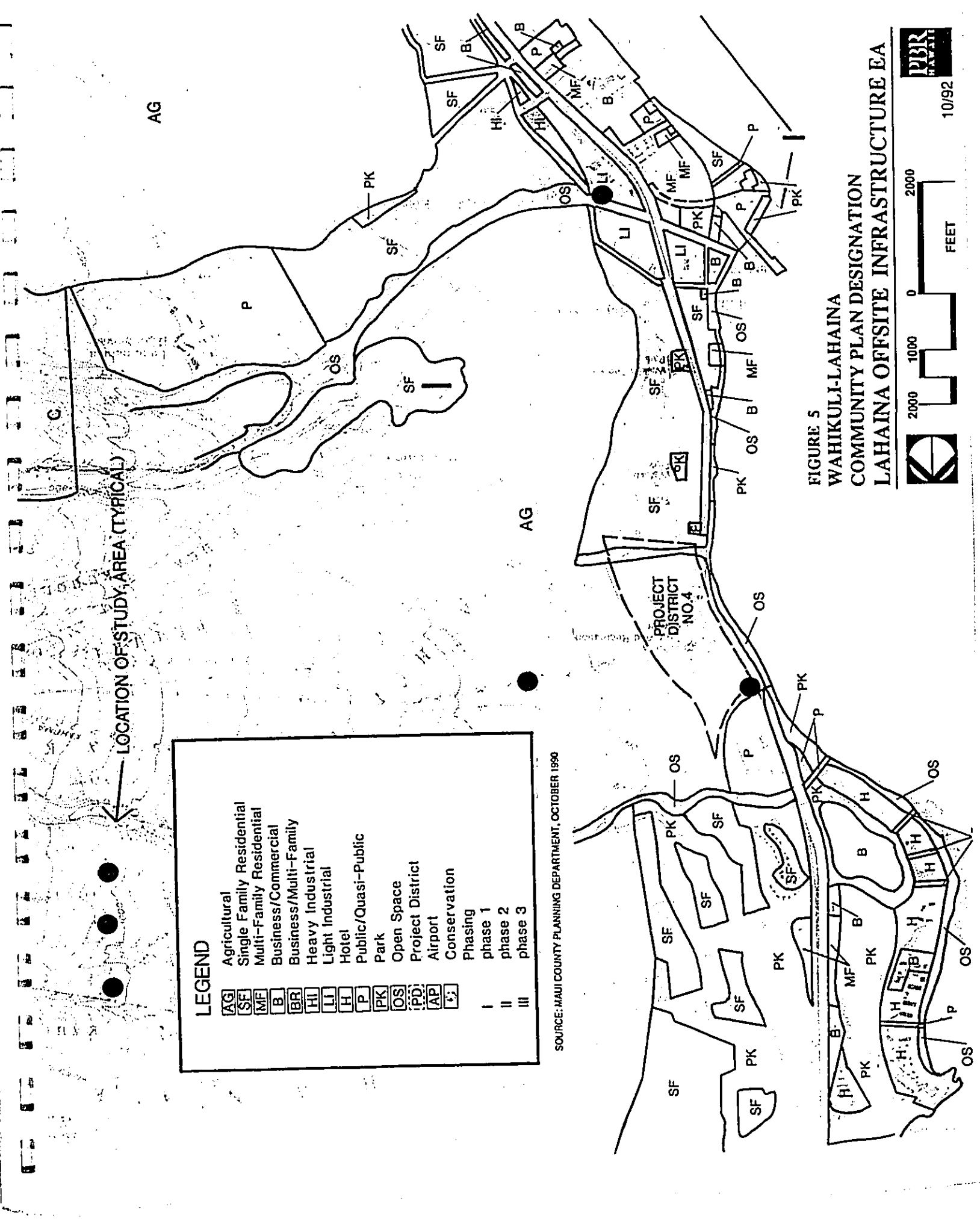


FIGURE 4
 EXISTING STATE LAND USE, COUNTY ZONING,
 & SPECIAL MANAGEMENT AREA
 LAHAINA OFFSITE INFRASTRUCTURE EA



LOCATION OF STUDY AREA (TYPICAL)

LEGEND

AG	Agricultural
SF	Single Family Residential
MF	Multi-Family Residential
B	Business/Commercial
BR	Business/Multi-Family
HI	Heavy Industrial
LI	Light Industrial
H	Hotel
P	Public/Quasi-Public
PK	Park
OS	Open Space
PD	Project District
AP	Airport
C	Conservation
I	Phasing phase 1
II	phase 2
III	phase 3

SOURCE: MAUI COUNTY PLANNING DEPARTMENT, OCTOBER 1990

FIGURE 5
 WAHIKULI-LAHAINA
 COMMUNITY PLAN DESIGNATION
 LAHAINA OFFSITE INFRASTRUCTURE EA

2000 1000 0 2000
 FEET

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PBR HAWAII

5. Existing Services

- a. **Water** – No potable water transmission lines currently serve the HFDC Lahaina Master Planned Community area. The existing County water system in West Maui, which extends from Lahaina to Napili, is served by three surface sources and eight wells. These sources include: sub-intake water from Kahana Valley, and four groundwater or well sources (Kahana 1 and 2 and Waipuka 1, and; 2) sub-intakes from Honokahau Ditch and four wells above Napili (Napili wells 1, 2 and 3 and Honokahau well A. These potable water sources are not sufficient to provide projected potable water requirements for the HFDC Lahaina Master Planned Project. Kaanapali and Kapalua Resorts both have their own private water systems.

Water storage for the West Maui water system is provided by a 1.0 million gallon (mg) tank at Alaeloa, a 1.5 mg tank above Wahikuli, and a 1.0 mg tank above Lahaina Town.

There is an existing 16-inch water transmission line connecting the Wahikuli tank with the Wahikuli subdivision, however, due to inadequate pressure in this line, the Wahikuli tank is never completely full. The potable storage tanks near Napili and Kanaha also connect to Lahaina Town through a series of 8-, 12-, and 16-inch lines. These transmission lines and storage tanks are not adequate to service needs of the proposed Lahaina Master Planned Community.

- b. **Sewer** – There are no wastewater transmission lines presently serving the proposed LMPC. However, there is an existing wastewater transmission system located between the LMPC and the Lahaina WWTP. These facilities consist of three major sewage pump stations and force mains, and two gravity transmission lines. See the June 1991 EA for a description of the proposed wastewater transmission improvements associated with LMPC.

Wastewater from Lahaina Town is pumped by County Sewage Pump Station (SPS) No. 3 via a 20 inch force main to a manhole at the upstream end of Sewer Line B. This line, consisting of approximately 2,260 feet of 27 inch gravity sewerline, conveys the wastewater by gravity to SPS No. 2 which is located east of the Kaanapali Parkway/Honoapiilani Highway intersection. Wastewater from the Kaanapali and Lahaina areas is pumped by SPS No. 2 via a 20 inch force main to a manhole at the upstream end of Sewer Line C. Sewer Line C, consisting of approximately 6,380 feet of 27 inch gravity sewerline, then conveys the combined wastewater flows by gravity to SPS No. 1. The wastewater is then pumped by a 20 inch

force main to the Lahaina WWTP. Wastewater is then treated and disposed of via injection wells located at the WWTP site. Each of these injection wells have an average capacity of 1 - 2 mgd, with a total maximum capacity of 5.2 mgd. There are no standby wells at present.

- c. **Roadways** - The western edge of the LMPC is located adjacent to Honoapiilani Highway, an improved two lane road connecting Wailuku and Waikapu to northwestern Maui. In the vicinity of the proposed project site, Honoapiilani Highway was recently widened to four lanes with two lanes in each direction. The four lane segment extends from Lahainaluna Road in Lahaina to Kaanapali Parkway in Kaanapali. The intersection of Lei'alani Parkway and Honoapiilani will be widened and repositioned for use as the primary entrance to the HFDC Lahaina Master Planned Community. (June 1991 EA)
- d. **Drainage** - General drainage in the project area utilizes naturally occurring gullies and other surface features. Kahoma and Kanaha Streams are the primary drainageways within the project area.
- e. **Solid Waste Disposal** - At present solid waste is collected and disposed by the County and private contractors. Residential waste is transported to the new Puunene landfill site in Central Maui.
- f. **Utilities** - Electrical services in the project area are provided by Maui Electric Company (MECO), and telephone services are provided by the Hawaiian Telephone Company.
- g. **Recreational Services/Resources** - The West Maui area is serviced by 17 County parks and three State beach parks.
- h. **Police and Fire Protection** - Police are currently dispatched from headquarters located in Lahaina at Wahikuli. Lahaina Fire Station, situated in the Lahaina Civic and Recreation Center, provides fire protection services to the area.
- i. **Schools** - The schools nearest the offsite infrastructure project area are Lahainaluna High School (9-12), Lahaina Intermediate School (6-8), King Kamehameha III Elementary School (K-5), and Princess Nahienaena Elementary School (K-3).

DESCRIPTION OF THE PROPOSED DEVELOPMENT

To provide the necessary infrastructure for the Lahaina Master Planned Project (Appendix F, Lahaina Master Planned Project EIS) offsite infrastructure improvements consist of intersection and roadway improvements, drainage, potable water source development, water storage reservoirs, pressure breaker tanks, booster pump stations, water transmission lines, wastewater treatment plant expansion, an effluent irrigation force main, pumps, effluent storage, reservoir, wastewater transmission lines, and modification and replacement of existing wastewater pump stations.

These offsite improvements will sufficiently expand the existing infrastructural capacity in the Lahaina area to accommodate approximately 3,800 to 4,800 residential dwelling units. Development of the offsite infrastructure improvements described below, and in the previously mentioned June 1991 EA, is an essential component of the overall infrastructural improvements needed to service the proposed housing planned for the area. The proposed drainage and water source development is anticipated to be completed within fifteen years. Figures 6, 7, 8, and 9 placed in the following pockets each detail the proposed project improvements.

Offsite Potable Water System Improvements

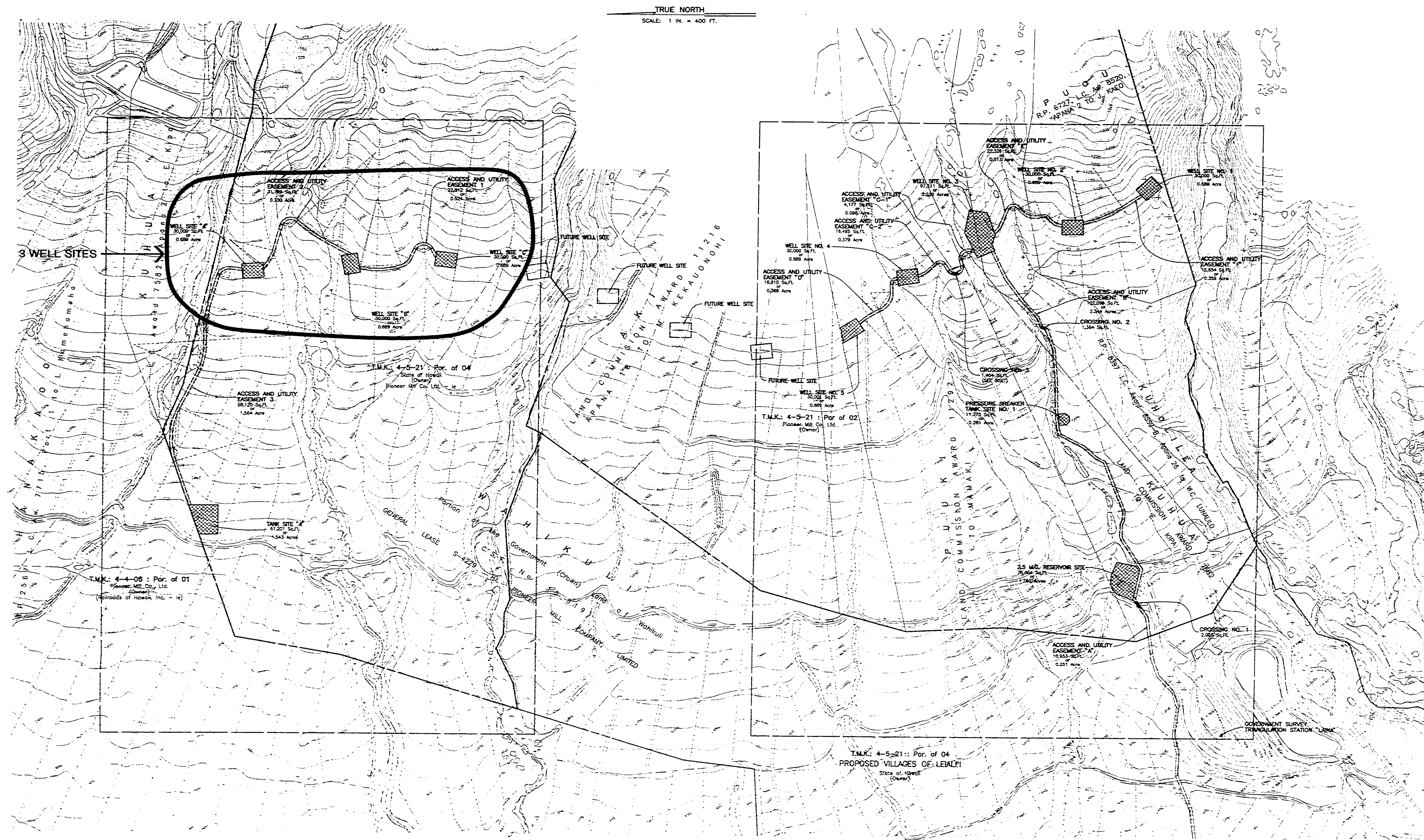
The average daily water demand for the entire LMPC is up to 2.8 million gallons per day (mgd). To produce potable water in a thin basal lens, like that found in Lahaina, a balance between the depth of the well, head in the aquifer and pump capacity must be reached. Groundwater resources in the area are constrained by capacity or sustainable yield. Consequently, it is estimated that a single well will be limited to a withdrawal rate of approximately 400 to 450 gallons per minute (gpm). Well depth from a ground elevation of 1,050 feet must extend approximately to 35 feet below sea level for a total depth of 1,085 feet. Each well would have a casing diameter of 16 inches for a pump size of 450 gpm. A louvered screen reaching from sea level to 20 feet below sea level is also required with rock packing and grouting. As noted earlier, the purpose of the development of these new well sites is to facilitate a well site exchange between Pioneer Mill and the State (see attached Appendix H for December 18, 1992 Land Board approval and details). The well sites, tank sites, access, and utility easements covered in the previous June 1991 EA would be exchanged for the three well sites, tank sites, access, and utility easements shown in Figure 6.

Planned storage facilities include a 2.5 million gallon storage tank planned for the 550 foot elevation, a second 1.0 mg storage reservoir at 1,076 feet. In addition, construction of two pressure breaker tanks (one at the 800 foot elevation and one at the 410 foot elevation), and installation of approximately 8,000 feet of 16 inch diameter transmission line between the well sources, the LMPC, and the existing 1.5 mg County reservoir at Wahikuli are planned.

**OVERSIZED
DRAWING/MAP**

**PLEASE SEE
35MM ROLL**

0084 E



VILLAGES OF LEIALII – WELL SITES MAP

DESIGNATION OF WELL SITES 1 TO 5 INCLUSIVE, "A" TO "C" INCLUSIVE, TANK SITE "A", PRESSURE BREAKER TANK SITE NO. 1, 2.5 M.G. RESERVOIR SITE, AND EASEMENTS 1 TO 3, INCLUSIVE AND "A" TO "F", INCLUSIVE.

BEING PORTIONS OF ROYAL PATENT 8397, LAND COMMISSION AWARD 8559-B, APANA 26 TO W.C. LUNALILO; LAND COMMISSION AWARD 7582 TO E. KIPA; LAND COMMISSION AWARD 11292 TO MAMAKI; GOVERNMENT (CROWN) LAND OF WAHIKULI (C.S.F. NO. 15,519); AND ROYAL PATENT 6727 LAND COMMISSION AWARD 8520, APANA 2 TO J. KAE0 KUHOLEA, KUHUA, PUUKI, PUOU, WAHIKULI, LAHAINA, MAUI, HAWAII

SCALE: 1 INCH = 400 FEET

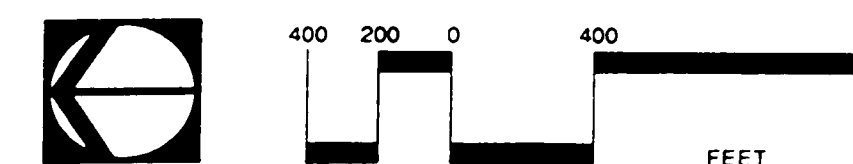
OWNER: (T.M.K.: 4-5-21 : 2) PIONEER MILL COMPANY, LTD.
ADDRESS: LAHAINA, MAUI, HAWAII

OWNER: (T.M.K.: 4-5-21 : 4) STATE OF HAWAII
ADDRESS: HONOLULU, HAWAII

NOTE:

- OWNERS OF ADJOINING LANDS, AS SHOWN ON PLAN, ARE FROM RECORDS FILED IN THE TAX MAPS BRANCH

FIGURE 6
WATER SOURCE DEVELOPMENT
LAHAINA OFFSITE INFRASTRUCTURE EA



ARRIN L. LEMURU, REGISTERED PROFESSIONAL ENGINEER
21420 Nihoa Street, Suite 403
Waikeolu, Maui, Hawaii 96793
509-242-4403 FAX: (808) 244-4856

12/92

Revised December 2, 1992
Revised December 2, 1992
Revised October 15, 1992
Revised October 15, 1992
August 26, 1992

38 x 48

**OVERSIZED
DRAWING/MAP**

**PLEASE SEE
35MM ROLL**

0084 F

**OVERSIZED
DRAWING/MAP**

**PLEASE SEE
35MM ROLL**

0084 G



PHASE I
(TEMPORARY) LEACH/IRRIGATION FIELD
FOR VILLAGES I-III
TOTAL WASTEWATER = 386,000 GPD
AREA REQUIRED = 30.9 ACS
AREA AVAILABLE = 49.0 ACS

PHASE II
LEACH/IRRIGATION FIELD FOR
VILLAGES I THRU V, INCLUSIVE
TOTAL WASTEWATER PROJECTED
= 734,400 GPD
AREA REQUIRED = 122.50 ACS
AREA AVAILABLE = 184.90 ACS

ESTIMATE OF WASTEWATER FLOWS

Village	Residential Type	Acres	DU	*Flow Rate (gpd)	Max. Design Flow (gpd)	**Leach Field Req'd (acs)	Cumulative Area of Leach Field Req'd
I	SFD	52.65	219	450	97,000	14.60	
	MFD	23.50	330	250	92,400	15.40	30.00
II	SFD	30.40	199	400	79,600	17.30	47.30
III	SFD	43.61	259	400	133,600	27.00	74.30
IV	SFD	68.95	405	400	162,000	24.99	99.29
V	SFD	84.02	523	400	209,200	34.99	134.28
Total				302.53	1,955	734,400	122.50

*Includes Dry Weather Infiltration
**Leach field irrigation requirements based on 6,000 gpd/acre (Silverword Golf Course)

ESTIMATE OF LAND AVAILABLE FOR IRRIGATION

Land Use/Designation	Acres
Golf Course (9 holes)	130.20
Golf Clubhouse (Assume 67% open space)	4.22
Neighborhood Parks	10.34
Civic Center Expansion	20.14
School Sites (Assume 57% in open space)	15.41
Leialoi Parkway (Assume 36% in Limitation)	4.53
Total Land Available	184.90 ACS

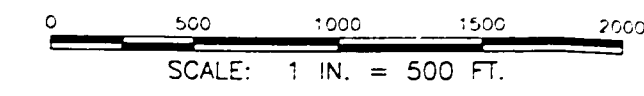
LAND APPRAISAL TABLE

LAND DESCRIPTION	AREA (ACRES)
LAND AREAS TO BE OBTAINED BY HFDC FOR RESIDENTIAL USE	
Village 1 - Ph. I	24.692
Village 1 - Ph. II	50.883
Village 2	30.404
Village 3	43.610
Village 4	68.949
Village 5	84.025
OTHER LAND AREAS TO BE OBTAINED BY HFDC AS PART OF RESIDENTIAL USE	
Roadway A	6.206
Roadway B	3.256
Roadway C	9.254
Roadway D	1.064
Roadway E	6.319
Roadway F	3.728
Church-Sgt. Core	2.685
9-Hole Golf Course	130.293
Golf Clubhouse	6.304
Drainage Basins	6.347
North School Site	11.390
South School Site	11.610
Neighborhood Park 1	3.979
Neighborhood Park 2	6.369
Civic Center Expansion	20.138
Roadway G	27.958
Roadway H	1.577
Roadway I	1.672
Cone Hill Road A	2.852
Cone Hill Road B	7.997
Cone Hill Road C	0.367
Electrical Substation Site	1.488
Existing Electrical Easement	4.271
Existing Waterline Easement	0.689
Existing Roadway Easement	1.928

CONCEPTUAL WASTEWATER RECLAMATION PLAN

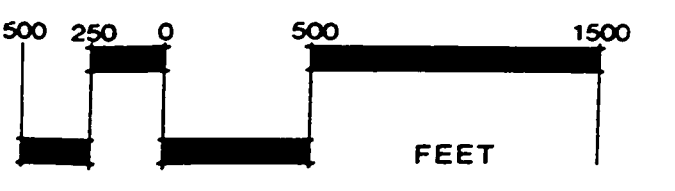
FOR VILLAGES OF LEIALOI

WAHIKULI, LAHAINA (KAANAPALI), MAUI, HAWAII

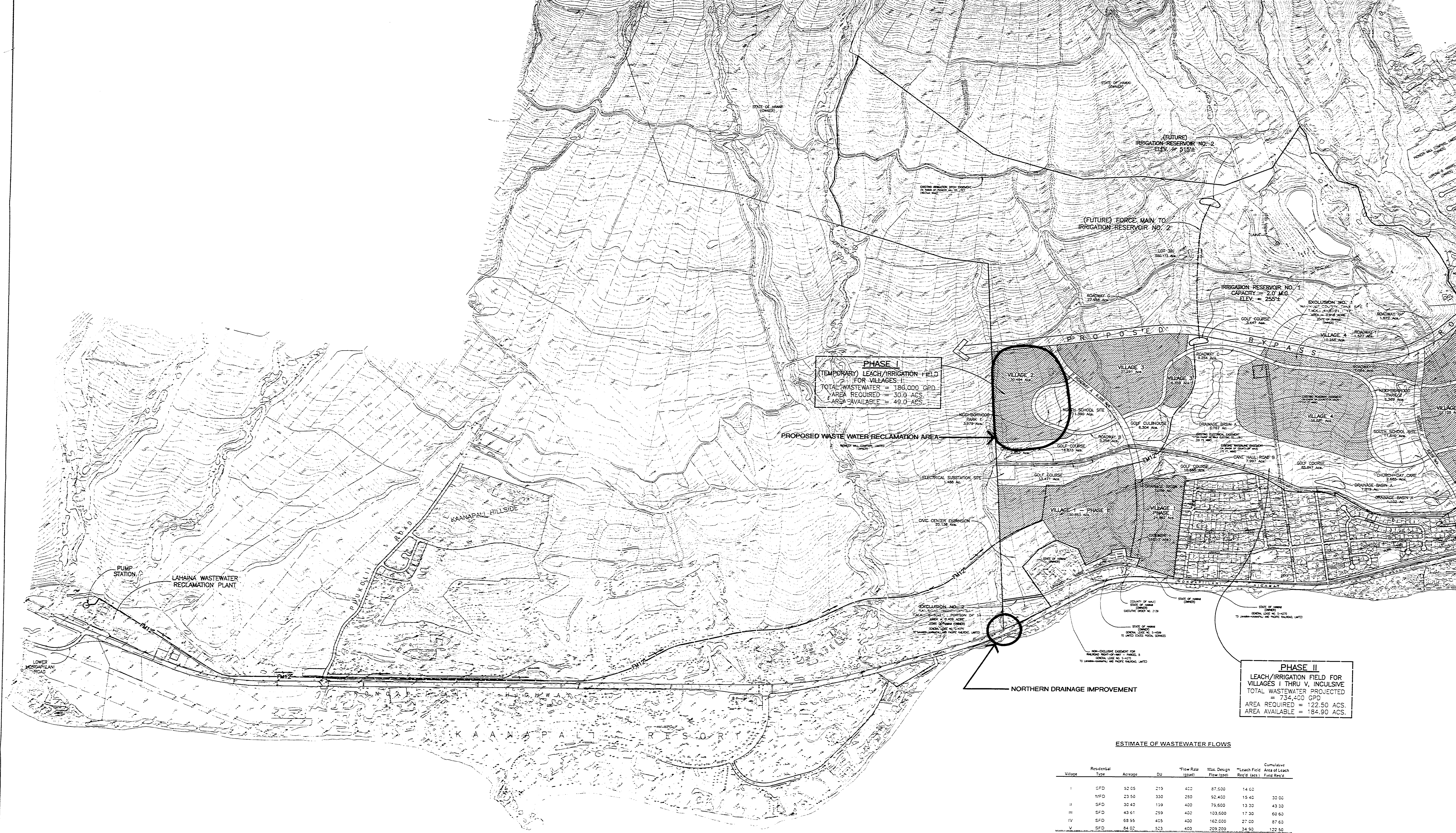


DEVELOPER: HOUSING FINANCE AND DEVELOPMENT CORPORATION
ADDRESS: HONOLULU, HAWAII

**SOUTHERN DRAINAGE IMPROVEMENTS,
LAHAINA STREAM
OFFSITE INFRASTRUCTURE EA**



10/82



PHASE I
 (TEMPORARY) LEACH/IRRIGATION FIELD
 FOR VILLAGES I
 TOTAL WASTEWATER = 180,000 GPD
 AREA REQUIRED = 30.8 ACS
 AREA AVAILABLE = 49.0 ACS

PHASE II
 LEACH/IRRIGATION FIELD FOR
 VILLAGES I THRU V, INCLUSIVE
 TOTAL WASTEWATER PROJECTED
 = 734,400 GPD
 AREA REQUIRED = 122.50 ACS
 AREA AVAILABLE = 184.90 ACS

ESTIMATE OF WASTEWATER FLOWS

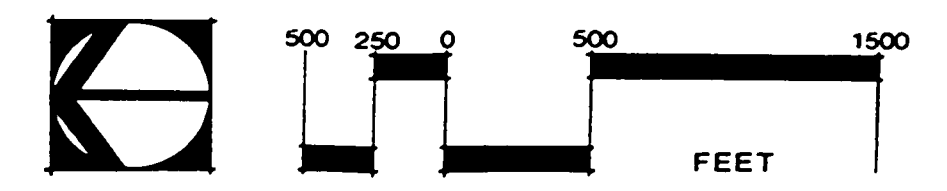
Village	Residential Type	Acreage	DU	Flow Rate (gpd)	Max. Design Flow (gpd)	Leach Field Area (Acres)	Cumulative Area of Leach Field (Acres)
I	SPD	52.05	219	400	87,600	14.60	
	MFD	23.50	300	250	92,400	15.40	30.00
II	SPD	30.40	199	400	79,600	13.30	43.30
III	SPD	43.61	259	400	103,600	17.30	60.60
IV	SPD	58.95	405	400	162,000	27.00	87.60
V	SPD	84.02	523	400	209,200	34.90	122.50
Total:		302.53	1,935		734,400	122.50	

*Includes Dry Weather Infiltration
 **Leach field irrigation requirements based on 9,000 gpd/acre (Silverwater Golf Course)

ESTIMATE OF LAND AVAILABLE FOR IRRIGATION

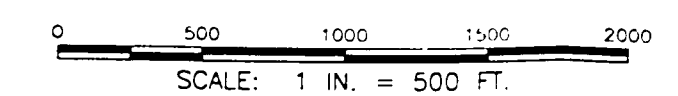
Land Use/Reservation	Acreage
Golf Course (9 holes)	130.25
Golf Clubhouse (Assume 67% open space)	4.22
Neighborhood Parks	10.34
Civic Center Expansion	20.14
School Sites (Assume 97% in open space)	15.41
Leiali'i Parkway (Assume 36% in Leach Field)	4.50
Total Land Available	184.90 Ac.

