UNIVERSITY OF HAWAI'I AT MĀNOA

College of Tropical Agriculture and Human Resources
Office of the Dean and Director

November 12, 2003

Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

Subject: Finding of No Significant Impact (FONSI) for Hawaii Plant Protection Laboratory Temporary Research Modules Project, Hawaii Fruit Fly Production Facility, TMK 4-1-26: Por. 1, Waimanalo, Oahu, Hawaii

Dear Ms. Salmonson:

The University of Hawaii College of Tropical Agriculture and Human Resources has reviewed the comments received on the subject draft environmental assessment during the 30-day public comment period that began on August 8, 2003. The agency has determined that this project will not have significant environmental effects and has issued a FONSI. Please publish this notice in the November 23, 2003 OEQC Environmental Notice.

We have enclosed a completed OEQC Publication Form and four copies of the Final EA/FONSI document. The project summary previously submitted for the draft EA may be used for the announcement. Please call Roy Abe of Hawaii Pacific Engineers, Inc. at 522-7425 if you have any questions.

Sincerely,

Andrew G. Hashimoto
Dean and Director
College of Tropical Agriculture and Human Resources

Enclosure

cc: Dr. Kingsley Fisher, USDA (cover only)

3050 Maile Way, Gilmore Hall 202, Honolulu, Hawai'i 96822-2271
Telephone: (808) 956-8234, Facsimile: (808) 956-9105, E-mail: dean@ctahr.hawaii.edu

HAWAII CZM PROGRAM
FEDERAL CONSISTENCY ASSESSMENT FORM

RECREATIONAL RESOURCES

Objective: Provide coastal recreational opportunities accessible to the public.

Policies:

1) Improve coordination and funding of coastal recreation planning and management.

2) Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:

   a) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;

   b) Requiring replacement of coastal resources having significant recreational value, including but not limited to surfing sites and sandy beaches, when such resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the State for recreation when replacement is not feasible or desirable;

   c) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;

   d) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;

   e) Encouraging expanded public recreational use of county, State, and Federally owned or controlled shoreline lands and waters having recreational value;

   f) Adopting water quality standards and regulating point and non-point sources of pollution to protect and where feasible, restore the recreational value of coastal waters;

   g) Developing new shoreline recreational opportunities, where appropriate, such as artificial reefs for surfing and fishing; and

   h) Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, County planning commissions; and crediting such dedication against the requirements of section 46-6.

Check either "Yes" or "No" for each of the following questions:

		Yes	No
1.	Will the proposed action involve or be near a dedicated public right-of-way?	___	X
2.	Does the project site abut the shoreline?	___	X
3.	Is the project site near a State or County park?	___	X
4.	Is the project site near a perennial stream?	___	X
5.	Will the proposed action occur in or affect a surf site?	___	X
6.	Will the proposed action occur in or affect a popular fishing area?	___	X
7.	Will the proposed action occur in or affect a recreational or boating area?	___	X
8.	Is the project site near a sandy beach?	___	X
9.	Are there swimming or other recreational uses in the area?	___	X

Discussion: A branch of Inoaole Stream that is located at the northwest corner of the site is not perennial.

HISTORIC RESOURCES

Objective: Protect, preserve, and where desirable, restore those natural and man-made historic and pre-historic resources in the coastal zone management area that are significant in Hawaiian and American history and culture.

Policies:

1) Identify and analyze significant archaeological resources;

2) Maximize information retention through preservation of remains and artifacts or salvage operations; and

3) Support State goals for protection, restoration, interpretation, and display of historic resources.

Check either "Yes" or "No" for each of the following questions:

		Yes	No
1.	Is the project site within a historic/cultural district?	___	X
2.	Is the project site listed on or nominated to the Hawaii or National register of historic places?	___	X
3.	Does the project site include undeveloped land which has not been surveyed by an archaeologist?	___	X
4.	Has a site survey revealed any information on historic or archaeological resources?	___	X
5.	Is the project site within or near a Hawaiian fishpond or historic settlement area?	___	X

Discussion: Construction activities will be confined to the USDA site to eliminate impacts to the historic Tai-Lee Ditch located near the northern boundary of the project site. The State Historic Preservation Division has stated that they believe that "no historic properties will be affected by the development of the project area." See applicable discussions (Chapter 3 and 4), archaeological inventory survey (Appendix E), and correspondence (Appendix G) in the environmental assessment for further information.

SCENIC AND OPEN SPACE RESOURCES

Objective: Protect, preserve and where desirable, restore or improve the quality of coastal scenic and open space resources.

Policies:

1) Identify valued scenic resources in the coastal zone management area;

2) Insure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;

3) Preserve, maintain and where desirable, improve and restore shoreline open space and scenic resources; and

4) Encourage those developments that are not coastal dependent to locate in inland areas.

Check either "Yes" or "No" for each of the following questions:

	Yes	No
1. Does the project site abut a scenic landmark?	___	X
2. Does the proposed action involve the construction of a multi-story structure or structures?	___	X
3. Is the project site adjacent to undeveloped parcels?	___	X
4. Does the proposed action involve the construction of structures visible between the nearest coastal roadway and the shoreline?	___	X
5. Will the proposed action involve construction in or on waters seaward of the shoreline? On or near a beach?	___	X

Discussion: The project is located in an inland area and will have no significant adverse visual impacts.

COASTAL ECOSYSTEMS

Objective: Protect valuable coastal ecosystems from disruption and minimize adverse impacts on all coastal ecosystems.

Policies:

1) Improve the technical basis for natural resources management;

2) Preserve valuable coastal ecosystems of significant biological or economic importance;

3) Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land water uses, recognizing competing water needs; and

4) Promote water quantity and quality planning and management practices, which reflect the tolerance of fresh water and marine ecosystems and prohibit land and water uses, which violate State, water quality standards.

Check either "Yes" or "No" for each of the following questions:

		Yes	No
1.	Does the proposed action involve dredge or fill activities?	___	X
2.	Is the project site within the Shoreline Setback Area (20 to 40 feet inland of the shoreline)?	___	X
3.	Will the proposed action require some form of effluent discharge into a body of water?	X	___
4.	Will the proposed action require earthwork beyond clearing and grubbing?	X	___
5.	Will the proposed action include the construction of special waste treatment facilities, such as injection wells, discharge pipes, or cesspools?	___	X
6.	Is an intermittent or perennial stream located on or near the project site?	X	___
7.	Does the project site provide habitat for endangered species of plants, birds, or mammals?	___	X
8.	Is any such habitat located nearby?	___	X
9.	Is there a wetland on the project site?	___	X
10.	Is the project site situated in or abutting a Natural Area Reserve?	___	X
11.	Is the project site situated in or abutting a Marine Life Conservation District?	___	X

12. Is the project site situated in or abutting an estuary? ___ X

Discussion: As discussed in the environmental assessment (Chapters 2 and 4), process wastewater will be hauled to an offsite location for treatment and disposal. The offsite treatment and disposal facilities will be required to meet applicable regulations and requirements of the State Department of Health. Earthwork beyond clearing and grubbing will be required for the construction of the building pad, drainage swales, and stormwater detention basin. Erosion control measures will be implemented to minimize impacts to coastal ecosystems. The proposed stormwater detention basin will be used to help remove silt from stormwater runoff and reduce impacts to downstream ecosystems. The project is not anticipated to have adverse impacts on the intermittent branch of Inoaole Stream that is located in the northwestern corner of the project site.

ECONOMIC USES

Objective: Provide public or private facilities and improvements important to the State's economy in suitable locations.

Policies:

1) Concentrate in appropriate areas the location of coastal dependent development necessary to the State's economy;

2) Insure that coastal dependent development such as harbors and ports, visitor industry facilities, and energy generating facilities are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area; and

3) Direct the location and expansion of coastal dependent developments to areas presently designated and used for such development and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:
   a) Utilization of presently designated locations is not feasible;
   b) Adverse environmental effects are minimized; and
   c) Important to the State's economy.

Check either "Yes" or "No" for each of the following questions:

		Yes	No
1.	Does the project involve a harbor or port?	___	X
2.	Is the project site within a designated tourist destination area?	___	X
3.	Does the project site include agricultural lands or lands designated for such use?	X	___
4.	Does the proposed activity relate to commercial fishing or seafood production?	___	X
5.	Does the proposed activity related to energy production?	___	X
6.	Does the proposed activity relate to seabed mining?	___	X

Discussion: The site is classified as prime agricultural land by the Agricultural Lands of Importance to the State of Hawaii (ALISH) system and is zoned AG-1, Restricted Agriculture, by the City and County of Honolulu. The HFFPF is considered a "necessary agricultural practice" that is allowed under AG-1 zoning. The project site is not currently used for cultivation of crops.

COASTAL HAZARDS

Objective: Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, and subsidence.

Policies:

1) Develop and communicate adequate information on storm wave, tsunami, flood erosion, and subsidence hazard;

2) Control development in areas subject to storm wave, tsunami, flood, erosion, and subsidence hazard;

3) Ensure that developments comply with requirements of the Federal Flood Insurance Program; and

4) Prevent coastal flooding from inland projects.

Check either "Yes" or "No" for each of the following questions:

		Yes	No
1.	Is the project site on or abutting a sandy beach?	___	X
2.	Is the project site within a potential tsunami inundation area as depicted on the National Flood Insurance Program flood hazard map?	___	X
3.	Is the project site within a potential flood inundation area according to a flood hazard map?	X	___
4.	Is the project site within a potential subsidence hazard areas according to a subsidence hazard map?	___	X
5.	Has the project site or nearby shoreline areas experienced shoreline erosion?	___	X

Discussion: Although a portion of the project site is located in a flood hazard zone, the proposed temporary research module buildings will be located outside of the 100-year and 500-year flood zones. See Figure 2-2 of the environmental assessment.

MANAGING DEVELOPMENT

Objective: Improve the development review process, communication, and public participation in the management of coastal resources and hazards.

Policies:

1) Effectively utilize and implement existing law to the maximum extent possible in managing present and future coastal zone development;

2) Facilitate timely processing of application for development permits and resolve overlapping or conflicting permit requirements; and

3) Communicate the potential short- and long-term impacts of proposed significant coastal developments early in their life cycle and in terms understandable to the general public to facilitate public participation in the planning and review process.

Check either "Yes" or "No" for each of the following questions:

	Yes	No
1. Will the proposed activity require more than two (2) permits or approvals? (Provide the status of each.)	X	___
2. Does the proposed activity conform with the State and County land use designations for the site?	X	___
3. Has or will the public be notified of the proposed activity?	X	___
4. Has a draft or final environmental impact statement or an environmental assessment been prepared?	X	___

Discussion: A list of permits and approvals is included at the end of Chapter 2 of the environmental assessment. No approvals have been obtained to date as preparation of plans and specifications for the project has not yet been completed.

PUBLIC PARTICIPATION

Objective: Stimulate public awareness, education, and participation in coastal management.

Policies:

1) Maintain a public advisory body to identify coastal management problems and to provide policy advice and assistance to the coastal zone management program;

2) Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal-related issues, developments, and government activities; and

3) Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.

Discussion: Please provide information about the proposal relevant to the Objective and Policies No. 2 and No. 3 above.

Information on coastal management issues is being disseminated through the environmental assessment review process. As indicated in Chapter 7 and Appendix G, extensive consultations have been conducted with government agencies and the public.

BEACH PROTECTION

Objective: Protect beaches for public use and recreation.

Policies:

1) Locate new structures inland from the shoreline setback to conserve open space and to minimize loss of improvements due to erosion;

2) Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities; and

3) Minimize the construction of public erosion-protection structures seaward of the shoreline.

Discussion: Please provide information about the proposal relevant to the Objective and Policies above.

The beach protection objectives and policies are not applicable to this project.

MARINE RESOURCES

Objective: Implement the State's ocean resources management plan.

Policies:

1) Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;

2) Assure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;

3) Coordinate the management of marine and coastal resources and activities management to improve effectiveness and efficiency;

4) Assert and articulate the interests of the State as a partner with federal agencies in the sound management of ocean resources within the United States exclusive economic zone;

5) Promote research, study, and understanding of ocean processes, marine life, and other ocean resources in order to acquire and inventory information necessary to understand how ocean development activities relate to and impact upon ocean and coastal resources; and

6) Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.

Discussion: Please provide information about the proposal relevant to the Objective and Policies above.

The marine resources objectives and policies are not applicable to this project.

2003-11-23-OA-FEA

(WAIMANALO PLANT PROTECTION)

Final Environmental Assessment and Finding of No Significant Impact (FONSI) for

Hawaii Plant Protection Laboratory Temporary Research Modules Project

Hawaii Fruit Fly Production Facility, Waimanalo, Hawaii

Prepared For:
United States Department of Agriculture

Prepared by:
Hawaii Pacific Engineers, Inc.

HPE Project No. 2003006
November 12, 2003

Final Environmental Assessment and Finding of No Significant Impacts (FONSI)

for

HAWAII PLANT PROTECTION LABORATORY TEMPORARY RESEARCH MODULES PROJECT

Hawaii Fruit Fly Production Facility

Waimanalo, Koolaupoko, Oahu, Hawaii
TMK: 4-1-26: Por. 1

November 12, 2003

THIS ENVIRONMENTAL DOCUMENT HAS BEEN PREPARED PURSUANT TO
CHAPTER 343, HAWAII REVISED STATUTES
AND THE NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

PROPOSING AGENCY: University of Hawaii at Manoa
College of Tropical Agriculture and Human Resources
3050 Maile Way, Gilmore 207
Honolulu, Hawaii 96822

In cooperation with: U.S. Department of Agriculture
Hawaii Fruit Fly Rearing Facility
41-650 Ahiki Street
Waimanalo, Hawaii 96795

PREPARED BY: Hawaii Pacific Engineers, Inc.
1132 Bishop Street, Suite 1003
Honolulu, Hawaii 96813-2830

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SUMMARY

EXECUTIVE SUMMARY

The United States Department of Agriculture (USDA) Hawaii Fruit Fly Production Facility (HFFPF), located on Ahiki Street in Waimanalo, is one of only two domestic sources of sterile Mediterranean fruit flies available to support eradication and preventive programs in the U.S.

USDA proposes to construct temporary Hawaii Plant Protection Laboratory (HPPL) research facilities comprised of five single-story prefabricated steel-panel modules with workspace totaling approximately 3,900 square feet. Approximately 10 employees will work in the research modules. The project also includes construction of a 2,200 square foot single story irradiator/storage building to temporarily house USDA's two irradiator units during future reconstruction of the HFFPF and to meet storage space needs of future HFFPF operations. The USDA funded project is estimated to cost $1.1 million.

The project will require clearing of approximately 0.75 acres of land leased from the University of Hawaii. Site improvements will include grading; fencing; water, power and sewer connections; storage tank for process wastewater (held for offsite disposal); and a stormwater detention basin.

Environmental impacts will be limited primarily to short-term disruptions associated with construction activities. Construction activities will be confined to the USDA site to eliminate impacts to the nearby historic Tai-Lee Ditch. No impacts to endangered species, archaeological resources or cultural practices are anticipated. Visual impacts will be minimal as existing vegetation will screen the site from public view. A Finding of No Significant Impact (FONSI) is anticipated for the project.

PROJECT INFORMATION SUMMARY

1. Proposing Agency: University of Hawaii at Manoa
   College of Tropical Agriculture and Human Resources
   3050 Maile Way, Gilmore 207
   Honolulu, Hawaii 968722
   Walter T. Harada, Director of Planning and Management Systems

   In cooperation with: U.S. Department of Agriculture
   Hawaii Fruit Fly Production Facility
   41-650 Ahiki Street
   Waimanalo, Hawaii 96795
   Susan D. McCombs, Facility Director
   Stuart H. Stein, Facility Director

PROJECT INFORMATION SUMMARY (CONTINUED)

2.	Approving Agency:	University of Hawaii at Manoa College of Tropical Agriculture and Human Resources
3.	Prepared By:	Hawaii Pacific Engineers, Inc. 1132 Bishop Street, Suite 1003 Honolulu, Hawaii 96813-2830 Roy K. Abe, Project Manager, Ph. 808-524-3771
4.	Project Name:	Hawaii Plant Protection Laboratory Temporary Research Modules Project
5.	Project Location:	Hawaii Fruit Fly Production Facility 41-650 Ahiki Street Waimanalo, Hawaii 96795
6.	Tax Map Key:	4-1-26: Por. 1
7.	Land Area:	9.680 acres (existing site and current expansion area)
8.	Property Owner:	University of Hawaii at Manoa College of Tropical Agriculture and Human Resources
9.	Property Lessee:	U.S. Department of Agriculture
10.	State Land Use:	Agriculture
11.	County Zoning:	AG-1, Restricted Agriculture
12.	Special Designations:	None (outside of SMA, shoreline setback and 100-year floodplain; not listed as a historic site on state or federal register)
13.	Hawaii CZM Program Federal Consistency Review	Required (Federally funded activity on State land)
14.	Determination:	Anticipate FONSI (Finding of No Significant Impact)

Chapter 1

Introduction

CHAPTER 1
INTRODUCTION

A. INTRODUCTION

The United States Department of Agriculture (USDA) Hawaii Fruit Fly Production Facility (HFFPF) in Waimanalo, Hawaii, is one of only two domestic sources of sterile Mediterranean fruit flies available to support eradication and preventative release programs in the U.S. Location and vicinity maps for the USDA facility are shown on Figures 1-1 and 1-2 respectively. The HFFPF is located on University of Hawaii Waimanalo Research Station land that is leased to the USDA.

In September of 2002, USDA suspended its operations due to the obsolescence of the existing Waimanalo fruit fly production facilities. Prior to the shutdown of the facilities, the USDA facility shipped approximately 300 million sterile Mediterranean fruit flies to California.

Construction of a new main production building is proposed by USDA to increase production and allow rearing of a more effective strain of the Mediterranean fruit fly. This project is considered essential to compete effectively with other sterile fruit fly production facilities throughout the world and to maintain the economic viability of the HFFPF. Other components of the project include new temporary research modules, a warehouse, a maintenance workshop, storage facility, and onsite water reclamation facilities. These additional project components are necessary to maintain a high degree of operational efficiency and reliability.

The HFFPF upgrade project has been temporarily delayed primarily due to setbacks related to securing funding for the project. The delays in the project have afforded USDA with the opportunity to reassess its plans for the project. In lieu of adding a new production wing and renovating the interior of the existing HFFPF building as originally planned, USDA has decided to demolish the existing building and construct an entirely new larger facility as part of an expanded HFFPF masterplanned complex. The new facility will allow USDA to streamline and optimize operations for the new fruit fly strain. New equipment and technology will provide highly controlled environmental conditions for optimal fruit fly rearing conditions. Along with planning work for the new facilities, USDA is also currently conducting studies to address previously expressed community concerns on treatment and disposal of HFFPF's process wastewater.

As a result of the delays, USDA has decided to proceed with only a portion of the overall project at the present time. In the initial phase of USDA's development plan, the construction of the temporary research modules is proposed. Due to the urgent need for

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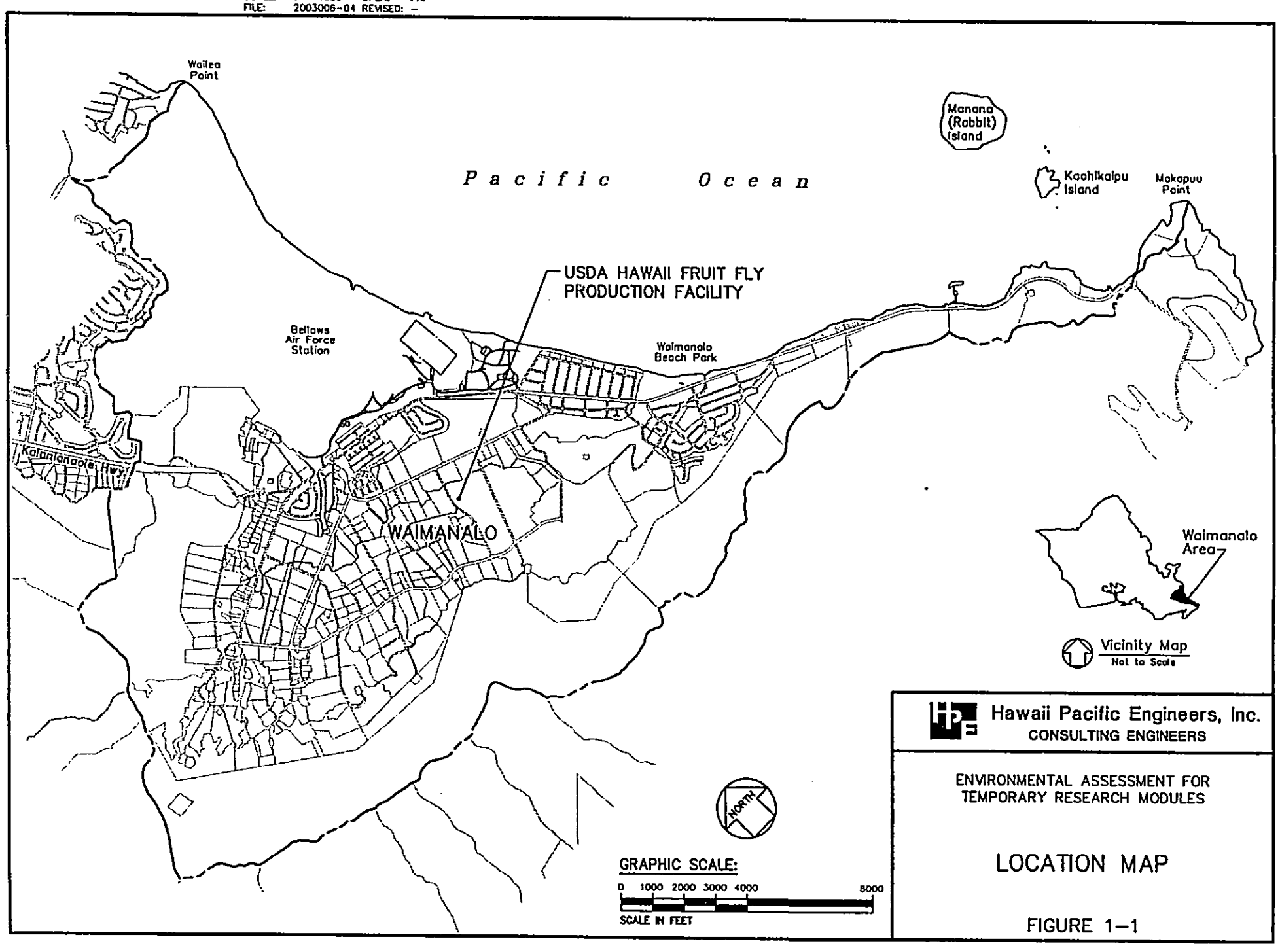
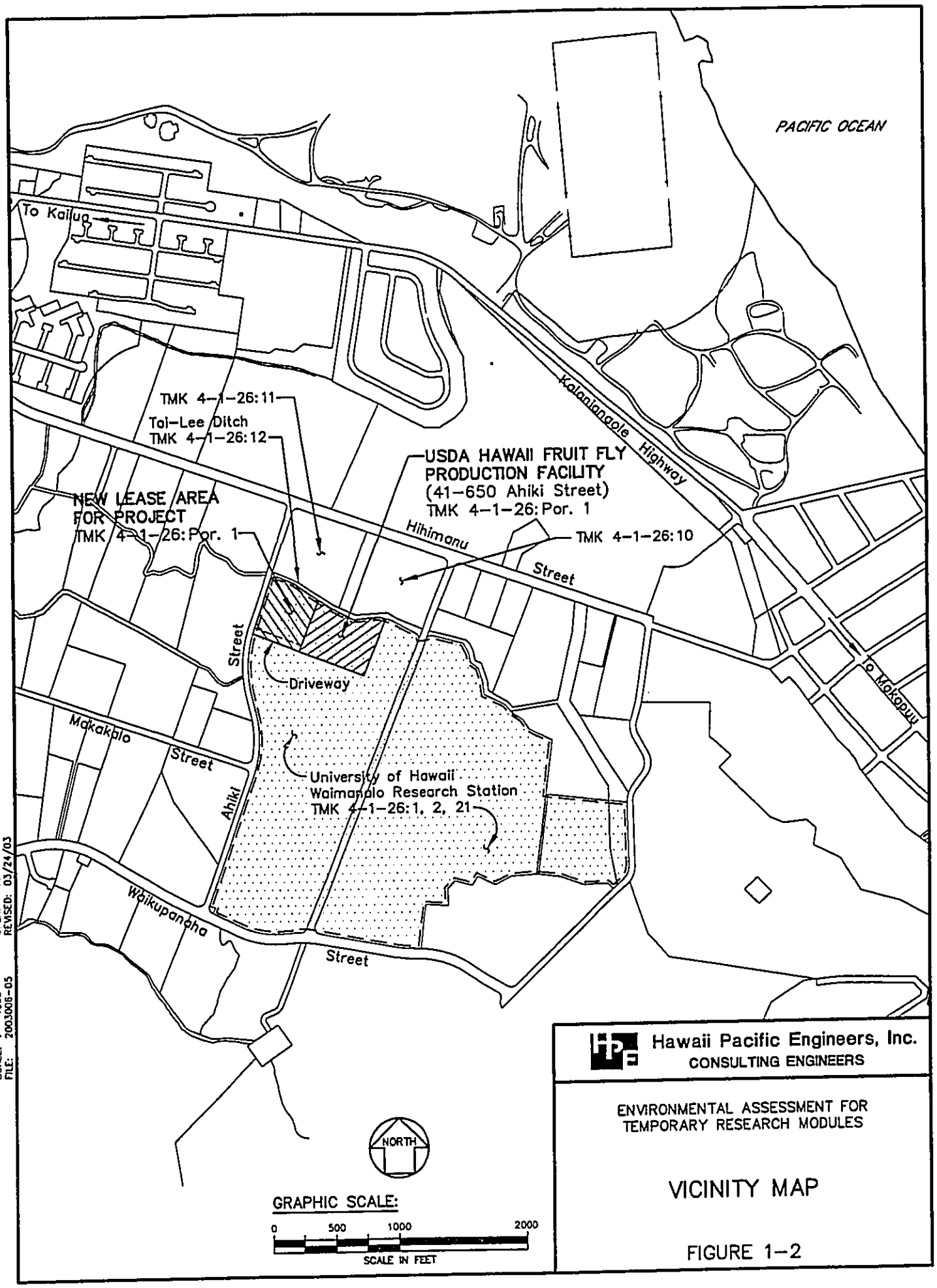