FIGURE 8
 SOUTHERN DRAINAGE IMPROVEMENTS,
 KAHOMA STREAM
 LAHAINA OFFSITE INFRASTRUCTURE EA



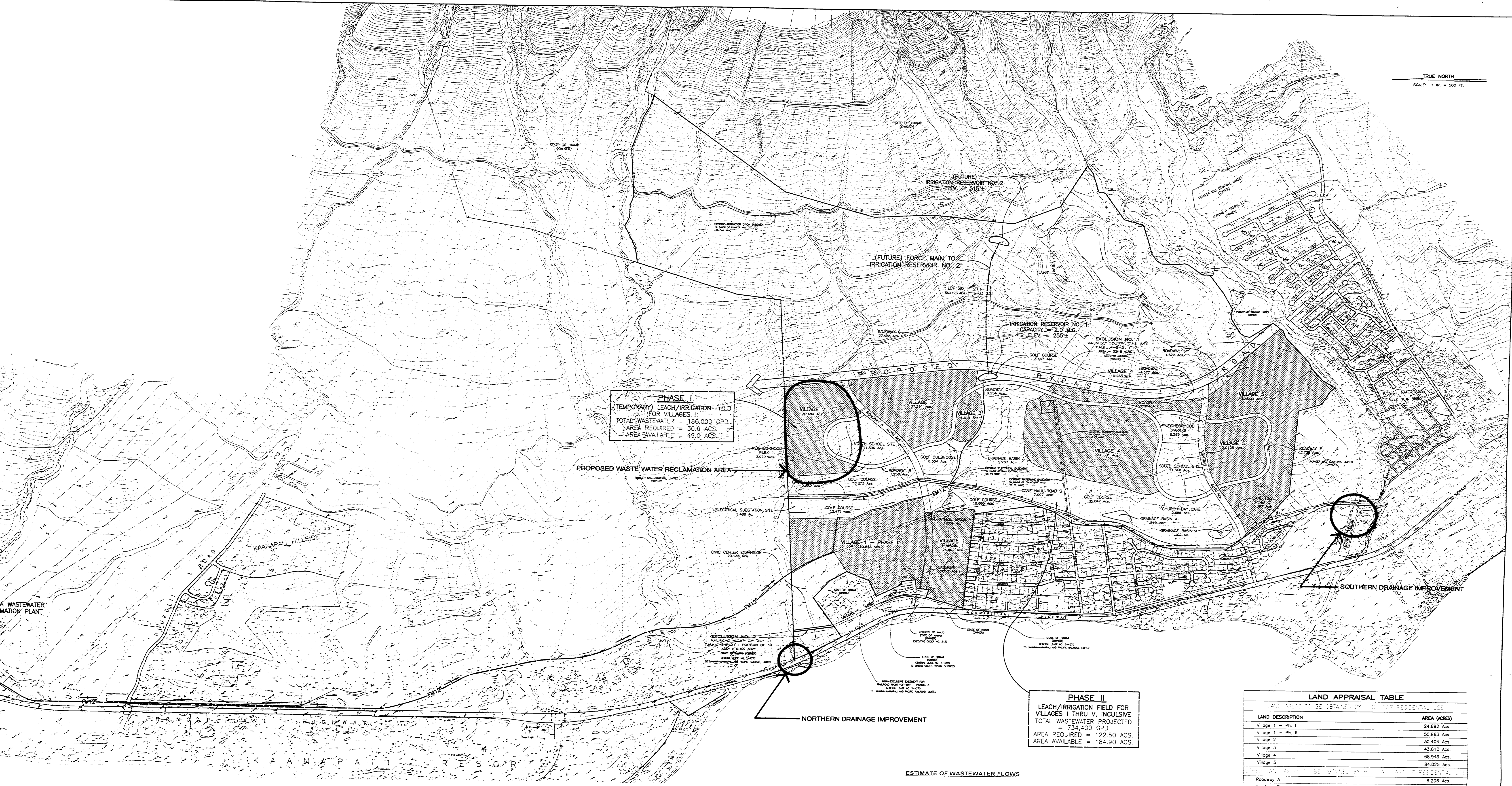
CONCEPTUAL WASTEWATER RECLAMATION PLAN

FOR
 VILLAGES OF LEIALI'I
 WAHIKULI, LAHAINA (KAANAPALI), MAUI, HAWAII



DEVELOPER: HOUSING FINANCE AND DEVELOPMENT CORPORATION
 ADDRESS: HONOLULU, HAWAII

TRUE NORTH
SCALE: 1 IN. = 500 FT.



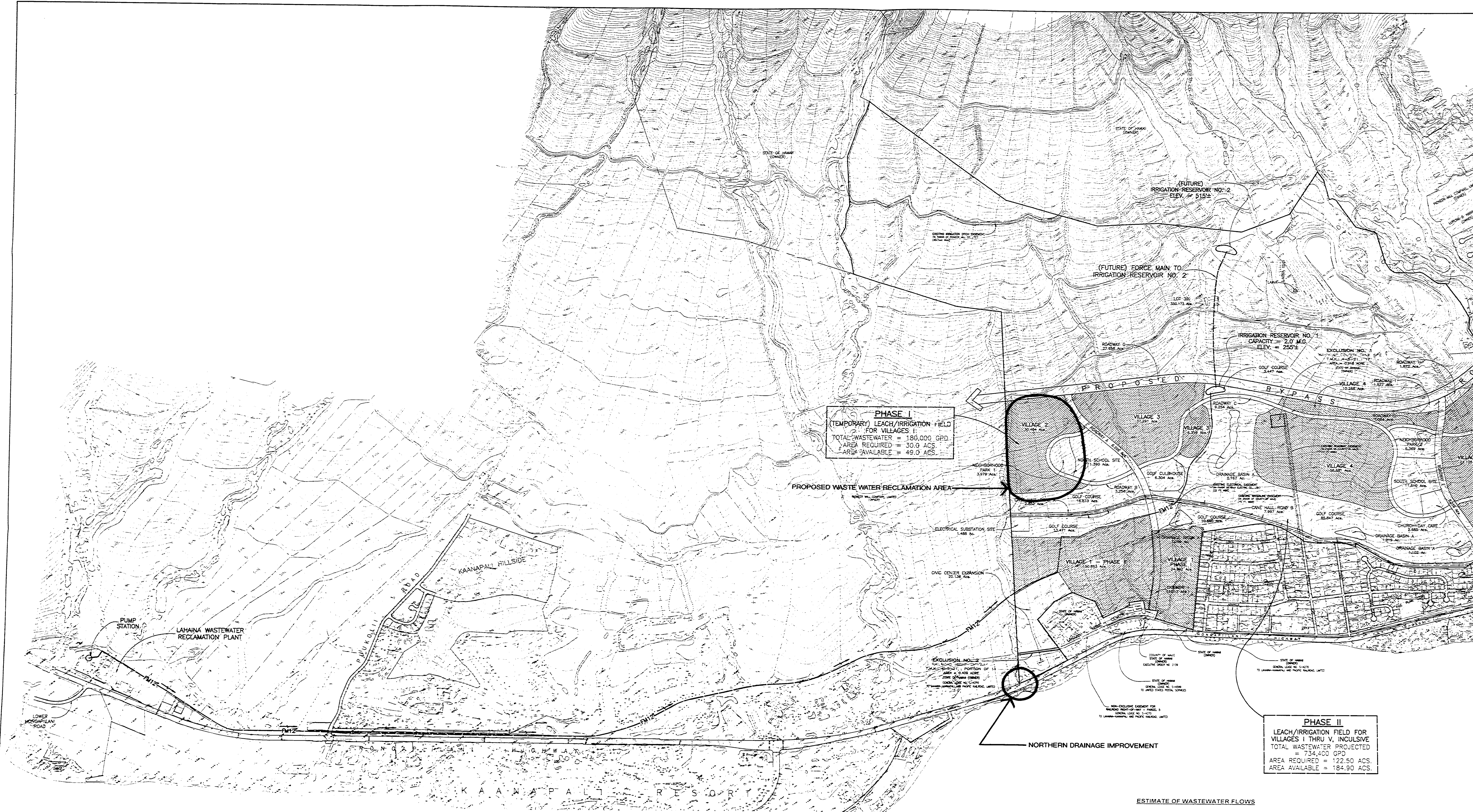
PHASE I
(TEMPORARY) LEACH/IRRIGATION FIELD
FOR VILLAGES I:
TOTAL WASTEWATER = 186,000 GPD.
AREA REQUIRED = 30.0 ACS.
AREA AVAILABLE = 49.0 ACS.

PROPOSED WASTE WATER RECLAMATION AREA

PHASE II
LEACH/IRRIGATION FIELD FOR
VILLAGES I THRU V, INCLUSIVE
TOTAL WASTEWATER PROJECTED
= 734,400 GPD
AREA REQUIRED = 122.50 ACS.
AREA AVAILABLE = 184.90 ACS.

ESTIMATE OF WASTEWATER FLOWS

LAND APPRAISAL TABLE	
LAND AREA TO BE OBTAINED BY HDP FOR RESIDENTIAL USE	
LAND DESCRIPTION	AREA (ACRES)
Village 1 - Ph. I	24.692
Village 1 - Ph. II	50.863
Village 2	30.404
Village 3	43.610
Village 4	68.949
Village 5	84.025
Roadway A	6.206
Roadway B	3.256



PHASE I
 (TEMPORARY) LEACH/IRRIGATION FIELD
 FOR VILLAGES I
 TOTAL WASTEWATER = 186,000 GPD
 AREA REQUIRED = 30.0 ACS
 AREA AVAILABLE = 49.0 ACS

PROPOSED WASTEWATER RECLAMATION AREA

PHASE II
 LEACH/IRRIGATION FIELD FOR
 VILLAGES I THRU V, INCLUSIVE
 TOTAL WASTEWATER PROJECTED
 = 734,400 GPD
 AREA REQUIRED = 122.50 ACS
 AREA AVAILABLE = 184.90 ACS

NORTHERN DRAINAGE IMPROVEMENT

ESTIMATE OF WASTEWATER FLOWS

**OVERSIZED
DRAWING/MAP**

**PLEASE SEE
35MM ROLL**

0084 H

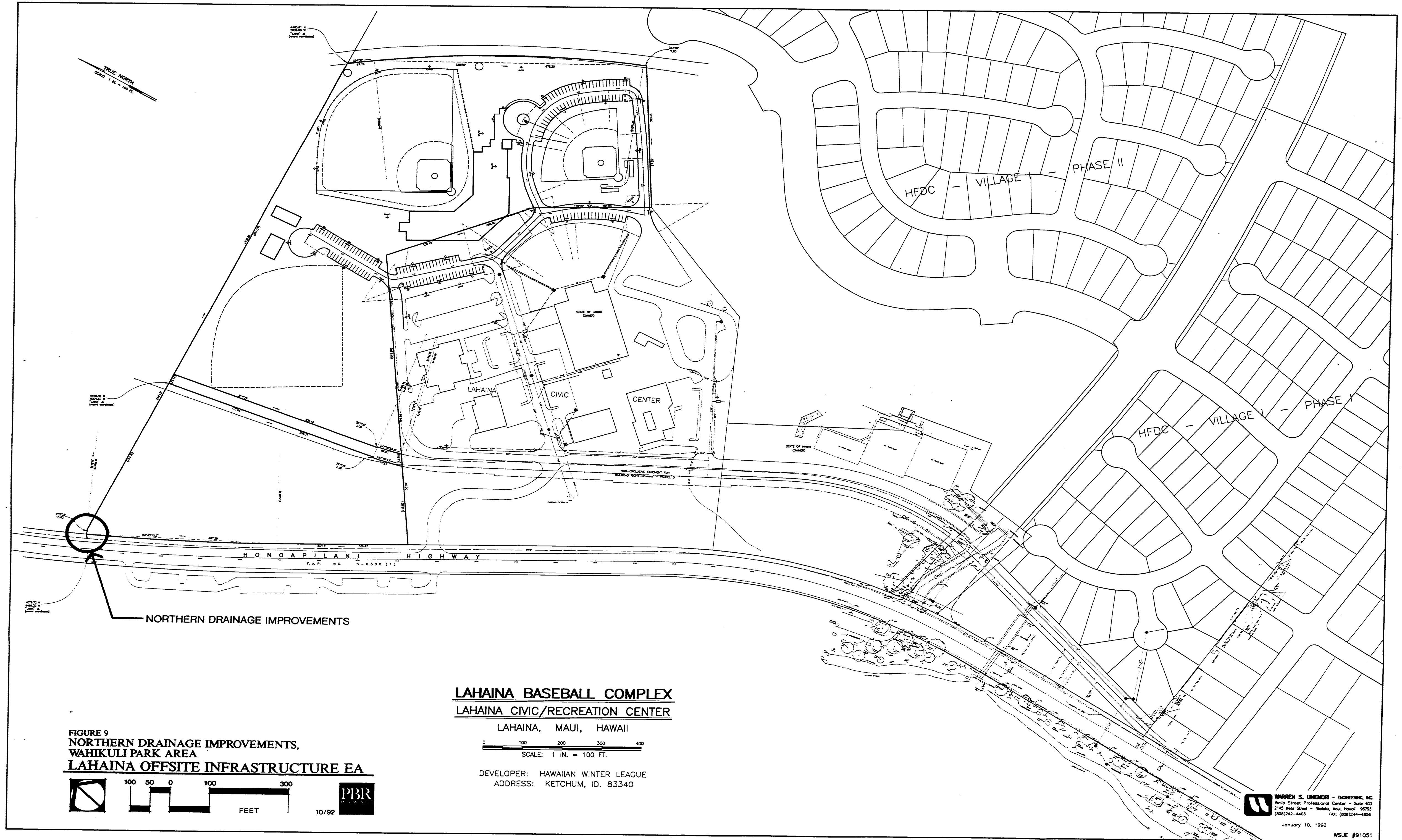
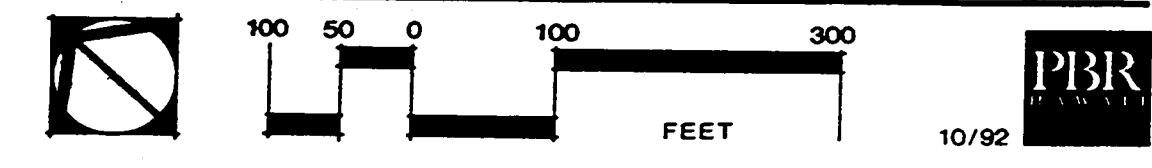
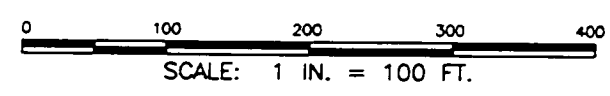


FIGURE 9
 NORTHERN DRAINAGE IMPROVEMENTS,
 WAHIKULI PARK AREA
 LAHAINA OFFSITE INFRASTRUCTURE EA



LAHAINA BASEBALL COMPLEX
LAHAINA CIVIC/RECREATION CENTER

LAHAINA, MAUI, HAWAII



SCALE: 1 IN. = 100 FT.

DEVELOPER: HAWAIIAN WINTER LEAGUE
 ADDRESS: KETCHUM, ID. 83340

WARREN S. LEMMON - ENGINEER, INC.
 2145 Main Street - Waikaloa, HI 96793
 (808) 342-4403 FAX: (808) 344-4054
 January 10, 1992
 WSUE #91051

0084 H

Existing Environment and Environmental Impacts

Offsite Drainage

North of the Lahaina Civic Center and under Honoapiilani Highway, a twin, 6'x 10' reinforced concrete box culvert (which will replace an existing 48" diameter pipe) is proposed to convey surface water. An increase in capacity from 100 cubic feet per second (cfs) to 200 cfs will result. The existing drain cannot even handle present flows.

A second drainage improvement will convey water through a proposed drainage channel across the Hawaii Omori Property into the existing drainage apron at Kahoma Stream. The drainage capacity for this drainage channel is 350 cfs.

Waste Water Reclamation Plan

The following improvements are being proposed in order to provide irrigation water for the golf course and various public and common areas. In addition to supplying water to landscaped areas, these improvements will (1) provide a primary disposal area for a portion of the treated effluent from the Lahaina Waste Water Treatment Plant, and (2) be consistent with Maui County policy that potable water be utilized for domestic uses, and that non-potable water be used for irrigation uses. The proposed waste water reclamation improvements include:

1. Modifications to existing sewer pump station no. 1 (Environmental Assessment, Offsite Infrastructural Components, June 1991).
2. Expansion/modifications to the existing Lahaina Waste Water Treatment Plant to include, increasing capacity from 6.7 mgd to 9.0 mgd, modifications to plant equipment to permit sewage treatment to "unrestricted irrigation reuse" standards, and modifications to the existing pumping equipment (EIS, 1990).
3. Effluent force main (14") from the Lahaina Waste Water Treatment Plant to the Lahaina Master Planned Project (Environmental Assessment, Offsite Infrastructural Components, June 1991).
4. Construction of a temporary irrigation field for effluent disposal. The area is located within the proposed Village 2 site, mauka of the proposed Village 1 site. Permanent effluent storage and disposal will include two polyethylene lined reservoirs and irrigation lines and will be situated within the proposed golf course, neighborhood parks, civic center expansion, school sites and Lei'alii Parkway (see Figure 7 for details).

5. Two irrigation reservoirs, both located within the golf course, one at the 255±' elevation and one at the 515±' elevation will be used for non-potable water storage.
6. All pumping, piping and irrigation equipment necessary to disperse the effluent within the intended disposal areas.

See Figure 7 for details regarding these improvements.

At the present time, the Housing Finance Development Corporation is working with representatives of both the State Department of Health (DOH) and Maui County's Department of Public Works to meet all applicable regulations concerning irrigation with treated effluent within the Lahaina Master Planned Project. It is anticipated that the wastewater reclamation project will be consistent with the following items:

1. HFDC will comply with DOH regulations on effluent irrigation mauka of the Underground Injection Control (UIC) line.
2. Required effluent treatment in order to permit unrestricted irrigation reuse.
3. Requirements of Title 11, Chapter 62, Wastewater Systems (State Department of Health); including program requirements for golf course groundwater monitoring and any applicable public health concerns.

EXISTING ENVIRONMENT AND ENVIRONMENTAL IMPACTS

Agriculture

Presently, one of the drainage areas and the well site areas are utilized for sugar cane cultivation. However, given the relatively minor size of the proposed offsite improvements, continued agricultural use of the subject properties will not be impacted by construction activities. The onsite area has already been phased from cane production (EIS, 1990). All improvements are compatible with the surrounding rural character of the area.

To identify which lands in Hawaii are most appropriate for agricultural production, all lands have been rated for agricultural purposes by three classification systems; (1) U.S.D.A. Soil Survey which reflects land capability, (2) Agricultural Lands of Importance to the State of Hawaii (ALISH), and (3) overall productivity ratings determined by the University of Hawaii Land Study Bureau.

Soil Survey

According to the U.S.D.A. Soil Conservation Service, "Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai," the major soils (shown in Figure 9) characteristic of the proposed offsite infrastructural components areas are identified as:

(LaC) - Lahaina Silty Clay on 7 to 15% slopes is a dark reddish-brown, silty clay about 15 inches thick. Permeability is moderate and runoff is slow, with light erosion hazard.

(WcB) - Wahikuli Stony Silty Clay on 3 to 7% slopes is part of the Wahikuli series generally developed from materials weathered from igneous rock. The soil is mildly alkaline with moderate permeability and slow runoff. The surface clay is about 15 inches thick with a substrate of about 17 inches.

(WdB) - Wahikuli Very Stony Silty Clay on 3 to 7% slopes is associated with the same Wahikuli series above. It differs from WcB only in that the stones contained in the soil inhibit cultivation.

Agricultural Lands of Importance to the State of Hawaii (ALISH)

The Agricultural Lands of Importance to the State of Hawaii (ALISH) system has also identified some of the project lands as "Prime" and "Other Important". These "Prime" lands (currently under sugarcane cultivation) are defined as having 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. The Other Important lands are located within the Honoapiilani Highway and are likely disturbed by previous road and construction related activities.