Hawaii Pacific Engineers, Inc.
CONSULTING ENGINEERS

ENVIRONMENTAL ASSESSMENT FOR
TEMPORARY RESEARCH MODULES

LOCATION MAP

FIGURE 1–1


PACIFIC OCEAN
To Kailua
Kalaniana'ole Highway
TMK 4-1-26:11
Tai-Lee Ditch
TMK 4-1-26:12
USDA HAWAII FRUIT FLY
PRODUCTION FACILITY
(41-650 Ahiki Street)
TMK 4-1-26: Por. 1
NEW LEASE AREA
FOR PROJECT
TMK 4-1-26: Por. 1
TMK 4-1-26:10
Hihimanu Street
Ahiki Street
Driveway
Makakilo Street
University of Hawaii
Waimanalo Research Station
TMK 4-1-26: 1, 2, 21
Kekaulike Street
Waikupanaha Street
NORTH
GRAPHIC SCALE:
0 500 1000 2000
SCALE IN FEET
DATE: 03/18/03
SCALE: 1 = 1000
FILE: 2003008-05
PM: RKA
OPER: FAJ
REVISED: 03/24/03
Hawaii Pacific Engineers, Inc.
CONSULTING ENGINEERS
ENVIRONMENTAL ASSESSMENT FOR
TEMPORARY RESEARCH MODULES
VICINITY MAP
FIGURE 1-2

research facilities and to avoid potential lapsing of funds for this portion of the expansion project, USDA is preparing this environmental assessment to address the temporary research modules. This project for the research modules is under the jurisdiction of the Hawaii Plant Protection Laboratory (HPPL) of USDA's Animal and Plant Health Inspection Service, Plant Protection and Quarantine (APHIS-PPQ).

Also addressed in this environmental assessment is the proposed installation of an additional building adjacent to the research modules for temporary housing of irradiator equipment and operations. USDA recently identified the need for a low-cost weatherproof structure to temporarily house its two existing fruit fly irradiator units to allow demolition of the existing HFFPF main production building for redevelopment of the site. The irradiator units need to be kept in service during the HFFPF redevelopment work since the irradiators are also used to sterilize insects produced by the California Department of Food and Agriculture Fruit Fly Rearing Facility that is also located in Waimanalo. This recent "add on" portion of the project is being funded by the APHIS Homeland Security Branch of USDA due to the critical role that the sterile fruit fly production facilities have in safeguarding the nation's food supply. After construction of the new HFFPF main production building is completed in the future, the irradiator units will be relocated to the new production building. The vacated irradiators modules will then be used by the HFFPF for storage. In this environmental assessment, the building for the irradiators is referred to as the irradiator/storage building due to the future use of the building for storage.

USDA plans to issue a second environmental assessment at a later date to address the impacts associated with the remainder of the planned upgrades. This initial environmental assessment for the temporary research module project only briefly touches upon the future HFFPF upgrade plans since alternative conceptual schemes are currently under development and evaluation by USDA for the other facilities.

This draft environmental assessment has been prepared in accordance with Chapter 343, Hawaii Revised Statutes based on a Finding of No Significant Impact (FONSI) determination. The document has also been prepared to satisfy the requirements of National Environmental Policy Act (NEPA) and the Hawaii Coastal Zone Management (CZM) Program Federal Consistency Review.

B. ORGANIZATION OF REPORT

The remainder of this report is organized as follows:

Chapter 2	Description of the Proposed Project
Chapter 3	Environmental Setting
Chapter 4	Potential Impacts and Proposed Mitigation Measures

B. ORGANIZATION OF REPORT (CONTINUED)

Chapter 5 Alternatives Considered

Chapter 6 Determination

Chapter 7 Persons and Agencies Contacted

Chapter 8 References

Chapter 2

Description of the Proposed Project

CHAPTER 2
DESCRIPTION OF THE PROPOSED PROJECT

This chapter describes the proposed USDA Hawaii Plant Protection Laboratory temporary research modules project at the Hawaii Fruit Fly Production Facility.

A. GENERAL BACKGROUND ON FRUIT FLY ERADICATION

Fruit flies in the family Tephritidae are among the most destructive, feared, and well-publicized pests of fruits and vegetables around the world. Tephritid fruit flies (i.e., the Mediterranean fruit fly, *Ceratitis capitata*; oriental fruit fly, *Bactrocera dorsalis*; melon fly, *Bactrocera cucurbitae*; and Solanum fruit fly, *Bactrocera latifrons*) spend their larval stages feeding and growing in one of over 200 types of host plants. The extensive damage and wide host range of Tephritid fruit flies become obstacles to agricultural diversification and trade in areas with large populations of these species.

The sterile insect technique (SIT) is currently the primary technology used in Mediterranean fruit fly eradication programs worldwide. SIT is a control technique involving the release of large numbers of laboratory-reared, irradiated-sterilized males into infested areas where they mate with wild females. The wild females that mate with the sterile males lay infertile eggs. The use of SIT prevents the proliferation of fruit flies without the need for widespread application of pesticides in agricultural and urban areas. The success of this method, however, is dependent upon the efficient production of high quality flies for release.

New infestations of the Mediterranean fruit fly could potentially cost several billion dollars in agricultural losses, ultimately resulting in higher food costs in Hawaii and elsewhere. Past outbreaks in Florida and California have resulted in the continuous application of SIT as a preventative measure through USDA's Preventative Release Programs. Although SIT has not yet been applied in Hawaii, it is regarded as a key component of the future long-term management strategy for fruit flies in Hawaii.

The two sterile Mediterranean fruit fly production facilities operated in the U.S. are both located in Hawaii. The Hawaii Fruit Fly Production Facility (HFFPF) is operated by USDA and another similar facility is operated by the California Department of Food and Agriculture (CDFA). Both facilities are located in Waimanalo on the island of Oahu. The HFFPF, the larger of the two domestic sources of sterile Mediterranean fruit flies, is critical to the fruit fly eradication and preventative release programs in the U.S.

B. GENERAL BACKGROUND ON HAWAII FRUIT FLY PRODUCTION FACILITY

The HFFPF is located on approximately five acres of leased land in the northwest corner of the 128 acre site comprising the University of Hawaii Waimanalo Research Station (see Figure 1-2 in Chapter 1). The HFFPF facility, located at 41-650 Ahiki Street (TMK: 4-1-26:1), was constructed in 1989. It consists of a 35,000 square feet one- and two-story structure. A site plan of the existing facility is shown on Figure 2-1.

The USDA HFFPF, prior to shutting down operations in 2002, shipped 300 million sterile Mediterranean fruit flies to California each week as part of an ongoing eradication and preventative program. For approximately the past 13 years, fruit fly pupae have been mass reared at the HFFPF and sterilized by the use of two irradiation units. Background information on the fruit fly rearing process is presented in Appendix A. The environmental assessment prepared in 1983 for the construction of the original HFFPF facility is presented in its entirety in Appendix B. This document includes additional background information on the HFFPF.

C. NEED FOR THE PROPOSED TEMPORARY RESEARCH MODULES PROJECT

The temporary research modules project is under the jurisdiction of the Hawaii Plant Protection Laboratory (HPPL) of USDA's Animal and Plant Health Inspection Service, Plant Protection and Quarantine (APHIS-PPQ). The mission of the HPPL is "to safeguard American agriculture by developing, adapting, and supporting technologies for the detection, management, and mass production/sterilization of fruit flies."

The HPPL assists HFFPF in resolving productivity and quality issues and will play a vital role in implementing new production technology at the HFFPF. Existing HPPL functions currently in the main HFFPF building are proposed to be relocated to the new research modules, together with other off-site HPPL functions such as ecology and genetics studies. In addition to assisting the HFFPF, the HPPL also provides key support to the CDFA sterile fruit fly operations in Waimanalo.

The HPPL has the following three focal points:

1. Efficient Production of Insects for Pest Management Programs. A reliable supply of high quality insects is an essential component of sterile insect release programs for management of pest fruit flies. Fruit fly production facilities have the common goal of producing large numbers of highly competitive insects at the lowest possible cost. The HPPL provides scientific expertise necessary to achieve maximum efficiency through technological innovations in strain development, diet optimization, and production automation. Experience in the mass production of the Mediterranean fruit fly in Hawaii over the past decade provides a solid foundation for the future production of sterile fruit flies of Mediterranean and other fruit fly species of economic importance in Hawaii.

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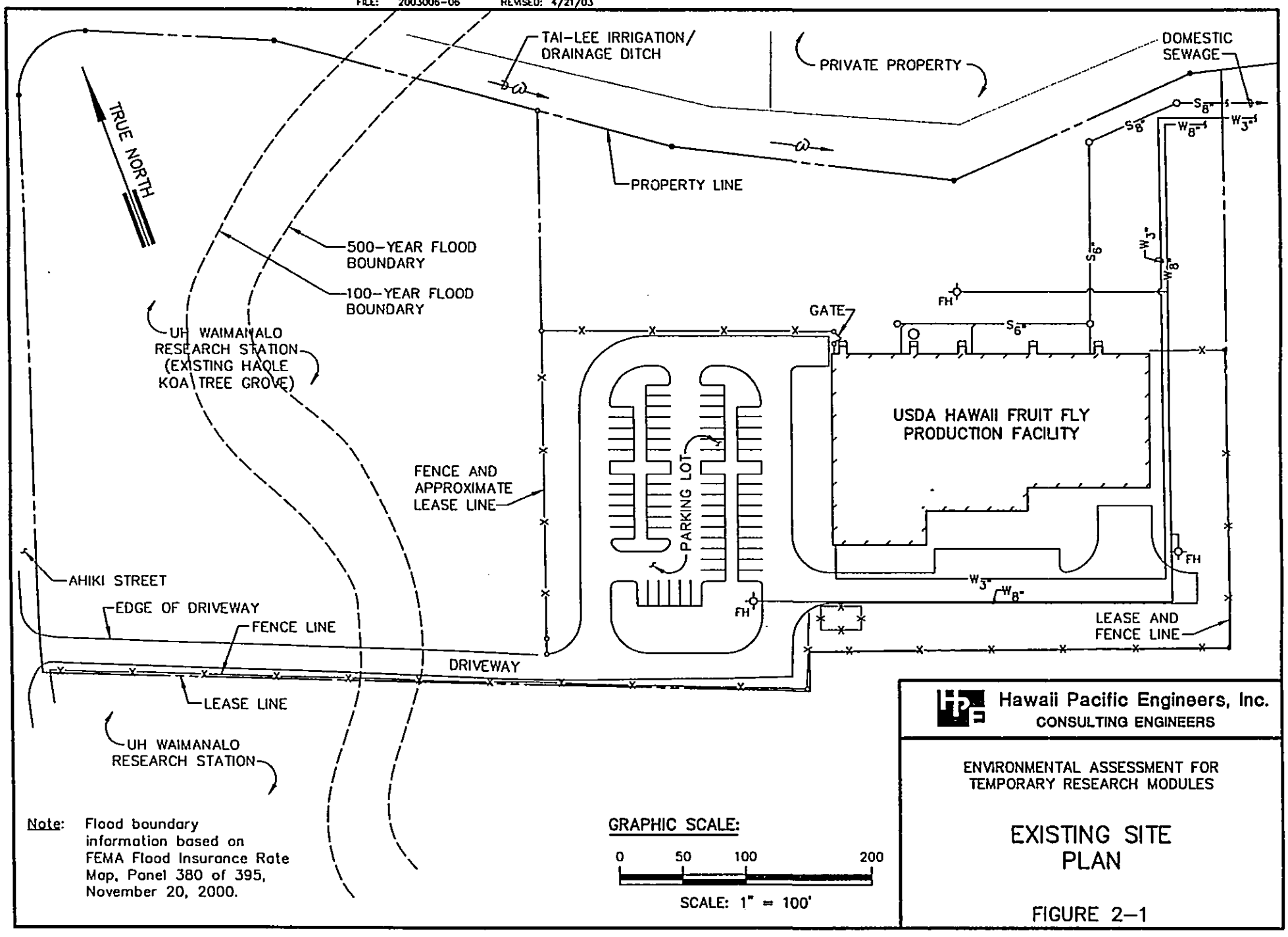

Note: Flood boundary information based on FEMA Flood Insurance Rate Map, Panel 380 of 395, November 20, 2000.

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EXISTING SITE PLAN

FIGURE 2–1

2. Scientific Research. The HPPL will have a major role in technology development and training through collaborative research and development efforts with local, national, and international scientists. These scientists will focus on developing innovative technologies for insect production and integrated pest management programs. Synergism resulting from intensive collaborative work will likely produce significant technological advances to enhance the efficacy of fruit fly production operations and fruit fly detection. Technology development activities at the HPPL are necessary to ensure the continuing role of Hawaii as a leader in the management of pest fruit flies.

3. Rearing of Multiple Species of Fruit Flies and Parasitoids. Under the national fruit fly safeguarding strategy system, the HPPL will contribute to technology development for management of *Bactrocera* species (e.g., *B. dorsalis*, *B. cucurbitae*, and *B. latifrons*). Hawaii is in a unique position to supply sterile *Bactrocera* and parasitoids in the future for control programs in Hawaii, the Pacific Basin, and the U.S. mainland.

The proposed HPPL research modules are an integral component of the HFFPF. The HFFPF will require a significant amount of research support to develop and implement production of improved fruit fly strains and to increase production efficiency. Construction of the proposed temporary research modules will be a critical step in meeting HFFPF's ongoing and future research needs. The HFFPF, in turn, is a vital component of USDA's Preventative Release Programs and the nation's food supply.

As noted in Chapter 1, the research modules project will also include the construction of a new irradiator/storage building that will initially serve as a temporary facility for the irradiators currently in the main production building, and later as a permanent storage facility. Demolition of the existing HFFPF is required to accommodate new facilities to be constructed in the future. Continued operation of the irradiators is required to support CDFA's sterile fruit fly rearing operations. The CDFA facility is currently an extremely vital component of the fruit fly eradication and preventative release program due to the protracted suspension of operations at the HFFPF. This portion of the project was considered sufficiently critical to the nation's food supply that the use of funds from the APHIS' Homeland Security Branch was considered justified by USDA.

D. DESCRIPTION OF THE PROPOSED TEMPORARY RESEARCH MODULES PROJECT

A proposed site plan showing the location and preliminary layout of the new temporary research modules and irradiator/storage building is presented on Figure 2-2. USDA plans to lease approximately four acres of additional land located west of the existing facility to accommodate the new facilities. The research modules are proposed to be located in the southeast corner of the new leased area. Physical separation between the research modules and the main HFFPF building helps to keep the potentially different strains of flies at each facility isolated from one another. The irradiator/storage building is proposed to be located

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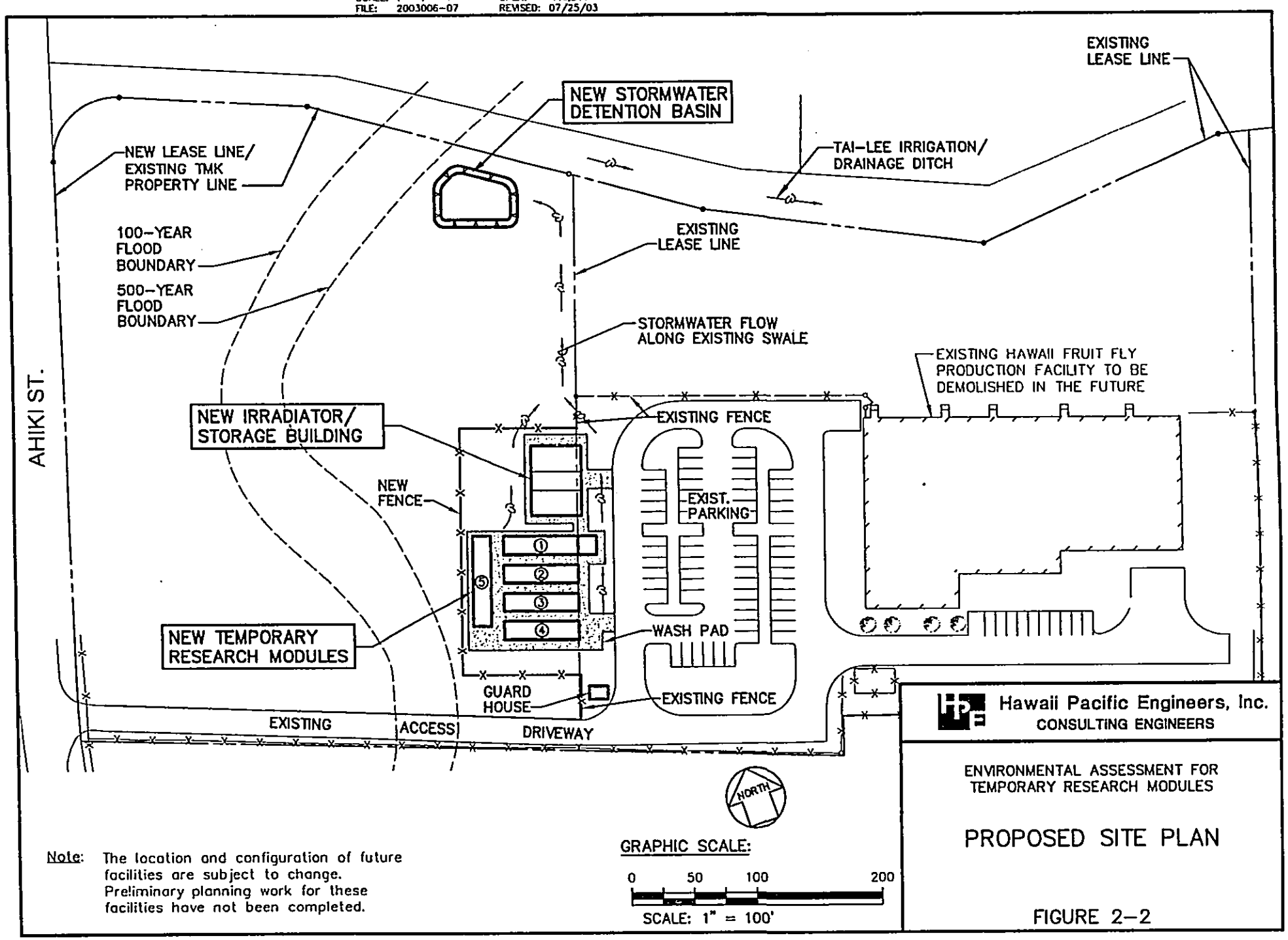

Note: The location and configuration of future facilities are subject to change. Preliminary planning work for these facilities have not been completed.

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PROPOSED SITE PLAN

FIGURE 2-2

adjacent to the research modules. The project also includes a stormwater detention basin that is proposed be located near the Tai-Lee irrigation/drainage ditch that runs along the northern boundary.

Future HFFPF facilities that are anticipated to be constructed include a new main production building, warehouse, maintenance workshop, water reclamation facility, reclaimed water storage basin, irrigation sites (for excess reclaimed water disposal), and an additional stormwater detention basin. The locations of the proposed new facilities associated with the future HFFPF expansion project are not shown on Figure 2-2 since a revised master plan for the HFFPF complex is currently in the process of being developed. USDA anticipates being able to lease an additional nine acres of Waimanalo Research Station land from the University of Hawaii to increase the size of the HFFPF complex to a total of approximately 18 acres. The expansion is proposed to occur along the southern boundaries of the existing HFFPF site. Land acquisition issues and the siting of future facilities are currently being jointly examined by USDA and the University of Hawaii.