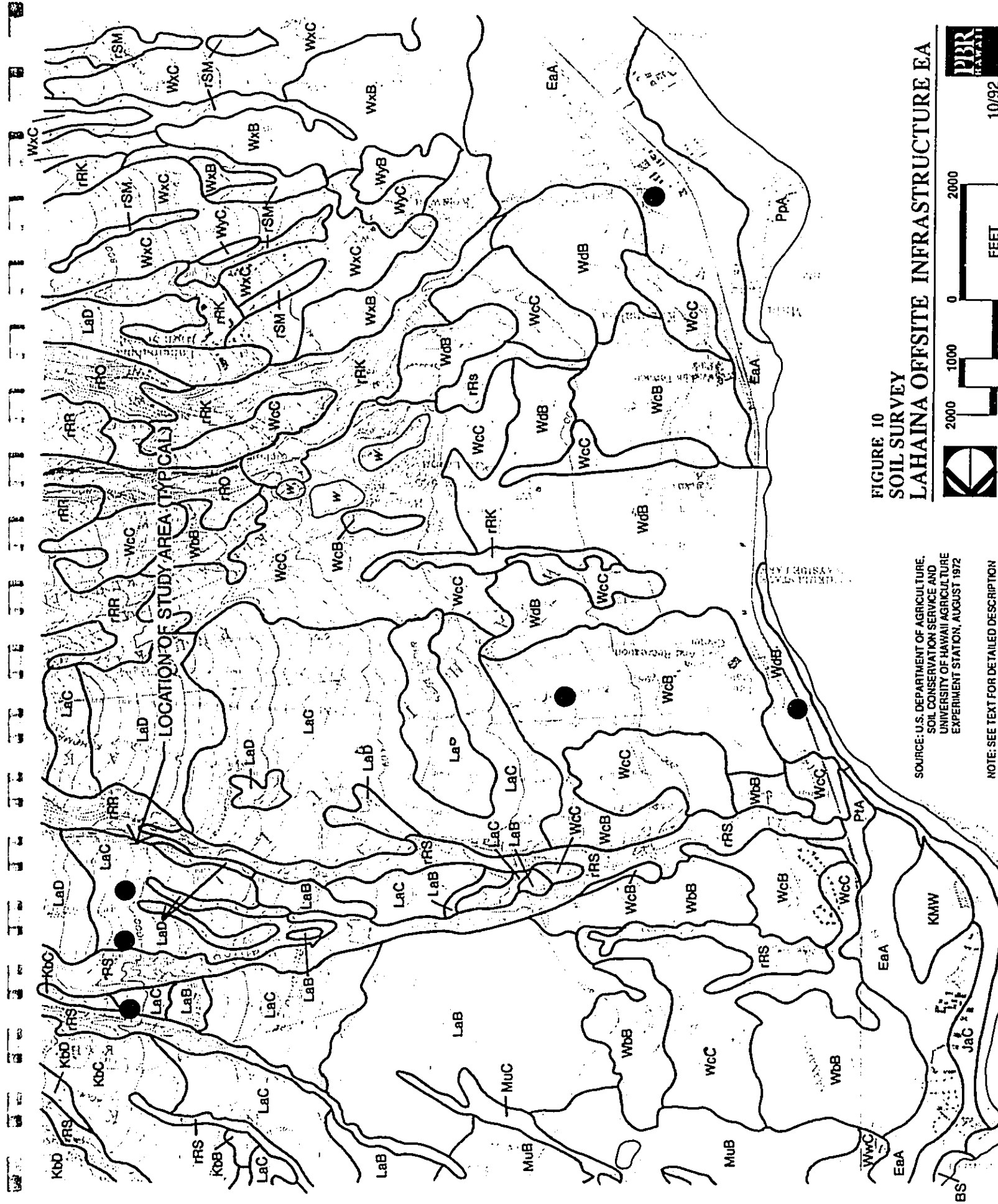





FIGURE 10
SOIL SURVEY
LAHAINA OFFSITE INFRASTRUCTURE EA

2000 1000 0 2000
FEET



10/92

SOURCE: U.S. DEPARTMENT OF AGRICULTURE,
SOIL CONSERVATION SERVICE AND
UNIVERSITY OF HAWAII AGRICULTURE
EXPERIMENT STATION, AUGUST 1972

NOTE: SEE TEXT FOR DETAILED DESCRIPTION

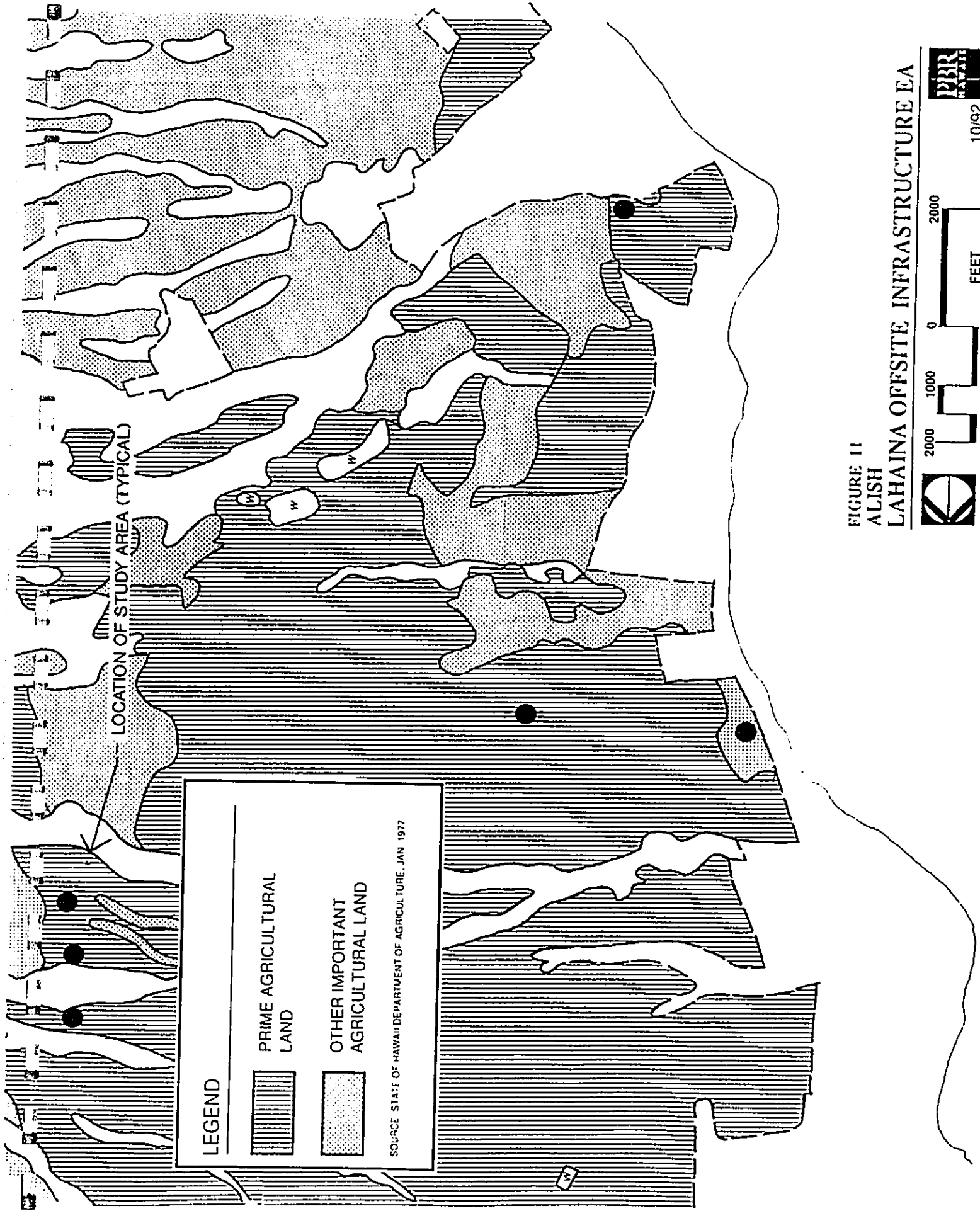


FIGURE 11
ALISH
LAHAINA OFFSITE INFRASTRUCTURE EA

Land Study Bureau Productivity Rating

The Land Study Bureau system of agricultural land classification, rates the project sites as "B" lands. Based on the rating scale of "A" to "E" ("A" representing the highest suitability for agricultural production), the "A" rated soils are considered as the highest suitability for soil based agricultural production. The "B" soils are also highly suitable for agricultural production. The proposed project, when crossing non-urbanized land, is situated over various soil types as shown in Figure 11. In general, only the "E" and "B" soils are affected by the proposed offsite infrastructure improvement project.

Archaeological, Cultural or Historical Resources

The majority of the project area has been or is under active sugarcane cultivation. Both historic and contemporary cultivation have involved deep plowing and extensive surface modification. Consequently, any archaeological sites that may have existed on the subject property are limited.

An archaeological survey was conducted for the June 1991 *Environmental Assessment for Offsite Infrastructure for the Lahaina Master Planned Project*. During that archaeological survey in April 1991 conducted in the areas where the proposed offsite infrastructure improvements would impact non-urbanized land (primarily agricultural land), no new archaeological sites were identified. Three historic construction features were located in the proposed mauka well field area. These features are not anticipated to be affected by the presently proposed project, since the new well sites and water reclamation area will occur in areas under active cane cultivation, and drainage improvement sites have been previously disturbed (Personal communication, Allen Walker, Paul Rosendahl Ph.D, Inc.). See Appendix B for details on archaeological survey of the proposed project sites.

Should any sub-surface archaeological/historic sites be uncovered on any site during any future construction, appropriate mitigation measures would be taken and the State Historic Sites Division will be immediately notified. If the need for further archaeological study of the site is indicated, all applicable requirements of the Department of Land and Natural Resources, will be followed.

Impacts on Infrastructure and Services

- a. **Water** - The proposed offsite infrastructure for the Lahaina Master Planned Community will add three new supply wells to the potable water resources available to Maui residents, specifically to those residing in the new community. Due to the limited nature of the proposed source development, no potential significant adverse impacts are expected to occur to existing potable water sources. The positive impacts of additional source development include increased pressure in transmission lines and improved reliability of service due to the interconnection of the services. These are shown in Figure 6.

- b. **Drainage** - Since runoff from the development will be directed into detention basins located onsite the Lahaina Master Planned Community in existing gullies and the golf course before being released into offsite drainage facilities, no significant adverse impacts to aquatic resources is expected. Fertilizer and herbicide management programs for the golf course and common areas will also assist in minimizing potential impacts to nearshore marine ecosystems.
- c. **Sewer** - No potential significant adverse impacts are anticipated as a result of a waste water reclamation program, an expansion of the existing facilities, or by the installation of offsite wastewater transmission infrastructure. The development of a waste water reclamation program would provide an improved method for disposing of treated effluent that would not impact groundwater or nearshore ocean water.
- d. **Roadways/Traffic** - No alterations to existing roadways or traffic patterns are anticipated to result from development of the proposed improvements. A cane haul road will be replaced and intersection improvements along Honoapiilani Highway and Primary Road "A" (Lei'alani Highway) are scheduled as part of the improvements required for Lahaina Master Planned Project circulation (June 1991 EA). These improvements are expected to improve traffic flow related to the Lahaina Master Planned Project.
- e. **Solid Waste Disposal** - No significant expansion in solid waste disposal, beyond a small increase during construction, would occur due to installation of offsite infrastructure for the Lahaina Master Planned Community.
- f. **Utilities** - An increase in electrical demand is anticipated to service pumpage requirements of the four well sites. However, no significant adverse impacts are anticipated on utilities due to the improvements, since the increased electrical demand is modest.
- g. **Recreational Services/Resources** - The proposed improvements will not directly increase the demand for recreational facilities. However, development of the overall master planned community will impact existing recreation as described in the 1990 Environmental Impact Statement.
- h. **Police and Fire Protection** - While the proposed project improvements would not require additional police services, the final build out of the LMPC would ultimately increase the availability of water for fire protection services in the area.
- i. **Schools** - Since no new population will be created by the proposed offsite infrastructure, no significant adverse impacts to educational facilities would occur.

ENVIRONMENTAL IMPACTS

Climate, Topography and Drainage

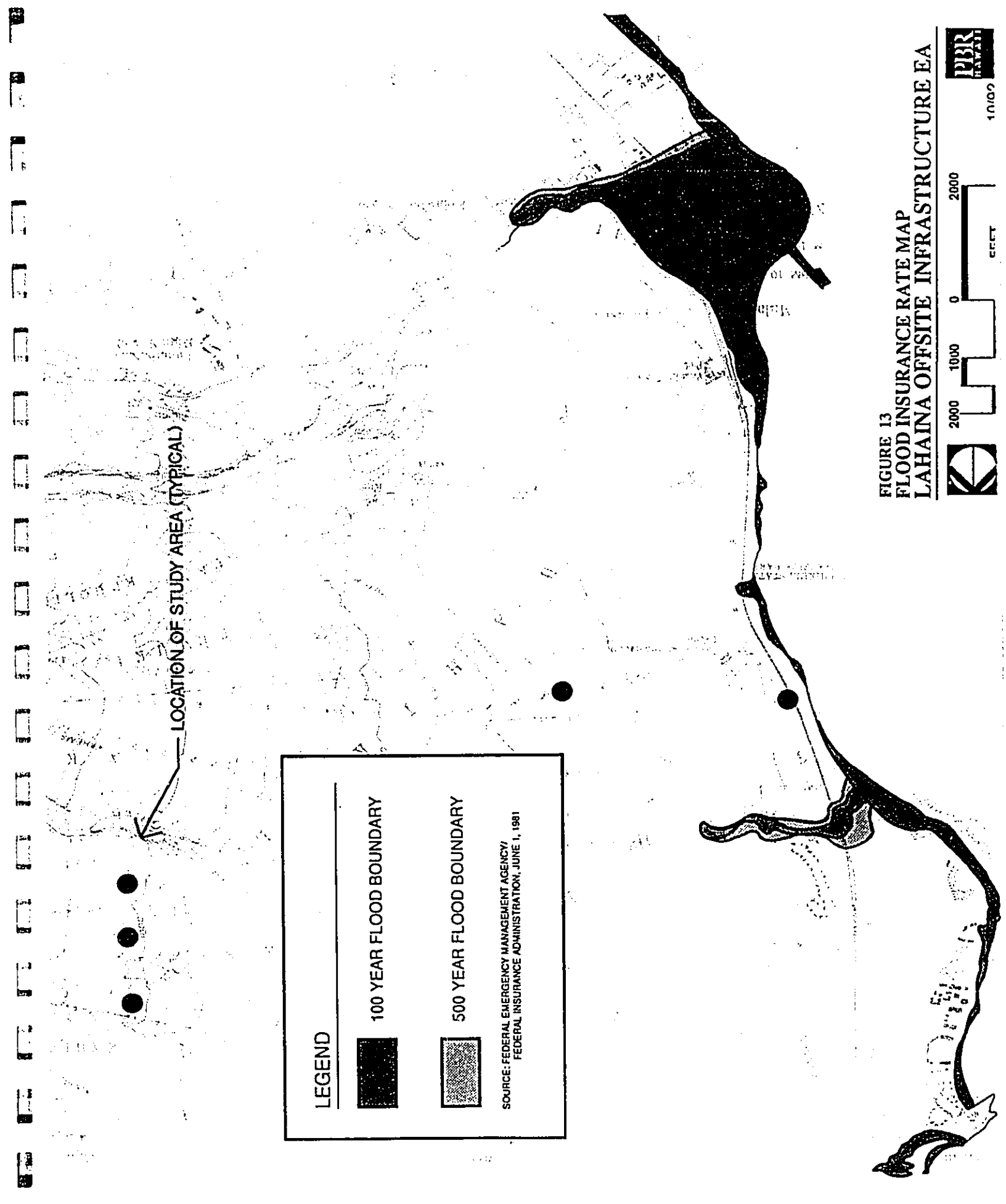
The existing natural climatic characteristics of the project area are typical of west central Maui with average annual precipitation around 12 inches and average temperatures ranging from about 71 degrees F to 79 degrees F. The proposed project contains no structures large enough to disrupt wind patterns which might affect localized climatic conditions and no significant adverse impacts to climate are anticipated.

Geographic conditions at the proposed offsite infrastructure areas range from olivine basalt in the mauka portion to a sedimentary base near the shoreline. The topography of the site slopes downward to the east, ranging in elevation from about 1,000 feet MSL to about 10 feet MSL near Honoapiilani Highway. The project are slopes range from about 6 to 14 percent. There are no known geothermal or other thermal sources below the project site. While installation of the proposed offsite infrastructure may require some minor grubbing and grading, no significant adverse impacts to topography is expected. Figures 12, 13, and 14 illustrate the potential areas of flooding, and geologic and topographic conditions.

The Flood Rate Insurance Map (FIRM) shows the drainage improvements and water source development areas relative to the FIRM boundaries. As indicated none of the proposed improvements are within the flood hazard areas.



Flora

As noted previously, the majority of the proposed improvements are located in areas presently utilized for sugar cane cultivation. No known threatened or endangered plant species designated by federal and/or state agencies are anticipated to occur on the site. A botanical survey (June 1991 EA) of the non-urbanized areas, similar to the proposed water source improvement sites, was completed on April 18, 1991, and is included as Appendix C. A 100 foot wide corridor was surveyed along a study for the other well sites, which were located in areas of scrub vegetation. Since the four proposed wells, waterlines and storage tanks will be situated on actively cultivated cane fields, and cane shades out weedy species, it is expected cane will dominate the botanical spectrum found in the area. Shrubland vegetation occurs in gulches and gullies on some portions of the study area. The shrubland is dominated by introduced koa-haole and a'ali'i. Other portions of the study area are urbanized land, and contain flora characteristic of disturbed urbanized areas.




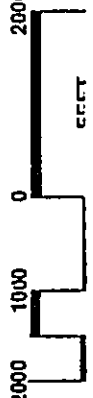
LOCATION OF STUDY AREA (TYPICAL)

LEGEND


-  100 YEAR FLOOD BOUNDARY
-  500 YEAR FLOOD BOUNDARY

SOURCE: FEDERAL EMERGENCY MANAGEMENT AGENCY/
FEDERAL INSURANCE ADMINISTRATION, JUNE 1, 1981

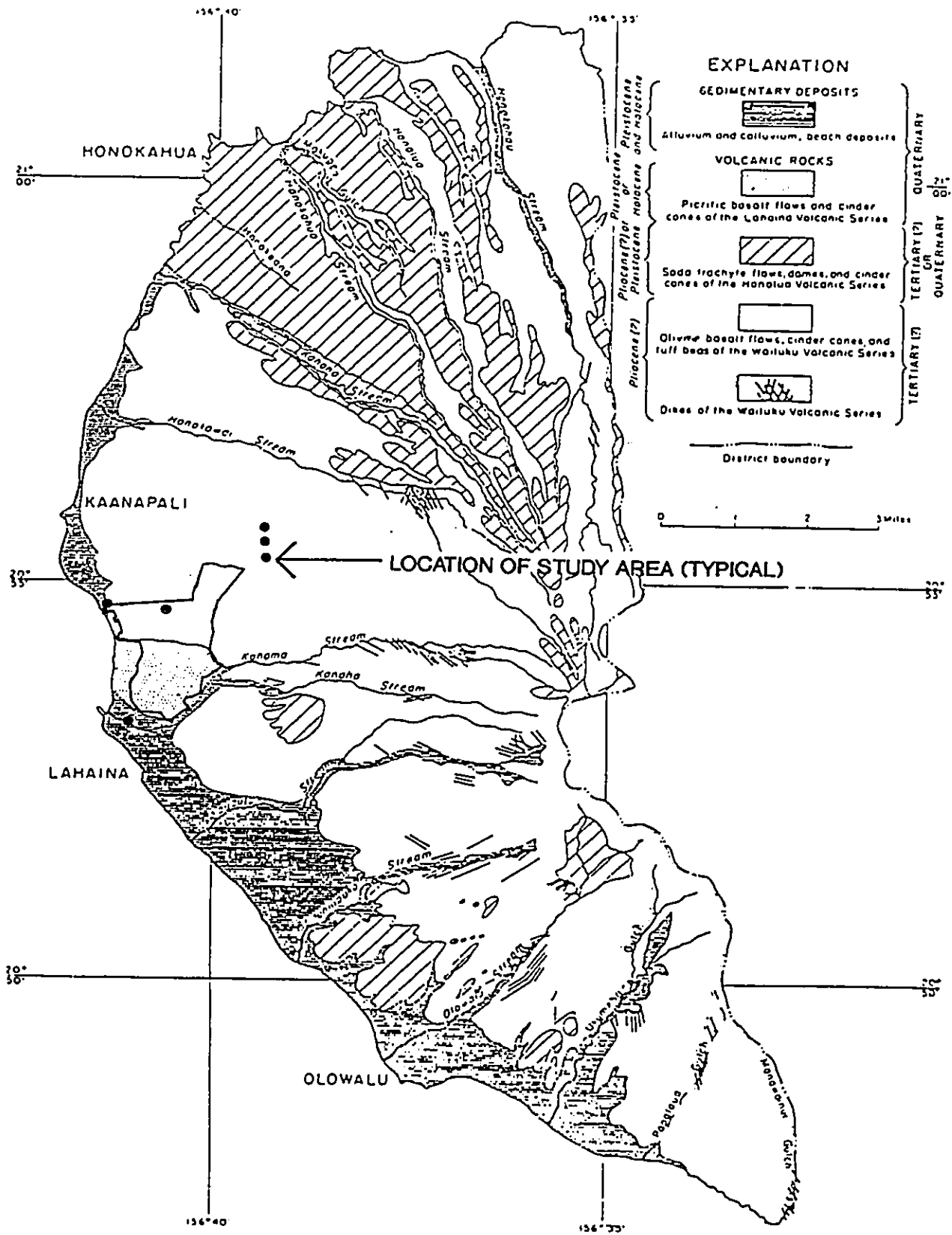
FIGURE 13
FLOOD INSURANCE RATE MAP
LAHAINA OFFSITE INFRASTRUCTURE EA

2000 1000 0 2000
FEET

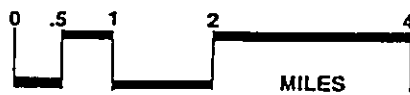


10/02



SOURCE: YAMANAGA & HUXEL, 1969

**FIGURE 14
GEOLOGY
LAHAINA OFFSITE INFRASTRUCTURE EA**



10/92

No officially listed threatened and endangered species, or proposed candidates for such status were found during the earlier botanical study. Because the current area proposed for the well site is nearby and on very similar terrain, no significant adverse impact on botanical or floral resources is anticipated due to the development of offsite infrastructure for the HFDC Lahaina Master Planned project. Other than re-establishing disturbed shrubland after construction, no subsequent mitigation measures are necessary.

Fauna

The fauna of the project site consists of typical mixed agricultural cropland birds and mammals, such as doves, mynas, cardinals, rats, mice, small Indian mongoose and other introduced species. No known threatened or endangered species of birds or mammals occur on the site. To complement the faunal study done for the 1990 EIS, a fauna study was conducted on the non-urbanized areas of the project site using a 100 foot wide corridor for the June 1991 EA. The report is attached as Appendix D, and is also used for this EA since the fauna surveyed are migratory and the site is nearly identical. No endemic birds were recorded, but two non-migratory indigenous (native) night heron (*Nycticorax nycticorax*) were noted during the survey. Of the migratory indigenous birds three species were observed: the Pacific Golden Plover (*Pluvialis fulva*), the Ruddy Turnstone (*Arenaria interpres*), and the Wandering Tattler (*Heteroscelus incanus*). Fourteen species of exotic or introduced birds were recorded during the survey. The survey report concluded that the site provides a limited range of habitat for faunal populations and that the numbers recorded were not unusual. Any changes in the overall bird or mammal populations in this region of Maui, as a result of this project, will be negligible.

Air and Noise Conditions

Over the portions of the project located in rural areas, the air and noise quality of the project sites are typical of rural agricultural areas. Typically northeast trade winds predominate with seaward moving air between Haleakala and the West Maui Mountains. As a result, wind-blown particulate matter generally moves out to sea. However, during harvesting periods, dust and smoke generated upwind of the site could cause potential adverse impacts at and downwind from the project site. Although the proposed project is not expected to contribute significantly to the air quality of the area or region, off-site existing agricultural operations could potentially affect the air quality of the site.

Sections of the project along Honoapiilani Highway display air and noise characteristics characteristic of major roadways. Emissions from motor vehicles are the primary impact on air quality. The construction planned along the highway will be short term and is not expected to add significantly to the overall emission level, therefore, impacts on air quality is anticipated to be temporary and minimal.

During construction, emissions from equipment on rural project sites may temporarily impact air quality. Increased fugitive dust may be created during construction. Due to limited nature of the construction, no mitigation measures are suggested, other than adhering to existing State emission controls, and implementation of a frequent watering program.

The noise regime of the rural project sites is also typical of rural agricultural areas, with sound levels presumably in the 25 to 45 dBa range. The project, however, would not significantly added to the noise regime of the area because of the confined characteristics of construction activity. Noise along Honoapiilani Highway is likely to exhibit levels typical of major roadways (the 65 dBa range). No significant increase in noise levels is anticipated from the short term construction planned at project sites along roadways. Other than limiting construction activity to day time hours, no further mitigation measures are warranted.

Visual Impact

During the construction period, visual impacts would be limited to temporary construction structures, drill rigs, and some heavy equipment in cultivated cane and open space areas. After construction, no visual impacts are anticipated due to the underground location of most improvements.

Infrastructure Impact

The major positive impact that would result from the project would be the installation of infrastructure which will support between 3,800 and 4,800 units of residential housing within the Lahaina Master Planned Community. Sixty percent of the residential units to be constructed would fall under the affordable category as defined by the State Housing Functional Plan (HFDC, 1989).

Impacts, resulting from construction of the offsite infrastructure for the Lahaina Master Planned Community, to the natural environment of the project site and area would be minimal or positive. The project has not resulted in the necessity to relocate any residences or businesses, nor has there been any need for people, either residents or employees, to relocate to another area. In general, the impacts of the project have been positive and beneficial to the County and State. As such, mitigation measures to minimize potential adverse impacts, other than continued adherence to existing County and State environmental protection regulations during construction of the proposed project, do not appear warranted.

OTHER IMPACTS

Social Impacts

The project sites are located near approximately 1,120 acres designated for the Lahaina Master Planned Community at Lahaina, Maui. According to the EIS for the Lahaina Master Planned Project, Maui County has experienced a severe housing shortage during the 1980's, resulting in the steadily increasing cost of housing. For example, by December of 1988, the mean price of a single family house on Maui Island was roughly three times the price appropriate for a household earning the median County income. The development of offsite infrastructure for the Lahaina Master Planned Project is necessary to support the construction of residential housing on the site.

The project has been designed to provide the infrastructure (water and drainage) necessary for the development of the Lahaina Master Planned project. As such, this project would allow the positive social and economic impacts of the residential housing project to be realized.

Economic Impacts

The economic impact of the project will result primarily from the support the project provides to development of the LMPC. The project would require the direct expenditure of State funds for new and improved public facilities, however, the fiscal impact analysis done for the Lahaina Master Planned Project EIS shows a revenue cost ratio of 1.2 to 1. Inasmuch as the proposed project would affect direct public expenditures, associated general excise tax, and real property tax increases, it appears that the project would have a positive impact and that both State and County revenues would exceed expenditures. A summary of costs is included in the following summary.

SUMMARY OF OFFSITE IMPROVEMENT COSTS

Item	Cost	Total
<u>Water System</u>		
Source Development:		
Four Wells	\$9,000,000	
Storage Tanks:		
First Phase 1.0 MG	\$1,700,000	
Future 2.5 MG	\$3,500,000	
Transmission:		
First Phase, including		
Two pressure breaker tanks	\$1,250,000	
 <u>Drainage System</u>		
Box Culvert, North Side	\$ 500,000	
Future Concrete Lined Channel to Kahoma Stream	\$1,200,000	
 <u>Wastewater Reclamation Program</u>		
Two - 2mg polyethylene lined irrigation reservoirs	\$1,500,000	
	Subtotal	\$18,670,000
	20% Contingency	\$ 3,734,010
 Total Estimated Offsite Cost		 \$22,404,000

The project would not directly or significantly affect the physical, natural or social environmental characteristics of the project area, County or State. Similarly, the indirect support which the proposed project provides for the housing project will not result in any negative impacts to the environmental characteristics of the area, County or State.