The temporary research modules in this current project are expected to be used for at least five to seven years until funding and siting issues for permanent research facilities are resolved. USDA will evaluate the possible demolition of the research facilities or alternative uses of the building modules at the time when permanent research facilities are constructed. The irradiator modules will be used for storage following relocation of the irradiator units to the new main production building. Construction of the new main production building and other proposed future facilities are expected to occur in 2005. The environmental assessment for the future facilities, which will address the impacts and ramification of the HFFPF expansion, is expected to be completed in late 2003 or early 2004 shortly following completion of the conceptual planning work.

The following discussion briefly describes the proposed research modules buildings, irradiator/storage building, and anticipated sitework to be required. It should be noted that discussions pertaining to the sitework and utility infrastructure are based on available initial conceptual information as the sitework design was only recently initiated. The sitework design will consider input received during the environmental review process.

1. Research Modules Buildings

The proposed research facilities are comprised of five one-story prefabricated steel-panel modules providing approximately 3,900 square feet of workspace. USDA anticipated also including an additional approximately 140 square foot module to provide men's and women's restrooms. The use of the proposed prefabricated modular buildings was determined to be the most cost-effective means to meet the current needs of HPPL. A general layout of the buildings is shown on Figure 2-3 and an isometric sketch of a typical building is shown on Figure 2-4. Each module will be approximately 58 feet long by 14 feet wide.

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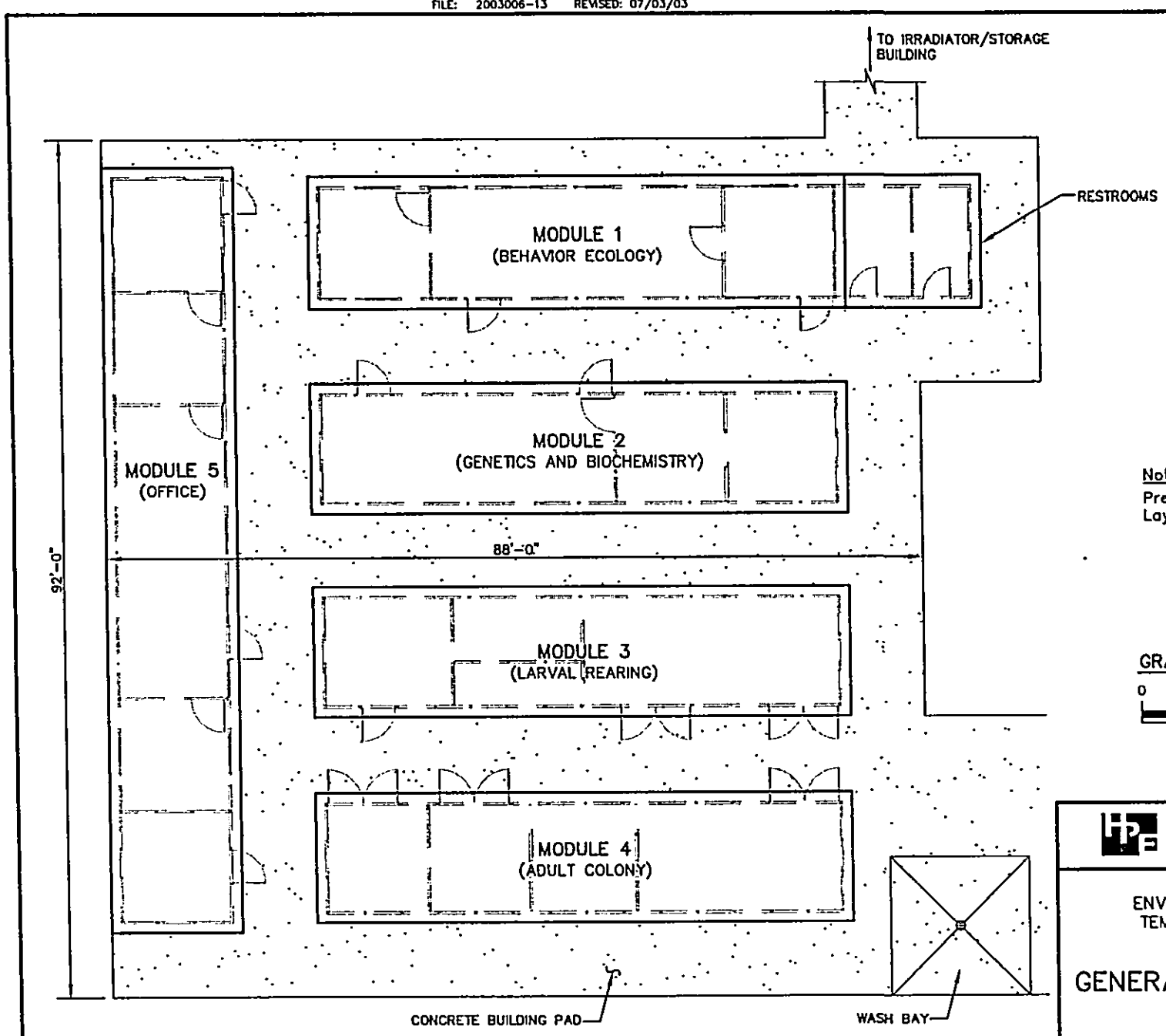

Note:
Preliminary conceptual layout shown.
Layout of buildings subject to change.

NORTH

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GENERAL RESEARCH MODULES LAYOUT PLAN

FIGURE 2-3

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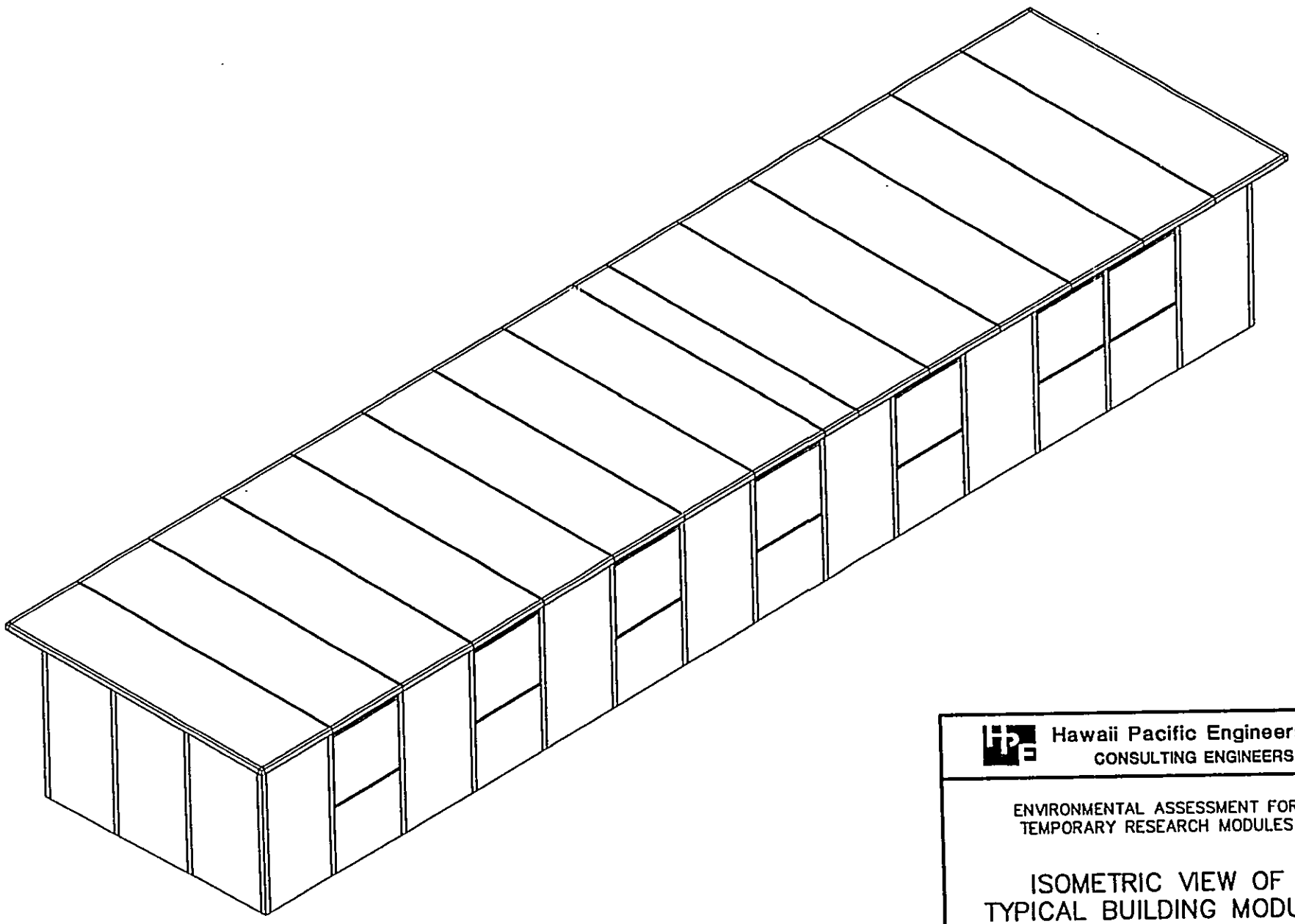

Reference: Adopted from building construction plans provided by Abtech, Santa Ana, California.

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ISOMETRIC VIEW OF
TYPICAL BUILDING MODULE

FIGURE 2–4

The modules will be classified as a group B: Business occupancy and be of Type II: N construction in accordance with the 1997 Uniform Building Code. A minimum of 5 feet yard setback will be provided.

Approximately 10 employees will work in the research modules. The functions of the five modules are as follows:

- Behavioral Ecology Module (Module 1): The behavioral studies conducted in this module will focus on the mating competitiveness of the sterile male fruit flies. This module will be comprised of a central laboratory for rearing of flies, an office for the entomologist, and a storage room.

- Genetics and Biochemistry Module (Module 2): This module will contain a biochemistry laboratory, microscope room, and colony maintenance room. The work conducted in the laboratory work areas will include biochemistry analyses, molecular biology, and microbiology. New strain development will use both traditional genetics and gene transfer technology. Quarantine features that are in full compliance with applicable national standards will be provided.

- Larval Rearing Module (Module 3): This module will contain immature stages of fly strains undergoing development for transfer to the HFFPF. The module will have a series of rooms providing a range of environmental conditions. Larvae will be reared in artificial diet held in trays on portable racks.

- Adult Colony Module (Module 4): This module will house the adult fruit fly colonies used for production and quality control. The module will contain adult colonies of fly strains undergoing development for transfer to the HFFPF. A range of environmental conditions will be provided in a series of rooms. Adult flies will be held in screened cages.

- Office Module (Module 5): This module will contain three separate offices for the laboratory director, administrative assistant, and entomologist; a central meeting/lunch room; and a storage room.

The modules will be provided with appropriate air conditioning and ventilation equipment to meet the environmental requirements of both the workers and the insects. Due to the small scale of the rearing operations that will occur in the modules, only a limited amount of air exchange is anticipated to be required for the research modules. The air handling system will be screened as necessary to prevent the escape of insects. Fume hoods will be installed in laboratory areas where required.

The modules will be installed on a reinforced concrete slab foundation. The concrete slab will be elevated above the surrounding ground and above the projected 100-year

storm flood elevation. The concrete slab will be sloped and/or provided with trench drains to minimize ponding. A wash pad, which may be covered, will be provided for cleaning of the rearing cages. The washwater from the pad will be stored along with other process wastewater generated by the research operations and transported to offsite treatment and disposal facilities.

The research modules buildings and access paths will be designed for wheel chair accessibility and meet the requirements of the Uniform Federal Accessibility Standards (UFAS).

2. Irradiator/Storage Building

The location and layout of the proposed irradiator/storage building is shown of Figures 2-2 and 2-5. The building will have three rooms consisting of a pre-irradiation room, irradiator room, and post-irradiation and shipping room. The pre- and post-irradiation rooms at the two ends of the building are proposed to be comprised of weatherproof vault-type steel storage modules that are EPA, OSHA and NFPA approved for use in storing flammable and hazardous materials. Each module will be approximately 40 feet long by 20 feet wide. The separate secured irradiator room will be constructed between the two modules with masonry or other appropriate materials to house the two temporarily relocated irradiator units. The total building area is anticipated to be approximately 2,200 square feet.

The following are brief descriptions of the three irradiator/storage building rooms:

- Pre-irradiation Room: This room will be provided with shelving for short-term storage of canisters of fruit fly pupae and refrigeration unit to pre-cool the pupae prior to being irradiated. Two openings in the wall will be used to manually feed the canisters containing the pupae into the irradiator.

- Irradiator Room: This room will house the two irradiators. This room will not normally be occupied and access to the room will be restricted to authorized and specially trained irradiator operation and maintenance personnel. Openings in the walls and canister conveyor between the openings and the irradiators will be used to convey the canisters of pupae to and from the irradiators.

- Post-irradiation and Shipping Room: The canisters containing irradiated pupae will enter the room through openings in the wall. The main activity in this room will be packing the irradiated pupae into boxes for shipment. A refrigeration unit will be provided in the room to keep the pupae cool.

A low-pitched roof will be provided over all three rooms. All the rooms will be provided with air-conditioning for temperature and humidity control. The building will be constructed on a reinforced concrete slab having an area of approximately 3,500 square

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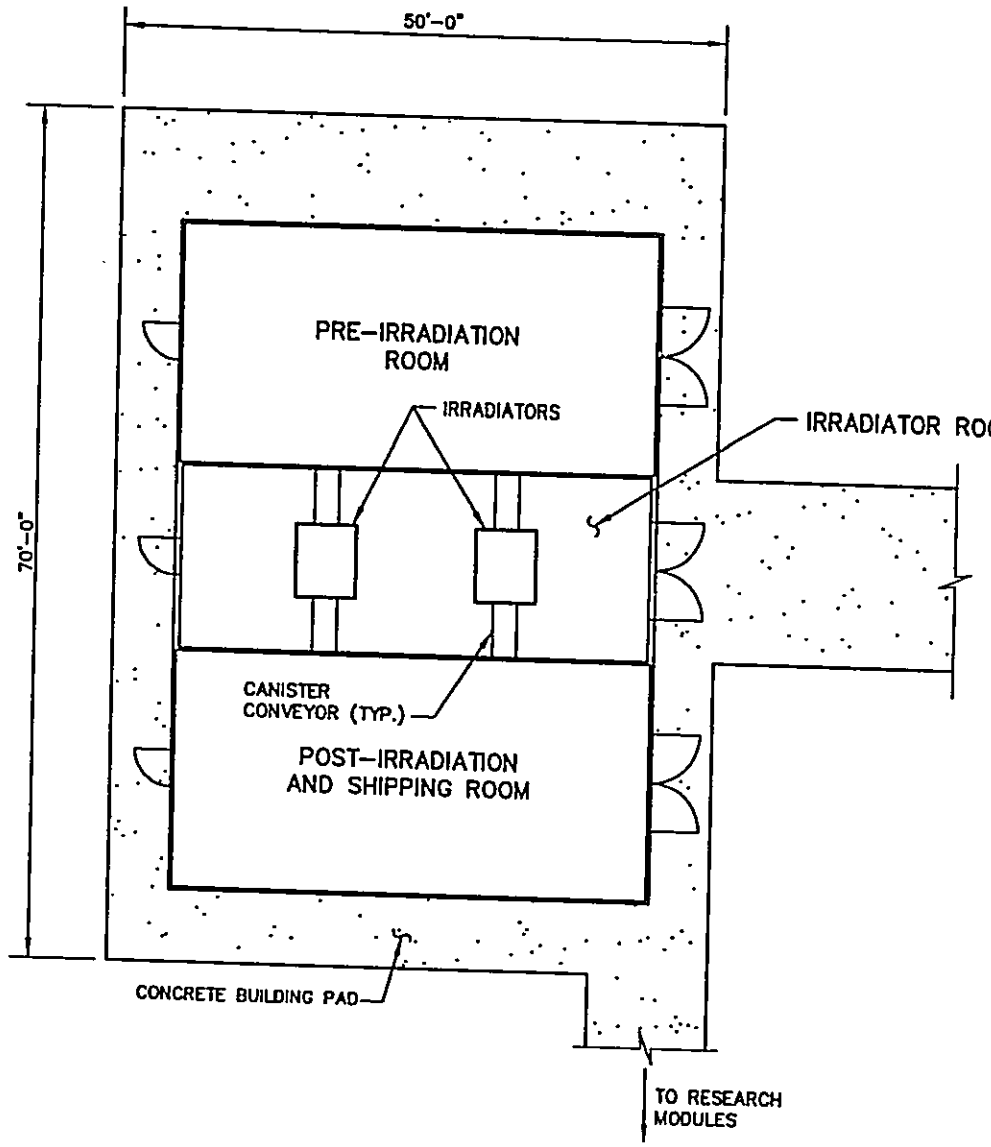

Note:
Preliminary conceptual layout shown.
Layout of buildings subject to change.

NORTH

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SCALE: 1/16" = 1'-0"

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GENERAL IRRADIATOR/ STORAGE BUILDING LAYOUT PLAN

FIGURE 2-5

feet. Building access will conform to UFAS requirements. Appropriate signs will be posted on the buildings as required by the U.S. Nuclear Regulatory Commission (NRC) license.

The irradiator units used at the HFFPF are sealed J.L. Sheperd Model 6810 Cesium 137 irradiators. The design of each unit meets International Atomic Energy Agency protocol and the NRC regulates its use through a stringent licensing program. Each unit weighs eight tons due to heavy lead shielding encased with thick high-grade steel. The units are classified as "transportable" because the safety features and conservative design of the units poses minimal risk during conventional air or marine transport. The units are designed to be dropped from a height of 20 feet on to a solid concrete steel-lined surface without rupturing the shielding.

After the irradiators are relocated to the new main production building in the future, the modules are proposed to be used for storage. The storage modules will be well suited for storing any lubricants, solvents, and other flammable or hazardous materials used at the facility.

3. Grading and Drainage

Approximately 0.75 acres of land will be cleared of trees and other vegetation for the research modules, irradiator modules, and stormwater detention basin. Grading work will be performed as required to raise concrete slabs above the 100-year storm flood elevation and to channel runoff around the buildings. Drainage culverts are anticipated to be installed under the walkways between the parking lot and building pads. Stormwater runoff will be directed to an existing grassed swale to promote sediment removal.

Near the northern boundary, which borders the Tai-Lee drainage/irrigation ditch, a stormwater detention basin will be constructed to meet City and County of Honolulu requirements for peak runoff attenuation and reduction in storm water pollution. The stormwater basin, which will likely be a grass lined basin, will be designed to store runoff generated by the additional impervious surfaces (i.e., walkways and building roofs) associated with the project. The basin will also serve to enhance runoff quality by removing sediment and debris. Accumulated silt and debris will be periodically removed and either reused where possible (as compost/soil amendment) or disposed of as solid waste (trash). Discharge of water from the pond at a low rate is anticipated to be by a combination of percolation (through the basin bottom and walls) and by discharge to the Tai-Lee ditch via small pipes, rock filled filter channel or other appropriate means. Excess flow that cannot be handled by the detention pond will be discharged to the Tai-Lee drainage/irrigation ditch similar to existing conditions.

The proposed research modules are located outside but very close to the 500-year flood boundary (see Figure 2-1). Near the research modules, the 100-year special flood hazard area boundary is located approximately 50 feet from the 500-year boundary. During the

design phase of the project, a brief flood study will be conducted to evaluate the surveyed ground elevations with respect to the projected flood elevations. Based on a preliminary assessment of available topographic survey information, the top of the concrete slab is anticipated to have at least 18 inches of freeboard above the 100-year flood level. The existing ground in the proposed location of the research modules is at least one foot above the flood elevation and the top of the slab would be expected to be at least 6 inches above the existing ground. Additional discussions on flood elevations and flooding impacts are presented in Chapters 3 and 4.

4. Parking

Ample parking will be available for the employees of the temporary research modules due to the reduced staffing of the USDA's main production facility following its temporary shutdown in 2002. The need for additional parking will be addressed under the future expansion project. New pavement markings and signage will be provided for one new handicapped parking stall near the research modules.

5. Potable Water

Potable water will be used for laboratory and utility sinks, preparation of fruit fly diet material, collection pool water, washing of fruit fly rearing equipment, and restroom facilities. The average potable water usage associated with the new research modules is estimated to be 1,200 gallons per day. A large portion of the water will be used for the fruit fly rearing operations, which includes washing of rearing trays, cages, and floors.

Due to the elimination of fruit fly rearing operations in the main production building, the use of potable water will be significantly lower than that previously used until the new production building is placed in operation.

Preliminary calculations of the future water demand indicate that the water demand will not increase significantly in the future due to the installation of water conserving fixtures and the use of reclaimed water for washdown and other nonpotable uses. The site currently has an 8-inch FM meter and 8-inch reduced pressure principle backflow preventer.

6. Fire Protection

The addition of a new fire hydrant near the temporary research modules is proposed. An analysis of the water supply system conducted for the future expansion project indicates that a fire flow of 550 gallons per minute at elevation 50 feet can be provided at a residual pressure of 55 to 58 psi (Hawaii Pacific Engineers, 2002).

7. Domestic Wastewater

A small amount of domestic wastewater suitable for discharge to the municipal sewer system will be generated from the laboratory and utility sinks, and the restroom facilities.

The installation of a small package-type grinder pump station is proposed to pump the domestic wastewater from the research modules to the existing sewer line behind the existing main production building.

The total volume of wastewater discharged to the sanitary sewer by the HFFPF will be low until the new production facility is constructed. The discharge to the municipal sewer associated with the research modules operation is expected to be approximately 400 gallons per day.

8. Process Wastewater

The City and County of Honolulu has not permitted the HFFPF to discharge its process wastewater generated by tray, cage and floor washing into the sewer system due to the high organic content of the process wastewater. Although the process wastewater is not likely to contain human pathogens due to the absence of domestic sewage, the wastewater is high in organic content due to the presence of diet material, fruit fly carcasses, and fruit fly wastes. The fruit fly diet material is comprised of wheat mill feed, corncob grit, sugar, yeast, and food preservatives suitable for human consumption.

An aerated watertight underground storage tank, with a capacity of approximately 3,000 to 5,000 gallons, will be provided to store process wastewater that is not permitted to be discharged to the sewer system. An average of approximately 700 to 800 gallons of process wastewater per day is expected to be generated by the research modules. The stored wastewater will be periodically hauled offsite to a facility with the necessary approvals from the State Department of Health to properly treat and dispose of the wastewater.

Potential facilities that may be used for handling the process wastewater include the wastewater treatment plant at the fruit fly rearing facility operated by CDFA in Waimanalo, or the East Honolulu Wastewater Treatment Plant that services the Hawaii Kai development. The State Department of Health has approved the design and operation of both treatment facilities. Other larger but less conveniently located State-approved wastewater treatment plants on Oahu could also be utilized if necessary to dispose of the research modules' process wastewater.

Preliminary full scale testing conducted at the East Honolulu Wastewater Treatment Plant indicated that the HFFPF wastewater has no impact on the treatment performance. The hauling cost and distance (approximately 7.5 miles) for this alternative is substantial but not unreasonable. The cost of wastewater treatment would be borne by the HPPL annual research budget.

The available surplus capacity of the CDFA treatment plant to handle all or a portion of the research module wastewater is currently being evaluated. The estimated capacity of the CDFA facility is 9,000 per day and the facility currently handles about 4,000 to 4,500

gallons per day. The capacity of the facility is currently being evaluated and verified by CDFA in cooperation with USDA. The use of the CDFA facility for disposal of the process wastewater is the preferred alternative since the facility is located only approximately one mile away from the HFFPF.

Offsite treatment of the wastewater is anticipated to be required for approximately three years. Once the new HFFPF project is completed, the research modules wastewater flow will be directed to the state-of-the-art wastewater reclamation system that will be constructed to support the new HFFPF facilities. The future wastewater reclamation facility will allow a large portion of the wastewater to the recycled for in-plant uses.

9. Security

Proposed security upgrades include a full time security guard (24 hour, 7 days per week), a new 150 square foot guard house near the entrance, security fencing, security lighting and motion detectors.

10. Landscaping

Landscaping is proposed to be provided near the new buildings to improve aesthetics and lower direct solar radiation on the building to reduce cooling requirements.

11. Electrical

Electrical power will be provided to the research modules for lighting, air conditioning systems, computers, laboratory equipment, water heaters, sewage/process wastewater pumps, irradiator equipment, and other uses. Due to the need to maintain environmental conditions within close tolerances for rearing of the fruit flies, a small backup engine-driven electrical generator will be provided.

E. PROJECT COSTS AND FUNDING

The construction cost for the temporary research modules project is estimated to be $1.1 million. Of this cost, $850,000 is budgeted for the research modules and $250,000 for the irradiator modules. The project is being entirely funded by USDA.

F. PROJECT CONSTRUCTION SCHEDULE

Construction of the project is expected to begin in the fourth quarter of 2003. The construction is expected to be completed within three months.

G. PERMITS AND APPROVALS REQUIRED

Permits and approvals that are anticipated to be required for construction of the proposed facilities are as follows:

State Permits/Approvals	
Construction plans approvals (including approval of process wastewater disposal)	Department of Health
Community noise permit (if required during construction)	Department of Health
NPDES permit for storm water associated with construction activity	Department of Health
Construction plans and specifications approval	University of Hawaii
Construction plans approval	Disability Communication Access Board
State Coastal Zone Management (CZM) Program Federal Consistency Review	Office of State Planning
City and County of Honolulu Permits/Approvals	
Construction plans approvals	Department of Planning & Permitting
Grubbing, grading and stockpiling permit	Department of Planning & Permitting
Building permit for building, electrical, and plumbing work	Department of Planning & Permitting

Although the disturbed area for the project will be less than one acre, an NPDES permit for storm water associated with construction activity is anticipated to be required since the project is part of a "larger common plan of development" that will ultimately disturb more than one acre of land. A Best Management Practices plan for erosion control will also be prepared to meet applicable building permit requirements.

No permits are required for moving the irradiator units from the existing main production building to the new irradiator modules since the move will take place entirely within the HFFPF site.

Chapter 3

Environmental Setting

CHAPTER 3
ENVIRONMENTAL SETTING

The environmental setting will affect the type and extent of impacts associated with the Hawaii Plant Protection Laboratory (HPPL) temporary research modules project. The following discussion provides an overview of the pertinent physical and biological aspects of the natural environment and the socio-economic characteristics of the community.

The environmental assessment that was prepared in 1983 for the original Hawaii sterile fruit fly rearing facility project is presented in its entirety in Appendix B. Some of the information from the previous environmental assessment was updated and incorporated into this document.

A. CHARACTERISTICS OF THE PHYSICAL AND BIOLOGICAL ENVIRONMENT

1. Location and Topography

The existing Hawaii Fruit Fly Production Facility (HFFPF) occupies a five acre site within the northwest corner of the 128 acre University of Hawaii Waimanalo Research Station. As part of the HPPL research modules project, approximately four acres of additional land west of the existing site are proposed to be leased from the University of Hawaii. Access to the site is from Kalanianaole Highway via Poalima Street, Hihimanu Street, and Ahiki Street. The site is located about a mile inland from the shoreline.

As shown previously on Figure 1-2, the HFFPF project site is bordered on the east and south by the UH research station land. Ahiki Street is located along the west boundary of the additional land to be leased. Located along on the northern border of the HFFPF site is the "Tai-Lee" drainage/irrigation ditch that is part of an abandoned irrigation system. Located north of the ditch are privately owned parcels used for banana farming and other diversified agriculture.

The HFFPF site and the surrounding areas are located on gently sloping terrain having average slopes of less than three percent. The elevation of the HFFPF site ranges between approximately 43 and 53 feet above mean sea level. A topographic map of the Waimanalo region is presented on Figure 3-1.

2. Climate

The Waimanalo area has a climate that is generally typical of Windward Oahu. The temperatures are typically mild and uniform, with the monthly average ranging from

71 degrees F in January to 79 degrees F in August. The average annual temperature is 75 degrees F (Hawaii State Climate Office, 2003).

Average annual rainfall in the Waimanalo area varies considerably with elevation (see Figure 3-2). At the shoreline, average annual rainfall is approximately 40 inches while the average annual rainfall is approximately 100 inches in the Koolau Mountain Range. There is also a seasonal variation in rainfall, with higher rainfall occurring from November through April. The average annual rainfall at the HFFPF site is approximately 51 inches.

Prevailing winds are northeasterly trade winds that occur approximately 70 percent of the time. Trade wind frequency ranges from about 45 percent in January to more than 90 percent in July. Winds may blow from any direction. High winds are most likely to occur during the winter months.

3. Hydrogeology and Soils

The general geology of Waimanalo is characterized by three major geological units. These units are basaltic bedrock, alluvium, and coralline deposits. Basaltic bedrock defines the western, southern, and eastern boundaries of the Waimanalo region, and generally consists of basaltic flows and dikes of the Koolau dike complex (Harding Lawson Associates, 1992). Alluvium generally lies at the foot of the basalt and primarily consists of highly weathered basaltic sand, gravel, cobbles, and boulders in a matrix of non-calcareous clays and silts. Marine calcareous deposits are expected to occur seaward of the alluvium and generally consist of recent beach and dune sand and other coralline deposits, including older lithified dunes. The alluvium is typically interlayered with coralline deposits in the Waimanalo area.

A geological map indicating the approximate boundaries between the geologic units in Waimanalo is shown on Figure 3-3. A generalized geological cross-section is shown on Figure 3-4. The HFFPF site is located in the area characterized by non-calcareous alluvium sediments. The U.S. Department of Agriculture Soil Conservation Service (SCS, now known as the Natural Resources Conservation Service) soil survey of Oahu (SCS, 1972) indicates that the primary soil association in the vicinity of the HFFPF facility is the Kaena-Waialua association. The Waialua clay soil that is at and near the HFFPF site exhibits moderate permeability.

Groundwater flow is generally east toward the coastline. Groundwater in the vicinity of the HFFPF site consists of a basal unconfined sedimentary aquifer. The upper layer of alluvium and sediments is generally not capable of transmitting significant amounts of water. The calcareous sediments in the underlying aquifer, however, are very permeable and capable of transmitting large amounts of water. In the inland areas, potable water

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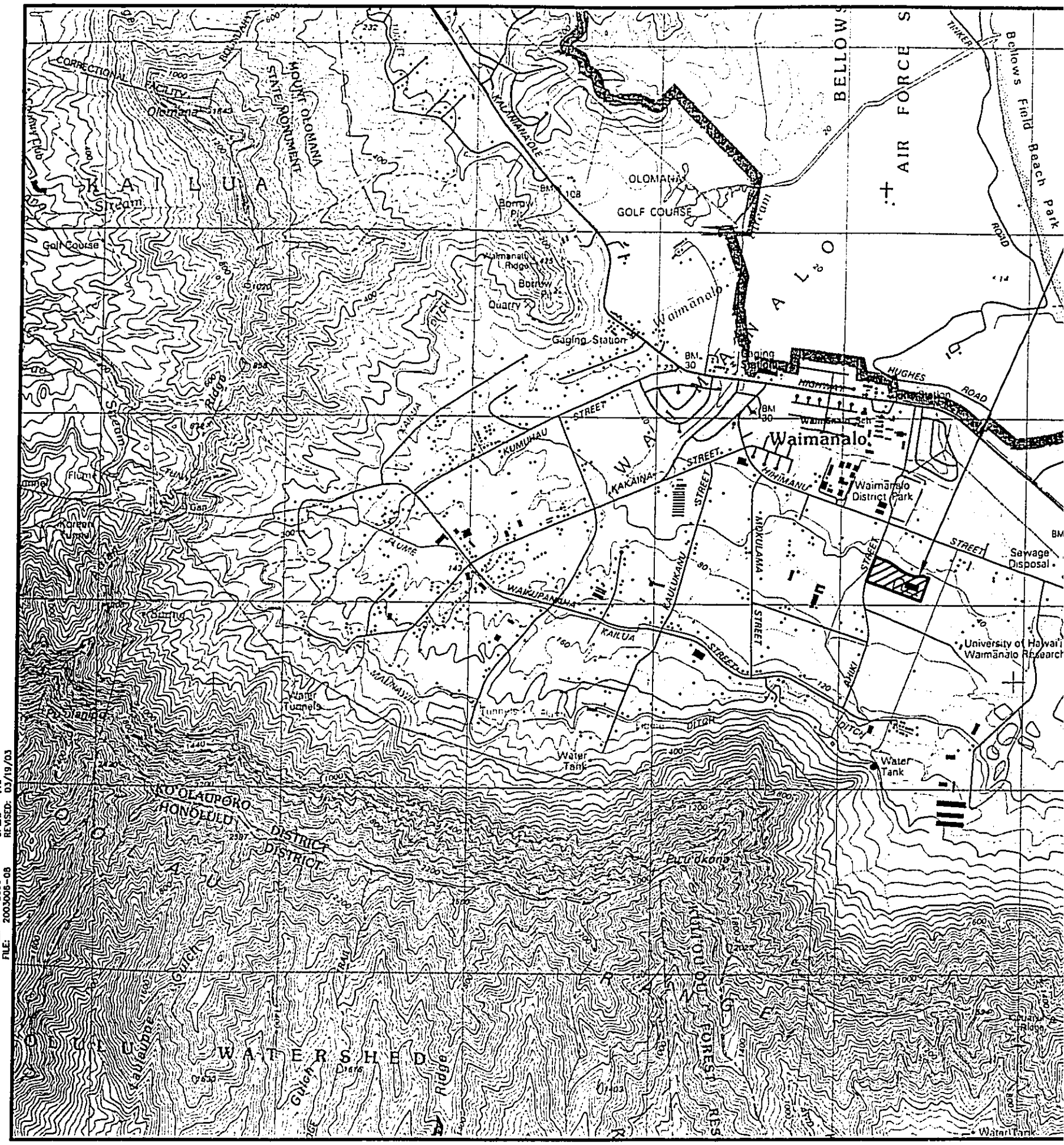

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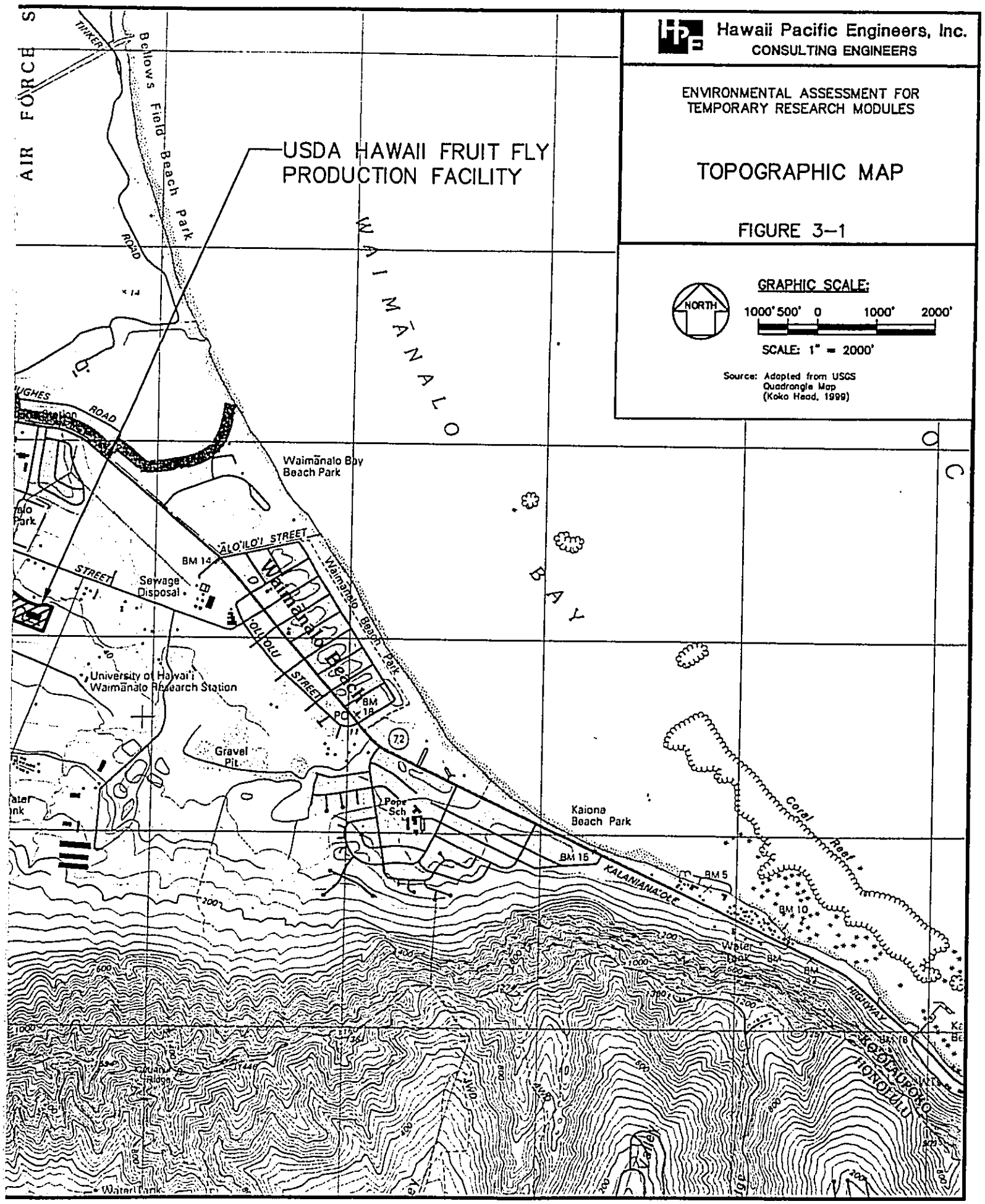

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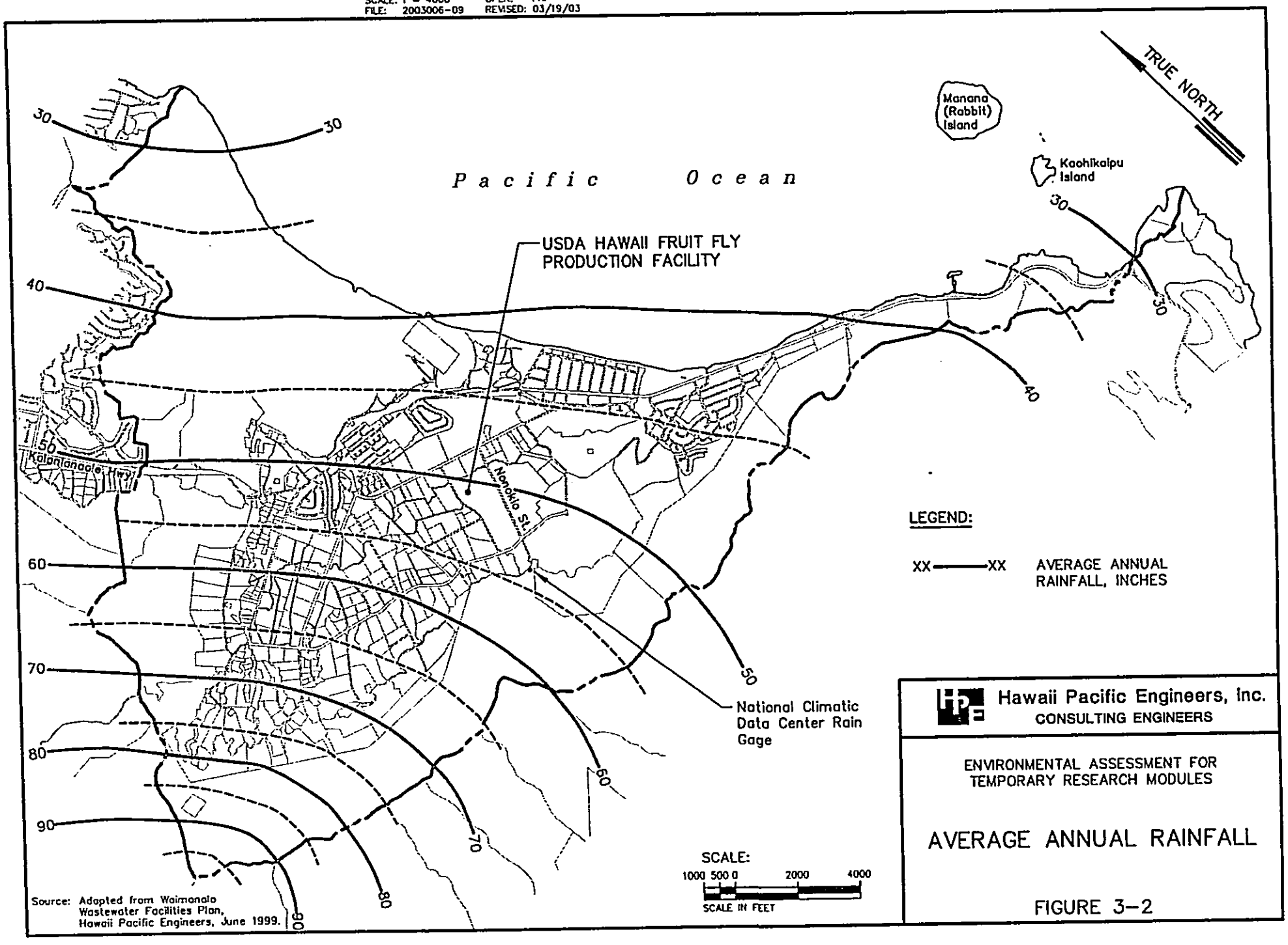

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AVERAGE ANNUAL RAINFALL

FIGURE 3–2

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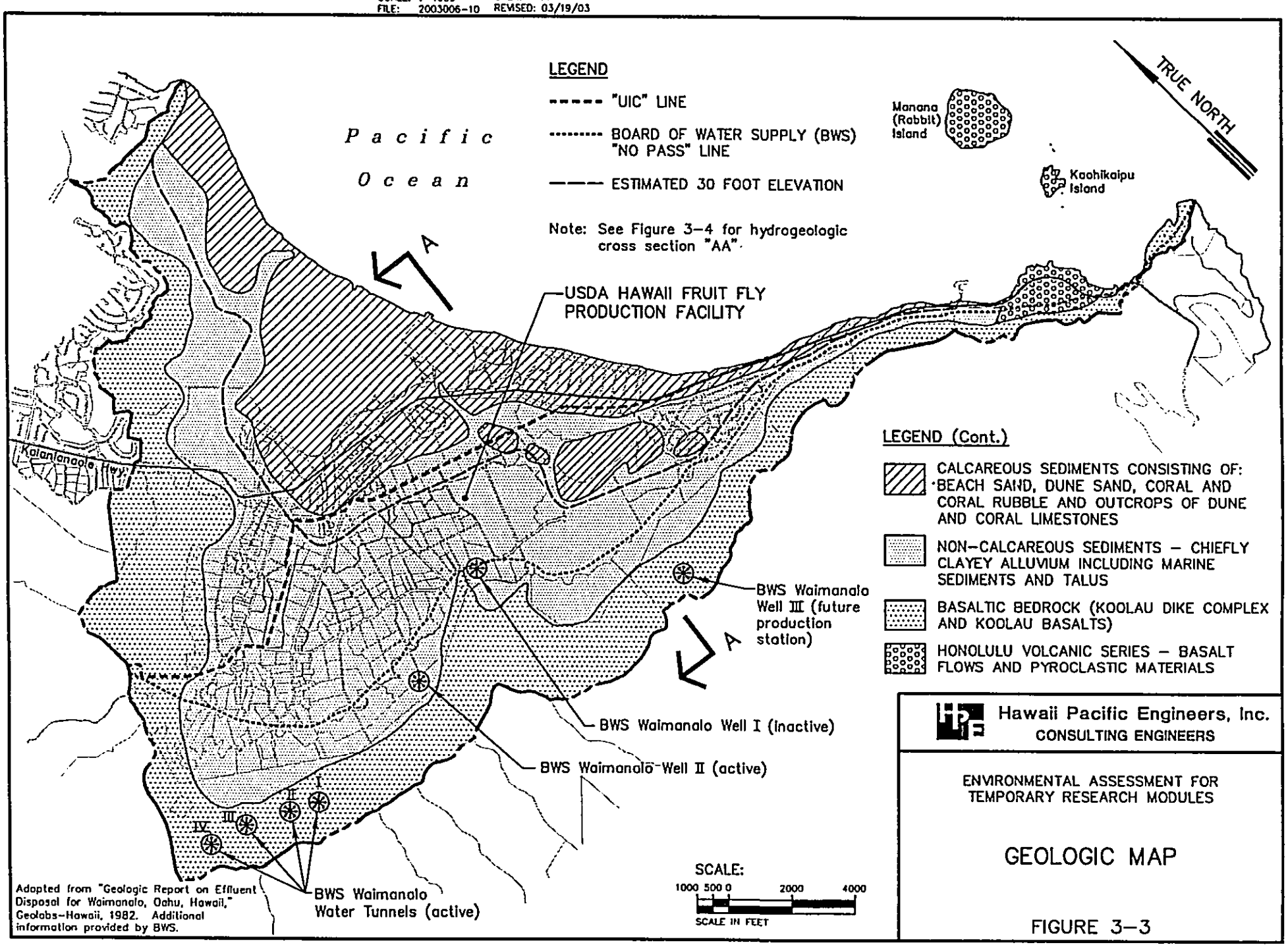