Regulatory Compliance

COMPLIANCE WITH GOVERNMENT STATUTES, ORDINANCES AND RULES

Implementation of the project will depend upon various approvals from both the State and County of Maui. These include; 1) drilling permits from the State Department of Land and Natural Resources, and 2) compliance with applicable State Department of Health regulations regarding use of potable and non-potable water for public purposes. Rules, regulations, and permit requirements administered by the County Department of Public Works are also applicable.

A Conservation District Use Application (CDUA) is not required as none of the subject property is located within the State Conservation District. The requirement for an Special Management Area permit has been waived for drainage and utility lines by the County of Maui. A letter to HFDC from Maui County regarding the waiver is also included in Appendix E.

No significant negative impacts on the environmental, cultural, recreation, scenic, historic, or other resources of the area are anticipated from approval of necessary permits. It is anticipated all drilling and development permits for the proposed project will be completed by mid-1996.

As previously indicated, the project would support the Lahaina Master Planned Project which is adjacent to the project area and is designated by the LUC as "Urban". No significant negative impacts on the environmental, cultural, recreation, scenic, historic, or other resources of the area are anticipated.

THE HAWAII STATE PLAN

The Hawaii State Plan, as set forth in Chapter 226, Hawaii Revised Statutes, consists of a series of long-range, comprehensive plans, goals, and policies which serve as a guide for the growth and future long range development of the State. Amendments to the land use district boundaries must be consistent with these plans and policies. The State goals and their relationship to the proposed offsite infrastructure project are as follows:

Sec. 226-4

a. Goal: 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.

Response: The development of offsite infrastructure in support of the Lahaina Master Planned Project would offer jobs to residents of Maui. Over the long term, the project would provide the foundation for development of between 3,800 and 4,800 residential housing units for Maui County residents.

b. Goal: 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.

Response: The proposed offsite infrastructure project is a desirable extension of infrastructure services to the Wahikuli-Lahaina area and supports development of affordable housing in a master-planned setting for residents of the community.

c. Goal: Physical, social, and economic well-being for individuals and families in Hawaii that nourishes a sense of community responsibility, of caring, and of participation in family life.

Response: The housing opportunities promoted by development of offsite infrastructure for the Lahaina Master Planned project would increase the economic well-being of the community as a whole, as well as providing affordable housing for Maui residents.

Sec. 226-7

Objectives and policies for the economy - agriculture

- 1) Continued viability in Hawaii's sugar and pineapple industries.*
- 2) Continued growth and development of diversified agriculture throughout the State.*

Response: While the construction of offsite infrastructure for the Lahaina Master Planned project would not directly contribute to the development of diversified agriculture or assist in the viability of Hawaii's sugar and pineapple industries, it is not anticipated to negatively affect the viability or diversification of agriculture in Hawaii.

FUNCTIONAL PLANS

Thirteen State Functional Plans have been prepared to manage and coordinate the various functional area activities, and to guide resource allocation and decision making. Each plan addresses Statewide needs, problems and issues, and recommends policies and priority actions to mitigate those problems and bring about desirable conditions. Objectives of several functional plans relating closely to the requests in this petition are discussed below.

State Agricultural Functional Plan

The State Agricultural Functional Plan identifies major issues of statewide concern affecting Hawaiian agriculture and the underlying needs and requirements of the commodity industries for resources.

Objective: (1) Conserve and protect important agricultural lands in accordance with the Hawaii State Constitution.

Response: The development of offsite infrastructure for the Lahaina Master Planned Project would not cause a loss of Prime agricultural lands. The proposed housing project would be developed in a designated Urban area.

State Conservation Lands Functional Plan

The State Conservation Lands Functional Plan defines and addresses areas of statewide concern including watersheds, sensitive habitats, ocean space, and scenic, historic and cultural sites. The plan specifically deals with the protection of rare and endangered species and habitats.

Objective: (a) Effective protection and prudent use of Hawaii's unique, fragile and significant environmental and natural resources.

Response: The project would not adversely impact any of Hawaii's unique, fragile and significant environmental and natural resources.

The State Energy Functional Plan

The purpose of the State Functional Energy Plan is to define and implement objectives which provide dependable, efficient and economical statewide energy systems capable of supporting the needs of the people, as well as moving toward energy self-sufficiency.

Objective: (1) Promote legislation and other measures to encourage, support, and provide incentives for energy conservation and efficiency and alternate and renewable energy resources.

Response: The proposed project is contiguous to existing urban areas and provides for the logical extension of existing electrical services. Development of offsite water and irrigation infrastructure to serve the planned residential community would satisfy an efficient and economical criteria of providing services from adjacent areas, and for establishing water and energy conservation policies for the project.

The State Recreational Functional Plan

The State Recreational Functional Plan is oriented toward improving public recreation opportunities in Hawaii. Its objectives focus on land use planning, recreational facilities and programs, conservation and resource management, public access, and coordination of facilities.

Response: The proposed project is not anticipated to adversely or significantly affect recreational resources.

HAWAII COASTAL ZONE MANAGEMENT ACT

The objectives of the Hawaii Coastal Zone Management (CZM) Act as set forth in Chapter 205A, Hawaii Revised Statutes, applies to the protection and maintenance of valuable coastal resources. The project generally conforms to the applicable CZM objectives.

Erosion control measures will be undertaken during project construction to mitigate any potential runoff of sediment during intense storm events. The design of the project will protect and enhance existing drainage systems. All design standards of the County of Maui will be followed to ensure the safe conveyance and discharge of storm water runoff.

CHAPTER 343, ENVIRONMENTAL IMPACT STATEMENT (EIS) REGULATIONS

An Environmental Impact Statement (EIS), as defined by Chapter 343 HRS and by the State Office of Environmental Quality Control is required only if the accepting agency (State of Hawaii) finds that the proposed action may have "significant environmental effects" [Section 11-200-6(b)] and if (1) the proposed development is contrary to the County General Plan, (2) the petition area were located in the SLUC Conservation District or shoreline setback areas, (3) the project contained a historic site listed on the State or National Registers of Historic Places, or (4) the project required the use of State or County funds.

Since the proposed project requires use of State funds for capital improvements, the proposed project is subject to the provisions of Chapter 343, Hawaii Revised Statutes and the Office of Environmental Quality Control (OEQC), Chapter 200 of Title 11, Administrative Rules.

Determination

As previously described, it is anticipated that development of the proposed project would not have a "significant environmental effect" on the subject property or the surrounding environment. As such, it appears that the proposed project will not have a significant impact on the environment and that a negative declaration is appropriate. An Environmental Impact Statement (EIS), would therefore, not be required.

In considering the significance of potential environmental effects, the applicant has considered the sum of effects on the quality of the environment and evaluated the overall cumulative effects of the proposed action. The applicant has considered every phase of the proposed action, the expected consequences, both primary and secondary and the cumulative as well as the short and long-term effects of the proposed action. As a result of these considerations, the applicant has determined that:

- The proposed action will not involve an irrevocable commitment to any significant natural or cultural resource;
- The proposed action may increase the range of beneficial uses of the environment;
- The proposed action appears to be in concert with the State and County long-term environmental policies, goals and guidelines;
- The proposed action will not involve significant secondary impacts such as population changes or effects on public facilities that are not already contemplated;
- The proposed action does not appear to include elements that would substantially affect public health or overall environmental quality;
- The proposed action will not affect known rare, threatened or endangered species or habitats;
- The proposed action will not detrimentally affect long-term air or water quality or ambient noise levels;
- While the proposed action is not individually limited and does involve a larger commitment for larger actions, the accepted EIS for the Lahaina Master Planned Project, along with the Urban designation demonstrate previous acceptance of the larger action.

THE GENERAL PLAN FOR THE COUNTY OF MAUI

The actions described in this EA are included under Act 15 (SLH), an act relating to housing, and are thus excluded from the provisions of standard zoning practices and procedures of Maui County, however, the proposed project will assist in supporting the County zoning classifications by contributing to the development of the Lahaina Master Planned Community.

The County General Plan sets forth the broad objectives and policies for guiding development on Maui, Molokai and Lanai. The proposed action will further the County General Plan objectives and policies for the economy, agriculture, and the environment. The development objectives of the Applicant are in concert with the County's policies for encouraging land use methods that will provide land use development patterns in sympathy with an area's natural topographic features, environmental hazards, constraints, scenic amenities, and other natural resources.

The proposed development largely conforms to the objectives of the General Plan of the County of Maui. The development's relationship to relevant General Plan objectives is addressed as follows:

· *Land Use Objective 1: To use the land within the County for the social and economic betterment of the County's residents.*

Response: The project activities provide both social and economic benefits for Maui County residents, as described in the section on Other Impacts.

· *Environmental Objective 1: To preserve and protect our unique and fragile environmental resources.*

Response: Development of the project would not negatively impact environmental resources in the region or on a County-wide basis.

· *Agriculture Objective 1: To foster growth and diversification of agriculture and aquaculture throughout Maui County.*

Response: The proposed project would not affect the use of prime agricultural land for diversified agricultural and possible aquacultural activities.

· *Urban Design Objective 1: To see that all developments are well designed and are in harmony with their surroundings.*

Response: The Applicant intends to provide an integrated, well-designed, master-planned project which would be supported by development of the proposed project.

· *Public Utilities and Facilities Objective 1: To provide public utilities which will meet community needs.*

Response: Existing utilities are provided according to State of Hawaii and Maui County standards. Additional water and sewer facilities would be provided through the development of the proposed project in accordance to State and County rules and regulations.

LAHAINA COMMUNITY PLAN

While the proposed project and requested action is part of an Act 15 project, nevertheless, the proposed project will assist in accomplishing the recommendations of the Lahaina Community Plan relating to economic activity, agriculture, population, environment, land use, and urban design support systems.

SPECIAL MANAGEMENT AREA; OBJECTIVES, POLICIES, GUIDELINES, AND SIGNIFICANCE CRITERIA

While portions of project site are located within the Maui County Special Management Area (SMA), Appendix E contains a ruling stating the proposed project is exempt from requirements of the Special Management Area because the work qualifies as "installation of underground utility lines and appurtenant above ground fixtures less than four feet in height along existing corridors".

Mitigation Measures

MITIGATION MEASURES

Mitigation measures are composed of two types: generic and specific. Generic mitigation measures are those where standard actions to reduce or eliminate impact have already been institutionalized through County, State, or Federal regulations, codes or ordinances. These types of mitigation usually apply to control of temporary, or short-term, impacts such as construction impacts of soil loss, noise, air quality effects, etc. Specific mitigation measures are recommended for actions which have potential residual or long term effects that require monitoring, or some kind of compensation for the environmental effect.

Since no significant adverse residual or long terms impacts are anticipated due to the proposed improvement of offsite infrastructure for the HFDC Lahaina Master Planned project, mitigation measures discussed in this EA are wholly of the generic type, and involve mitigation measures necessary during the construction and maintenance periods of the project. These include, but are not confined to:

- limiting construction to dry periods as much as practicable
- retention of groundcover until the latest possible date
- immediate stabilization of any denuded areas through sodding or planting
- early construction of drainage control features such as berms
- installation of siltation basins where warranted
- application of fertilizers or biocides only during periods of low rainfall to minimize chemical runoff
- covering of open vehicles carrying soils, gravel or other particulate matter which may affect air quality
- controlling dust by watering and use of proper stockpiling procedures.
- landscaping around tanks and reservoirs

- a. **Water** -- The short-term mitigation measures discussed above will serve to protect aquatic resources during the construction of the proposed project. In the long-term, the increased consumption of potable water, called for with the development of the Lahaina Master Planned Community, is anticipated. The proposed project would mitigate this water demand expansion by providing new storage, transmission, and source development which would augment existing system capacity. No significant adverse impacts to the potable water system is anticipated.
- b. **Sewers** -- Existing sewage transmission and treatment facilities are not adequate for the development of the Lahaina Master Planned Community. This deficiency would be mitigated by the development of offsite infrastructure as outline in the June 1991 EA. All offsite components constructed and connected to the County of Maui Lahaina system will be in accordance with all applicable State Department of Health and County of Maui requirements. Other than employing the mitigation measures for construction activities and conforming to State and County requirements regarding the use of effluent for

irrigation, no further mitigation appears warranted.

- c. **Roadways/Traffic** -- The project roadways will be adequate with the realignment of the cane haul road and improvements to the project intersection as described on page 11, Description of the Proposed Development, June 1991 EA . Besides construction activity mitigation measures, no further mitigation measures are required.
- d. **Drainage** -- No long term, off-site drainage impacts will result from project development. Replacement of the existing metal culverts with a reinforced concrete boxed culverts will improve an existing drainage system. Some short term impacts to natural drainage features may occur during construction activities, these will be mitigated as discussed previously in this document and in the June 1991 EA.
- e. **Solid Waste Disposal** -- The proposed project will not cause a change in the manner in which area-wide solid wastes are presently collected and disposed. As such, the project is not expected to result in any adverse impacts relative to solid waste disposal.
- f. **Utilities** -- No negative impacts on utility systems will result from the development of this project. However, cumulative impacts of this and other projects on an island-wide scale will impact future needs. To mitigate the impact of electrical and communication system development, all necessary on-site utility infrastructure will be provided by the applicant.
- g. **Recreational Services/Resources** -- No adverse impacts to active recreational facilities in the area will be generated from project development.
- h. **Police and Fire Protection** -- Police protection services will be adequate to serve the project. Fire protection capability will be enhanced by the development of the proposed project. No mitigation measures appear warranted.
- i. **Schools** -- While two elementary schools are presently planned to serve the new Lahaina Master Planned Community (FEIS, 1990), the offsite infrastructural components proposed will not impact any State Department of Education facilities. The proposed infrastructure project will not generate any new students, therefore no mitigation measures are necessary.

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- Baker, H.L. et al. (1965). Detailed Land Classification, Island of Hawaii. L.S. Bulletin 6. Honolulu:Land Study Bureau, University of Hawaii
- Bruner, P.L. (April, 1991). Survey of Avifauna and Feral Mammals at Lahaina, Maui for the HFDC Master Plan Project/Offsite Sewer and Water Improvements. Prepared for PBR HAWAII. Laie, Hawaii:Author
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- Hawaii, State of. Office of State Planning. (1989). The Hawaii State Plan. Honolulu, Hawaii.
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PBR HAWAII. (June 1991). Offsite Infrastructural Components Lahaina Master Planned Project. Honolulu, Hawaii.

PBR HAWAII. (February 1990). Lahaina Master Planned Project Final Environmental Impact Statement. Honolulu, Hawaii.

Rosendahl, Paul. (May 1991). Supplemental Archaeological Survey: Lahaina Master Planned Project Offsite Sewer, Water Improvements and Cane Haul Road. Hilo, Hawaii

U.S. Department of Housing and Urban Development, Federal Insurance Administration, National Flood Insurance Program. Flood Insurance Rate Map Maui County.

Comments & Responses to the Draft EA



STATE OF HAWAII
DEPARTMENT OF HEALTH

P. O. BOX 3119
HONOLULU, HAWAII 96813

December 8, 1992

92-403/epo

Ms. Ramona Mattix, AICP
Project Planner
PBR Hawaii
1042 Fort Street Mall, Suite 300
Honolulu, Hawaii 96813

Dear Ms. Mattix:

Subject: Draft Environment Assessment (DEA)
Offsite Infrastructural Components of the
Lahaina Master Planned Project
Wahikuli - Lahaina, Maui
TMC: 4-5-21; Por. 4, 7, 3
TKK: 4-5-11; Por. 1

Thank you for allowing us to review and comment on the subject document. We have the following comments to offer:

Wastewater

The subject project is located within the County sewer service system. As the area is sewer, we have no objections to the proposed Lahaina Master Planned Project, provided that the project is connected to the public sewers.

The developer should work closely with the County to assure the availability of additional treatment capacity and adequacy for the project. Non-availability of treatment capacity will not be an acceptable justification for use of any private treatment works.

If you should have any questions on this matter, please contact Ms. Lori Kajiwara of the Wastewater Branch at 586-4290.

On pages 19 and 20, under the heading "Wastewater Reclamation Plan", Item #5 is missing.

Underground Injection Control (UIC)

1. The proposed wastewater leachfield site is located above the UIC line as stated in the document.
2. The nearest known drinking water sources are located approximately 1.5 miles from the proposed wastewater leachfield site.

Ms. Ramona Mattix
December 8, 1992
Page 2

92-403

3. The Wahikuli Pump Litch partially converges into or runs adjacent to the east boundary of the proposed leachfield. If the ditch is still operational, what impacts would the ditch cause?

4. On page 13, Item 5, b, Sewer, under the section titled "Existing Services," a total maximum capacity of 5.2 mgd for the existing injection wells at the Lahaina Wastewater Treatment Plant (WWTP) is erroneously stated. The injection wells are presently being reevaluated to obtain the actual total maximum capacity.

5. On page 26, Item c, Sewer, under the section titled "Impacts on Infrastructure and Services," the statement that... "(t)he development of a wastewater reclamation program would provide an improved method for disposing of treated effluent that would not impact groundwater or nearshore ocean water..." should either be substantiated or restated (emphasis added). Wastewater reclamation is viewed by the Department as the environmentally-preferred choice over current effluent disposal methods, i.e., injection wells and ocean outfalls. Although being the preferred choice, reclamation still has the potential, but to a lesser degree than injection wells or ocean outfalls, to impact groundwater or nearshore ocean water.

If you should have any questions on this matter, please contact Mr. Morris Uehara of the UIC Section of the Safe Drinking Water Branch at 586-4258.

Drinking Water

1. The DEA indicates that the project will include the development of new sources of potable water. If new sources of water are developed, it will be necessary to comply with Department of Health Administrative Rules, Chapter 11-20, "Potable Water Systems." Section 11-20-29 requires that all new sources of potable water serving a public water system be approved by the Director of Health prior to its use. Such an approval is based primarily upon the submission of a satisfactory engineering report which addresses the requirements set in Section 11-20-29.

2. Section 11-20-30 requires that new or substantially-modified distribution systems for public water systems be approved by the Director. However, if the water system is under the jurisdiction of the County of Maui, the department of Water Supply will be responsible for the review and approval of the plans.

3. The DEA indicates that the proposed development will have a dual water system (wastewater reclamation and potable water). The potable and nonpotable water systems must be carefully designed and operated to prevent cross-connections and backflow conditions. The two systems must be clearly labeled and physically separated by air gaps or reduced pressure principle backflow preventers to avoid contaminating the

Ms. Ramona Mattix
December 8, 1992
Page 3

92-403

potable water supply. In addition, all nonpotable spigots and irrigated areas should be clearly labeled with warning signs to prevent the inadvertent consumption of nonpotable water.

If you should have any questions on this matter, please contact Mr. Stuart Yamada of the Safe Drinking Water Branch at 586-4258.

Very truly yours,

John C. Lewin
JOHN C. LEWIN, M.D.
Director of Health

cc: Wastewater Branch
Safe Drinking Water Branch
Housing Finance Development Corporation (J. Connant and N. Mu)
Hauai District Health Office



December 28, 1992

Dr. John C. Lewin, Director
Department of Health
P.O. Box 3378
Honolulu, HI 96801

RE: Lahaina Master Planned Project Offsite Infrastructure Environmental Assessment: File 93-403/epo

Dear Dr. Lewin:

Thank you for your comment letter of December 8, 1992 on the above Draft EA. Your comments are appreciated and will be included in the final document, along with the response. Revisions to the Environmental Assessment in response to your comments is as follows:

Wastewater

HFDIC will work closely with the County to assure the availability of additional treatment capacity and adequacy for the project. Item #5 is actually Item #6 on the Reclamation Plan; the list was mis-numbered.

Underground Injection Control

The location of the drinking water sources is provided.

If Waihukui Ditch is operational, there would be no increased impacts related to the leachfield.

Page 13, item c. Sewer, is revised to state that the total maximum capacity of the wells is presently being reevaluated.

Remaining pages missing!

Not connected in text

UNITED STATES MAIL, SUITE 401 HONOLULU, HAWAII 96813 TELEPHONE: (808) 521-5411 FAX: (808) 521-1107

Ms. Ramona Mattix
December 8, 1992
Page 3

92-403

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Very truly yours,

John C. Lewin
JOHN C. LEWIN, M.D.
Director of Health

cc: Wastewater Branch
Safe Drinking Water Branch
Housing Finance Development Corporation (J. Connant and N. Wu)
Maui District Health Office



December 28, 1992

Dr. John C. Lewin, Director
Department of Health
P.O. Box 3378
Honolulu, HI 96801

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Page 13, item c. Sewer, is revised to state that the total maximum capacity of the injection wells is presently being reevaluated.

Not connected in text



PLANNING
DESIGN
CONSTRUCTION

December 8, 1992

Mr. Kasack Cheung, P.E., Director of Engineering
Department of the Army
U.S. Army Engineer District, Honolulu
Building 230
Pt. Shafter, HI 96856-5440

RE: Lahaina Master Planned Project Offsite Infrastructure Environmental
Assessment

Dear Mr. Cheung:

Thank you for your comment letter of November 19, 1992 on the above Draft EA. Your
response is appreciated and will be included in the final document.

The applicant will consult with the Operations Division when specific infrastructure plans
are developed and will comply with the related regulations.

Sincerely,

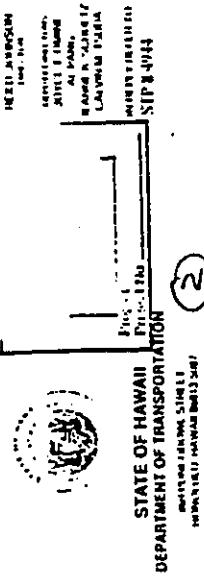
PBR HAWAII

Ramona Mattix, AICP
Project Planner

cc: Neal Wu/HEDC

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December 7, 1992

Ms. Ramona Mattix, Project Planner
PBR Hawaii
1042 Fort Street Mall, Suite 200
Honolulu, Hawaii 96813


Dear Ms. Mattix:

Subject: Draft Environmental Assessment and Anticipated
Negative Declaration for Offsite Infrastructural
Components - Lahaina Master Planned Project

Regarding the roadway component of the Lahaina Master Planned Project, we have the following comments to offer:

1. The proposed Lahaina Bypass as shown appears consistent with our pre-draft supplemental EIS. However, our right-of-way requirements are yet to be determined and we are, therefore, not prepared to commit to the proposed 150-foot width for the right-of-way for the entire project length.
2. Plans for any work on the infrastructural components within our State highway rights-of-way must be submitted to our Highways Division for review and approval.
3. For the Lahaina Master Planned Project, we are still unclear as to what specific roadway improvements will be provided by the developer to mitigate the traffic congestion caused by the traffic generated by the development. A level of service "C" or better should be provided.

We appreciate this opportunity to provide comments.

Sincerely,

Rex D. Johnson
Director of Transportation



December 28, 1992

Mr. Rex Johnson, Director
Department of Transportation
869 Punchbowl Street
Honolulu, HI 96813-5097

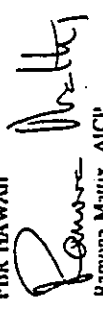
RE: Lahaina Master Planned Project Offsite Infrastructure En
Assessment: STP 8.4944

Dear Mr. Johnson;

Thank you for your comment letter of December 7, 1992 on the above Draft EA. Your response is appreciated and will be included in the final document. In regard to your comments, the EA will be revised to reflect that:

1. The developer will work with DOT to provide an adequate right-of-way for the Lahaina Bypass.
2. Plans for any work on the proposed infrastructural components within the State Highway rights-of-way will be submitted to the Highways Division for review and approval.
3. The developer will mitigate traffic generated by the development in conformance with the measures described in the Lahaina Master Planned Project Environmental Impact Statement and provide a level of service "C" or better.

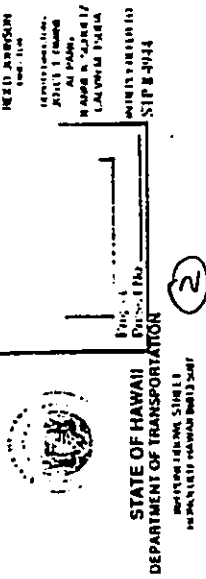
Sincerely,

PBR HAWAII

Ramona Mattix, AICP
Project Planner

cc: Neal Wu/HFDC
07/04/93

Changes in
text made

POSTAGE WILL BE PAID BY ADDRESSEE PERMIT NO. 100 HONOLULU, HI 96813-5097
PBR HAWAII, 869 PUNCHBOWL STREET, HONOLULU, HI 96813-5097



December 7, 1992

Ms. Ramona Matix, Project Planner
PIHR Hawaii
1042 Fort Street Mall, Suite 300
Honolulu, Hawaii 96813


Dear Ms. Matix:

Subject: Draft Environmental Assessment and Anticipated
Negative Declaration for Offsite Infrastructural
Components - Lahaina Master Planned Project

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Sincerely,

Rex D. Johnson
Director of Transportation



December 28, 1992

Mr. Rex Johnson, Director
Department of Transportation
869 Punchbowl Street
Honolulu, HI 96813-5097

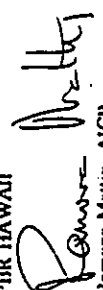
RE: Lahaina Master Planned Project Offsite Infrastructure Environmental
Assessment: STP 8.4944

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Thank you for your comment letter of December 7, 1992 on the above Draft EA. Your response is appreciated and will be included in the final document. In regard to your comments, the EA will be revised to reflect that:

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2. Plans for any work on the proposed infrastructural components within the State Highway rights-of-way will be submitted to the Highways Division for review and approval.
3. The developer will mitigate traffic generated by the development in consonance with the measures described in the Lahaina Master Planned Project Environmental Impact Statement and provide a level of service "C" or better.