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GEOLOGIC MAP

FIGURE 3-3

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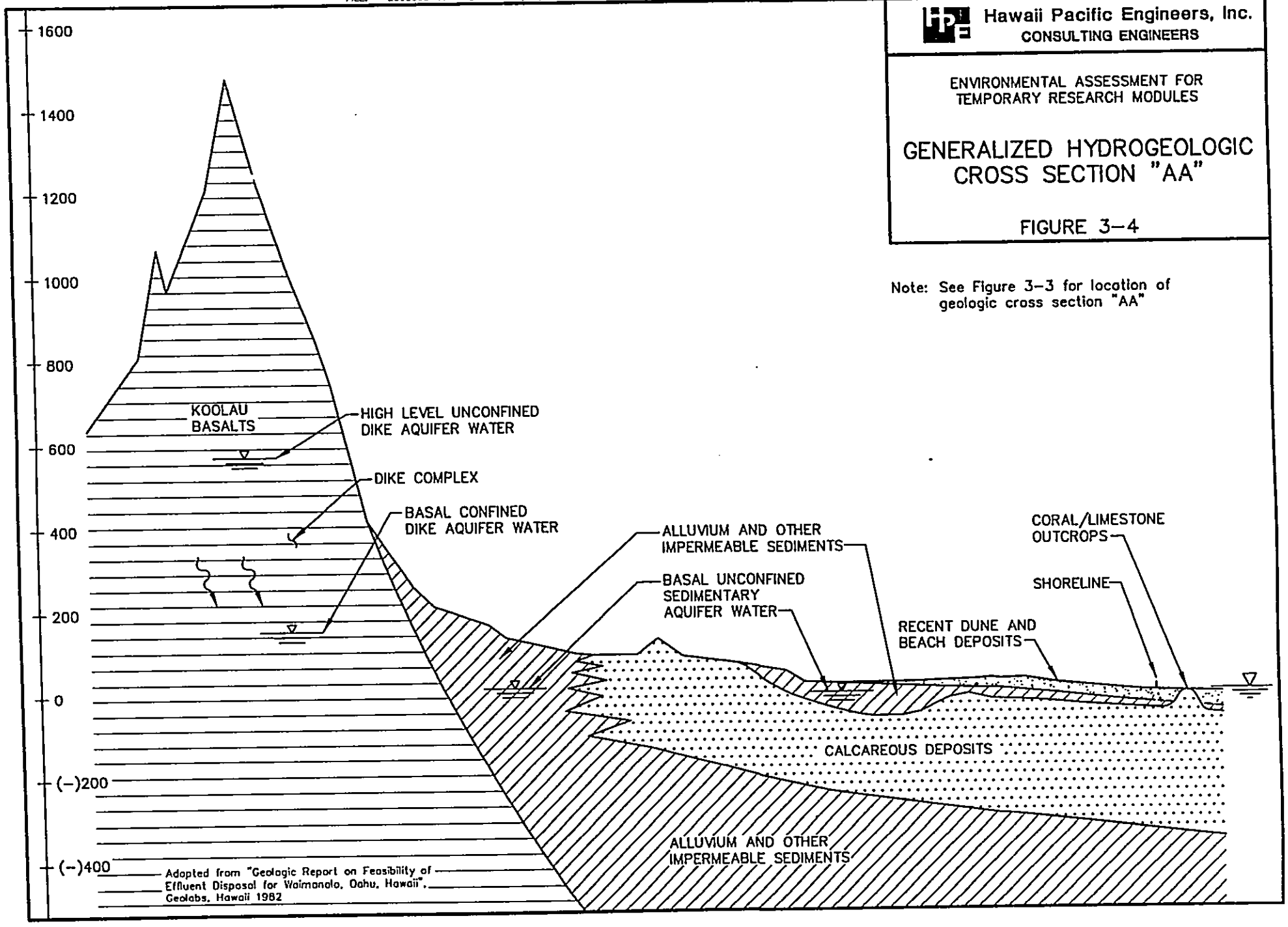

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ENVIRONMENTAL ASSESSMENT FOR
TEMPORARY RESEARCH MODULES

GENERALIZED HYDROGEOLOGIC CROSS SECTION "AA"

FIGURE 3-4

Note: See Figure 3-3 for location of geologic cross section "AA"

wells and tunnels draw water from the basal confined dike aquifer and high level unconfined dike aquifer, respectively.

The map presented on Figure 3-3 also shows the locations of the State of Hawaii Department of Health (DOH) "Underground Injection Control" (UIC) line," the Honolulu Board of Water Supply (BWS) "no-pass" line, and BWS potable water wells and water tunnels. The UIC and no pass lines are geographic regulatory boundaries that have been established to prohibit certain subsurface discharges inland of the boundaries that may adversely impact potable aquifers. The HFFPF site is seaward of the BWS no-pass line but inland of the DOH UIC line.

4. Streams, Drainage and Wetlands

Three major streams drain a large portion of the Waimanalo region: Waimanalo Stream, Inoaole Stream and Muliwaiolena Stream (see Figure 3-5). Kahawai Stream joins Waimanalo Stream in the vicinity of Kalanianaole Highway. In general, the portions of these streams that are inland of Kalanianaole Highway are owned and maintained by the State of Hawaii whereas the portions seaward of the highway fall under the jurisdiction of the City and County of Honolulu. Based on informal comments by a Waimanalo resident and field observations at the HFFPF site, it would appear that abandoned irrigation ditches that could or should serve as drainage ditches are not being maintained for the purpose of drainage.

The HFFPF site is bordered on the east by a drainage swale that transports stormwater runoff from uphill research plots to a drainage ditch and the Inoaole Stream system north of the site. Runoff on the west side of the site appears to drain to an irrigation/drainage ditch and branch of the Inoaole Stream that runs near the northwest corner of the site (see Figure 3-5, and also flood boundaries previously shown on Figure 2-1 and Figure 2-2).

There are no wetlands at or near the proposed project site. The U.S. Army Corps of Engineers, based on an inspection of the site in 2002 and 2003, concluded that there are no wetlands in the area and that no Department of Army permits will be required for the project.

5. Coastal Waters

The Waimanalo region is well known among local residents and visitors for its beaches and recreational waters. The coastal waters are used for swimming, surfing, fishing and other shoreline recreational activities.

Waimanalo's coastal waters have been experiencing water quality problems primarily in the form of periodic algal blooms. It is suspected that excessive nutrients are being contributed by such sources as agricultural fertilizers, animal wastes, and subsurface disposal of wastewater. Nutrients discharged to nearshore coastal waters may be from

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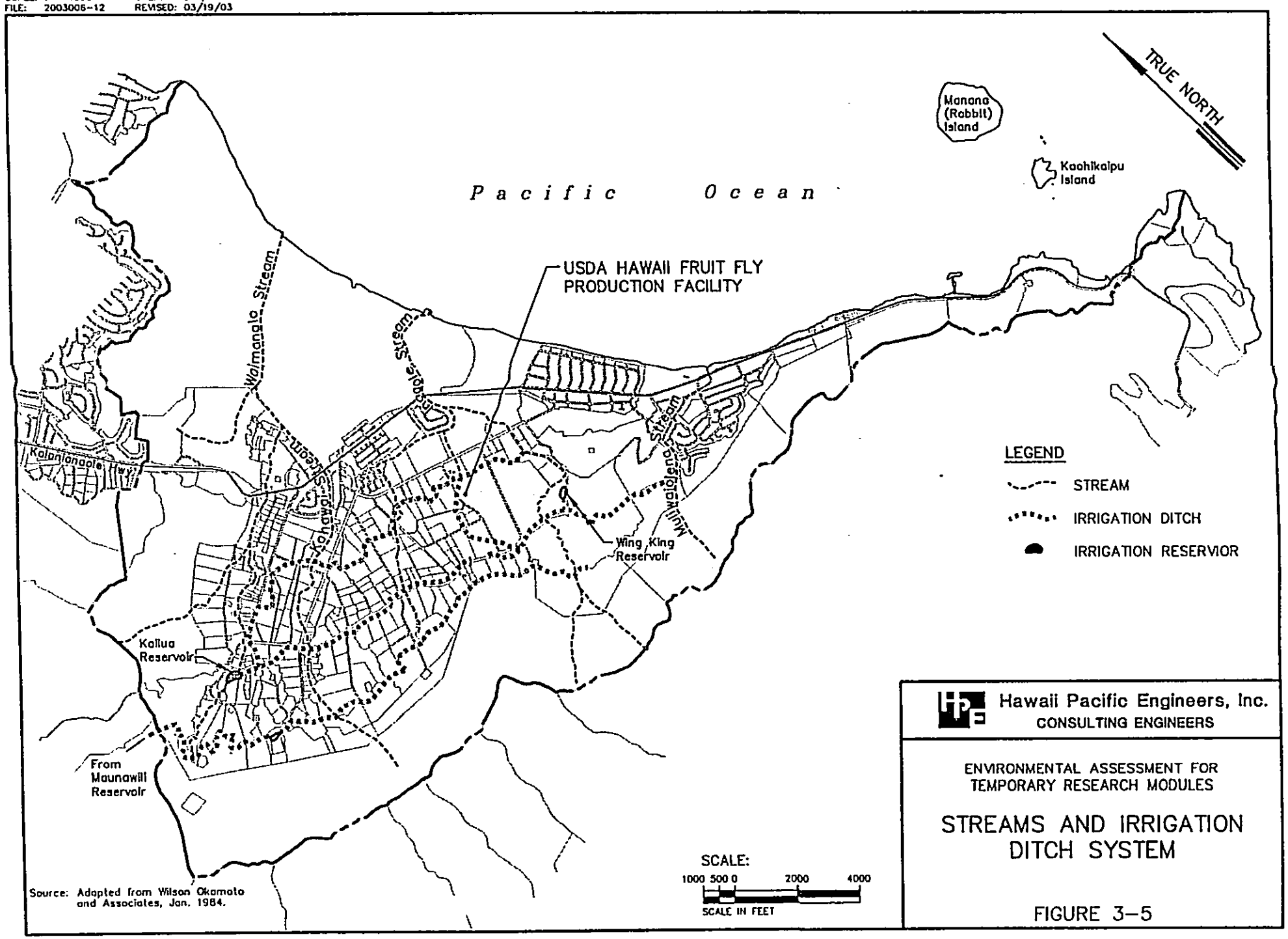

Source: Adopted from Wilson Okamoto and Associates, Jan. 1984.

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ENVIRONMENTAL ASSESSMENT FOR
TEMPORARY RESEARCH MODULES

STREAMS AND IRRIGATION DITCH SYSTEM

FIGURE 3–5

nutrients that are present in both surface water runoff and subsurface groundwater discharges. Detailed discussions on water quality data, issues and concerns related to coastal water quality in Waimanalo may be found in "Final Supplemental Environmental Impact Statement, Waimanalo Wastewater Facilities Plan," (Hawaii Pacific Engineers, 1999).

Members of the Waimanalo community concerned with Waimanalo's water quality problems have indicated that subsurface disposal of treated wastewater should be avoided to minimize contribution of nutrients to the groundwater and coastal waters.

6. Flood and Tsunami Hazard

Floodplain information from the Federal Emergency Management Agency (FEMA) Federal Insurance Rate Map (FIRM) for the project site is presented in Appendix C. The FIRM defines the 100-year and 500-year floodplain boundaries. As noted in Chapter 2, the 100-year and 500-year floodplain is located within the western portion of the additional land to be leased for the research modules project (see Figure 2-2). The proposed research modules buildings are outside but very near the floodplain boundaries. A portion of the access road to the project site is located within the 100-year and 500-year floodplain.

The FIRM map indicates that the 100-year flood elevation at the floodplain's closest point to the research module building pad (southwest corner of the pad) is approximately 49 feet above mean sea level. Topographic survey information indicates that the existing ground elevation at the building pad in this area is between 50 and 51 feet above mean sea level.

Waimanalo is located along the northeastern coast of Oahu and is potentially vulnerable to tsunamis from all directions. The wide, shallow reef, however, offers good protection to the area. During the major tsunamis that have occurred in Hawaii (1946, 1952, 1960), inundation along the Waimanalo coastline ranged between six and nine feet above the mean lower-low water level. There were no reports of shore erosion or property damage. The HFFPF site is well outside the tsunami inundation zone.

7. Flora and Fauna

A biological resources assessment study consisting of a flora and fauna survey of the project site was conducted by Char & Associates. The biological resources assessment report is presented in its entirety in Appendix D. The area examined in the study included the additional four-acre area west of the existing site and the heavily vegetated area (approximately 40 feet wide) along the north boundary of the existing site. A summary of the findings is presented below.

The site for the temporary research modules and future HFFPF expansion was cultivated in the past initially as part of a sugar plantation and then later for agricultural experiments conducted by the Waimanalo Research Station. A planting of "Hawaiian Giant" cultivar of koa haole, along with a few stands of other experimental plantings, covers most of the four-acre expansion area. Guinea grass forms a dense cover between the woody components. The vegetation on the site is composed almost exclusively of introduced or alien species. The only native species observed on the site was ricegrass or mau`u laiki (Paspalum scrobiculatum). None of the plants observed is a threatened and endangered species or a species of concern.

Nine bird species were recorded during the site survey. All are alien species except for the kolea, which is a winter visitor. Mammals such as rats, mice, feral cats, and mongoose would be expected to be found at the site. None of the animals recorded during the survey is a threatened and endangered species or species of concern.

8. Archeological and Historic Sites

An archaeological inventory survey of the project area was conducted by Cultural Surveys Hawaii, Inc. for both this environmental assessment and the upcoming environmental assessment for the future expansion project. The archaeological inventory report is presented in its entirety in Appendix E. The area examined included the existing HFFPF site and the four-acre expansion area west of the existing site. A summary of the study's findings and conclusions is presented below. USDA has determined that the "area of potential effect" (APE) is essentially limited to the HFFPF project site (existing site and additional leased land).

Traditional Hawaiian accounts indicate that the Waimanalo area was agriculturally very productive and populous. The *Mahele* records of the 1850s also indicate a high level of agricultural and cultural activity focused specifically along Waimanalo Stream, well to the west and north of the present project area, and to a lesser extent along the coast. No indications of specific activities in the vicinity of the present project area are given in traditional Hawaiian accounts or *Mahele* records.

By the 1880s, pasture land in Waimanalo began to be replaced by cultivated sugar cane, which was first grown by Chinese rice farmers. In the early 1900s, there was an expansion of the Waimanalo Sugar Co., which eventually had some 2,600 acres under mechanized cultivation. The project site was one of the areas used for sugar cane cultivation. C. Brewer and Co., which gained control of the Waimanalo Sugar Co. in 1910, liquidated the company in 1947, ending nearly 70 years of sugar cultivation. Since the lands within the project area were leased government lands, they reverted first to the Territory of Hawaii and are now under State of Hawaii jurisdiction.

No sites of any kind were identified within the project area *per se* by the archaeological inventory survey. No prehistoric archaeological features were observed within the project area, or are known to exist within the general vicinity. The north boundary of the project area, however, is demarcated by a ditch understood to be the Tai-Lee Ditch associated with the individual of that name and the Chinese sugar cane growing period of 1876-1900. The Tai-Lee Ditch is considered to be a historic property and has been designated as State Inventory of Historic Places Site #50-80-15-6427. Much of the ditch is earthen without improvements although portions are lined with concrete, and some water diversion and engineered features are present.

Based on the absence of any observable sites or any indication of the previous existence of any sites other than the Tai-Lee Ditch near the proposed project, no further work in the project area was recommended by the study. The study recommends, however, that adverse impacts to the Tai-Lee Ditch along the north boundary of the project area be avoided. If construction work is to be carried out in the immediate vicinity of the Tai-Lee Ditch, the study recommends that the ditch be fenced off and that contractors working in the area be informed not to impact this historic property.

9. Cultural Resources

A cultural impact assessment was conducted by Cultural Surveys Hawaii, Inc. for the existing HFFPF site and the additional land to be leased as part of the research modules project. The cultural impact assessment report is presented in its entirety in Appendix F. A summary of the study's findings and conclusions is presented below.

The cultural impact assessment included review of available on information from historical documentation and archaeological investigations. The study also obtained information from consultations with government agencies, private organizations, and the concerned community to identify knowledgeable *kupuna* or *kamaaina* who could provide information on the history, previous land use, and traditional practices of the project area. The organizations consulted included the State Historic Preservation Division, Office of Hawaiian Affairs, Oahu Island Burial Council, Alu Like, Waimanalo Neighborhood Board No. 32, Waimanalo Hawaiian Civic Club, Waimanalo Hawaiian Homes Association, Waimanalo Health Center, and University of Hawaii Oral Research Center. Based on the recommendations by the agencies and organizations, attempts were made to contact 31 individuals who either lived in or have connections to Waimanalo. Consultations were held with 25 individuals with some knowledge of the Waimanalo area. One individual, Mr. Francisco Tabar, a kamaaina who worked and lived at the Waimanalo Sugar Plantation, was informally interviewed.

The information compiled indicates that by the early 20th century, the project area was leveled and plowed for sugarcane cultivation that continued to the late 1940s. Subsequently, the project area reverted to other agriculture or open, undeveloped land.

These historic activities have removed any remnants of traditional Hawaiian use and activity within the project area. The community members consulted during the course of the assessment who had any knowledge of the project area could recall only the former sugarcane field. None of the individuals consulted could recall any traditional cultural resources, practices and beliefs that may have been associated with the project area. There was no mention of ongoing cultural activities associated with the area.

The cultural impact assessment study concluded that further development of the project area parcel should have no adverse impact on traditional cultural resources, practices or beliefs. The only precautionary note was for the preservation of the Tai-Lee Ditch located along the northern boundary of the project area (see previous discussions).

10. Air Quality

The project site is not situated within an air quality maintenance or non-attainment area designated by the Department of Health (DOH). Vehicular traffic is the major source of air pollutants in Waimanalo. The impact of this pollution source, however, is not considered to be significant. Limited air pollution sources exist due to the rural character of the area and the prevailing northeast tradewinds help to keep air pollution levels low. This is confirmed by air quality samples of particulate matter collected at a monitoring site located at the Waimanalo wastewater treatment plant. According to the State DOH data, all of the 102 samples collected from January 2000 to December 2001 were well below the Hawaii State air quality standards (DOH, Clean Air Branch, 2003).

11. Noise

Existing noise levels in Waimanalo are generally low because of the rural nature of the community. Vehicular traffic is the primary noise generator in the area, particularly along the major thoroughfare, Kalanianaole Highway.

There have been no complaints of noise attributed to the HFFPF. Some noise is currently generated at all hours at the HFFPF site due to operation of outdoor mechanical equipment associated with the air conditioning and ventilation systems.

B. SOCIO-ECONOMIC SETTING

1. General

Waimanalo consists of a residential and agricultural community comprised of residential homes, small farm lots, community businesses, schools, parks, and recreational facilities. Bellows Air Force Station is located adjacent to the "town" of Waimanalo. Waimanalo's total resident population is estimated to be 10,919 persons (DBEDT, 2000). There are a total estimated 2,657 households with an average household size of 4.03 persons. The estimated median age of the community is 32.9 years.

2. Socio-Economic Background

The surrounding community can best be described as rural agricultural in character. The project site is centrally located within the Waimanalo farm lots, one of Oahu's most productive agricultural centers. There are a variety of agricultural structures and residences situated along the rural roads that traverse the area in an irregular pattern. The area is very scenic due to the landscaping of the open areas; planted fields, mature trees, and the spectacular backdrop formed by the shear cliffs of the Koolau Mountains.

Agriculture is a major industry for the area. Major agricultural activities conducted in Waimanalo include livestock operations, nurseries and ornamental crops, tropical fruit orchards, and truck crops. Implementation of the Waimanalo Agricultural Park project began in 1982 with the goal of ensuring that State owned lands zoned for agriculture would be cultivated through leases to qualified farmers (Park Engineering, 1982). The agricultural park project encompasses approximately 196 acres. The Waimanalo Irrigation System, a State owned and operated system, serves agricultural water to approximately 1,150 acres of farmland (USDA, 1981).

3. Land Ownership, Land Use, and Land Use Designations

The State of Hawaii is the largest landowner in Waimanalo. The HFFPF is located on the 128 acre Waimanalo Research Station site that is owned by the State of Hawaii and under the control of the University of Hawaii (UH). The Waimanalo Research Station, which is operated by the University of Hawaii College of Tropical Agriculture and Human Resources (CTAHR), is utilized by researchers to conduct a wide variety of agricultural experiments. An arboretum is located on the southwest corner of the site. The land on the west side of Ahiki Street and to the north of the HFFPF site is privately owned and presently used predominantly for banana cultivation.

The Waimanalo Research Station land on which the HFFPF is located is classified as ceded lands. As noted in the correspondence from the Office of Hawaiian Affairs (OHA) (see Appendix G), OHA has indicated that they are entitled to 20 percent of the pro rata share of revenues generated from the ceded lands. The existing HFFPF site is currently leased by the University of Hawaii at no cost to USDA. The lease rent is waived under a cooperative agreement between USDA, UH and the State of Hawaii.

CTAHR is providing USDA with land for the HFFPF due to planned cooperative research programs. Joint facilities and programs with USDA are within the CTAHR vision for an Agribusiness Incubation and Outreach Center at Waimanalo. CTAHR envisions the HFFPF as a key element in future programs to implement a fruit fly eradication or suppression program in Hawaii that will significantly benefit agriculture and Hawaii's economy. Joint USDA and CTAHR research and training facilities will lead to cutting edge research programs that will ensure that Hawaii remains a world

leader in the science of fruit fly detection and management. CTAHR anticipates being able to attract significant funds through grants, contracts and cooperative agreements. Cooperative projects and programs involving leading USDA scientists, together with state-of-the-art USDA equipment and USDA research funding, will significantly benefit CTAHR faculty and graduate students.

Regarding the ceded land revenues, the following statements were provided by the UH Office of University General Counsel through CTAHR:

> "The University of Hawaii Board of Regents and Administration have and will continue to support Native Hawaiian Programs and provide financial aid for needy Native Hawaiian students."
>
> "The support of public education is one of five enumerated purposes of the ceded lands public trust. Thus, to the extent that revenues generated from ceded lands under the control of the UH are used to fulfill the University's mandate to support public education, the trust obligations are satisfied. This is and has been the University's position from the start. The University realizes that the issue of what constitutes "revenues" and how the trust obligations, including the betterment of the conditions of Native Hawaiians, will be fulfilled is a matter that will be taken up by the legislature, especially in light of the Hawaii Supreme Court decision in *Office of Hawaiian Affairs v. State of Hawaii.* The University also understands that it will be the legislature which will ultimately define how the ceded lands public trust obligations are to be fulfilled. Until the matter is settled by the legislature, the University will continue to use the revenues generated from ceded lands under its control to fulfill the University's mandate to support public education."

Based on a review of the project, Mr. Walter Kirimitsu, UH Vice President for Legal Affairs and University General Counsel, concluded that the property and project fall within the exemption from any revenues owed to OHA.

The HFFPF site and the surrounding area are classified as agriculture by the State Land Use Commission, and as prime agricultural land by the Agricultural Lands of Importance to the State of Hawaii (ALISH) system. The site is zoned as AG-1, Restricted Agriculture, by the City and County of Honolulu.

Under Chapter 205, Paragraph 205-4.5 of the Hawaii Revised Statutes, items (3) and (5) state that permissible uses within agricultural districts include:

> "(3) Raising of livestock, including but not limited to poultry, bees, fish, or other animal or aquatic life that are propagated for economic or personal use;

(5) Public institutions and buildings which are necessary for agricultural practices;"

The HFFPF meets the above two criteria for permitted uses within State agricultural districts. Based on a request for further clarification on permitted uses on State Land Use Agricultural District, the State Land Use Commission provided the following comments (see correspondence in Appendix G-2):

> "We note that relevant permissible uses within the State Land Use Agricultural District (§205-4.5(a)(5) HRS) include public institutions and buildings, which are necessary for agricultural practices. This same section also notes that buildings and uses, including but not limited to mills, storage, and *processing* facilities, maintenance facilities, and vehicle and equipment storage areas that are normally considered directly accessory to the abovementioned uses and are permitted under section 205-2(d) are permissible within the agricultural district."
>
> "Both your description and that received from the State Department of Agriculture would seem to indicate that your program qualifies as both necessary for agricultural practice and/or an agricultural processing facility."

The City and County of Honolulu Department of Planning and Permitting has determined that the proposed project is a "public use" under the City's zoning code and is a permitted use in the AG-1 Restricted Agricultural District (see correspondence in Appendix G-2).

4. Relation to Koolaupoko Sustainable Communities Plan

The Koolaupoko Sustainable Communities Plan (SCP) (C&C of Honolulu, 2000) is a City Charter-prescribed community oriented plan intended to help guide public policy, investment, and decision-making through the 2020 planning horizon. The Koolaupoko planning area located in Windward Oahu stretches from Kaoio Point (north most end of Kaneohe Bay) to Makapuu Point. The vision statement and supporting provisions of the Koolaupoko SCP are oriented toward maintaining and enhancing the region's ability to sustain its unique character and lifestyle.

One of the key vision elements outlined in the Koolaupoko SCP is the preservation and promotion of agricultural uses of the land. General land use policies in the Koolaupoko SCP related to agricultural uses include providing supporting infrastructure, services and facilities to foster and sustain agricultural operations. The HFFPF is classified as a permitted agricultural use and is a critical component of the nation's agricultural industry. The development of technology, infrastructure and expertise in Hawaii to support Mediterranean fruit fly eradication and preventative programs for the U.S. mainland is considered an important step in implementing an eradication and preventative program in Hawaii. Future elimination of fruit flies in Hawaii will benefit and increase agriculture

throughout Hawaii. The proposed research modules will provide the HFFPF with vital research support to resolve problems and improve sterile fruit fly production technology.

The City Department of Planning and Permitting, in its August 23, 2002 letter written in response to pre-assessment consultation for a previously proposed plan for expanding the HFFPF (see Appendix G-1), stated the following:

> "The proposed expansion is consistent with the Koolaupoko SCP Agricultural Use General Policy to provide support infrastructure, services and facilities to foster and sustain agricultural operations."

Chapter 4

Potential Impacts and Proposed Mitigation Measures

CHAPTER 4
POTENTIAL IMPACTS AND PROPOSED MITIGATION MEASURES

This chapter presents an assessment of the potential environmental impacts and describes the proposed mitigation measures for the Hawaii Plant Protection Laboratory temporary research modules project.

No significant negative long-term impacts associated with the research modules project were identified during preparation of this environmental assessment. Environmental impacts will be limited primarily to short-term disruptions associated with construction activities. The project will have the beneficial effect of providing the required research facilities to support the operations of the Hawaii Fruit Fly Production Facility (HFFPF). The HFFPF is a critical component of USDA's Mediterranean fruit fly eradication and preventative release programs in the U.S.

A. LAND ALTERATION AND AESTHETICS

Short-term impacts associated with land alteration and aesthetics will result from the construction activities. The work will include excavation, stockpiling of materials, and general visual/aesthetic deterioration. These impacts will cease upon completion of construction and the affected areas will be restored to their original condition to the extent possible. Existing dense vegetation along the northern and western borders of the site will shield the project construction activities from view. The USDA will provide construction inspection and monitoring services to ensure that the contractor performing the work adheres to all environmental regulations applicable to construction activities.

Construction activities may increase the potential for erosion at the site. Temporary and permanent erosion control measures will be implemented during the construction to minimize the impacts of erosion. The construction contractor will be required to comply with Best Management Practices erosion control plans to be provided on the construction drawings. As part of the grading permit approval process, the erosion control plans will be reviewed by the City and County of Honolulu Department of Planning and Permitting for conformance to applicable regulations and guidelines.

Long-term visual impacts associated with the project will be minimal. The single story buildings will not be readily visible from Ahiki Street due to the existing dense vegetation along the western border of the site. Landscaping in the vicinity of the new building will be provided for improved aesthetics.

B. FLOOD HAZARD

The proposed research and irradiation modules will be located in close proximity but outside the 500-year and 100-year floodplains. As noted in Chapters 2 and 3, the proposed buildings will be constructed at elevations that will minimize the probability of damage or operational problems resulting from significant storm events that may cause flooding in the area.

A portion of the access road to the site is located within the 100-year floodplain. During construction, the contractor will be prohibited from erecting temporary structures and storage of fill, excavated material, or equipment within the 100-year floodplain.

The research modules project includes a stormwater detention basin to store excess stormwater runoff generated by the additional impermeable areas (such as building roofs and walkways), and thereby minimize increases in peak stormwater runoff. The detention basin will also help to minimize the discharge of sediments and debris to drainage channels that flow into Waimanalo Bay. Much of Waimanalo is subject to flooding problems and aggravation of flooding problems will be avoided by implementing appropriate flood control measures.

Stormwater runoff from the HFFPF site enters the Tai Lee Ditch along the northern boundary of HFFPF site. Although the Tai Lee Ditch may not have been designed to channel stormwater flows, the ditch does function as a stormwater diversion channel. This is typical of plantation irrigation channels throughout the State where irrigation ditches which once brought water to the sugar cane fields now function as stormwater channels that drain the fields during storm events. Clogging of the Tai Lee ditch due to lack of maintenance aggravates the flooding problems in the immediate vicinity of the ditch but should not increase downstream flooding problems. The clogged ditches may actually reduce downstream flooding impacts by backing up stormwater runoff on the USDA site for temporary storage rather than allowing the runoff to flow quickly downstream where it would aggravate flooding problems.

C. FLORA AND FAUNA

No endangered flora or fauna were observed at the project site during the biological resources assessment field survey. The findings of the biological assessment survey were previously discussed in Chapter 3 and the report documenting the findings is included in its entirety in Appendix D. The proposed project is not expected to have a significant impact on the plant and animal resources of the site or the general region. Introduced/alien species are the dominant components of the vegetation and animal communities on the site.

The project will require clearing an area of approximately 0.75 acres of land for the research and irradiation modules and the stormwater detention pond. The existing giant haole koa trees, guinea grass and other vegetation will be removed as required to accommodate the new

construction. The remaining trees and other vegetation at the project site will be left undisturbed.

The research modules are designed to minimize the escape of fruit flies from the modules used for insect rearing. Any escaping Mediterranean fruit flies will have minimal impact on agriculture in the region or Hawaii since this species of fruit fly is already well established in Hawaii. Spent feed material containing live larvae will be bagged in heavy-duty plastic bags to kill the larvae through the heat generated by sunlight and fermentation. The fruit fly rearing operations for the research modules will be similar to, but much smaller than those used in the full-scale production of fruit flies at the site.

D. ARCHAEOLOGICAL AND HISTORIC SITES

As previously discussed in Chapter 3, an archaeological inventory survey was conducted for the project site as part of this environment assessment. A copy of the survey report is presented in its entirety in Appendix E.

The archaeological inventory survey did not identify the presence of any archaeological or historic sites of any kind within the project site itself. No prehistoric archaeological features were observed within the project area, or are known to exist within the general vicinity. The archaeological inventory survey, however, did identify the Tai-Lee Ditch located along the northern border of the project site as being a historic property. The Tai-Lee Ditch, which is associated with the Chinese sugar cane growing period of 1876-1900, has been designated as State Inventory of Historic Places Site #50-80-15-6427. Much of the ditch is earthen without improvements although portions are lined with concrete, and some water diversion and engineered features are present.

The temporary research modules project will essentially alter a landscape already modified by past plantation and agricultural research activities. Adverse impacts to the Tai-Lee Ditch will be avoided by requiring the contractor to not impact the historic property and including a requirement to fence off the ditch area when performing construction near the ditch.

As a precautionary measure, the contractor will also be made aware of potential encounters with artifacts or remains such as shells, bones, or charcoal deposits. If such items are encountered during construction, the work will be halted in the immediate vicinity of the find and the find will be protected from further disturbances. The contractor will be required to immediately contact the State Historic Preservation Division to assess the significance of the find and recommend an appropriate mitigation measure if necessary.

As part of the procedures to satisfy the requirements of Section 106 of the National Historic Preservation Act, a copy of the archaeological inventory survey report was sent to the State Historic Preservation Division (SHPD) in November 2002. In its response letter dated January 17, 2003, SHPD stated that:

> "In sum, we find the report acceptable and believe that "no historic properties will be affected" by development of the project area. The historic preservation review process is concluded for this project."

USDA, in a letter dated February 10, 2003, informed SHPD of its plans to conduct additional consultations with appropriate native Hawaiian organizations as part of the Section 106 process. Based on subsequent discussions with SHPD, it was concluded that due to the lack of potential impacts to historic and cultural properties, consultation via letters to Hui Malama and the Office of Hawaiian Affairs would be sufficient to meet the consultation requirements of Section 106. Consultation with the Oahu Burial Council was not considered necessary since the project does not involve any burial issues. Correspondence pertaining to the Section 106 consultation process is included with the other pre-assessment consultation correspondence presented in Appendix G.

E. WATER QUALITY

Due to the high nutrient levels and associated high algal concentrations in the streams and nearshore waters of Waimanalo Bay, nutrients from subsurface discharges to the groundwater and in surface runoff are a concern. The two key nutrients of concern are nitrogen and phosphorus. Input received from representatives of the Waimanalo community during pre-assessment consultations confirmed that discharge of nitrogen and phosphorous from any source would be a concern of the community.

The process wastewater from the research modules is a source of nutrients but is not anticipated to be a significant concern with respect to water quality. The proposed offsite treatment and disposal of the process wastewater, as described in Chapter 2, will minimize nutrient pollution impacts associated with research facility operations. The proposed treatment of the wastewater at the Waimanalo fruit fly rearing facility operated by the California Department of Food and Agriculture (CDFA) will result in nutrient removal and recycling due to treatment by an anoxic biological treatment process and reuse of treated effluent through irrigation of a palm tree grove. Proposed alternative treatment and disposal of the process wastewater at the East Honolulu Wastewater Treatment Plant (WWTP) would also result in some nutrient removal during treatment. The East Honolulu WWTP discharges treated effluent through an ocean outfall that minimizes impacts on nearshore water quality and recycles nutrients through the food chain.

In general, the amount of nutrients generated by the process wastewater from the research modules is very low. As an example, based on an estimated process wastewater total nitrogen concentration of 50 mg/L and average wastewater flow of 800 gallons per day, the amount of nitrogen generated would be 0.33 lbs/day. Subjecting the wastewater to biological treatment would be expected to remove 50 percent or more of the nitrogen. At a typical nitrogen generation rate of 0.031 lb per day for humans, the 0.17 lbs/day of nitrogen in the treated wastewater would represent the nitrogen produced by approximately five persons.

For further comparison, the total nitrogen generated by an estimated 4,100 persons using individual wastewater systems (cesspools and septic tanks) in Waimanalo is estimated to be on the order of 130 lbs/day. Assuming a relatively high nitrogen removal rate of 30 percent in the individual wastewater systems, the mass emission to the groundwater would be an estimated 91 lbs/day. The mass emission resulting from the subsurface injection of effluent from the Waimanalo WWTP, which removes a substantial amount of nitrogen from the domestic sewage, is estimated to be on the order of 50 lbs/day (Hawaii Pacific Engineers, 1999). Extensive agricultural and livestock activities in Waimanalo, along with the decay of natural forest litter and other organic matter in the heavily vegetated inland areas, also contribute significantly to the total nitrogen emissions in Waimanalo.

It can be concluded that the nitrogen from the research modules process wastewater is not significant relative to the total contribution of nitrogen from other sources in Waimanalo. Similar conclusions would apply to phosphorus.

The process wastewater storage and transfer facilities will be designed to minimize the potential for leakages or spills, and are not anticipated result in any significant risks to the environment or public health. The proposed underground storage tank will be of either reinforced concrete or fiberglass construction and be similar in design to watertight septic tanks used for sewage. Level alarms will be provided to alert operations personnel before overfilling of the tank occurs. As noted in previous discussions, the process wastewater should not contain human pathogens due the absence of domestic sewage in the wastewater.

The impacts of process wastewater produced by the future expanded HFFPF will be of greater significance and will be addressed in the forthcoming environmental assessment for the major HFFPF expansion work. Studies are currently being conducted to refine and verify estimates of nutrient removal efficiencies that can be achieved through wastewater treatment incorporating nutrient removal processes and application of the treated effluent to trees and other vegetation.

The proposed temporary research modules project will not significantly increase the volume of peak stormwater runoff or contribution of contaminants to stormwater runoff. The increase in runoff due to the additional impervious surfaces such as walkways and building roofs will be offset by storing a portion of the runoff in a stormwater detention basin. The detention basin will improve the quality of the stormwater runoff by serving as a sedimentation basin for silt and other debris. The detention facilities will be designed in accordance with City and County of Honolulu requirements for stormwater flow attenuation and water quality enhancement.

F. NOISE AND AIR QUALITY

The use of construction equipment such as backhoes, trucks, hand compactors, and pavers will create noise, dust, and exhaust emissions.

The noise level will increase during the construction period. The noise of construction equipment will be minimized by ensuring properly functioning mufflers on machinery and restricting construction activity to normal working hours. The contractor will be required to meet applicable vehicular and community noise standards established by the Department of Health. Work on weekends will be limited to the extent possible and work at night will not be permitted.

Following completion of construction, the temporary research modules project will result in negligible increases in noise compared to current and past conditions. There may be slight increases in noise due to air conditioning equipment, pumps and blowers, and an emergency generator for backup power. The emergency generator, which would be powered by a diesel or gas engine, would be operated only during power outages and during periodic testing and "exercise" sessions.

The noise generated by the research module and irradiator operations is expected to generate sound levels much lower than those currently being generated by outdoor air conditioning equipment and well within applicable community noise standards. In general, noise is not a significant concern at the site due to lack of homes on the south and east boundaries, and the remoteness of dwelling units and sound attenuation provided by large trees and heavy brush along the west and north boundaries. For the future expansion project, USDA will be retaining an acoustic engineer to evaluate existing ambient noise levels, project noise levels for future conditions, and provide recommendations for sound attenuation and any other mitigative actions.

The contractor will be required to control the generation of dust by adequately watering down the construction site, keeping the construction site and access roadways reasonably free of dust-causing materials, and implementing other appropriate dust control practices.

There have been no odor complaints with the HFFPF operations in the past and there are no odor or other air emissions of concern anticipated with the operation of the new research modules project facilities. Odors from the stored process wastewater will not be significant due to the use of a fully enclosed storage tank and provisions for aerating the wastewater to prevent septic conditions. Past experience indicates that the HFFPF wastewater is not odorous if kept in an aerobic state. Standby power will be available to allow continuous aeration of the wastewater during power outages.

There will be some noise and vehicle exhaust fumes associated with hauling of the process wastewater to an offsite disposal location with a tanker truck. The impact will be minimal since the wastewater is expected to be hauled away not more than once per day. More frequent hauling would be required if the wastewater was handled by the CDFA wastewater treatment plant due to its limited capacity. If the wastewater is handled by the significantly larger East Honolulu Wastewater Treatment Plant, hauling of the wastewater between one and two times per week is expected.

G. ENERGY USE

The research modules and irradiator equipment will utilize a modest amount of energy for lighting, air conditioning, water heaters, laboratory equipment, pumps/blowers, and other uses.

H. WATER RESOURCES

Approximately 1,200 gallons per day of potable water is projected to be utilized (see discussions in Chapter 2). The use of reclaimed water for washdowns, cooling and other in-plant uses is anticipated to be implemented with the planned future expansion project to conserve potable water resources.

I. WASTEWATER TREATMENT AND DISPOSAL INFRASTRUCTURE

The Waimanalo Wastewater Treatment Plant, owned by the State of Hawaii and operated by the City and County of Honolulu, is currently operating at its design capacity. A moratorium on new sewer connections has been imposed by the City.

The volume of domestic sewage produced at the HFFPF site upon completion of the temporary research modules project will be a fraction of the volume previously produced by the HFFPF due to the temporary shutdown of the main production operations. The handling of the domestic wastewater from the new HFFPF will be addressed in the ensuing planning and environmental review work for the future facilities.

The State Department of Health (DOH) has indicated that the proposed offsite disposal of the process wastewater would be acceptable provided that written authorization from the owners is obtained and the facilities are capable of handling the flow (see DOH pre-assessment consultation response letter in Appendix G). Preliminary full scale testing conducted at the East Honolulu Wastewater Treatment Plant indicated that the HFFPF process wastewater has no impact on the treatment performance. The available surplus capacity of the treatment plant at the California Department of Food and Agriculture fruit fly rearing facility is currently being evaluated.

The plans and other details of the research modules domestic sewage and process wastewater collection and storage facilities will be subjected to DOH approval as part of the building permit review process to ensure compliance with applicable provisions of Chapter 11-62, Hawaii Administrative Rules. All wastewater facilities will be designed by a licensed professional engineer.

J. RADIATION EXPOSURE

Although the two irradiator units utilize radioactive Cesium 137 as its source of radiation, there are no significant risks of radiation exposure to the HFFPF workers or the Waimanalo community. Each irradiator contains a few ounces of Cesium 137, a common radionuclide

used for sterilizing food products, including wheat, spices, flour, and potatoes. Its strength of radioactive decay depends on the amount of Cesium 137, which in the case of the HFFPF irradiators, is relatively small. The irradiator units are sealed, heavily shielded and designed to not release significant amounts of radiation. The radioactive material cannot be accessed without special tools, which are not available locally.

The inherent design of irradiator units prevents leakage of and accidental exposure to the radiation source. The completely sealed static source of Cesium-137 remains motionless and never contacts any samples or the environment. The Cesium-137 remains locked up in the irradiators at all times, shielded by several tons of lead and steel. Passage of the irradiated canisters through the rotating cylinder system of the irradiator occurs through three positions of the turntable. Position 1 accepts a canister from the feed end and Position 3 expels canisters to the shipment side. Position 2 is the exposure position. There is no other passage to Position 2 except via Position 1. The interlocks allow only one canister to be accepted in each revolution. There is no means to access Position 2 for exposure to radiation except through the canister.

The design and construction of the irradiators are subject to the highest engineering and radiation standards. The irradiator units are licensed by the U.S. Nuclear Regulatory Commission (License No. 19-00915-06). Leakage testing is performed every six months as required by the irradiator license. The irradiation units are used by or under the supervision and physical presence of individuals who have undergone the required training. HFFPF currently has approximately 15 trained operators that are licensed to operate the irradiators. USDA personnel wear personal radiation monitors (in accordance with Federal law) when working close to the units, which typically averages 10 minutes each day. The personal radiation monitors record accumulated dosages (over the lifetime of the wearer) and are analyzed regularly. If analyses show any positive exposure, the staff is notified immediately. In the history of operations at the HFFPF, there have been no distinguishable exposures. Since radiation decreases exponentially as one moves away from the source, it is reasonable to conclude that the community is not in harm's way.

A security guard is provided 24 hours per day, 7 days a week, to guard against vandals and terrorists. Even if vandals or terrorists were able to enter the irradiator room, gaining access to the Cesium 137 would be very difficult due to the sealed design of the unit and various interlocks and safeguards that prevent entry to the unit's irradiation chamber. The irradiator unit cannot be moved without heavy lifting equipment and therefore theft of the unit is not a concern.

There is no significant radiation exposure risk associated with moving the irradiators from the existing production building to the new irradiation building. The irradiators are of the "transportable" type that are allowed to be moved without special handling restrictions as they are robustly designed and constructed to have minimal radiation exposure risks despite

being roughly handled or dropped. The irradiators are expected to be moved to its new location using either a crane or large forklift.

K. ESCAPE OF FRUIT FLIES AND IMPACT ON LOCAL AGRICULTURE

The temporary research modules will be designed to minimize the escape of flies. Incidences of fly escapes should be infrequent, since they are housed in cages within the modules. The buildings will have quarantine features that are in compliance with applicable State and Federal standards.

The research to be conducted at the temporary research modules will predominantly involve a strain of Mediterranean fruit flies (*Ceratitis capitata* (W)) already being reared in Waimanalo. The colony was imported under State and Federal permits, for which a scientific panel carefully considered the environmental risks prior to issue.

The new strain of Mediterranean fruit fly is a temperature sensitive strain, which has three notable attributes: 1) it has a naturally occurring genetic composition, 2) it is 50% sterile (due to a chromosomal linkage) even before it is exposed to sterilizing radiation, and 3) female flies of this strain are physiologically disadvantaged at temperatures over 84°F. This makes the strain an excellent candidate for the Sterile Insect Technique, but a poor candidate for breeding in the field.

Research conducted on the fruit fly problem in Hawaii indicates that other species of fruit flies, Oriental fruit fly and Melon fly in particular, are likely causing the majority of damage to local fruit growers. In 2000, an assessment of fruit fly species, made by the USDA Agricultural Research Service (ARS) and University of Hawaii, demonstrated in Central Oahu that the prevalence of Melon fly in traps was 22 to 54 flies/trap/day and Oriental fruit fly prevalence in traps was 68 to 710 flies/trap/day, while Mediterranean fruit flies were found at the rate of 1.8 to 8.7 flies/trap/day. ARS noted that Mediterranean fruit fly populations in Waimanalo are so sparse that the area cannot easily be used as an experimental site for studying the pest in the field.