Sincerely,

PIHR HAWAII

Ramona Matix, AICP
Project Planner

cc: Neal Wai/HIFDC
12/28/92

U.S. DEPARTMENT OF TRANSPORTATION
HONOLULU OFFICE
1001 KALANOA'OLE DRIVE
HONOLULU, HAWAII 96813-5097
TELEPHONE: (808) 541-1111 FAX: (808) 541-1102

State of Hawaii
Department of Land and Natural Resources
DIVISION OF AQUATIC RESOURCES

Date: December 4, 1992

TO: Paul Kawamoto, Program Manager, Aquatic Resources & Environmental Protection
FROM: Mike H. Yamamoto, Aquatic Biologist
SUBJECT: Comments on Maps, Technical Appendix, File #93-249

Comment Requested by: Roger Evans, Office of Conservation and Environmental Affairs
Date Requested: 11/09/92
Date Rec'd: 11/04/92

Summary of Proposed Project

Title: Lahaina Master Planned Project
Project by: Housing Finance and Development Corporation
Location: Lahaina, Maui

Brief Description:

The State of Hawaii, Housing Finance and Development Corporation (HFDC), is proposing to develop 4,800 residential units on approximately 1,120 acres in the Mahikuli area of Lahaina, Maui. The units, which will include both single-family and multiple-family dwellings, will be constructed over a ten-year period and eventually cover 730 acres, or 65% of the project site.

Planned infrastructural components of the proposed project include the following: 1) internal roadway system; 2) potable water distribution system; 3) sanitary sewer collection and transmission system; 4) underground electrical distribution system; 5) underground communications system (telephone and tv); 6) public parks and related recreational facilities, including an 18-hole golf course; 7) landscaped public roadways and walkways; 8) storm drainage system; and 9) tsunami/civil defense warning system.

The project site is located adjacent to Lahaina town, mauka of the Lahaina Civic Center and Mahikuli subdivision, and north of the Kelawe subdivision and Lahainaluna High School. Several streams, ditches and reservoirs are located in or adjacent to the parcel. These include: Kahana Stream, Kahona Stream, Honokohau Ditch, Mahikuli Ditch, Mahikuli Reservoir and Crater Reservoir.

Comments:

Our previous comments (copies attached) remain applicable.
attach.

2/117

State of Hawaii
Department of Land and Natural Resources
DIVISION OF AQUATIC RESOURCES

DATE: February 7, 1990

TO: Paul Kawamoto, Program Manager, Aquatic Resources & Environmental Protection
FROM: Mike H. Yamamoto, Aquatic Biologist
SUBJECT: Comments on 1. Conservation District Use Application
X 2. Draft EIS

Comment Requested by: Roger Evans, Office of Conservation and Environmental Affairs
Date Requested: 01/30/90
Date Rec'd: 01/30/90

Summary of Proposed Project

Title: Lahaina Master Planned Project
Project by: State of Hawaii
Location: Lahaina, Maui

Brief Description:

The State of Hawaii, Housing Finance and Development Corporation (HFDC), is proposing to develop 4,800 residential units on approximately 1,120 acres in the Mahikuli area of Lahaina, Maui. The units, which will include both single-family and multiple-family dwellings, will be constructed over a ten-year period and eventually cover 730 acres, or 65% of the project site.

Planned infrastructural components of the proposed project include the following: 1) internal roadway system; 2) potable water distribution system; 3) sanitary sewer collection and transmission system; 4) underground electrical distribution system; 5) underground communications system (telephone and tv); 6) public parks and related recreational facilities, including an 18-hole golf course; 7) landscaped public roadways and walkways; 8) storm drainage system; and 9) tsunami/civil defense warning system.

The project site is located adjacent to Lahaina town, mauka of the Lahaina Civic Center and Mahikuli subdivision, and north of the Kelawe subdivision and Lahainaluna High School. Several streams, ditches and reservoirs are located in or adjacent to the parcel. These include: Kahana Stream, Kahona Stream, Honokohau Ditch, Mahikuli Ditch, Mahikuli Reservoir and Crater Reservoir.

Comments:

A project of this magnitude will undoubtedly have some negative effects on the area's freshwater and marine resources. To minimize these impacts to the extent possible, the applicant should take appropriate measures to prevent erosion and leaching of toxic substances into the aquatic environment. These measures should include: 1) controlling the time of construction; 2) retaining ground cover until the latest possible date; 3) early construction of drainage control features; 4) use of temporary area sprinklers in non-active construction areas when ground cover is removed; 5) stationing water trucks on site during construction to provide for immediate sprinkling, as needed in active construction zones (weekends and holidays included); 6) use of temporary beams and cut-off ditches, where needed for control of erosion; 7) thoroughly watering graded areas after construction has ceased for the day; 8) rolling and planting all cut and fill slopes immediately after grading work has been completed; and 9) applying fertilizers and/or birchbark only during periods of low rainfall to minimize their runoff into streams, ditches, and reservoirs.

Mike H. Yamamoto
Mike H. Yamamoto

State of Hawaii
Department of Land and Natural Resources
DIVISION OF AQUATIC RESOURCES

Date: August 1, 1991
ID: Paul Kawamoto, Program Manager, Aquatic Resources & Environmental Protection
FROM: Mike H. Yamamoto, Aquatic Biologist-TW
SUBJECT: Comments on Environmental Assessment

Comment Requested by Roger Evans, Office of Conservation and Environmental Affairs
Date of Request 02/15/91 Rec'd. 02/16/91

Summary of Proposed Project

Title: Lahaia Master Planned Project/Infrastructural Components
Project by: Housing Finance and Development Corporation
Location: Lahaia, Maui

Brief Description:

In order to provide the necessary infrastructure for the Lahaia Master Planned Project, offsite roadway and drainage improvements, potable water sources, water storage tanks, booster pump stations, water transmission lines, wastewater treatment expansion, an existing wastewater pump station, wastewater transmission lines and modification and replacement of existing wastewater pump stations will be required. These offsite improvements will meet the requirements of between 3,800 and 4,800 residential units. The proposed project is anticipated to be completed within five years.

The proposed project site encompasses several disparate areas near the Housing Finance Development Corporation's Lahaia Master Planned Project. The proposed Lahaia subdivision area near Lahaia town and north of the existing Kelawa subdivision and Lahaialuna High School.

Comments:

Our comments of February 7, 1990 remain applicable (copy attached).
Attach.



December 28, 1992

Mr. Paul Kawamoto, Program Manager
Department of Land and Natural Resources
Division of Aquatic Resources
P.O. Box 621
Honolulu, HI 96809

RE: Lahaia Master Planned Project Offsite Infrastructure Environmental Assessment; File 93-249

Dear Mr. Kawamoto;

Thank you for your comment letter of December 4, 1992 on the above Draft EA. Your response is appreciated and will be included in the final document. Each of the mitigation measures provided in your earlier letter of February 7, 1990, regarding the Lahaia Master Planned Project will be utilized in the development of Offsite Infrastructure as appropriate.

Sincerely,

PBR HAWAII

Ramona Matix, AICP
Project Planner

cc: Neal Wu/HEDC

97904_7_921

OFFICE: 500 SOUTH KING STREET, SUITE 200, HONOLULU, HAWAII 96813
TELEPHONE: (808) 521-1402 FAX: (808) 521-1402
MAILING: 1000 ALA MOANA DRIVE, SUITE 100, HONOLULU, HAWAII 96814
TELEPHONE: (808) 521-1402 FAX: (808) 521-1402

LINDA CHOCQUET LINGLE
Mayor



COUNTY OF MAUI
PLANNING DEPARTMENT
4
500 S. HIGH STREET
WAILUKU, MAUI, HAWAII 96793

December 21, 1992

BRIAN W. MISKAE
Planning Director



PLANNING DEPARTMENT
December 28, 1992

Ms. Ramona Mattix
Project Planner
PBR Hawaii
1042 Fort Street Mall, Ste. 310
Honolulu, Hawaii 96813

Dear Ms. Mattix,

RE: Draft Environmental Assessment and Anticipated Negative
Declaration for Offsite Infrastructural Components
Lahaina Master Planned Project, Lahaina, Maui, Hawaii.

The Planning Department has reviewed the Environmental
Assessment on the Offsite Infrastructural Components of the Lahaina
Master Planned Project.

Please be advised that we have no further comments to offer in
this matter.

Thank you for your cooperation. If further clarification is
required, please contact Ms. Ann Cua of this office.

Very truly yours,

Brian Miskae
BRIAN MISKAE
Director of Planning

cc: Colleen Suyama
Ann Cua
Project file

Mr. Brian Miskae, Director of Planning
County of Maui
250 High Street
Wailuku, Maui 96793

RE: Lahaina Master Planned Project Offsite Infrastructure Environmental
Assessment

Dear Mr. Miskae;

Thank you for your comment letter of December 21, 1992 on the above Draft EA. Your
response is appreciated and will be included in the final document.

Sincerely,

PBR HAWAII
Ramona Mattix
Ramona Mattix, AICP
Project Planner

cc: Neal Wofford

OFFICE: 508-531-1400 FAX: 508-531-1402
MAIL ROOM: 508-531-1400 FAX: 508-531-1402



DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HONOLULU

FT SHAFTER, HAWAII 96858-5440

NOVEMBER 19, 1992

REPLY TO
ATTENTION OF

Planning Division

NOV 19 1992

Project No.



PLANNING DIVISION
ENVIRONMENTAL STUDIES

December 28, 1992

Mr. Ramona Mattix, AICP
PBR Hawaii
1042 Fort Street Mall, Suite 300
Honolulu, Hawaii 96813

Dear Mr. Mattix:

Thank you for the opportunity to review and comment on the Draft Environmental Assessment and Anticipated Negative Declaration Offsite Infrastructure Components for the Lahaina Master Planned Project (TRK 4-3-21; por. 4, por. 7, por. 3; 4-5-11; por. 1). The following comments are provided pursuant to Corps of Engineers authorities to disseminate flood hazard information under the Flood Control Act of 1960 and to issue Department of the Army permits under the Clean Water Act; the Rivers and Harbors Act of 1899; and the Marine Protection, Research and Sanctuaries Act.

a. Any work in waters of the U.S., including Kaloana and Kanaha Streams and their tributaries, would require a Department of the Army permit. The applicant should consult with our Operations Division at 438-8557 as specific infrastructure plans are developed.

b. The flood hazard information provided on page 27 of the report is correct.

Sincerely,

Kisuck Cheung
Kisuck Cheung, P.E.
Director of Engineering

Mr. Kisuck Cheung, P.E., Director of Engineering
Department of the Army
U.S. Army Engineer District, Honolulu
Building 230
Ft. Shafter, HI 96858-5440

RE: Lahaina Master Planned Project Offsite Infrastructure Environmental Assessment

Dear Mr. Cheung:

Thank you for your comment letter of November 19, 1992 on the above Draft EA. Your response is appreciated and will be included in the final document.

The applicant will consult with the Operations Division when specific infrastructure plans are developed and will comply with the related regulations.

Sincerely,

Ramona Mattix

PBR HAWAII
Ramona Mattix, AICP
Project Planner

cc: Neal Wu/HFD/C

97044.1.WV

100 TURTLE STREET MAIL STOP 300 HONOLULU HAWAII 96813 TELEPHONE (808) 521-5611 FAX (808) 521-1802
MAIL ROOMS: INFORMATION CENTER (808) 521-5611; MAIL ROOMS (808) 521-5611; FAX ROOMS (808) 521-1802

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES



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

November 6, 1992

Ms. Ramona Matix, AICP
PBR Hawaii
1042 Fort Street Mall, Suite 300
Honolulu, Hawaii 96813

Dear Ms. Matix:

SUBJECT: Historic Preservation Review of the Draft Environmental Assessment
and Anticipated Negative Declaration, Offsite Infrastructural
Components, Lahaina Master Planned Project
Lahaina, Maui
ZNR 1-5-21: 03

Thank you for sending us a copy of this document for our review and comments. We found this document to have adequately addressed historic preservation concerns. Page 24 states that historic sites in the proposed well site, drainage improvements and wastewater reclamation area are not present. This negative finding is the result of an archaeological survey conducted by Paul H. Rosendahl, Inc. and the full report is reproduced in Appendix B. This report was previously reviewed by our office, and we concurred with the findings and determination that the proposed project will have no effect on significant historic sites.

Should you have any questions, please contact Ms. Annie Griffin at 587-0013. Sincerely,

Thy M. M. Alden

DOM HIBBARD, Administrator
State Historic Preservation Division

AG:aa1

c: Sam Lomo, OCEA (File No.: 93-249)

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

LOG NO.: 6660
DOC NO.: 9277AGNR



December 8, 1992

Mr. Don Hibbard, Administrator
Department of Land and Natural Resources
State Historic Preservation Division
33 South King St., 6th Floor
Honolulu, HI 96813

RE: Lahaina Master Planned Project Offsite Infrastructure Environmental Assessment

Dear Mr. Hibbard:

Thank you for your comment letter of November 6, 1992 on the above Draft EA. Your response is appreciated and will be included in the final document.

Sincerely,

Ramona Matix

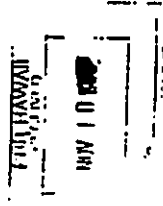
PBR HAWAII

Ramona Matix, AICP
Project Planner

cc: Neal Wm/H/DC

FORM 3, 1991

FOR INFORMATION ONLY - THIS IS A DRAFT DOCUMENT. IT IS SUBJECT TO CHANGE AND SHOULD NOT BE USED FOR DECISION MAKING.





LAND AND INFRASTRUCTURE
PLANNING
FOR HAWAIIAN ISLANDS

December 8, 1992

Mr. Kistuck Cheung, P.E., Director of Engineering
Department of the Army
U.S. Army Engineer District, Honolulu
Building 230
 Ft. Shafter, HI 96858-5440

RE: Lahaia Master Planned Project Offsite Infrastructure Environmental
Assessment

Dear Mr. Cheung:

Thank you for your comment letter of November 19, 1992 on the above Draft EA. Your
response is appreciated and will be included in the final document.

The applicant will consult with the Operations Division when specific infrastructure plans
are developed and will comply with the related regulations.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Ramona Mallix'.

PBR HAWAII

Ramona Mallix, AICP
Project Planner

cc: Neal WuIIIDC

WVWUJL3.W31

PLEASE PRINT NAME AND TITLE OF PERSON RECEIVING MAIL IN THIS SPACE
FOR MAILING PURPOSES

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32

STATE OF HAWAII
 DEPARTMENT OF LAND AND NATURAL RESOURCES
 Commission on Water Resource Management
 Honolulu, Hawaii

DEC 8 PM



DEC 3 1992
 MEMORANDUM

TO: Roger C. Evans, Administrator
 Office of Conservation and Environmental Affairs

FROM: Rae M. Loui, Deputy Director
 Commission on Water Resource Management

SUBJECT: File No. 93-249, Draft Environmental Assessment for Offsite Infrastructural Components Lahaina Master Planned Project
 Waihuku-Lahaina, Maui

December 8, 1992

Rae M. Loui, Deputy Director
 Department of Land and Natural Resources
 Commission on Water Resource Management
 1151 Punchbowl St., Rm. 227
 Honolulu, HI 96813

RE: Lahaina Master Planned Project Offsite Infrastructure Environmental Assessment

Dear Ms. Loui;

Thank you for the opportunity to review the subject report. Our comments are as follows:

- | Page | Comment |
|------|--|
| 8 | Drainage improvements described may require a Stream Channel Alteration permit from the Commission on Water Resource Management (CWRM). |
| 14 | Proposed water source development described should be included within the Hawaii Water Plan, in particular the State Water Projects Plan and the Maui County Water Use and Development Plan. Any changes in plans should be coordinated with the County of Maui Department of Water Supply and the Department of Land and Natural Resources, Division of Water and Land Development. |
| 14 | Proposed water source development, four wells, requires well construction and pump installation permits from the CWRM. |
| 14 | Pumpage from wells at Waihuku may be less than anticipated and will be dependent upon actual pump test data as wells are developed. |

If you have any questions, please contact Eric Hirano at 587-0261.

The applicant will contact the Commission on Water Resource Management (CWRM) to determine if a Stream Channel Alteration permit will be needed, as well as procure well construction and pump installation permits. All plans will be coordinated with the County of Maui Department of Water Supply and the DLNR Division of Water and Land Development.

Sincerely,

Rae M. Loui

PBR HAWAII

Ramona Mallix, AICP
 Project Planner

cc: Neal Wu/HFDC

9791A_5_931

DEPARTMENT OF LAND AND NATURAL RESOURCES
 COMMISSION ON WATER RESOURCE MANAGEMENT
 1151 PUNCHBOWL STREET, HONOLULU, HAWAII 96813
 TELEPHONE: (808) 531-2100 FAX: (808) 531-1007

ONE HUNDRED
CONTINUED FROM



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
P.O. BOX 51
HONOLULU, HAWAII 96813

WILLIAM W. PATY, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
1992
OFFICES
STATE OF HAWAII
P.O. BOX 51
HONOLULU, HAWAII 96813
ADVISORY BOARD OF HISTORIC
PRESERVATION
ADVISORY BOARD OF NATURAL
RESOURCES
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UTILITIES
ADVISORY BOARD OF
SOLID WASTE MANAGEMENT
ADVISORY BOARD OF
WATER RESOURCES

REP: OCEA: KOK

DEC 1 1992

File No.: 93-249
DOC. ID.: 1056

Ms. Ramona Mattix, Project Planner
PBR, Hawaii
1042 Fort Street Mall, Suite 300
Honolulu, Hawaii 96813

Dear Ms. Mattix:

Subject: Draft Environmental Assessment for Offsite Infrastructure
Components, Lahaina Master Planned Project, Mahikuli-Lahaina,
Maui

Thank you for giving our Department the opportunity to comment on this
matter. We have reviewed the materials you submitted and have the
following comments.

Our Department's Historic Sites Section has already responded to PBR,
Hawaii (letter attached) on this matter.

In addition our Division of Water Resource Management will comment on the
Draft EA when they have completed their review. We have no further
comments at this time.

Thank you for your cooperation in this matter. Please feel free to call
Eva Lemo at our Office of Conservation and Environmental Affairs, at
587-0377, should you have any questions.

Very truly yours,
William W. Paty
WILLIAM W. PATY

cc: Joseph K. Conant, HFDC



December 8, 1992

Mr. William W. Paty, Chairperson
Board of Land and Natural Resources
P.O. Box 621
Honolulu, HI 96809

RE: Lahaina Master Planned Project Offsite Infrastructure Environmental
Assessment: File 93-249

Dear Mr. Paty:

Thank you for your comment letter of December 1, 1992 on the above Draft EA. Your
response is appreciated and will be included in the final document.

Sincerely,

Ramona Mattix

PBR HAWAII
Ramona Mattix, AICP
Project Planner

cc: Neal Wu/HFDC

97884_3_951

HONOLULU STREET MAIL, SUITE 100 HONOLULU, HAWAII 96813 TELEPHONE (808) 521-5431 FAX (808) 521-1402
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Appendix A: Negative Declaration

JOHN WAIHEE
GOVERNOR



JOSEPH K. CONANT
EXECUTIVE DIRECTOR

STATE OF HAWAII
DEPARTMENT OF BUDGET AND FINANCE
HOUSING FINANCE AND DEVELOPMENT CORPORATION
677 QUEEN STREET, SUITE 300
HONOLULU, HAWAII 96813
FAX (808) 587-0600

IN REPLY REFER TO:
92:DEV/5150

October 19, 1992

TO: Brian Choy, Director
Office of Environmental Quality Control

FROM: *Joseph K. Conant*
Joseph K. Conant, Executive Director
Housing Finance and Development Corporation

SUBJECT: OFFSITE INFRASTRUCTURE COMPONENTS - LAHAINA MASTER
PLANNED COMMUNITY

As accepting agency, the Housing Finance and Development Corporation (HFDC) acknowledges an Environmental Impact Statement (EIS), as defined by Chapter 343, HRS, and by the State Office of Environmental Quality Control, is required only if the accepting agency (State of Hawaii) finds that the proposed action may have "significant environmental effects" [Section 11-200-6(b)] and if (1) the proposed development is contrary to the County General Plan, (2) the petition area is located in the SLUC Conservation District or shoreline setback areas, (3) the project contained a historic site listed on the State or National Registers of Historic Places, or (4) the project required the use of State or County funds.

Since the proposed project requires use of State funds for capital improvements, the proposed project is subject to the provisions of Chapter 343, Hawaii Revised Statutes and the Office of Environmental Quality Control (OEQC), Chapter 200 of Title 11, Administrative Rules.

Anticipated Determination

It is anticipated that development of the proposed project will not have a "significant environmental effect" on the subject property or the surrounding environment, and that negative declaration will be appropriate. An Environmental Impact Statement (EIS), therefore, would not be required. The sum of

DEV.22100.00

Mr. Brian Choy
October 19, 1992
Page 2

effects on the quality of the environment is evaluated in the Draft Environmental Assessment, along with overall cumulative effects of the proposed action.

Should you have any questions, please contact Neal Wu, Project Coordinator, at 587-0538.

NW:dl

Appendix B: Archaeological Survey

**Supplemental Archaeological Survey
Lahaina Master Planned Project
Offsite Sewer, Water Improvements,
And Cane Haul Road**

**Lands of Wahikuli, Hanakaoo, Honokawai, Kuhua,
Kuholilea, Puou, Puuiki, and Aki**

Lahaina District, Island of Maui

PHRI

Paul H. Rosendahl, Ph.D., Inc.

Archaeological • Historical • Cultural Resource Management Studies & Services

385 Mobeull Street • Hilo, Hawaii 96720 • (808) 949-1763 • FAX (808) 961-4998
P.O. Box 23305 • G.M.F., Guam 96911 • (671) 472-3117 • FAX (671) 472-3131

**Supplemental Archaeological Survey
Lahaina Master Planned Project
Offsite Sewer, Water Improvements,
And Cane Haul Road**

**Lands of Wahikuli, Hanakao, Honokawai, Kuhua,
Kuholea, Puou, Puuiki, and Aki**

Lahaina District, Island of Maui

by

**Peter M. Jensen, Ph.D.
Associate Senior Archaeologist**

and

**Jenny O'Claray, B.A.
Supervisory Archaeologist**

Prepared for

**Housing Finance and Development Corporation
State of Hawaii
c/o PBR Hawaii
1042 Fort Street Mall, Suite 300
Honolulu, Hawaii 96813**

May 1991

PHRI

Paul H. Rosendahl, Ph.D., Inc.

Archaeological • Historical • Cultural Resource Management Studies & Services

305 Mowoll Street • Hilo, Hawaii 96720 • (808) 969-1763 • FAX (808) 961-6998
P.O. Box 23305 • G.M.F., Guam 96911 • (671) 472-3117 • FAX (671) 472-3131

SUMMARY

At the request of Ms. Ramona Matix of PBR Hawaii, on behalf of their client, the Housing Finance and Development Corporation (HFDC) - State of Hawaii, Paul H. Rosendahl, Ph.D., Inc. (PHRI) conducted supplemental archaeological inventory survey relating to construction of three offsite features associated with the proposed residential development of the c. 1,097.765-acre Lahaina Master Planned Project project area. Portions of the area of construction impacts originate in the Land of Wahikuli, Lahaina District, but fall outside of the originally-defined Master Planned Project project area, which was located entirely within Wahikuli. The newly proposed linear features extend into the lands of Hanakaoo, Honokawai, Kuhua, Kuholilea, Puou, Puuiki, and Aki. Since the original project area was restricted to lands located with a portion of Wahikuli, not all of the land areas to be affected by construction of these new features were inventoried for significant cultural resources during the original survey (Jensen 1989). The present supplemental survey work conforms with recommendations contained in the original inventory survey report, and is in compliance with state and county requirements. The basic

objective of the present supplemental survey was essentially the same as that specified for the original inventory survey—to provide appropriate cultural resource information and evaluations for use in the Environmental Impact Statement for the Lahaina Master Planned Project.

The supplemental inventory survey work was conducted April 18-26, 1991, under the overall supervision of Associate Senior Archaeologist Dr. Peter M. Jensen and Supervisory Archaeologist Ms. Jenny O'Claray, B.A.. During the survey, no new sites were identified within the areas of potential effect for the three newly identified construction features—the offsite sewer, water improvement features, and road extension. Four previously unidentified historic-era features related to sugar cane irrigation were observed on lands close to water improvement features. However, it was determined that all of these historic features (ditch segments and associated wood flume remains) were located outside of the present project impact area and will not be affected by developments as presently proposed.

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INTRODUCTION

BACKGROUND

At the request of Ms. Ramona Mattix of PBR Hawaii, on behalf of their client, the Housing Finance and Development Corporation (HFDC) - State of Hawaii, Paul H. Rosendahl, Ph.D., Inc. (PHRI) conducted supplemental archaeological inventory survey work relating to construction of sewer line, water improvement features, and a road extension associated with the proposed residential development of the c. 1,097.765-acre Lahaina Master Planned Project project area (Figure 1). Some of the offsite features originate within Wahikuli, Lahaina District, Island of Maui, but most of the proposed new linear features are outside of the originally-defined Master Planned Project Area. As a consequence, the areas to be affected by this construction were not surveyed for cultural resources during the original survey work (Jensen 1989). The present supplemental survey work conforms with recommendations contained in the original inventory survey report, and will ensure compliance with state and county requirements. The basic objective of the present supplemental survey was essentially the same as that specified for the original inventory survey—to provide appropriate cultural resource information and evaluations for use in the Environmental Impact Statement (EIS) for the Lahaina Master Planned Project.