Parasitic wasps have been introduced and established in Hawaii for fruit fly control. They are fairly specific to certain fruit fly species or genera. The important fruit fly parasitoids currently established in Hawaii are *Fopius arisanus, F. vandenboschi, Diachasmimorpha longicaudata and D.tryoni* (hosts are Oriental and/or Mediterranean fruit fly) and *Psyttalia fletcheri* (host is melon fly). These parasitoids are very small insects which have a free-living adult stage, and during their parasitic stage, lay eggs in hosts such as fruit fly eggs or larvae. The host is killed as the parasitoid larvae eat the host. Exploration for effective, new parasitoid species is ongoing at UH and the Hawaii Department of Agriculture (HDOA). Some work is being conducted by the Biological Control division of the HDOA under a grant provided by the USDA Agricultural Research Service.

Parasitoids help reduce the overall population of fruit flies by insuring that a proportion of the fly progeny will be killed and ultimately develop into parasitic wasps instead of flies. When these wasps were introduced to Hawaii, scientists documented that the Mediterranean fruit fly population was reduced to less than half of what existed before the releases. Parasitoids do not eat or sting fruit. Parasitoids therefore have no damaging effect on the fruit that has not already been infested with fruit fly eggs or larvae.

In summary, the rearing of fruit flies in Waimanalo by USDA will have no significant effect due to: 1) the quarantine features of its facilities, 2) the use of a fly strain that is already present in Hawaii, 3) the poor viability of the temperature sensitive strain in the wild, 4) the low concentration of Mediterranean fruit flies in Waimanalo compared to other fruit flies of economic importance, and 5) parasitoids serving as beneficial organisms.

L. CULTURAL RESOURCES

The findings of a cultural impact assessment were previously discussed in Chapter 3 and the report documenting the findings is included in its entirety in Appendix F. The proposed project has no identifiable adverse impacts on Hawaiian culture and traditional and customary rights. Due to the location and nature of the proposed facilities, the project does not lend itself to significant or direct promotion or protection of cultural beliefs, practices and resources of native Hawaiians or any other ethnic group.

The Tai-Lee Ditch located along the northern border of the project site is considered a historic property. As previously noted, adverse impacts to the Tai-Lee Ditch will be avoided by erection of fencing during the construction work to prevent disturbing the ditch. The ditch itself is overgrown and not maintained, and is therefore not a historic resource that would normally be viewed or enjoyed by the public.

M. SOCIO-ECONOMIC IMPACTS AND ENVIRONMENTAL JUSTICE CONSIDERATIONS

The temporary research modules project will benefit the U.S. economy by supporting the HFFPF in fruit fly eradication and preventative release programs. The effectiveness of these programs is critical in preventing the proliferation of the Mediterranean fruit fly that could cost billions in agricultural losses.

The project will provide employment for contractors and their employees, material suppliers, and others associated with the construction industry. The project will provide long-term employment opportunities for researchers and support personnel.

The HFFPF, prior to its suspension of operations in September of 2002, provided the Waimanalo community with a source of jobs and income. Approximately 25 percent of the 45 former employees of the HFFPF were from Waimanalo. The HFFPF had an annual operating budget of $2.5 million per year for supplies and services. It is estimated that about

50 percent of the expenditures went to Waimanalo businesses. Furthermore, employees of the HFFPF and their guests patronize Waimanalo restaurants, gas stations, shops, plant nurseries and other businesses. The research modules will have approximately 10 employees and will buy provisions through local businesses. These interactions contribute to the economic viability of Waimanalo by leaving dollars in Waimanalo.

Waimanalo is a Hawaiian homestead area and has considerably lower socio-economic demographics than its neighboring communities. In 1994, Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations," was issued. The environmental justice program is designed to help ensure that for government programs and activities affecting human health or the environment, all members of the community, including minority and low-income members, are: 1) provided the opportunity to comment before decisions are rendered on, 2) allowed to share the benefits, and 3) not affected in a disproportionately high and adverse manner.

The following points address the environmental justice issues with respect to the proposed temporary research modules project:

- Extensive effort was made to solicit input from all members of the Waimanalo community through presentations at the Waimanalo Neighborhood Board meetings (see Chapter 7 and Appendix G) and by performing a detailed cultural impact assessment study (see Appendix F). The draft environmental assessment was distributed to a wide range of Waimanalo community members for review and comments.

- The HFFPF benefits Waimanalo by providing a substantial number and wide range of job opportunities for Waimanalo residents. HFFPF workers from outside the community patronize Waimanalo businesses.

- The HFFPF is not located near minority or low-income residential areas within Waimanalo. Adverse HFFPF impacts on minority and low-income members, as well as the rest of the community members and the Waimanalo environment, are not significant.

N. HAWAII COASTAL ZONE MANAGEMENT (CZM) PROGRAM FEDERAL CONSISTENCY REVIEW

The National Coastal Zone Management Act of 1972, as amended, requires Federal agencies to conduct their planning, management, development, and regulatory activities in a manner consistent with the State of Hawaii CZM Program. Federal agencies are not permitted to act without regard for or in conflict with state policies and related resource management programs that have been officially incorporated into the Hawaii CZM Program.

The Office of Planning of the State of Hawaii Department of Business, Economic Development and Tourism, as the lead agency of the Hawaii CZM Program, is responsible for conducting federal consistency reviews on applicable Federal projects or activities. The "coastal zone" of Hawaii includes all non-federal property within the state, except for State forest reserves. Seaward, the coastal zone includes all waters and submerged lands to the limit of the State's jurisdiction.

The temporary research modules project was subjected to a Hawaii CZM Program Federal Consistency Review since the project involves a Federally funded activity on state coastal zone land. USDA has determined that the proposed temporary research modules project is consistent with the goals and objectives of the Hawaii CZM Program and requested concurrence from the State Office of Planning. Copies of the submitted CZM certification and assessment forms are included in Appendix H. In a September 19, 2003 letter (see Appendix G-2), the State Office of Planning expressed concurrence with USDA's consistency determination based on implementation of mitigation measures proposed in environmental assessment.

Chapter 5

Alternatives Considered

CHAPTER 5
ALTERNATIVES CONSIDERED

This chapter discusses various alternatives that were considered for the proposed Hawaii Plant Protection Laboratory (HPPL) temporary research modules project. The alternatives considered and the rationale for not selecting the alternatives are discussed for the following areas of evaluation:

- Alternative sites for research facilities.
- Alternative types of building construction.
- Alternative methods for process wastewater disposal.

The "no action" alternative of not constructing research facilities was not considered to be a viable option due to the need for continuing research to support the operations of the Hawaii Fruit Fly Production Facility (HFFPF). The new building for to house the irradiator equipment and operations is required as part of the proposed plan to expand the HFFPF. The need for the research facilities, irradiator/storage building, and HFFPF were previously discussed in Chapter 2.

Relocation of the HFFPF to California or other areas of the U.S. mainland as suggested by Waimanalo residents is not a viable option due to U.S. quarantine laws and is therefore not addressed below.

As will be evident in the discussions below, none of the alternatives to the recommended action were considered by USDA to be sufficiently viable and substantially lower in cost to merit serious consideration. There were typically one or more overriding non-monetary factors that significantly decreased the viability of the alternative.

A. ALTERNATIVE SITES FOR RESEARCH FACILITIES

Alternative sites for the research facilities that were considered included:

- Location at another site (location that is not at HFFPF, such as at the University of Hawaii at Manoa campus, California Department of Food and Agriculture Fruit Fly Rearing Facility in Waimanalo, other USDA or Federal facilities/properties, or a newly leased parcel).
- Location within the HFFPF main production building.

Location of the research facilities at a site other than the HFFPF was considered undesirable by USDA for the following two primary reasons.

- There is a need for frequent interaction and close coordination between the personnel of the HPPL research facilities and HFFPF main production operations. An offsite facility would result in significant loss of productive research time due to travel. In addition, insects would also need to be periodically transported between the two facilities. Having the two facilities within close proximity minimizes stress on the insects during transport and any undesirable transportation related consequences on experimental results. The research facilities and HFFPF utilize similar insect rearing methods and therefore the two facilities have similar needs and challenges with respect to operational procedures, feed material, equipment, personnel, and waste disposal. Productive collaboration in resolving common problems and issues would be facilitated by personnel working in close proximity. Furthermore, USDA would like to fully consolidate its research activities by having its previously off-site research involving ecology and rearing studies performed at the HFFPF site.

- Since research work is critical to the success of HFFPF operations and safeguarding of the nation's food supply, USDA has determined that increased security in needed at its fruit fly research facilities. Location of the research modules within the secured HFFPF compound is desirable and cost-effective considering potential difficulties and costs associated with providing a high level of security at some offsite locations. USDA intends to significantly upgrade it security at the HFFPF site in the future through improved security fencing, installation of security surveillance cameras, and increased security guard staffing.

Other factors relevant to evaluation of the offsite research option include the following:

- Energy Use and Air Quality Impacts: The substantially higher use of vehicles for personnel transportation in the offsite option would result in greater energy use and air quality impacts, particularly if the offsite facility was not located in Waimanalo.

- Socio-economic Impacts: Locating the research facility outside of Waimanalo would result in a decrease in employment opportunities and expenditures in Waimanalo but increase employment opportunities and expenditures at the selected offsite location.

The proposed onsite alternative has no significant impacts with respect to land use, aesthetics, flood hazards, flora and fauna, archaeological and historic sites, water quality, noise and cultural resources. Other offsite alternatives are therefore not likely to offer significant advantages with respect to these environmental factors.

The location of the research activities within the future expanded HFFPF main production building was considered but not determined to be feasible or cost-effective. Physical

separation between the research facilities and the main HFFPF building is desired by USDA to keep different strains of fruit flies at each facility isolated from one another. USDA also needs to continue conducting research for improved fruit fly strains during the construction of new HFFPF. Construction of the new HFFPF is expected to take at least one year from demolition of the existing building to completion of the new building.

B. ALTERNATIVE TYPES OF BUILDING CONSTRUCTION

Construction of a permanent masonry building for the research facilities was considered as an alternative to the proposed steel-paneled modular buildings. Due to limited available funding and the dire need for new research facilities, USDA has determined that it is necessary and cost-effective to construct temporary research facilities using the proposed modular buildings. The proposed modular buildings are capable of accommodating the near future research needs as well as meeting the short-term budget limitations. Funding for larger and more costly permanent research facilities, which will require Congressional appropriation and approval, would likely require at least several years to secure.

Due to the limited size of the current site, construction of larger permanent research facilities will require additional land to be leased from the University of Hawaii. Additional land beyond the currently identified project site is not immediately available. The availability and location of additional leased land for future expansion of the HFFPF is subject to further evaluation by the University of Hawaii.

Due to the temporary nature of the facilities, the use of steel-paneled modular buildings was determined to be more cost-effective than structures that are typical of permanent facilities. The modular buildings are capable of being relocated and used for other purposes in the future.

The rationale in selection of the building construction for the irradiation/storage building was similar to that of the research modules. The use of prefabricated modules designed for flammable and hazardous material storage was cost-effective due to the future need for such storage facilities at the site.

C. ALTERNATIVE METHODS FOR DISPOSAL OF PROCESS WASTEWATER

Alternative methods for disposing the process wastewater from the research facilities that were considered included:

- Discharge to the municipal sewer system.
- Discharge to an onsite wastewater disposal system.

The discharge of process wastewater to the municipal sewer system is not a viable option due to existing capacity limitations of the Waimanalo Wastewater treatment plant and past problems in handling HFFPF's wastewater due to its high organic content.

The use of onsite individual wastewater systems (cesspools and septic tanks) that employ subsurface disposal was not considered feasible or environmentally acceptable. Subsurface disposal systems are not appropriate due to concerns with nutrient pollution of the groundwater in Waimanalo and the poor percolation rates of the clayey and elastic silty soils at the site.

The construction of an onsite treatment system capable of providing a higher degree of treatment for nutrient removal and/or water reclamation is not cost-effective in the immediate future due to the limited quantity of wastewater produced by the research facilities. Direct use of the wastewater for irrigation (i.e., without treatment) is not feasible because the high organic content of the wastewater will likely result in odor problems. Other factors that would hinder the implementation of small scale reuse at the present time include: 1) high wastewater treatment cost (no funds in construction budget and low cost-effectiveness due to lack of economy of scale), 2) State Department of Health regulatory, reporting and testing/monitoring issues related to the use of reclaimed water, 3) need for alternative effluent disposal and/or sufficient storage during wet weather, and 4) additional costs associated with transmission/transport of the reclaimed water to irrigation sites. A survey of nearby property owners was conducted and none of the owners expressed an interest in using the water.

Although the proposed offsite hauling of wastewater will contribute to increased truck traffic, fuel consumption and air emissions, these impacts will be eliminated once permanent onsite water reclamation facilities are constructed as part of the future HFFPF expansion project.

Chapter 6

Determination

CHAPTER 6
DETERMINATION

This assessment for the proposed Hawaii Plant Protection Laboratory temporary research modules project shows that no significant impact on the environment will occur and an Environmental Impact Statement is not required. In accordance with the provisions of Chapter 343, Hawaii Revised Statutes, a Finding of No Significant Impact (FONSI) is therefore deemed to be in order.

Reasons supporting the above determination include:

1) **The proposed action does not involve an irrevocable commitment or loss of or destruction of any natural or cultural resources.**

   There are no known significant natural or cultural resources associated with the project site. Past development of the project area has already substantially altered the site from its natural condition. No impacts to the abandoned historical Tai-Lee irrigation/drainage ditch that is located just beyond the northern boundary of the site are anticipated.

2) **The proposed action does not curtail the range of beneficial uses of the environment.**

   The proposed project is consistent with land use plans, policies and controls and would not curtail beneficial uses of the environment in the area. The project is consistent with the Koolaupoko Sustainable Communities Plan's agricultural use general policy as the project provides support infrastructure, services and facilities to foster and sustain agricultural operations.

3) **The proposed action is in concert with the State's long term environmental policies, goals and guidelines as expressed in Chapter 344, HRS, and any revisions and amendments thereto, court decisions and executive orders.**

   No long-term adverse environmental conflicts are foreseen. The project supports Mediterranean fruit fly eradication and preventative release programs in the continental U.S. and could eventually support a suppression program in Hawaii.

4) **The proposed action does not substantially affect the economic or social welfare of the community or State.**

   There will be some positive economic impacts related to short-term construction related activities. The project will help promote the long-term economic viability of the Hawaii Fruit Fly Production Facility, which has positive economic benefits to the community,

State and the U.S. economy. The accidental release of fruit flies from the proposed facilities will not have significant adverse impacts on local agriculture.

5) **The proposed action does not involve substantial secondary impacts, such as population changes or effects on public facilities.**

The proposed project will not result in an increase of population in the area. The project will not have adverse impacts on public facilities such as roads and wastewater treatment facilities.

6) **The proposed action does not have significant adverse effects on public health.**

Short-term impacts associated with construction will have minimal potential for affecting public health. Construction activities will regulated to minimize noise, dust, and exhaust emissions. The research activities to be conducted are not anticipated to have adverse health effects on workers at the facility or neighboring residents. There are virtually no risks associated with exposing HFFPF workers or the community to radiation from the irradiators used in the fruit fly sterilization process.

7) **The proposed action does not involve a substantial degradation of environmental quality.**

The existing physical aspects of the surrounding area will be preserved. The proposed buildings will be shielded from public view from Ahiki Street by existing trees and other vegetation.

8) **The proposed action is individually limited and cumulatively, does not have a significant effect upon the environment or involve a commitment for larger actions.**

The temporary research modules project is limited in scope to the proposed buildings and site improvements within the project site. The size and scope of the future Hawaii Fruit Fly Production Facility expansion project is not directly influenced by or related to the temporary research modules project.

9) **The proposed action does not substantially affect rare, threatened or endangered species or habitats.**

Based on review of available information and the results of a site survey, no endangered flora or fauna are anticipated to be found within the project site.

10) **The proposed action does not detrimentally affect air, water quality, or ambient noise levels.**

Short-term impacts on air, water quality and noise may occur during the construction period, but will be mitigated by construction practices and will be regulated by the project's

plans and specifications. The research modules project is not anticipated to result in noise or odor problems.

11) **The proposed action does not affect or is likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary or coastal waters.**

The proposed research modules are located near but outside the 100-year and 500-year flood zones.

12) **The proposed project does not substantially affect scenic vistas and viewplanes identified in County or State plans or studies.**

The project site is not a part of a unique or valuable scenic resource. The proposed modifications will be compatible in scale, mass and height with existing facilities located at the site.

13) **The proposed action does not require substantial energy consumption.**

The additional energy required to operate the research facilities is not significant.

Chapter 7

Persons and Agencies Contacted

CHAPTER 7
PERSONS AND AGENCIES CONTACTED

A. PRE-ASSESSMENT CONSULTATION

Pre-assessment consultation correspondence and other relevant consultation information associated with the preparation of the Draft Environmental Assessment (DEA) for the temporary research modules project are presented in Appendix G-1. Pre-assessment consultations included: 1) written correspondence to various agencies and community members soliciting input, 2) meeting and tour of the Hawaii Fruit Fly Production Facility (HFFPF) with representatives of the community (June 18, 2001), and 3) presentations at the Waimanalo Neighborhood Board No. 32 (June 18, 2001; August 12, 2002; October 14, 2002; March 10, 2003; and July 14, 2003).

It should be noted that due to USDA's late addition of the irradiator/storage building to temporary research modules project, this portion of the project was not addressed in any of the pre-assessment consultation except at the Waimanalo Neighborhood Board meeting on July 14, 2003. The extent of impacts and concerns associated with the irradiator/storage facility are somewhat comparable to that of the temporary research modules. As noted in earlier discussions, risks associated with radiation from the irradiators are insignificant.

It should be noted that pre-assessment consultations were conducted several times since 2001 for various HFFPF upgrade scenarios and development phases. USDA originally intended to renovate the HFFPF main production building and construct an onsite water reclamation facility in 2001. In 2002, the project scope was significantly increased to include expansion of the HFFPF main building, the research modules, and a new warehouse. As noted in Chapter 1, USDA currently plans to only construct the temporary research modules and irradiator/storage building addressed in this environmental assessment while ongoing planning work is performed for the future HFFPF expansion. Pre-assessment correspondence received for consultation on earlier project scopes are included in Appendix G-1 where the input provided is relevant to the current project.

Parties contacted for pre-assessment consultation input are listed below. Parties that provided written input relevant to the research modules project are indicated by an "*". Waimanalo residents attending the HFFPF tour are marked with a "+". Supplemental information is shown in parentheses "( )". Included in Appendix G-1 are the following pre-assessment consultation documents: 1) sample copy of a typical letter requesting input on the research modules project (similar letter distributed at the March 10, 2003 neighborhood board meeting), 2) copies of correspondence (arranged in order of the agencies/persons listed

below), 3) excerpts of the Neighborhood Board meeting minutes, and 4) summary of comments from Waimanalo residents during the HFFPF plant tour.

The DEA was prepared by USDA in cooperation with the University of Hawaii, which is the designated proposing agency. University of Hawaii entities providing input during preparation of the environmental assessment included the College of Tropical Agriculture and Human Resources, Environmental Center, Facilities Planning and Management Office, and Environmental Health and Safety Office. The "internal" correspondence between USDA and the University of Hawaii, which references various draft versions of the environmental assessment, is not included in Appendix G-1.

1. Federal Government

Mr. Robert P. Smith, Ecoregion Manager (pre-2003)
Mr. Paul Henson, Ecoregion Manager and Field Supervisor
Department of the Interior, Fish and Wildlife Service

Commander and Division Engineer *
U.S. Army Corps of Engineers Planning Branch

2. State Government

Ms. Genevieve Salmonson, Director*
State Department of Health, Office of Environmental Quality Control

Mr. Dennis Tulang, Chief (pre-2003)
Mr. Harold Yee, Chief*
Department of Health, Wastewater Branch

Mr. James J. Nakatani, Chairperson* (pre-2003)
Ms. Sandra Lee Kunimoto, Chairperson
State of Hawaii, Department of Agriculture
(Letter sent to respond to comments.)

Dr. Don Hibbard, Administrator (pre-2003)*
Ms. P. Holly McEldowney, Acting Administrator*
Mr. Peter Young, Chairperson*
Dept. of Land & Natural Resources
State Historic Preservation Division
(Note: Archaeological inventory report submitted to SHPD for review through subconsultant David Shideler of Cultural Surveys Hawaii Inc.)

Mr. Randall Ogata, Administrator* (pre-2003)
Mr. Clyde Namuo, Chairperson*
Office of Hawaiian Affairs
(Note: Responses from Jaina Keala, Acting Hawaiian Rights Division Director, and Peter Lee, Director, Nationhood and Native Rights)

Senator Fred Hemmings, District 25

Representative Tommy Waters, District 51
Representative Joe Gomes, District 51 (pre-2003)

Mr. Walter T. Harada
Director of Planning and Management Systems
College of Tropical Agriculture and Human Resources
University of Hawaii at Manoa
(Note: Mr. Harada forwarded a copy of the lease for the USDA site and noted in a 5/15/01 telephone conversation that UH review of plans and specifications will be required in accordance with the lease)

3. County Government

Mr. Randall K. Fujiki, Director* (pre-2003)
Mr. Eric Crispin, Director*
Department of Planning & Permitting
City and County of Honolulu

Mr. Timothy Steinberger, Director (pre-203)
Mr. Frank Doyle, Acting Director
Department of Environmental Services
City and County of Honolulu

Council Member Barbara Marshall, District III
Council Member John Henry Felix, District III (pre-2003)
City and County of Honolulu

4. Others

Mr. Wilson K. Ho+
Waimanalo Neighborhood Board Chair

Other Waimanalo Neighborhood Board Members
Mr. Joseph N.A. Ryan, Jr.+
Mr. Andrew Jamila, Jr.

Other Waimanalo Neighborhood Board Members (continued)
Mr. Joseph A. Aragon, Jr.
Mr. Michael G. Buck
Mr. Philip L. Ellsworth
Ms. Mabel Ann Spencer
Mr. David R. Eckart
Ms. Nani P. Akeo
Mr. Bob Kimo Lastimosa
Ms. Priscilla Ho
Ms. Alexandria Cummings (pre-2003)
Mr. Kawika Eckart (pre-2003)
Mr. Scotty K. Reis Moniz (pre-2003)
Ms. Kuulani Reynolds (pre-2003)

Ms. Lisa Ferentinos+
Waimanalo resident

Ms. Nancy Glover+
Waimanalo resident (deceased - July 2001)

Landowner/Resident
41-350 Hihimanu Street
Waimanalo, Hawaii 96795

Landowner/Resident
41-310 Hihimanu Street
Waimanalo, Hawaii 96795

B. PARTIES CONSULTED DURING PREPARATION OF THE FINAL ENVIRONMENTAL ASSESSMENT

Copies of the DEA were be mailed or delivered to the agencies, organizations and other interested parties listed below. Parties consulted during the pre-assessment phase of the research modules project that are not included on the distribution list were notified of the availability of the environmental assessment and sent a copy if one was requested. Availability of the DEA was published in the August 8, 2003 edition of The Environmental Notice by the State Office of Environmental Quality Control.