The present report is the Final Report for the current project. It includes a scope of work, a discussion of field methods and procedures, and a description of the three new features to be added to the original project area. The report concludes with feature descriptions and evaluations, as appropriate, and final project recommendations. Because the present document is a supplement to the existing inventory survey report, previous archaeological investigations within the region are not reviewed in this report. For this and other relevant background information the reader is referred to the original survey report (Jensen 1989).

SCOPE OF WORK

The basic purpose of an inventory survey is to identify—to discover and locate on available maps—all sites and features of potential archaeological significance present within a specified project area. An inventory survey is an initial level of archaeological investigation. It is extensive rather than intensive in scope, and is conducted with the primary aim of determining the presence or absence of

archaeological resources. A survey of this type indicates the general nature and the variety of archaeological remains present, and the general distribution and density of such remains. It permits a general significance assessment of the archaeological resources, and facilitates formulation of realistic recommendations and estimates for any further mitigation work that might be necessary or appropriate. Such mitigation work could include further data collection involving detailed recording of sites and features, and limited excavations. It might also include construction monitoring, interpretive planning and development, or preservation of sites and features with significant scientific research potential, interpretive qualities, or cultural value.

In consideration of the above, the basic objectives of the present survey were fourfold: (a) to identify (find and locate) all sites and site complexes present within the three newly identified project features; (b) to evaluate the potential general significance of all identified archaeological remains; (c) to determine the possible affects of proposed development upon the identified remains; and (d) to define the general scope of any further data collection or other mitigation work that might be necessary or appropriate.

Based on a review of readily available background literature, familiarity with the general project area, PHRI's familiarity with the current requirements of pertinent review authorities, and on discussions with Ms. Ramona Mattix of PBR Hawaii, the following specific tasks were determined to constitute an adequate and appropriate scope of work for the present supplemental inventory survey:

1. Conduct limited additional archaeological and historical documentary background research involving review and evaluation of readily available archaeological and historical literature, historic documents and records, and cartographic sources relevant to the immediate project area;
2. Conduct a 100% coverage, low-level (30-50 ft altitude) aerial reconnaissance survey (helicopter) of the newly identified project area features and corridor routes, with special emphasis on (a) identification of any sites (new and previously recorded) with surface structural remains, as well as identification of areas devoid of sites (e.g., mechanically altered lands under past/current cultivation or pasture), and (b) locational plotting of sites and disturbed areas on aerial photos and/or topographic maps;

3. Conduct sample coverage, variable intensity, ground survey of woodland, gulch, and any other relatively unmodified portions of the newly identified project area features and corridor routes;
4. Conduct limited subsurface testing by hand-excavation or mechanical backhoe of selected locations and selected sites and features within the project area in order to determine the presence or absence of potentially significant buried cultural features or deposits, and to obtain suitable samples for age determination analyses; and
5. Analyze background and field data, and prepare an appropriate supplemental report.

The inventory survey was carried out in accordance with the standards for inventory-level survey recommended by the Hawaii State Department of Land and Natural Resources-Historic Preservation Department (DLNR-SHPD). The significance of all archaeological remains identified within the project area was to be assessed in terms of (a) the National Register criteria contained in the Code of Federal Regulations (36 CFR Part 60), and (b) the criteria for evaluation of traditional cultural values prepared by the national Advisory Council on Historic Preservation. DLNR-SHPD uses these criteria to evaluate eligibility for both the Hawaii State and National Register of Historic Places.

PROJECT CONTEXT

It was determined that review of information from several sources would improve the accuracy of field survey results by ensuring that field workers were familiarized with the types of sites most likely to be encountered, and the primary distribution patterns of such resources. The information to be reviewed included (a) the relationship between survey area locations and topographical features and prior physical disturbance, (b) the results of historic documentary background research, and (c) the findings of the initial inventory survey work, which involved examination of more than 1,000 acres of adjoining land.

PROJECT AREA LOCATION

As noted in the Introduction, the present project involved examination of (a) the site of a new sewer line to connect the residential development area with the State's existing wastewater treatment plant facility, located inland from Honokowai Point and near Honokowai Stream, (b) the site of an expanded system for water storage and distribution, and (c) new sections of roadway. These areas are identified in Figure 1, and may be described, as follows.

New Sewer Line and Expanded Water Reclamation Plant Site

The offsite section of sewer line exits the project area along what is currently known as the "lower" cane haul road. At this point, this road exits Wahikuli and enters Hanakao, and proceeds northward into Hanakao through cane fields and passes adjacent to existing residential areas and the Lahaina Civic Center. Eventually the road parallels and proceeds adjacent to the east side of Highway 30 and the Pioneer Mill railroad tracks. The sewer line will proceed northward past the Pioneer Mill Railroad turn-around yard, and then enter Honokowai, terminating at the existing State wastewater treatment plant site, which is on the south side of Honokowai Stream.

New Section of Road

The offsite section of new roadway exits the project area and the *ahupua'a* of Wahikuli and enters Hanakao between the existing "upper" and "lower" cane haul roads. After proceeding a short distance in a northwesterly direction, the road swings west and proceeds along the northern margin of

a "false gulch" or depression that was created by bulldozing and aligning boulders within a shallow swale, within lands that were subsequently developed for sugar cane cultivation. The roadway again swings northwest and will connect with the existing "lower" cane haul road and the route of the new sewer line before crossing Hahakea Gulch. From this point north, both the sewer line and the new roadway follow the same corridor, currently the route of the "lower" cane haul road.

Well Field and Storage Facilities and Associated Interconnecting Pipelines

The system of tanks, wells and interconnecting pipelines constituting the expanded well field and water storage facilities originates east (mauka) of Puu Laina and existing reservoirs in this area and proceeds upslope through Kuhua and into Kuholilea. At this point, one branch of the well field (containing well Sites 2 and 3) will proceed south a short distance into Puou. The remaining well sites are distributed in a broad north-south arc that dips down into existing sugar cane fields through Puuiki and into Aki. Before entering Hahakea Gulch, the system pipeline turns west (makai) and proceeds along the edge of an existing agricultural access road, above and outside of the margins of Hahakea Gulch (along the south side of the Gulch).

Approximately 90% of these lands have been fully developed for agricultural use, and are currently planted in sugar cane. Those lands that are not in active cultivation exhibit evidence of past agricultural use (most of the large boulders and cobbles appear to have been removed), or they have been used extensively for grazing. Vegetation thus ranges from sugar cane within areas under active cultivation, to low shrubs and immature *koa haole* (*Leucaena glauca* [L.] Benth.) within areas not under active cultivation.

Major gulches are located both north (Hahakea) and south (Komohana) of the project area, but with one exception, only minor, unnamed gulches, are affected by the proposed construction. The single exception is where the new sewer line route crosses Hahakea Gulch at the point where the Pioneer Mill Railroad tracks meet the "lower" cane haul road. However, even this area has been extensively modified and disturbed during agricultural field clearing and later by bulldozing associated with construction of the railroad track and haul road crossings at Hahakea Gulch.

FINDINGS OF ORIGINAL PHRI SURVEY OF HFDC PROJECT AREA

From August 28 to September 10, 1989, PHRI completed the initial inventory survey of the c. 1,200-acre Lahaina Master Planned Project Site, situated in the Land of Wahikuli, Lahaina District, Island of Maui (Jensen 1989). In conjunction with the survey, PHRI also examined a short section of the proposed Alternative C Honoapiilani Highway Corridor. The basic objective of the survey was to provide information appropriate to and sufficient for the preparation of an Environmental Impact Statement to be prepared in conjunction with a Land Use Boundary Amendment petition to be submitted to the State Land Use Commission.

Under the overall supervision of Associate Senior Archaeologist Dr. Peter M. Jensen and Supervisory Archaeologist Alan T. Walker, B.A., the initial survey work resulted in the identification of a total of 12 sites containing 44 component features within the project area. Of the 12 sites, one had been previously identified and partially recorded (SIHP Site 1203*) (Barrera 1989) and the remaining 11 sites were newly identified. Ranging in physical condition from poor to excellent, the identified sites included single and multiple components, and displayed a range of feature types that included overhangs and caves, platforms, walled enclosures, petroglyphs, graves, agricultural terraces, and a single historic agricultural access road alignment. Tentatively identified functional types include habitation, agriculture (prehistoric and historic), ceremonial, probable burial, recreation, and indeterminate.

Six of the 12 identified sites were assessed as significant solely for information content. For one of these six sites (Site 2487) no further work was recommended; for the remaining five sites, further work in the form of vegetation clearing, detailed archaeological recording, and further refinement of the evaluations of subsurface components was recommended.

The remaining six sites were assessed as significant for information content, and provisionally, as good examples of site types. These sites included one complex in Habakea Gulch containing relatively well-preserved habitation features (Site 2480); two site complexes identified within the two branches of Kahoma Stream (Site 2483, located within the south branch of the stream [also known as Kanaha Stream], and previously recorded Site 1203 located within the north branch); and two well-constructed walled enclosures in the general vicinity of Puu Laina (Sites 2485 and 2488). For these five sites, further work in the form of vegetation

clearing and further data collection was recommended (i.e., detailed recording, surface collections, and limited excavations), to be followed by a decision as to whether preservation "as is," or preservation with some level of interpretive development, is appropriate. This determination is to be based on functional interpretations, dating results, and evaluation of nearby areas for similar preserved examples. The final project area site (Site 2486) was assessed as significant for information content, and also as potentially culturally significant, because the site may contain a burial).

These findings and conclusions were reviewed by DLNR-SHPD and Maui County, and the recommendations for treatment were subsequently accepted. In approving the petition of HFDC to reclassify the project area from an Agricultural Land Use District to Urban Land Use District, the Department of Land and Natural Resources appended the following conditions regarding cultural resources:

1. For specific archaeological sites that had been identified and evaluated within the original project area, the following treatment has been required by the State: (a) further data recovery: Sites 2478, 2479, 2481, 1482 and 2484; and (b) preservation "as is": Sites 2480, 2483, 2485, 2488, 1203 and 2486.
2. For potential effects to non-specific cultural features associated with the historic Pioneer Mill, the State recommended further evaluation of structures and features, additional historical documentary research, and final recommendations re any identified sites for either additional data recovery work or preservation with possible interpretive development.

These conditions are being treated in an archaeological mitigation plan for this project, which is currently in preparation.

HISTORICAL DOCUMENTARY RESEARCH

The *ahupua'a* of Wahikuli (lit. "noisy place") has been overshadowed during historic times by its much-visited neighbor just to the south, Lahaina. As a result, relatively little is available in terms of sources referring specifically to Wahikuli. For this reason, references to Lahaina have been substituted here, since it is nearby and thus closely associated with Wahikuli.

* State Inventory of Historic Places (SIHP) designation system: all four-digit numbers prefixed by 50-50-03- (50-State of Hawaii, 50-Island of Maui, 03-USGS 7.5" series quad map ["Lahaina, Maui"]).

Inez Ashdown (personal notes) claims that Lahaina was originally *Laha'aina*, literally meaning "land [of] prophesy," deriving from the ancient *alii* prophets who made their predictions there. Another interpretation of the name is "cruel sun"; as noted by Albert Pierce Taylor, "[a] thin-haired chief who lived at Kauaula Valley, while going to and fro without a hat, felt annoyed at the effects of the scorching rays of the sun. He looked up and gazed into the heavens and cursed at the sun thus: 'He keu hoi keia o kala haina!' ('What an unmerciful sun!')" (Taylor 1928:36).

Another old variant name for Lahaina, attributed to a number of sources, is *Lele* (literally, "jump"). According to Ashdown, "The surf of U-o at Lele was even more important to ali'i...than others such as Ka-lehua-webe at Waikiki" (personal notes).

Traditional References and Legends

Kamakau tells of a burial site north of the project area. His description suggests that people from Wahikuli were buried there:

Waiuli...is a deep pit where the corpses of the common people were thrown (he lua meki ho'olei kupapa'u ia no na maka'ainana). It is directly mauka of Honokohau, Honolua, and Honokahua, and for those from Lahaina to Kahakuloa, it was the common burial place (ho'oilina kupapa'u). The body of anyone from those places who had died on Molokai was brought back to that place. (Kamakau 1964:39)

Following are two legends which are associated with the Lahaina area, the first from Kamakau, and the second from Beckwith.

This is the main reason why the people of Maui worshipped sharks—in order to be saved from being eaten by a shark when they went fishing. At...Lahaina...a fisherman was in danger of being devoured by a shark when he went out fishing with a dip net ('upena 'aki'iki'i), or fishing for octopus with a lure (lawai'a lu'uhe'e), or setting traps for hinalea fish (ho'olu'ulu'u hinalea), or diving with a scoop net...or whichever kind of fishing a man would be doing alone. It would be better to stay ashore, but the fisherman craves fish to eat, and so might be devoured by a shark. Hence the people of that island worshipped sharks. Most of the people of that land do not eat shark even to this day; those who do are malihini—the kama'aina are afraid to eat shark (Kamakau 1964:78).

Formander (1917-19) describes nearby Kekaa in a reference that also mentions Wahikuli:

Kekaa was the capital of Maui when Kakaalaneo was reigning over West Maui....Many houses were constructed and people cultivated a great deal of potatoes, bananas, sugar cane, and things of a like nature. I have been told that the country from Kekaa to Hahakea and Wahikuli—that country now covered by cactus, in a northwesterly direction from Lahaina—was all cultivated. This chief (Kakaalaneo) also planted bread fruit and kukui trees down at Lahaina. Some of these trees southwest of the Lahaina fort, were called the bread fruit of Kauheana (Formander, Vol. 5:540-541).

Clark (1989) mentions the Kekaa area in Ka'anapali in his book *Beaches of Maui County*:

Ka'anapali is the name of an ancient *kalana* that was obliterated by the Hawaiian Legislature in 1859 by combining its lands in a new Lahaina district. The name was preserved by American Factors, Ltd., the developer of the Ka'anapali resort complex. The outstanding geographical feature in the resort area is Pu'u Keka'a, "the rumbling hill," a volcanic cinder and spatter cone. Pu'u Keka'a is most commonly known to local residents as Black Rock, a reference to the color of the cone.

According to legend, the lands surrounding Pu'u Keka'a were once an area of intense cultivation and the home of the Maui chief Kaka'alaneo when he ruled West Maui. Kaka'alaneo's son, Ka'ulula'au, was born there and became famous in his own right. An extremely mischievous youngster, he vandalized many of the shady breadfruit trees of Lele (Lahaina), for which the village was renowned. He was finally banished to Lana'i, an island then inhabited only by spirits. Using his mental and physical agility, Ka'ulula'au outwitted the spirits and made Lana'i safe for human habitation. Pu'u Keka'a, according to tradition, is a *leina a ka 'uhane*, a soul's leap." When a person lay on his deathbed, his soul would leave his body and wander about. If all earthly obligations had been fulfilled, the soul found its way to Pu'u Keka'a. There it was taken by minor gods and at that moment physical death came to the individual's body. Every island had at least one if not several locations designated as a *leina a ka 'uhane* (Clark 1989:60-1).

Handy concludes that there was "continuous cultivation on the coastal region along the northwest coast" of Maui. He writes:

On the south side of western Maui the flat coastal plain all the way from Kihei and Maalaea to Honokahua, in old Hawaiian times, must have supported many fishing settlements and isolated fishermen's houses, where sweet potatoes were grown in the sandy soil or red lepo near the shore. For fishing, this coast is the most favorable on Maui, and, although a considerable amount of taro was grown, I think it is reasonable to suppose that the large fishing population which presumably inhabited this leeward coast ate more sweet potatoes than taro with their fish. Almost no sweet potatoes are planted in this section now, however, which is partly due to the displacement of Hawaiians by Orientals on the industrialized sugar and pineapple plantations (Handy 1940:159).

Handy and Handy later presented the following summary of this important region:

Lahaina District was a favorable place for the high chiefs of Maui and their entourages for a number of reasons: the abundance of food from both land and sea; its equable climate and its attractiveness as a place of residence; it had probably the largest concentration of population, with its adjoining areas of habitation; easy communication with the other heavily populated areas of eastern and northeastern West Maui and with the people living on the western, southwestern and southern slope of Haleakala; and its propinquity to Lanai and Molokai... All this area, like that around and above Lahaina, is now sugar-cane land... Lahaina's main taro lands, on the lower slopes running up to the west side of Pu'u Kuku'i, were watered by two large streams, Kanaha and Kahoma, which run far back into deep valleys whose sides were too precipitous for terracing. (1972:492)

Early Historic References

Menzies, the naturalist and surgeon on board HMS *Discovery* during Captain George Vancouver's 1793 tour, made these observations of the Lahaina coast and the village:

...[We] soon entered the verge of the woods where we observed the rugged banks of a large rivulet that came out of the chasm cultivated and watered with great neatness and industry. Even the shelving

cliffs of rock were planted with esculent roots, banked in and watered by aqueducts from the rivulet with as much art as if their level had been taken by the most ingenious engineer....

March 17...to see the village of Lahaina, which we found scattered along shore on a low tract of land that was neatly divided into little fields and laid out in the highest state of cultivation and improvement by being planted in the most regulated manner with the different esculent roots and useful vegetables of the country, and watered at pleasure by aqueducts that ran here and there along the banks intersecting the fields, and in this manner branching through the greatest part of the plantation (Menzies 1920:105,112).

J. Arago, who visited Hawaii with Captain Louis de Freycinet in 1819, was impressed with the area as well:

The environs of Lahaina are like a garden. It would be difficult to find a soil more fertile, or a people who can turn it to greater advantage;... various sorts of vegetables and plants... amongst which we distinguish the Caribee-cabbage, named here taro; double rows of banana, bread-fruit, cocoa-nut, palma-christi, and the paper-mulberry trees...

The space cultivated by the natives of Lahaina is about three leagues [9 miles] in length, and one in its greatest breadth. Beyond this all is dry and barren; everything recalls the image of desolation (IN Handy and Handy 1972).

Rev. C.S. Stewart visited Hawaii twice, first as a missionary in 1823 assigned to the station at Lahaina, then as Chaplain of the U.S. Frigate *Vincennes*. His diary entry for May 31, 1823 reads:

The settlement is far more beautiful than any place we have yet seen on the Islands. The entire district stretching nearly three miles along the seaside, is covered with luxuriant groves, not only of the cocoanut, the only tree we have before seen except on the tops of the mountains, but also of the breadfruit and of the kou... while the banana plant, kapa and sugar-cane are abundant, and extend almost to the beach, on which a fine surf constantly rolls (Taylor 1928:42).

Another Stewart entry reads:

...The breadfruit trees stand as thickly as those of a regularly planted orchard, and beneath them are

kalo patches and fishponds, 20 or 30 yards square, filled with stagnant water, and interspersed with kapa trees, groves of banana, rows of the sugar cane, and bunches of the potato and melon....It scarcely ever rains, not oftener, we are told, than half a dozen times during the year, and the land is watered entirely by conducting streams, which rush from the mountains, by artificial courses, on every plantation. Each farmer has a right, established by custom, to the water every fifth day (Taylor 1928:43).

The *Pacific Commercial Advertiser* (February 12, 1857) devoted itself to the port of Lahaina. The following excerpt reports on the population as well as the agriculture:

...Fruits are generally abundant. The grape seems to luxuriate in the rich soil, and the sunny, clear weather of Lahaina.... Figs, bananas and melons are produced in abundance, and pumpkins enough for all New England to make pies for a general Thanksgiving....

In riding through [a] "Tropic road"...we counted twenty varieties of trees and shrubs growing by the road side, and presenting within a mile's ride, as fine specimens of tropical productions as any similar drive to be found on the Islands.

The population of Lahaina is estimated at fifteen hundred, the foreign part of which will not probably exceed one to two hundred. The causes that have been at work depopulating the islands have likewise tended to reduce the numbers here. "Years ago there was a hut under every breadfruit tree," was the statement of an old man who has seen the four Kamehamehas as the rulers of the land. So far as local diseases, we are singularly free. The climate is unequalled; the mild, sea breezes temper the heat of the day, and the cool breeze of the night makes sleeping a luxury to be enjoyed.

Finally, the *Maui News* (February 3, 1926) provided the following narrative of a 1926 trip on horseback, in an article entitled "Historic Lahaina":

The road during the rest of the journey to Lahaina [rider is departing the Honokohau area, North of Wahikuli] is first-class. For a great part of the way the traveler can indulge in a brisk canter whenever he chooses. It skirts the sea beach very closely, running, in some places, within eight or ten feet of high water mark. Beyond this part, all the way into Lahaina, it lies further from the sea, but is equally good for riding.

...The large number of mango, bread fruit, tamarind, and other trees, with innumerable bananas, which are growing in all parts of the town and around it, give the place a most picturesque appearance. The luxuriance with which these trees grow here I have not seen equalled at any other place in the Kingdom. Mr. Turton's sugar plantation also is quite near to the town.

Sugar cane is planted here wherever land can be obtained, a proof how rich the soil is....It [Lahaina] has suffered from the advance of other places, and also, in common with all the formerly populous parts of the Kingdom, from the lamentable depopulation, which is the most striking feature in the history of the islands since they became known to European nations. It has, I believe, experienced of late some revival, but its prospects are by no means so good as those of many other Hawaiian towns, which, under the influence of what is now the staple industry of the Kingdom, sugar growing, are making rapid strides in advance. -George Cummings, clerk in the Office of the County Auditor.

Land Commission Awards

The testimony that was given in support of Land Commission Awards (LCA) often contains descriptions of land use for the area concerned. Excepting minor parcels, the entire *ahupua'a* of Hanakao (LCA 7715) was awarded to Lot Kamehameha (Kamehameha V). At the State Survey Division is Bishop's 1883 map (Reg. 1883), but it shows only the location of Puukoolii School, the roadway and railway for Pioneer Mill Co., and indicates that there was sugar cultivation within the project area. Hommon (1982) indicates that this parcel was evidently irrigated by a canal leading from Honokowai Stream. Native Testimony on LCA 7715 reveals only that Lot Kamehameha relinquished the land of Kahikinui on East Maui to acquire grants for his lands (said to be 18 in number), without further commutation or divisions (Vol. 10:244). North of Hanakao lie the parcels of LCA 5121:3 to Kuku, and LCA 76:21 to Shaw. LCA 5121:3, situated in the Honokowai Gulch, contained taro land, pasture and a house site (Archives Vol. 5:225). Since there is limited data for Hanakao, testimonies for parcels in the neighboring *ahupua'a* of Honokowai are presented here:

LCA 3925H:1 *Kaaha* Native Testimony Vol. 5:234

Kauwealoha wrote and sent this claim to Oahu, but no document has been returned as yet. Makamaikai (F), sworn she has seen Kaaha's 6 sections in the ilis listed below. Section 1 - 4 taro patches at Naunaunahawe, Section 2 - Pasture land in Maili,

Section 3 - House lot at Kahananui, Section 6 - Pasture land at Kailepai. Sections at Honokowai from Kaaha. Sections in Kahana are ancient. The section in Mailepai from Kalalau and Alaala. These 6 sections were obtained Feb. 14, 1848. Kaaha is deceased, Kahinalua, his son is heir, no objection.

LCA 4242 *Kaaha* Native Testimony Vol. 5:143

Kaluaika sworn he has seen 5 sections in these ilis of Honokowai. Land from Kaaha's parents at the time of Kamehameha I, no objection and the boundaries are: Sec 1 - 9 patches in Naunaunahawe, Sec 2 - Potato hill in Naunaunahawe ili, Sec 3 - Potato pasture in Maele ili, Sec 4 - Potato pasture in Honokowai ili, Sec 5 - House site in the ili of Moomuku. Work on award No. 6396 Kaaha is included in No. 4242 above.

LCA 3988:3 *Hilahila* Native Testimony Vol. 5:147

Maui sworn he has seen *Hilahila*'s lands in these ilis of Honokowai ahupua'a. Land from *Hilahila*'s parents at the time of Kamehameha I, no one had objected. Sec 1 - Taro in the ili of Puulena: Mauka and Lahaina - Honokowai Stream, Makai - Poalima, Kahakuloa - Honokowai pali, Sec 2 - Potato pasture at Puulena: Kahakuloa - Honokowai. Sec 3 - Pasture in Puulena ili, Sec 4 - Potato pasture at Ilikikoo ili, Sec 5 - House site in Honokowai ili land.

LCA 4249:1 *Kameeui* Native Test. Vol. 5:222

Maui sworn he has seen 5 sections in the ahupua'a of Honokowai. Sec 1 - Taro land in Honokowai ili: Mauka - Keaweluaole, Lahaina - Keaweluaole/Kalalakoa, Makai - King's poalima, Kahakuloa - pali/poalima. Sec 2 - Pasture land in Honokowai ili: Mauka - govt pasture, Lahaina - Kahaleola's land, Makai - govt enclosure, Kahakuloa - Pupu. Sec 4 - Pasture land in Ulukikoo ili: Mauka and Lahaina - Stream, Makai - Kuaana, Kahakuloa - Honokowai pali. Sec 5 - Pasture land in Ulukioo ili...Land from J. A. Kuakini to Kameeui's parents at the time of Kamehameha I, no objection.

LCA 3765 *Aio* Native Test. Vol. 5:121

Kahanaumaikai sworn he has seen 5 sections in these ilis of Honokowai. Lands at Moomuku were from Aumai at the time of Kamehameha I. Pasture at Ilikikao from Keawe at the time of Pili. Pasture at Haenaiki from Haihe in 1845. Sec 1 - House lot at Moomuku, Sec 2 - pasture in Moomuku, Sec 3 - two patches in Moomuku, Sec 4 - Pasture in Ilikikoa, Sec 5 - Pasture at Haenaiki.

LCA 3689 *Maui* Native Test. Vol. 5:120

Kahanaumaikai sworn he has seen two sections in these ilis of Honokowai. This land was from Maui's parents at the time of Kamehameha I, no objections and these are the boundaries. Sec. 1 - Potato pasture at Ilikikoa, Sec 2 - Potato pasture at Kipapa.

LCA 3987:1 *Holona* Native Test. Vol. 5:142

Kaukau sworn he has seen *Holona*'s lands in these ili lands of Honokowai of 4 sections, no objection. This land was from Puaa at the time of Kamehameha I, the boundaries are: Sec 1 - house lot in the ili and of Ahaloa, Sec 2 - 10 taro patches in Kapili ili, Sec 3 - Potato patch in Wainalo ili, Sec 5 - 14 taro patches in Wainalo ili land.

LCA 5002:2,5 *Kahanaumaikai* Native Test. Vol. 5:119

Kaukau sworn he has seen 5 sections at Kapili in Honokowai. This land was from Kahanaumaikai's parents at the time of Kamehameha I, no one has objected. Sec 1 - One potato moo makai of here in Kapili, Sec 2 - One potato moo in upland, Sec 3 - Potato moo in upland, Sec 4 - Upland potato moo, Sec 5 - Taro section. Makapuu sworn he has seen 4 sections at Poopohaku and Poehu in Honokowai. This interest was from Pikanele in 1845, no objection. The boundaries are: Sec 6 - Taro at Poopohaku, Sec 7 - pasture, Sec 8 - Taro at Poehu, Sec 9 - Pasture at Poehu.

LCA 3850:1 *Paki* Native Test. Vol. 5:134

Kaukau sworn he has seen 5 sections in the ili land of Kapili in Honokowai. Land from Paki's parents at the time of Kamehameha I, no objections, the boundaries are: Sec 1 - Potato pasture, Sec 2 - Pasture, Sec 3 - Pasture (J. Kalaikini's boundaries all around) Sec 4 - 4 taro patches. Work for award # 6600 has been included in award # 3850, these are similar.

LCA 4239:3 *Kaukau* Native Test. Vol. 5:117

Kahanaumaikai sworn he has seen 14 sections belonging to Kaukau here in these ilis in the ahupuaa of Honokowai. This land was from his father at the time of Kamehameha I, Sec 1 - House lot and pasture at Mahinahina 1: Mauka, Lahaina and makai - Charles Amara's land, Sec 2 - Pasture at Kapili, Sec 3 potato moo in uplands of Kapili, Sec 4-2 patches at Naunaunahawe, Sec 5-13 patches at Naunaunahawe, Sec 6-1 patch at Puulena, Sec 7 -1 patch at Kapili, Sec 8-1 patch at Kapili, Sec 9 -7 patches at Kapili, Sec 10-6 patches at Kapili, [Kahakuloa] sec 11-2 patches at Kapili, Sec 12-2

patches at Kapili, Sec 13 - Pasture at Kapili, Sec 14 - Pasture at Kapili. No. 4239 is similar to the award above.

LCA 327B:2 *John Previer* Native Register 2:85

We, Kamehameha III and Kuakini hereby give and convey absolutely to John Preever [sic] a certain land at Honokowai, called Waihale, and its house lot also, at Wainalu. This land and this house lot shall be for John Preever and his heirs born here in Hawaii, for them in perpetuity, however, they shall not be conveyed to a foreigner from another country. And we give all the rights pertaining to said land and the house lot from ancient times. In witness whereof we set our hands on this 6th day of January in the year of our Lord 1840, at Maui. Witness to the signature: Wm. Richards, Gov. Adams, Kamehameha III.

The Interior Department file has the following data regarding lands in Hanakao:

Interior Dept. Aug 27, 1850: Set apart for Lot Kapuaiwa in the land division of Hanakao'o.

Interior Dept Dec. 31, 1855: In letter from J. W. Austin to Minister of Int. (Young) enclosing a statement of a/c which is attached, showing that \$50 had been paid to Kaiheekai for road damages over lands in the above place.

Interior Dept. April 7, 1865: In letter from Campbell & Turbun to C. C. Harris asking information relative to the # of acres, the lowest figure asked, together with the terms of payment which may be accepted for the king's lands of the above land.

Interior Dept Aug. 11, 1866: In letter from P. Nahalehua to J. O. Dominis stating that he had spoken to him relative to the desire of Hema, et al to lease the kula of the above land & Ahikuli for \$300, but states that said Ahikuli belongs to C. C. Harris and H. A. Widemann.

Interior Dept Sept 30, 1873: In letter from P. Nahalehua to J. O. Dominis inquiring as to whether the boundaries of the above land belonging to R. Keelikolani, had been settled.

The Indices to Land Commission Awards lists only two awards for the *ahupua'a* of Wahikuli: LCA 477-F to P. Keliipio for 1 acre, 2 roods, 3 roods, and LCA 7724 to

Poholapu for 12 acres. Keliipio's parcel is listed as a house lot alongside Kaanapali Road and Chandler's land (Alexander map Aug. 20, 1851). Poholapu's parcel, which was bounded by Kahoma Stream on the Olowalu side, was cultivated in taro (Hawaii State Archives, Native Testimony). A large percentage of Wahikuli was Crown Land. The Index of Kamehameha Deeds shows that 2,194 acres were leased from Kamehameha III to Kamehameha V on March 1, 1854 for the amount of \$250 per annum (State Survey Office, Personal Communication).

A 1913 map by W. E. Wall (Reg. #2569) depicts another LCA, #5483:2 to Kaeo, as well as Grant 1891 to D. Baldwin. The map also reveals that 14,797 acres were devoted to cane land, and 221 acres to pasture land. This cane cultivation was under the management of Pioneer Mill Company.

Pioneer Mill Co.

Lahaina was the setting of some of the earliest sugar enterprises in Hawaii. In 1849 Judge A. W. Parsons operated a sugar mill here. This mill, along with 1,000 acres of land, was sold to O. H. Gulick at auction. Henry Dickenson, a Lahaina store owner, began a plantation in 1859, and the success of his Lahaina Sugar Co. encouraged the establishment the following year of a second plantation, Pioneer Mill Co. It was founded by three partners: James Campbell, a carpenter who later became Hawaii's first millionaire, Henry Turton, and James Dunbar, on lands deeded to them by Benjamin Pittman. In 1863, Lahaina Sugar Co. went bankrupt and sold out to Pioneer Mill Co. (HRHP Site Form 50-03-1598, and Conde 1973:252). Another plantation, formed by Lot Kamehameha and others in 1870, was also bought out by Pioneer Mill Co. a few years later (HRHP Site Form 50-03-1598). The firm of Walker & Allen appears to have been the plantation agency in the early years, but in 1877 H. Hackfeld replaced them as agents (Conde 1973:252). An 1883 evaluation of plantations represented by H. Hackfeld lists Pioneer Mill Co. assets at \$500,000 (Simpich 1974).

A section of Pioneer Mill's railroad ran through the project area. The main line extended north from the mill, which is several blocks from the center of Lahaina Village, to a point north of the town of Puukolii in Hanakao, five miles distant and, at the north end, about 350 feet above the sea (Conde 1975:169). The *Pacific Commercial Advertiser* reported on the construction of the railway on Oct. 23, 1882:

Turton's railroad to Kaanapali is making rapid progress. The grading is finished for over two miles out from the mill, and the track is laid on same for nearly the whole distance. Mr. Johnstone, the civil

and every other kind of engineer, has management of the whole thing, and is making things hum along the route — he expects to be hauling cane [to] Kaanapali by January next...

Formerly the cane was brought to Lahaina at the rate of twenty cart loads a day — the carts would come into Lahaina in the morning and return in the afternoon to load up for the next day's trip. It took from six to eight bullocks to a cart, a driver for each team, and a luna to go back and forth with them. Now however, 120 loads will be hauled by steam in a day and it will require but the engineer, and say two trainmen on the cars — the wear and tear and loss of cattle and mules on the Kaanapali route was more than running expenses and wear and tear on the railroad will be.

The *Hawaiian Gazette* added to this on November 29, 1882:

Mr. Turton's railroad to Honokowai has made good progress; the grading is now substantially completed and three miles of track are laid. About one mile has been heavy grading along a rocky tract, where a large amount of dynamite has been used. The whole length of the permanent track is four and one half miles; width of track 31 inches, steel rails. There will be some 5000 feet more movable track in addition. One and one quarter miles of railway will be laid from the mill to the south end of Lahaina. The whole cost of the railway and other plant will not exceed \$30,000. This will dispense with about \$20,000 invested in carts and teams, heretofore employed in conveying cane to the mill.

Pioneer Mill Co. reorganized in 1900. The prospectus for the change is interesting, as it designates the land areas comprised by the plantation property:

Lahaina - 1,000 acres of land on the flat and outside of small kuleanas, the land is fee simple.

Launiupoko - 2,900 acres of fee simple land, lying between Lahaina and Olowalu.

Wahikuli - A tract of Government land of 5,000 acres, under lease for eighteen years, lies between Lahaina and Kaanapali.

Kaanapali - Some 3,600 acres at various levels, fee simple land, beyond Wahikuli. (The area also comprises streams at Kahumu, Lahainaluna, Kawaulu and Launiupoko.)

The extent of sugar cultivation is noted in the *Hawaii Sugar Manual*:

The cane fields of the estate have a sea frontage of ten miles, and while cultivated to 1 1/2 miles average depth in some sections raising of cane is followed so far back as two and one half miles as the farthest reach up the slopes of the West Maui mountains.

The bulk of the crop is raised on lands that range from 10 feet to 700 feet elevation above sea level; the highest being cultivated at 1500 feet (IN Conde 1973:254).

Beginning in 1929, the company's Annual Report lists equipment retirements, signalling the decline of the railroad. The 1933 report lists "Railroads & Bridges—1,020 linear feet of 26 lb. rail, acquired in 1920 was retired in 1933." The 1934 report notes "1 Velocipede track-car, acquired 1921, retired 1934." Starting in 1943, the company experimented with loading starting cane into trucks using grab loaders. The 1946 report reveals that by that year, serious consideration was being given to abandoning the railroad and harvesting exclusively by trucks. The final rail report appeared in 1953: "Change in operation—...All cane will be hauled by truck on a time shift basis...All railroad tracks were taken up, sorted and subsequently sold to a mainland buyer. Most of the railroad equipment was sold to various purchasers. The mill yard was graded, dressed with cinders and a direct cane dumping arrangement was built." (Conde 1973:254).

An article in the *Maui News* reports that a large number of ties were purchased by ranchers for use as fence posts, and that portable track iron, all of the old rails, and old rail switches, frogs, fishplates angle bars and spikes were sold to the Purdy Co. of San Francisco.

The renaissance of the railway began when A. W. McKelvey received capital from Taylor A. "Tap" Pryor to construct the "Lahaina, Kaanapali & Railroad" in 1968. The new railway began several blocks from the center of Lahaina, north of Pioneer Mill, on the old railroad grade, alongside cane haul dirt roads. New track was laid, and a trestle was built, at the cost of \$15,000, near the golf course to offer a panoramic view of Kaanapali. In 1973 the operation was sold to Willis B. Kyle who hired R.D. Ranger to run the line (Conde 1975:169).

Wahikuli State Wayside Park, *makai* of the project area, is described in *The Beaches of Maui County*:

Wahikuli means "noisy place" and is an alternate name of the ahupua'a of Mala which includes this

park. Waihikuli State Wayside Park is one of the most popular beach parks in West Maui. It is usually crowded with picnickers, swimmers, and sunbathers, especially on weekends and holidays. Waihikuli's popularity is undoubtedly due to its size, its good swimming conditions, its excellent facilities, and its proximity to Lahaina....Almost the entire shoreline is lined with a retaining wall composed of large boulders (Clark 1989:60).

Clark also describes Hanaka'o'o in the following passage:

Hanaka'o'o means the "digging stick bay," but the origin of the name is now unknown. The beach fronting the park was once known to Maui residents as Sand Box Beach. Sand Box was also the name of a still-popular surfing break fronting the neighboring Hyatt Regency Maui. During the early 1900s Pioneer Mill constructed a rock crusher near Hanaka'o'o Cemetery, now situated with the park. The rock crusher had several large storage bins to hold the crushed material, including a box for sand. The sand box was kept filled with beach sand, which was bagged as needed for various construction projects. The rock crusher shut down operations in the 1920's, but the sand box remained on the beach for many years, giving the beach its once-popular name....(ibid.).

In these excerpts, Clark brings us up to the present explaining the buildup of the Ka'anapali Resort area by the Pioneer Mill Company and American Factors:

In more recent times the Ka'anapali area was acquired by Pioneer Mill Company for cultivation in sugar cane. A landing was built on the north side of Black Rock to ship out the sugar that was processed and bagged at the mill in Lahaina and hauled to the landing by train.... The bagged sugar was stored in a warehouse to the rear of Black Rock. When the sugar boats called, the bags were run out to the end of the landing on flatcars.... Other buildings in the area included oil and molasses tanks and, on the beach, a pavilion and beach cottages reserved for the use of Pioneer Mill Company's supervisors. There was also a quarter-mile track on the tidal flats to the rear of Hanaka'o'o Point, used for racing horses on special occasions and holidays. The ruins of Ka'anapali Landing, abandoned just prior to World War II, can still be seen on the north side of Black Rock....

In December 1957 American Factors, Ltd., the owner of Pioneer Mill Company, announced plans for a multi-million dollar resort to be built around Pu'u Keka'a and its two long white sand beaches. The complex was to be called Ka'anapali, thus preserving an old Hawaiian name. Title clearance delayed the project for several years, and construction on the first hotels commenced in the early 1960's....(ibid:61).

The Ka'anapali and Lahaina areas are now filled with hotels, condominiums, and shops along the coast which cater to tourists. Sugar is still cultivated in the upper lands of these areas.

FIELD METHODS AND PROCEDURES

Field work for the present project was undertaken in three phases. The initial phase involved a limited field inspection of all project areas, conducted on April 18, 1991 by Peter M. Jensen, accompanied by HFDC Senior Planner Mr. Neal Wu. During this field inspection, project features were identified in the field, and flagging tape was placed at strategic locations to assist the subsequent aerial and pedestrian surveys.

The second phase involved the aerial inspection of all project alignments and feature areas. This work was undertaken by Peter M. Jensen and Jenny O'Claray on April 19, 1991. All linear corridors were over-flown at least twice by helicopter, at approximately 30 to 50 ft altitude. Project feature locations were confirmed from the air by visual identification of the flagging tape that had been placed the previous day. Additionally, blue flagging tape, which had apparently been set out by land surveyors along linear corridors, was also spotted during the aerial reconnaissance.

Finally, pedestrian survey was undertaken along the portions of all linear corridors and other project area locations located within lands not currently under active sugar cane cultivation. This work was undertaken April 23 through 26, 1991, by Supervisory Archaeologists Jenny O'Claray and Diane Guerrero. The pedestrian survey involved walking zig-zag transects along linear corridors, with transect spacing maintained at approximate 30-60 ft intervals.

Both the aerial and pedestrian surveys were conducted with detailed topographic maps as well as recent aerial photographs of the project area.

FINDINGS

No prehistoric or historic archaeological sites were identified within the areas of potential effect of the proposed construction areas (sewer line, water improvement features, and road extension). However, six previously unidentified historic-era features related to sugar cane irrigation were observed on lands close to several of the water improvement features. None of these features was formally recorded, but locations were noted on project area maps, and brief descriptions are provided below.

Feature 1 consists of the dilapidated remains of a wooden, trestle-supported flume. The remains were observed on both sides of Hahakea Gulch near the northeasternmost corner of the present project area. Lying some 20 meters below the lip of the gulch, the wooden remains are well outside of the present impact area and will not be affected by the proposed water wells and pipelines, as they are presently proposed.

Feature 2 consists of two old and heavily weathered fence posts. They are located within about 30 meters of the Feature 1 remains and outside of the area of potential effect of the present project.

Features 3 and 4 are short segments of wood flume remains that spanned shallow ravines located within the general vicinity of Water Well Sites 1 and 2. The two segments were initially observed during the aerial inspection of the property, and were relocated during the pedestrian survey by their proximity to the blue flagging tape that had

been placed in the field to mark the route of the pipeline and access road into the well site areas. The features are located more than 30 m west of the west side of the impact corridor for these features, and will not be affected by the project as presently planned. No evidence of additional features or artifact associations were observed at or within the immediate vicinity of either of these flume segments. Both flume segments are tentatively considered only minimally significant for information content.

Feature 5 was identified during a pedestrian survey sweep. It is located 13.7 m at 140 degrees Az from the sugar cane road and presently lies within Well-Line 16. Feature 5 consists of an historic wooden flume built across an inactive streambed. The flume is constructed of milled lumber and is supported by concrete mortared stone footings. Its dimensions are 0.72 m wide by 0.86 m tall by 7.0 m long, and it is raised c. 0.56 m above streambed surface.

Feature 6 was also identified during a pedestrian survey sweep. It is located c. 50.0 m at 140 degrees Az. from Water Well No. 1. Feature 6 consists of a small and narrow historic dam built across an inactive streambed. It is constructed of concrete mortared boulders with PVC pipes inserted in the center of the structure. The dimensions are 0.54 m wide by 0.3-1.0 m tall by 8.0 m long. It is faced on the southwest side and stacked two to three courses high. Feature 6 is outside of the present project area.

CONCLUSION

In view of the negative findings of both the pedestrian field survey and the examination of relevant historic documentary records, it is reasonable to conclude that the construction activities associated with the proposed offsite project features will not affect significant or potentially significant cultural resources.

However, it should be noted that this conclusion is based on the findings of an aerial survey and surface inventory survey

only. There is always the possibility, however remote, that potentially significant unidentified cultural remains might be encountered in the course of future development activities involving ground surface modification. In such a situation, archaeological consultation should be sought immediately.

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Appendix C: Flora Study

SUPPLEMENTAL FLORA ASSESSMENT
LAHAINA MASTER PLANNED PROJECT
OFF-SITE IMPROVEMENTS
LAHAINA DISTRICT, ISLAND OF MAUI

by

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May 1991

SUPPLEMENTAL FLORA ASSESSMENT
LAHAINA MASTER PLANNED PROJECT
OFF-SITE IMPROVEMENTS
LAHAINA DISTRICT, ISLAND OF MAUI

INTRODUCTION

A supplemental flora study of the off-site improvements for the Lahaina Master Planned Project was conducted in April 1991. The areas surveyed were the proposed alignment for the offsite sewer; the proposed alignment for the offsite water improvements including waterlines, storage tanks and well sites; and the proposed "new" cane haul road.

The field studies involved a walk-through survey along the areas proposed for the improvements; a 100-foot wide corridor was surveyed. Notes were made on plant associations and distributions, substrate types, moisture regimes, topography, etc. Plants which could not be positively identified were collected for later determination in the herbarium and for comparison with the most recent taxonomic treatment.

DESCRIPTION OF THE VEGETATION

The vegetation on the site consists largely of actively cultivated sugar cane fields. Scrub or shrubland vegetation occurs on uncultivated areas such as gulches, small gullies, and on parts of the proposed wellfield. Portions of the sewerline alignment and wellfield were surveyed during studies for AMFAC's proposed South Beach Mauka project (Char 1989a) and for the State's Hono-a-Pi'ilani Highway realignment project (Char 1988). The two basic vegetation types found on the areas for the proposed improvements

were also noted in the previous surveys. A checklist of all the plant species inventoried during the field studies is presented at the end of this report.

Cane Fields

The sewerline alignment, "new" cane haul road, and most of the waterline and storage tanks will be sited on actively cultivated sugar cane fields or near existing cane haul roads. The cane fields are almost monodominant, with the fast growing cane (Saccharum officinarum) shading out most of the weedy species. Thus, most weedy species tend to occur along the margins of fields and alongside the cane haul roads. Commonly observed weeds include golden crownbeard (Verbesina encelioides), young koa-haole shrubs (Leucaena leucocephala), spiny amaranth (Amaranthus spinosus), slender amaranth (Amaranthus viridis), wild bittermelon (Momordica charantia), hairy fleabane (Conyza bonariensis), pualele (Emilia fosbergii), and hairy spurge (Chamaesyce hirta). On some of the roads which are less frequently used, swollen finger grass (Chloris barbata) is abundant. Where the cane fields or cane haul roads abut gulches and small gullies, Guinea grass (Panicum maximum) and koa-haole shrubs become more numerous.

Shrubland Vegetation

Two variants of this vegetation type are recognized. The first is a koa-haole shrubland composed of rather dense koa-haole shrubs, from 3 to 6 ft. tall; Guinea grass, up to 3 ft. tall, fills in the matrix between the shrubs. Scattered through this shrubland are a few trees of Java plum (Syzygium cumini) and guava (Psidium guajava) shrubs. This type of shrubland is found in the unnamed gulch which parallels the proposed waterline; portions of the waterline cross this gulch just above the 2.5 M.G. storage tank site. Smaller gullies near the sewer alignment and the "new"

cane haul road also support koa-haole shrubland. These smaller gullies are often filled in with large boulders. They typically support a more or less dense thicket of koa-haole. Vines of hairy merremia (Merremia aegyptia) are seasonally abundant, scrambling over the shrubs during the wetter months. Locally common in scattered patches of varying sizes are castor bean (Ricinus communis) and wild tomato (Lycopersicon pimpinellifolium).

A'ali'i (Dodonaea viscosa) shrubland is found on the site of the 1.0 M.G. storage and control tank and on certain portions of the well field.; this occurs at the 1,050 to 1,100-foot elevation. This a'ali'i shrubland was formerly grazed as evidenced by old fence posts and wire. The a'ali'i shrubs form an open to closed shrubland, 3 to 6 ft. tall. Silk oak trees (Grevillea robusta) are a common component and form roughly 20% cover. Grassy patches dominated by Natal redtop (Rhynchelytrum repens) and molasses grass (Melinis minutiflora) are scattered through the shrubland. Less common are patches of Guinea grass and sour grass (Digitaria insularis). Other shrub and subshrub species scattered through this vegetation type are 'uhaloa (Waltheria indica), koa-haole, indigo (Indigofera suffruticosa), klu (Acacia farnesiana), and lantana (Lantana camara). Large, heavily eroded areas with about 50% plant cover are found adjacent to and above the storage and control tank. 'Uhaloa is locally abundant on these eroded sections; a few plants of a'ali'i, silk oak, and various grasses also occur on these badly eroded areas.

DISCUSSION AND RECOMMENDATIONS

The great majority of the proposed off-site improvements will occur on lands already disturbed by agricultural activities. These areas support sugar cane fields as well as their associated network of cane haul roads and irrigation ditches and common weedy species. Shrublands dominated by the introduced koa-haole or by a'ali'i, a native indigenous species, are found on the more

steeply sloping areas unsuitable for cultivation. During the field studies, a total of 46 species were inventoried. The majority, 40 (87%), are introduced or alien species; one (2%) is originally of Polynesian introduction; and five (11%) are indigenous, i.e. native to the Hawaiian Islands and elsewhere throughout the Pacific. None are officially listed threatened and endangered species (U. S. Fish and Wildlife Service 1989); nor are any currently being proposed or are candidates for such status (U. S. Fish and Wildlife Service 1990). A botanical survey for the Lahaina Master Planned Project as well as surveys of adjacent areas (Char 1988, 1989a, 1989b) also recorded similar findings.

The proposed off-site improvements are not expected to have a significant negative impact on the botanical or floral resources and there are no botanical reasons to impose any restrictions, constraints, or impediments to their construction. Of concern, is the increased soil erosion which would result from removal of vegetation during construction activities on the more steeply sloping areas occupied by the shrubland vegetation. It is recommended that those disturbed areas within the shrublands be revegetated as soon as possible to prevent loss of soil through wind and water. Some of the grasses already found in the area, such as molasses grass and Guinea grass, could be used for revegetation.

PLANT SPECIES LIST -- Off-site Improvements, Lahaina Project

Following is a checklist of all those vascular plants inventoried during the field studies. The plants are arranged into two groups: Monocots and Dicots. The taxonomy and nomenclature of the flowering plants, for the most part, are in accordance with Wagner et al. (1990). The common and/or Hawaiian names given follow St. John (1973) or Porter (1972).

For each species, the following information is provided:

1. Scientific name with author citation.
2. Common English and/or Hawaiian name, when known.
3. Biogeographic status. The following symbols are used:
I = indigenous = native to the Hawaiian Islands and elsewhere
P = Polynesian = plants originally of Polynesian introduction prior to Western contact (1778)
X = introduced or alien = all those plants brought to the islands intentionally or accidentally after Western contact; not native.
4. Presence (+) or absence (-) of a particular species within each of two vegetation types recognized on the project site (See text for discussion):
cf = cane fields
sv = shrubland vegetation

<u>Scientific name</u>	<u>Common name</u>	<u>Status</u>	<u>Vegetation type</u>	
			cf	sv
ASTERACEAE (Daisy Family)				
Acanthospermum australe (Loefl.) Kuntze	star bur	X	+	+
Ageratum conyzoides L.	maile hohono	X	+	-
Bidens pilosa L.	Spanish needle, beggar's tick	X	+	+
Conyza bonariensis (L.) Cronq.	hairy horseweed	X	+	+
Crassocephalum crepidioides (Benth.) S. Moore	crassocephalum	X	+	-
Emilia fosbergii Nicolson	red pualele, emilia	X	+	+
Sonchus oleraceus L.	milkweed, pualele	X	+	+
Verbesina encelioides (Cav.) Benth. & Hook.	golden crownbeard	X	+	-
Xanthium strumarium var. canadense (Mill.) Torr. & A. Gray	cocklebur, kikania	X	+	-
CACTACEAE (Cactus Family)				
Opuntia ficus-indica (L.) Mill.	panini	X	-	+
CONVOLVULACEAE (Morning Glory Family)				
Ipomoea indica (J. Burm.) Merr.	koali-'awania	I	-	+
Merremia aegyptia (L.) Urb.	hairy merremia	X?	+	+
CUCURBITACEAE (Squash Family)				
Momordica charantia L.	wild bittermelon	X	+	-
EUPHORBIACEAE (Spurge Family)				
Chamaesyce hirta (L.) Millsp.	hairy spurge	X	+	+
Chamaesyce hypericifolia (L.) Millsp.	graceful spurge	X	+	-
Ricinus communis L.	castor bean, koli	X	-	+
FABACEAE (Pea Family)				
Acacia farnesiana (L.) Willd.	klu	X	-	+
Chamaecrista nictitans (L.) Moench	partridge pea, lauki	X	+	-
Crotalaria pallida Aiton	rattlebox	X	+	+
Indigofera suffruticosa Mill.	indigo, 'iniko	X	-	+
Leucaena leucocephala (Lam.) de Wit	koa-haole	X	+	+

<u>Scientific name</u>	<u>Common name</u>	<u>Status</u>	<u>cf</u>	<u>sv</u>	Vegetation type
MALVACEAE (Hibiscus Family) Sida fallax Walp.	'ilima	I	-		+
MYRTACEAE (Myrtle Family) Psidium guajava L. Syzygium cumini (L.) Skeels	guava, kuava Java plum	X X	+		+
PROTEACEAE (Protea Family) Grevillea robusta A. Cunn. ex R. Br.	silk oak	X	-		+
RUBIACEAE (Coffee Family) Richardia brasiliensis Gomes	richardsonia	X	+		-
SAPINDACEAE (Soapberry Family) Dodonaea viscosa Jacq.	a'ali'i	I	-		+
∞ SOLANACEAE (Tomato Family) Lycopersicon pimpinellifolium (Jusl.) Mill.	currant tomato, wild : tomato	X	-		+
STERCULIACEAE (Cocoa Family) Walteria indica L.	'uhaloa, hi'aloa	I?	+		+
VERBENACEAE (Verbena Family) Lantana camara L.	lantana, lakana	X	-		+

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Appendix D: Faunal Survey

**SURVEY OF THE AVIFAUNA AND FERAL MAMMALS AT LAHAINA, MAUI
FOR THE LAHAINA HFDC MASTER PLAN PROJECT/OFFSITE SEWER
AND WATER IMPROVEMENTS**

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INTRODUCTION

The purpose of this report is to summarize the findings of a two day (30-31 March 1991) bird and mammal field survey of lands proposed for sewer and water improvements at Lahaina, Maui (see Fig.1). Also included are references to pertinent literature and unpublished reports.

The objectives of the field survey were to:

- 1- Document what bird and mammal species occur on the property or may likely occur given the type of habitats available.
- 2- Provide some baseline data on the relative abundance of each species:
- 3- Determine the presence or likely occurrence of any native fauna particularly any that are considered "Endangered" or "Threatened". If such occur or may likely be found on the property identify what if any features of the habitat may be essential for these species.
- 4- Determine if the property contains any special or unique habitats that if lost or altered by development might result in a significant impact on the fauna in this region of the island.

GENERAL SITE DESCRIPTION

Figure One indicates the limits of the various properties that were surveyed. Sugarcane covers large areas of the site. The mauka lands where the wells are to be located contain scrubby second growth forest of Silk Oak (Grevillea robusta), Java Plum (Syzygium cumini), Lantana (Lantana camara), Koa Haole (Leucaena leucocephala) and A'alii (Dodonaea viscosa). Haul cane roads with exotic weeds and grasses along their margins provide additional habitat.

Weather during the survey was partly cloudy. Winds were gusty and from the east.

STUDY METHODS

Field observations were made with the aid of binoculars and by listening for vocalizations. These observations were concentrated during peak bird activity periods of early morning and late afternoon.

At various locations and in all representative habitats eight minute counts were made of all birds seen or heard. Between these count stations observations of birds were also kept. These data provide the basis for the relative abundance estimates given in this report. Unpublished reports of birds known from this region were also reviewed in order to acquire a more complete picture of

possible avifaunal activity (Bruner 1986, 1988a, 1988b, 1989a, 1989b). Observations of feral mammals were limited to visual sightings and evidence in the form of scats and tracks. No attempts were made to trap mammals in order to obtain data on their relative abundance and distribution. One evening was devoted to searching for the presence of owls and the Hawaiian Hoary Bat (Lasiurus cinereus semotus).

Scientific names used herein follow those given in the most recent American Ornithologist's Union Checklist (A.O.U. 1983); Hawaii's Birds (Hawaii Audubon Society 1989); A Field Guide to the Birds of Hawaii and the Tropical Pacific (Pratt et al. 1987); Mammal Species of the World (Honacki et al. 1982); Hawaiian Coastal Plants (Merlin 1980a) and Hawaiian Forest Plants (Merlin 1980b).

RESULTS AND DISCUSSION

Resident Endemic and Indigenous (Native) Birds:

No endemic birds were recorded. One possible species which may occur occasionally in this area is the Hawaiian Owl or Pueo (Asio flammeus sandwichensis). Pueo are known from agricultural lands on Maui but are seen less frequently in more urban habitat (Hawaii Audubon Society 1989). No permanent wetlands occur on the properties involved with the proposed sewer and water improvements. Irrigation ditches and reservoirs are found nearby.

During periods of heavy rain the gulches in the mauka lands are prone to flooding. These water resources are utilized by Black-crowned Heron (Nycticorax nycticorax). Two night heron were recorded during the survey. Both were seen at a reservoir down slope from well site number One. Black-crowned Night Heron are the only native waterbird that is not listed as an endangered species.

Migratory Indigenous (Native) Birds:

Migratory shorebirds winter in Hawaii between the months of August through May. Some juveniles will stay over the summer months as well (Johnson et al. 1981, 1983, 1989). Of all the shorebird species which winter in Hawaii the Pacific Golden Plover (Pluvialis fulva) is the most abundant. Plover prefer open areas such as mud flats, lawns, pastures, plowed fields and roadsides. They arrive in Hawaii in early August and depart to their arctic breeding grounds during the last week of April (Johnson et al. 1981). Bruner (1983) has also shown plover are extremely site-faithful on their wintering grounds and many establish foraging territories which they defend vigorously. Such behavior makes it possible to acquire a fairly good estimate of the abundance of plover in any one area. These populations likewise remain relatively stable over many years (Johnson et al. 1989). A total of 43 plover were recorded over the two days of the survey.

Ruddy Turnstone (Arenaria interpres) is another common migrant that utilizes plowed fields. None, however, were recorded on this survey.

One Wandering Tattler (Heteroscelus incanus) was observed along an irrigation ditch in the mauka lands. This species generally forages solitarily along rocky shorelines and in mountain streams and irrigation systems.

Resident Indigenous (Native) Seabirds:

This site is totally unsuitable for nesting or roosting seabirds. Several species can be seen offshore but would not utilize this property.

Exotic (Introduced) Birds:

A total of 14 species of exotic birds were recorded during the field survey. Table One shows the relative abundance of each species. In addition to these species other exotic birds which potentially could occur on the property include: Common Barn Owl (Tyto alba), Cattle Egret (Bubulcus ibis), Ring-necked Pheasant (Phasianus colchicus) and Eurasian Skylark (Alauda arvensis) (Pratt et al. 1987; Hawaii Audubon Society 1989; Bruner 1989b).

Three species not recorded on an earlier survey of nearby lands (Bruner 1989b) but found on this survey include: Northern Mockingbird (Mimus polyglottus), Red-crested Cardinal (Paroaria coronata) and Hwamei (Garrulax canorus). Warbling Silverbill

(Lonchura malabarica) were also much more abundant on this survey than in 1989.

Feral Mammals:

Wild (feral) cats were seen as well as Small Indian Mongoose (Herpestes auropunctatus). Mice were also observed. Without a trapping program it is difficult to conclude much about the relative abundance of these species, but it is not unlikely that their numbers are similar to comparable habitats elsewhere.

Maui records of the endemic and endangered Hawaiian Hoary Bat are sketchy (Tomich 1986; Kepler and Scott 1990). None were observed on this field survey despite late evening observations. This species generally roosts solitarily in trees. Much remains to be known about the natural history of this bat and its ecological requirements here in Hawaii. Kepler and Scott (1990) suggest that the bat occurs on Maui only as a "migrant, probably from the Big Island". Others, (Duvall and Duvall 1991), challenge this notion and report evidence that would suggest a resident breeding population of bats exists on Maui.

CONCLUSION

A brief field survey can at best provide only a limited perspective of the wildlife present in any given area. Not all species will necessarily be observed and information on their use of the site must be sketched together from brief observations.

the available literature and from reports by people familiar with the region. The number of species and the relative abundance of each species may vary throughout the year due to available food resources and reproductive success. Species which are migratory will quite obviously be an important part of the faunal picture only at certain times during the year. Exotic species sometimes prosper for a time only to later disappear or become a less significant part of the faunal community (Williams 1987, Moulton 1990). Thus only long term studies can provide an in depth view of the bird and mammal populations in a particular area. However, when brief field studies are viewed in the light of data gathered from other similar habitats the value of the conclusions drawn can be significantly increased. The following are some general conclusions related to bird and mammal activity on this property.

- 1- This site provides a limited range of habitats which are utilized by the typical array of exotic species of birds one would expect in this region of the island. No unusual concentrations of any exotic species were discovered. However, some species typically found in this area were not recorded. This could have been due to a number of reasons such as: the survey was too brief, their numbers were so low that they went undetected or a combination of these and other factors.
- 2- The only native birds recorded were Black-crowned Night Heron, Pacific Golden Plover and Wandering Tattler. The numbers of these species were typical of this type of habitat on Maui.

- 3- Data on feral mammals were limited to observations. No unusual concentrations were noted. No endangered species were recorded.
- 4- No unusual or special habitat for wildlife was found on these sites. The changes in the overall populations of birds in this region of Maui, as a result of the proposed development, will be negligible.

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Fig. 1. Location of offsite sewer and water improvements for HFDC project, Lahaina, Maui.

TABLE 1

Exotic species of birds recorded at HFDC Lands, Lahaina, Maui.

COMMON NAME	SCIENTIFIC NAME	RELATIVE ABUNDANCE*
Gray Francolin	<u>Francolinus pondicerianus</u>	C= 6
Rock Dove	<u>Columba livia</u>	R= 1
Spotted Dove	<u>Streptopelia chinensis</u>	U= 3
Zebra Dove	<u>Geopelia striata</u>	A= 15
Common Myna	<u>Acridotheres tristis</u>	C= 9
Northern Mockingbird	<u>Mimus polyglottus</u>	C= 6 (recorded only on mauka lands)
Northern Cardinal	<u>Cardinalis cardinalis</u>	C= 8
Red-crested Cardinal	<u>Paroaria coronata</u>	U= 3
Hwamei	<u>Garrulax canorus</u>	R= 2
Japanese White-eye	<u>Zosterops japonica</u>	A= 12
Nutmeg Mannikin	<u>Lonchura punctulata</u>	A= 25
Warbling Silverbill	<u>Lonchura malabarica</u>	C= 8
House Finch	<u>Carpodacus mexicanus</u>	U= 4
House Sparrow	<u>Passer domesticus</u>	C= 5

(see page 11 for key to symbols)

KEY TO TABLE 1

Relative abundance = number of times observed during survey or frequency on eight minute counts in appropriate habitat.

A= abundant (ave. 10+)

C= common (ave. 5-10)

U= uncommon (ave. less than 5)

R= recorded (seen or heard at times other than on 8 min. counts. Number which follow is the total individuals seen or heard)

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Appendix E: SMA Exclusion Statement

JOHN WAIHEE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF LAND MANAGEMENT
P. O. BOX 521
HONOLULU, HAWAII 96809

CONSERVATION AND
RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

January 11, 1991

Board of Land and
Natural Resources
State of Hawaii
Honolulu, HI

Gentlemen:

MAUI

Subject: Housing Finance and Development Corporation
Requests Grant of Non-Exclusive Wastewater
Transmission Pipeline Easement to County of
Maui at Wahikuli, Lahaina, Maui; Tax Map Key:
(2) 4-5-21:7 (Por.)

STATUTE: Section 171-95, Hawaii Revised Statutes, as amended

APPLICANT: COUNTY OF MAUI, DEPARTMENT OF PUBLIC WORKS,
by application of Housing Finance and
Development Corporation, Department of Budget
and Finance

FOR: Perpetual, non-exclusive wastewater
transmission pipeline easement, fifteen (15)
feet-wide, over, under, in and across portion
of the Government Land of Wahikuli, situate
at Wahikuli, Lahaina, Maui, Hawaii, being a
portion of that certain parcel of land
identified by Tax Map Key: 2nd Div./4-5-21:7,
as shown delineated in red on maps labeled
Land Board Exhibits "A" and "B,"
respectively, appended to the basic file.

STATUS OF
LAND TITLE: Subsection 5(b) lands of the Admission Act.

STATUS: Encumbered under Governor's Executive Order
No. 2947 dated December 14, 1978 to the
Department of Land and Natural Resources,
Division of State Parks and Outdoor
Recreation, for use as an addition to
Wahikuli State Wayside Park:

ZONING: State Land Use Commission: Urban District
County of Maui: Park

APPROVED BY THE BOARD OF
LAND AND NATURAL RESOURCES
AT ITS MEETING ON

1-11-91

ITEM F-2

**Appendix F: Notice of Accepted EIS
Lahaina Master Planned Project**

1,800 cubic yards of silt and clay sediments from a 0.66 acre area of Kawela Bay in its southeastern portion. The removal of these sediments is the primary goal of the project, in order to improve water clarity and eliminate the silt/clay bottom texture in the swimming, snorkeling and wading area offshore of the two planned new resort hotels.

The desilting equipment will remove the top six to 12 inches of sediments in this area utilizing a suction device. Hard, consolidated substrate areas will not be altered or excavated. Material that cannot be removed by this equipment will not be removed by any other means.

The silt and clay material will be pumped into a containment pond on 0.34 acres in the nearshore upland area adjacent to the desilting project. This containment facility will allow dewatering of sediments along with drying and compaction. The storage capacity of this facility will be adequate to accommodate desilting materials and the residence time will be sufficient to allow removal of suspended sediments from the water. Water returning to the ocean from the containment area will have turbidity levels that are equal or better than that measured in this portion of Kawela Bay.

The dewatered sediments will be removed to golf course construction areas on the applicant's property, if useable; if not, it will be land filled. The total duration of the desilting, dewatering and disposal operations will be two months for operations and one month for mobilization and demobilization.

Following the desilting operation, approximately 1,000 cubic yards of crushed basalt gravel and 5,000 cubic yards of calcareous sand will be placed at the silt removal site. The sands will fill the depressions in the bottom through this area of the Bay. This action is expected to improve circulation in this part of the Bay and reduce the likelihood of a recurrence of the problem. Sand will be imported onto the property by trucks and stock piled near the project site. Using amphibious earth moving equipment or hydraulic pumping, this sand will be transported offshore to fill the bottom areas. The filling project will require approximately two weeks to complete.

FINAL ENVIRONMENTAL IMPACT STATEMENTS

The following EISs have been submitted for acceptance. All comments received by the applicant or proposing agency, and corresponding responses, should be contained within the Final EIS. Those who wish to contest the acceptance of an EIS have a 60-day period in which to initiate litigation. The 60-day litigation period starts from the date of publication of an EIS's acceptance.

HAWAII

HAWAII COMMODITIES IRRADIATION FACILITY

Location: Hilo, Hawaii
TMK: 2-1-12:106, 107, & 108

Proposing Agency: Department of Business and Economic Development

Accepting Authority: Governor, State of Hawaii

Status: Currently being processed by the Office of Environmental Quality Control

Initially published as a Final EIS on December 23, 1988.

MAUI

LAHAINA MASTER PLANNED PROJECT

Location: Lahaina, Maui
TMK: 4-5-21:03, 04, 05, 09

Proposing Agency: Housing Finance and Development Corporation

Accepting Authority: Governor, State of Hawaii

Status: Accepted by the Governor, State of Hawaii, on March 5, 1990.

**Appendix G: Notice of Accepted EIS
Lahaina Wastewater Treatment Plant Expansion**

The existing Waianae Sewage Treatment Plant was constructed in 1965. Plans to expand and upgrade this plant were first discussed in a facility plan prepared in 1975. The concept to expand the capacity of the plant has not changed significantly since 1975 and has been incorporated in the Waianae Development Plan. The Development Plan has a public facilities map that shows the future areas to be sewerred; these are the areas that will be contributing the additional flows that necessitate the treatment plant expansion. The plans to upgrade the treatment plant have changed since 1975. The 1975 plan proposed secondary treatment. Congressional amendments to the Clean Water Act have subsequently allowed less-than-secondary treatment for ocean discharges. A secondary treatment waiver application was submitted to the Environmental Protection Agency (EPA) that documented the minimal impacts that would be caused by discharging advance-primary effluent. Although the EPA has yet to approve the waiver, the City and County of Honolulu is proceeding in anticipation of approval. To minimize the impacts, the outfall is being extended to discharge the effluent in about 100-ft. depth and 6,000 ft. offshore. Construction of this extension will require the following permits: Conservation District Use Permit, DOT Shorewaters Construction Permit, and a permit from the Corps of Engineers. Construction of the upgraded treatment plant facilities will require the following permits: Shoreline Management Area Permit and Comprehensive Zoning Code (CZC) zoning waiver. The CZC waiver will especially evaluate the appropriateness of the proposed odor stack height.

Amendment to Draft Supplemental EIS:

The City and County is amending the proposed height of the odor control stack. The original plan, as written in the EIS, was a stack height of 40' (measured from ground level) with a top elevation of 70' (measured from sea level and inclusive of the site elevation). The amendment to this original plan involves raising the stack height by 30'. Consequently, the resulting height would be 70' with a top elevation of 100'.

This EIS is also available at the Waianae Library.

Deadline: May 23, 1983.

ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED PRINCEVILLE PHASE TWO DEVELOPMENT, HANAIEI, KAUAI, Princeville Development Corporation/County of Kauai Planning Dept.

Previously published April 8, 1983.

This EIS is also available for inspection at the Hanapepe, Kapaa, Koloa Community-School, and Waimea Libraries.

Deadline: May 9, 1983.

ENVIRONMENTAL IMPACT STATEMENT FOR HALAWA MEDIUM SECURITY FACILITY, HALAWA, OAHU, Dept. of Accounting and General Services

Previously published April 8, 1983.

This EIS is also available for inspection at the Aiea Library.

Deadline: May 9, 1983.

EIS'S SUBMITTED FOR ACCEPTANCE.
The following EIS's have been submitted for acceptance and contain comments and responses made during the review and response period.

LAHAINA WASTEWATER TREATMENT PLANT EXPANSION, FINAL ENVIRONMENTAL IMPACT STATEMENT, LAHAINA, MAUI, County of Maui Dept. of Public Works

Previously published March 23, 1983.

This EIS is also available for inspection at the Maui Community College Library, Kahului Library, Makawao Library, and Lahaina Library.

Status: Accepted by Governor Ariyoshi on April 5, 1983.

Appendix H: Land Exchange Approval DLNR

JOHN WAIHEE
GOVERNOR OF HAWAII



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

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

December 18, 1992

Board of Land and
Natural Resources
State of Hawaii
Honolulu, HI

MAUI

Subject: Proposed Land Exchange Between State of Hawaii
and Pioneer Mill Company, Ltd., Lahaina, Maui,
TMK: 4-5-21:por. 4 and TMK: 4-5-21:por. 2

STATUTE: Section 171-50, Hawaii Revised Statutes

APPLICANTS: STATE OF HAWAII and PIONEER MILL COMPANY, LTD.
(PMC)

PURPOSE: Construction and development of well sites,
water tank sites, reservoir site and related
access and utility easements.

FOR: (1) Lands owned by State to be exchanged with
PMC - Portion of the Government (Crown)
Land of Wahikuli situate at Wahikuli,
Lahaina, Maui identified as TMK: 4-5-21:
por. 4 as shown shaded in red on map
labeled Land Board Exhibit "A" appended to
the basic file.

Said lands are identified as follows:

Well Site A	- 30,000 sq. ft. or 0.689 acs.
Well Site B	- 30,000 sq. ft. or 0.689 acs.
Well Site C	- 30,000 sq. ft. or 0.689 acs.
Tank Site A	- <u>67,201 sq. ft. or 1.543 acs.</u>
Total	157,201 sq. ft. or 3.610 acs.

Access and
Utility
Easement 1 - 22,812 sq. ft. or 0.524 acs.

Access and
Utility
Easement 2 - 31,788 sq. ft. or 0.730 acs.

Access and
Utility
Easement 3 - 68,120 sq. ft. or 1.564 acs.

Total 122,720 sq. ft. or 2.818 acs.

APPROVED BY THE BOARD OF
LAND AND NATURAL RESOURCES

DEC 18 1992

ITEM F-10

Exact areas subject to verification by the Department of Accounting and General Services, State Survey Office.

APPRAISED VALUE: \$145,400

ZONING: State Land Use Commission:
Agriculture

County of Maui: Agriculture

LAND TITLE STATUS: Section 5(b) of Admissions
Act - ceded land.

STATUS: Encumbered under General
Lease No. S-4229 issued to
Pioneer Mill Company, Ltd.
for sugar cane cultivation
purposes.

- (2) Lands owned by PMC to be exchanged with the State - Portion of the land situate at Kuhua, Kuhlilela, Puuki, Puou, Lahaina, Maui identified as TMK: 4-5-21:por. 2 as shown shaded in yellow on map labeled Land Board Exhibit "A" appended to the basic file.

Said lands are identified as follows:

Well Site 1 - 30,000 sq. ft. or 0.689 acs.
Well Site 2 - 30,000 sq. ft. or 0.689 acs.
Well Site 3 - 97,211 sq. ft. or 2.232 acs.
Tank Site 1 - 11,375 sq. ft. or 0.261 acs.
Reservoir
Site - 77,111 sq. ft. or 1.770 acs.

Total 245,697 sq. ft. or 5.641 acs.

Access and
Utility
Easement A - 10,953 sq. ft. or 0.251 acs.

Access and
Utility
Easement B - 102,099 sq. ft. or 2.344 acs.

Access and
Utility
Easement
C-1 - 4,177 sq. ft. or 0.096 acs.

Access and
Utility
Easement E - 22,326 sq. ft. or 0.513 acs.

Access and
Utility
Easement F - 15,654 sq. ft. or 0.359 acs.

Total 155,209 sq. ft. or 3.563 acs.

Exact areas subject to verification by the Department of Accounting and General Services, State Survey Office.

APPRAISED VALUE: \$208,590

ZONING: State Land Use Commission:
Agriculture

County of Maui: Agriculture

STATUS: Well sites are vacant, tank site and reservoir site cultivated sugar cane.

CONSIDERATION: Land exchange predicated upon lands being of substantially equal value as determined by independent appraisal; however, pursuant to Section 170-50(b), HRS, should the appraised value of PMC's lands be greater than the value of the State lands, PMC shall waive the difference but should the value be less PMC shall pay the difference to the State. (PMC to waive the difference in appraised value).

EIS REQUIREMENTS: To be complied with by State Housing Finance and Development Corporation (HFDC).

REMARKS: The State Housing Finance and Development Corporation is now in the process of planning and developing approximately 4,200 housing units on some 1,100 acres of land at Wahikuli, Lahaina, Maui for the State's Lahaina Master Planned project known as the Villages of Leiali'i. As part of this project, HFDC is required to construct and develop the necessary off-site infrastructure improvements and water sources to meet the needs of this project. According to HFDC, five (5) new wells located along the 1,050 ft. contour elevation will be needed. Three (3) of these wells and related tank and reservoir sites and access and utility easements will be located on PMC land with the remaining two (2) well sites located on State land. HFDC has requested that we obtain these sites and related easements from PMC via a land exchange and that we subsequently convey it over to them for the development of their project.

Another submittal requesting the Board's approval of the foregoing conveyance to HFDC will be presented later upon completion of this exchange proposal.


According to HFDC, the well sites, tank sites, reservoir site and related access and utility easements will be dedicated to the County of Maui upon completion of all the improvements.

In exchange for the conveyance of its properties to the State, PMC has requested that they be given the three (3) well sites and related tank site and access and utility easements to be located on State land.


RECOMMENDATION: That the Board:

- A. Approve of and authorize the subject land exchange between the State of Hawaii and Pioneer Mill Company, Ltd. as described herein subject to the following terms and conditions:
1. Disapproval by the State Legislature in any regular or special session next following the date of the exchange.
 2. Publication of Public Notice of the proposed exchange as required by law.
 3. Such other terms and conditions as may be prescribed by the Chairperson.
- B. Approve of and authorize the withdrawal of the subject State lands from the operation of General Lease No. S-4229 issued to Pioneer Mill Company subject to the following terms and conditions:
1. Effective date of the withdrawal to be determined by the Chairperson.
 2. Such other terms and conditions as may be prescribed by the Chairperson.

Respectfully submitted,


W. MASON YOUNG
Land Management Administrator

APPROVED FOR SUBMITTAL:


WILLIAM W. PATY, Chairperson