The public review period ended September 8, 2003. A total of 14 comment letters were received as of October 15, 2003. Copies of the comment letters and the responses prepared by the applicant are presented in Appendix G-2. During and following the public review period, Waimanalo Neighborhood Board No. 32 meetings (August 11, 2003; September 8,

2003 and October 13, 2003) were attended to discuss issues of concern and answer questions on the project.

In the list of parties presented below, parties that provided written comments are indicated by an "*". Copies of the comment and response letters are presented in Appendix G-2 in the order of the list presented below. Also included in Appendix G-2 are excerpts of the Neighborhood Board meeting minutes.

1. Federal Government Agencies

Department of Agriculture, Natural Resources Conservation Service*
Department of the Interior, Fish and Wildlife Service
U.S. Army Corps of Engineers*

2. State Government Agencies

Department of Agriculture
Department of Business, Economic Development and Tourism, Office of Planning*
Department of Business, Economic Development and Tourism, Land Use Commission*
Department of Health, Office of Environmental Quality Control
Department of Health, Wastewater Branch*
Department of Land & Natural Resources, Land Division
Department of Land & Natural Resources, State Historic Preservation Division*
Office of Hawaiian Affairs*
University of Hawaii at Manoa, College of Tropical Agriculture and Human Resources
University of Hawaii Environmental Center
University of Hawaii Facilities Planning and Management Office
Waimanalo Public and School Library

3. County Government Agencies

Honolulu Board of Water Supply*
Department of Environmental Services
Department of Planning & Permitting*

4. Elected Officials

Senator Fred Hemmings, District 25
Representative Tommy Waters, District 51*
Council Member Barbara Marshall, District III

5. Others

Mr. Wilson K. Ho' Waimanalo Neighborhood Board Chair*
Other Waimanalo Neighborhood Board Members
- Mr. Joseph N.A. Ryan, Jr.
- Mr. Andrew Jamila, Jr.
- Mr. Michael G. Buck
- Mr. Philip L. Ellsworth
- Ms. Mabel Ann Spencer*
- Ms. Nani P. Akeo
- Mr. Bob Kimo Lastimosa
- Ms. Priscilla Ho
- Mr. Solomon Spencer
- Mr. Kawika Eckart
- Mr. Orrin Kupau
- Mr. Malcolm Lee, Jr.

Ms. Lisa Ferentinos
Ms. Kimberly Clark and Ohana*
Mr. Steve Tayama, Puuhonua O Waimanalo Village*
Hui Mālama i Nā Kūpuna o Hawai'i Nei
Waimanalo Hawaiian Civic Club
Waimanalo Hawaiian Homestead Association

Chapter 8

References

CHAPTER 8
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Appendices

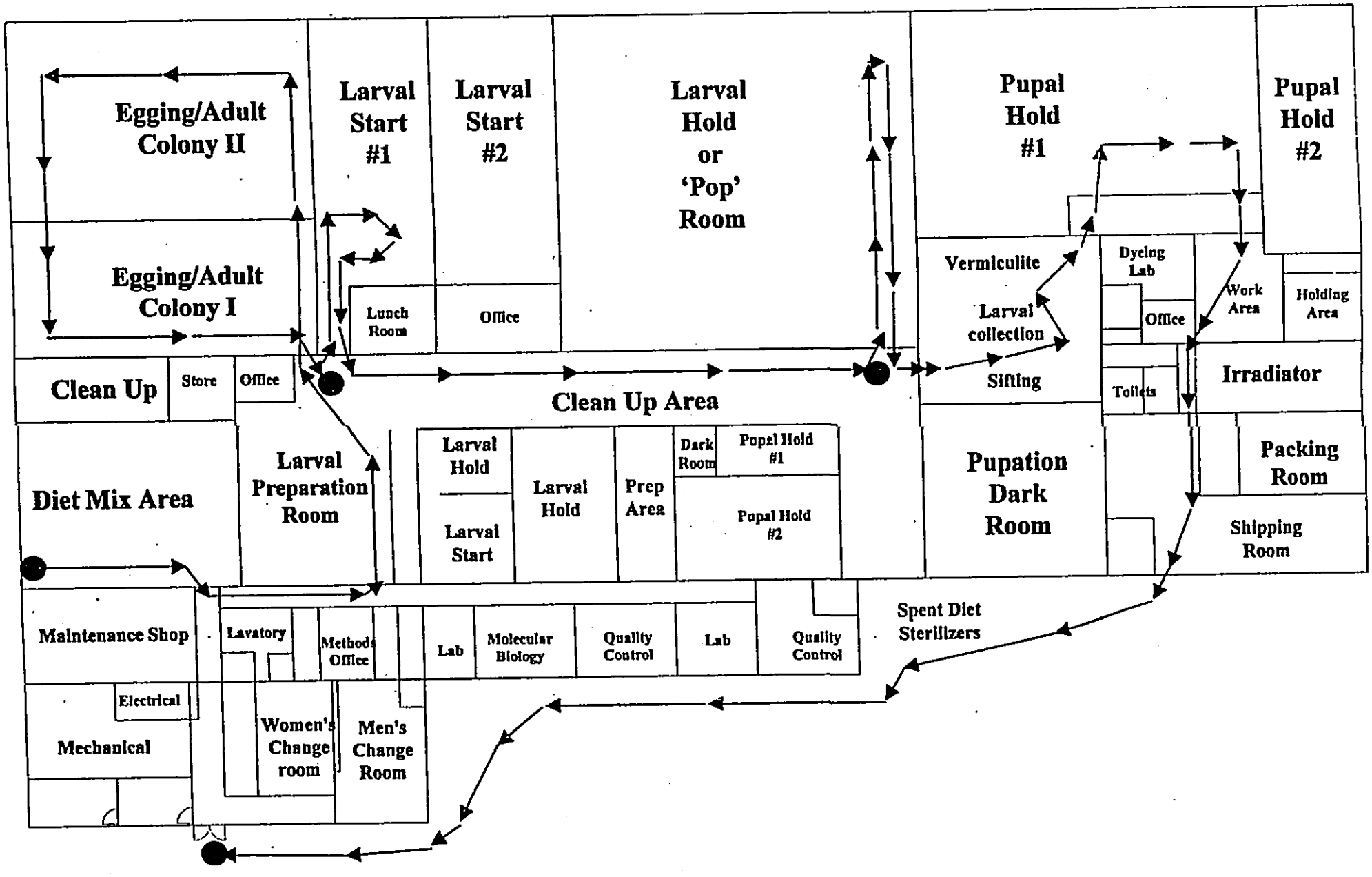
Appendix A

Background Information on the Hawaii Fruit Fly Production Facility

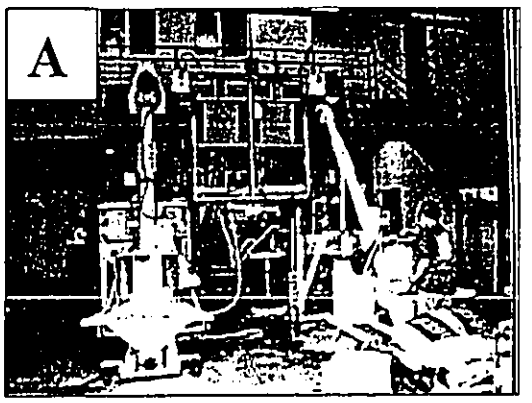
HAWAII FRUIT FLY PRODUCTION FACILITY

USDA, APHIS, PPQ

Address: 41-650 Ahiki Street
Waimanalo, HI 96795
Telephone Number: (808) 259-8822
Facsimile: (808) 259-9017
Facility Director: Stuart Stein
E-mail: Stuart.H.Stein@usda.gov

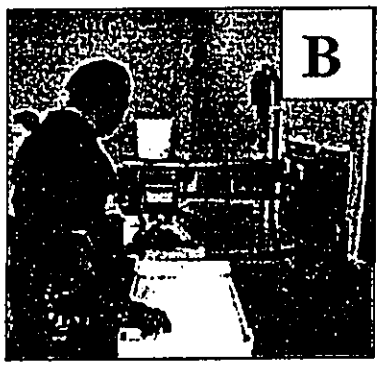

Egging/Adult Colony II
Egging/Adult Colony I
Larval Start #1
Larval Start #2
Larval Hold or 'Pop' Room
Pupal Hold #1
Pupal Hold #2
Lunch Room
Office
Vermiculite
Larval collection
Sifting
Dyeing Lab
Office
Work Area
Holding Area
Toilets
Irradiator
Clean Up
Store
Office
Clean Up Area
Diet Mix Area
Larval Preparation Room
Larval Hold
Larval Start
Larval Hold
Prep Area
Dark Room
Pupal Hold #1
Pupal Hold #2
Pupation Dark Room
Packing Room
Shipping Room
Maintenance Shop
Lavatory
Methods Office
Lab
Molecular Biology
Quality Control
Lab
Quality Control
Spent Diet Sterilizers
Electrical
Mechanical
Women's Change room
Men's Change Room

TOUR GUIDE FOR THE HAWAII FRUIT FLY PRODUCTION FACILITY



DIET MIXING AREA:

- One mixer can prepare 474 gallons of diet, weighing 4,320 lbs.
- At full production 16,000 lbs. of food is prepared daily.
- The diet consists of wheat germ, flour, corncob grits, sugar, yeast, chemical preservatives, and water. Hydrochloric acid is used for pH optimization.



LARVAL PREPARATION ROOM:

- 12 pounds of larval diet is deposited into the fiberglass trays.
- During full production 1,320 trays are prepared daily.
- 120,000-150,000 eggs, suspended in a gel mix, are sprayed on to each tray of diet, using an automatic pipette.
- Trays are stacked on monorail racks and moved into Larval Start Room #1 for incubation.

EGGING ROOM:

- The Mediterranean fruit fly life cycle consists of egg, larva, pupa and adult. Under ideal conditions, the life cycle is completed in 21-30 days.
- 480,000 pupae are placed into the bottom of each cage. Emerging adults feed on a mixture of sugar and yeast.
- Adults mate and begin laying eggs within 3 days. Eggs are laid into special tubes inside the cages. Each tube contains 4,000 oviposition holes.
- Egg laying is induced by wetting the insides of the tubes with water. Eggs that are deposited in the egging tubes are collected by washing-out the tubes each day.
- Eggs are collected for 3 consecutive days, and then the cage is washed for recycling. Each cage produces an average of 6 million eggs per day.

LARVAL START ROOM #1 (85°F):

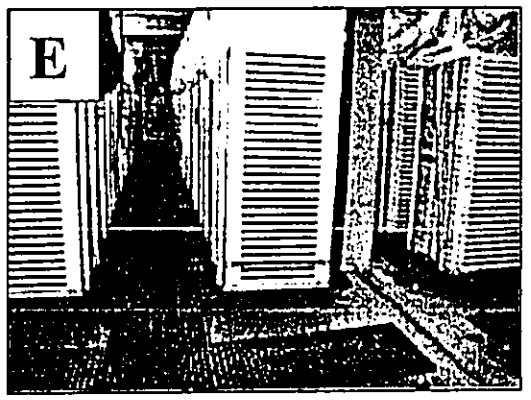
- The eggs begin to hatch in the gel in about 14 hours at 85°F. The newly hatched larvae feed on the diet and begin developing.
- After two days, the trays are moved into Larval Start Room #2.

LARVAL START ROOM #2 (80°F):

- Another 3 days of development at a lower temperature allows the larvae to mature.

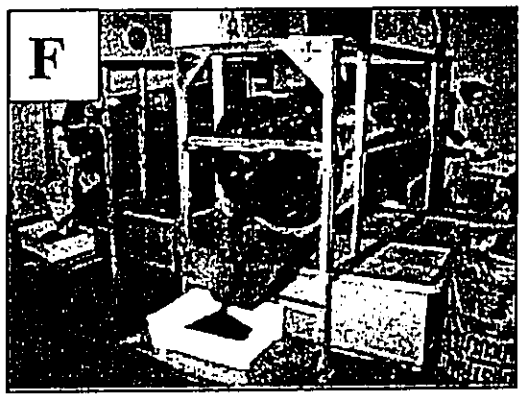
LARVAL HOLD ROOM (POP):

- Trays are held in this room at 70°F for 4 consecutive days.
- During this period, mature larvae leave the diet by bending and then abruptly extending their bodies to "pop" out of the trays into the water catchment lanes.
- Larvae are collected twice daily by draining the water slowly from the collection lanes, via a gutter, into collection sieves. After concentrating the larvae into the sieves, the collector pours the larvae into collection buckets.
- An electrical hoist is used to lift the collection buckets from the trench and transport the larvae to plastic bins. From here they are taken to the next room.



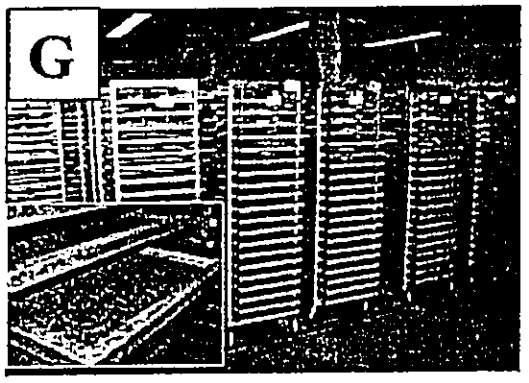
LARVAE COLLECTION/SIFTING ROOM:

- The collected larvae are mixed with vermiculite and placed into pupation boxes. The boxes are placed in a pupation dark room for 2 days at 68°F.
- During this period the larvae metamorphose into pupae. At the end of 2 days, the pupae are sifted out of the vermiculite.
- Sifted pupae are placed onto screened trays and placed in racks. The racks are then moved into Pupal Hold Room #1, where pupae continue to mature.



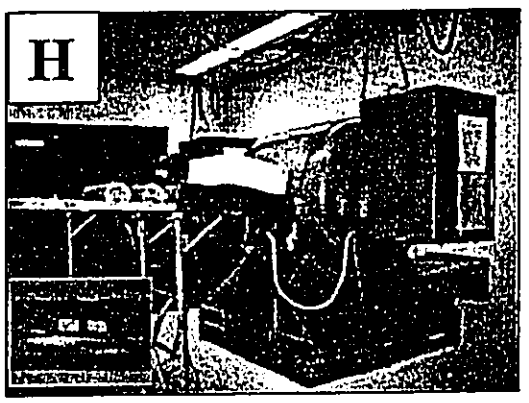
PUPAL HOLD ROOM #1:

- Each pupal rack holds 40 screened trays containing a total of four million pupae.
- The maturation rate of the pupae depends on the temperature of this room. At 66°F, the pupae will reach shipping age in 10-11 days.
- The pupae are shipped from the facility approximately 2 days before they emerge as adults.
- The age of the pupae is determined by eye color. The eyes are dark brown approximately 2 days before they emerge as adults.



DYEING/IRRADIATION AREA:

- In order to differentiate the released sterile flies from the wild flies in the field, it is necessary to mark the sterile flies with a fluorescent dye.
- The pupae are dyed in a rotating drum and placed into tubular plastic bags for irradiation. Excess air is forced out of the bag to induce hypoxia and slow metabolism prior to irradiation. Each bag holds approximately 210,000 pupae.
- After at least one hour of hypoxia, a bag of pupae is placed into a metal canister and irradiated in a Husman® Irradiator, containing Cesium-137. A dosimeter tag placed in each bag will indicate that the bag has been irradiated by showing a change in color. It takes nearly four minutes to irradiate each bag.



SHIPPING AREA/LOADING DOCK:

- Bags of pupae are placed into specially designed boxes and refrigerated until shipment.
- Boxes of pupae are transported to the airport in an air-conditioned van and cooled until flight time.

WASTE DIET:

- After the larvae have exited from the trays, waste diet is removed and sealed in bins for ensiling.
- The waste diet is then transported to a ranch for consumption by cattle.
- At full production, approximately 11 cubic yards of waste diet will be processed each day.
- Trays are washed and sanitized by hand

QUALITY CONTROL AND ENVIRONMENTAL MONITORING:

- It is necessary to continually monitor the quality of the flies that are produced. Several tests are conducted and compared with established standards. These tests include pupal size, emergence rate, flight ability, and mating propensity. When poor quality is detected, the cause is investigated and corrected.
- The environment in the facility is monitored to assure minimal micro-contaminants (to prevent outbreaks of insect diseases that may affect production) and to maintain optimal temperature and humidity.

STANDBY REARING AREA:

- This facility has a standby rearing area that you were not shown today on your tour. It mirrors the setup of the larger rooms in the building, and is currently used for increased production.

This tour has been conducted at the:

USDA, APHIS, PPQ, HFFRF
41-650 AHIKI STREET
WAIMANALO, HI 96795
808) 259-8822
808) 259-9017 FAX
E-MAIL: Stuart.H.Stein@usda.gov
STUART STEIN, FACILITY DIRECTOR

Appendix B

Environmental Assessment for Original Hawaii Fruit Fly Production Facility Project

ENVIRONMENTAL ASSESSMENT

FOR THE

STERILE FLY REARING FACILITY

OAHU, HAWAII

PREPARED BY:

U. S. DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE

COOPERATING AGENCIES:

STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES
AND
UNIVERSITY OF HAWAII

FOR FURTHER INFORMATION CONTACT:

USDA, APHIS, ATTN.: MR. DENNIS WILMETH
ROOM 260, FEDERAL BUILDING, HYATTSVILLE, MARYLAND 20782
PHONE (301)436-8775

DECEMBER 1983

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I. SUMMARY

The United States Department of Agriculture, Animal and Plant Health Inspection Service (APHIS), in cooperation with the states of Hawaii and California, plans to develop a sterile fruit fly rearing facility in Waimanalo, Oahu. The proposed facility will consist of about 35,000 square feet of enclosed space in a one- and two-story structure. The building and other site improvements, such as parking, access drives, storage areas and landscaping will be designed to blend in with the agricultural surroundings.

The total site is approximately 5 acres and bordered on all sides by various field crops. The site is part of the University of Hawaii Waimanalo Agricultural Research Station, which totals 128 acres. The State selected this vacant 5-acre parcel and assigned it to the fruit fly facility. When completed, the fly rearing facility will employ about 76 persons during full production and 25 persons during standby operations. Characteristics of the site include the following: accessible by major roads, flat terrain, adequately served by all utilities, very temperate climate, and soil conditions suitable for buildings and roads.

Examination of the site and the nature of the proposed facility have not indicated any significant environmental impacts or conflicts with existing uses or planning policies. The proposed use supports agricultural activities, which is consistent with State and County planning policies to maintain Waimanalo in agricultural use. There will be a loss of open space once the facility is developed. However, the site is visually buffered from surrounding areas. The "Tai Lee" ditch, north of the site and part of the historic Waimanalo Irrigation Ditch System, will continue to collect storm water runoff and will not be adversely affected by the proposed project. Demand for utilities will increase and can be served by existing systems. Traffic will also increase, but local roads have adequate capacity.

One and possibly two Cesium-137 irradiators will be used to sterilize fruit flies at the facility. The irradiators will be operated in strict compliance with Federal regulations.

The potential for accidental release of sterile flies or eggs from the facility will be minimized by various precautionary measures. These include building security, controlled entry/exit, showering, sterilizing diet media, and steam treating all effluent.

The benefits to Hawaii's agricultural industry will be significant should a fruit fly eradication program be implemented using sterile flies from this facility. This far outweighs the minor impacts identified. The proposed facility is also important to continuing research on fruit fly eradication in Hawaii and other parts of the world with similar problems.

II. NEED FOR THE PROPOSAL

APHIS, in cooperation with the states of Hawaii and California, plans to develop a sterile fruit fly rearing facility in Waimanalo, Oahu. This facility will be used as a standby rearing laboratory to provide sterile flies to the mainland in the event of a medfly outbreak. It also will be one component of a comprehensive program to eradicate fruit flies from the State of Hawaii, if this program is funded. Such a joint Federal/State eradication program would reduce or eliminate the economic losses which fruit flies have caused to locally produced fruit and vegetable crops. This program also will remove the risk of introducing fruit flies to the mainland and foreign markets to which crops are exported. The sterile fly technique is one approach to this problem which has been proven successful in the past. Other methods also will be explored as part of a comprehensive eradication program.

Exotic species of fruit flies are considered the world's worst pests for citrus, subtropical fruit, and vegetable crops. In Hawaii, three species of tropical fruit flies exist: Mediterranean, Oriental and melon. By the mid-1970's, the technology to eradicate these three fruit flies from Hawaii had been developed, although continuing research to refine the eradication technology was still needed.

In 1975, the sterile fly technique was used successfully to eradicate an infestation of flies in the metropolitan Los Angeles area. It can be expected that fruit flies will periodically infest areas of the mainland and that a continuing need to provide sterile fruit flies to combat this problem will occur.

Since this technique has been proven effective, there is a need for a permanent facility to raise sterile fruit flies and improve the methods and technology for rearing (i. e., fly quality, rearing equipment, and diet). The facility should be capable of producing over 100 million fruit fly pupae per week for local use or shipment to other parts of the world. A permanent facility will also allow continuous improvements to be made in order to reduce production costs and improve materials and equipment used.

The proposed rearing facility was selected by an ad-hoc committee, formed by APHIS, as the most desirable means of producing sterile fruit flies. The following advantages were cited:

A. The State has made a site in Waimanalo available for the facility (see Figures 1 and 2).

B. Technical assistance is available from the local Science and Education Administration-Agricultural Research (SEA-AR) facility. Technology transfer from research to operational programs can be easily facilitated by this agency.

C. There could be a direct transition to produce sterile fruit flies for an eradication program in Hawaii.

The proposed facility will provide approximately 35,000 square feet of space in a modern one- and two-story structure (see Figure 3). The facility will cost an estimated $4.3 million with construction to start in 1985. The building will be designed with security measures to prevent any accidental release. The site has adequate area for employee parking. Exterior finishes and color of the building will be designed to be compatible with the surrounding agricultural setting. In addition, the site will be fully landscaped. Access to the site is off the State-owned Ahiki Street with the University of Hawaii's Waimanalo Research Facility field access road bordering the site on the south providing connection to Ahiki Street. As part of site development improvements, this access roadway will be upgraded to a paved street. The new facility will be sited with parking areas on the west and a perimeter service road around the building. This will be used primarily for truck and service access. Parking spaces will be provided for administration, visitors and employees.

Closest to the building will be 14 spaces assigned to administration and visitors. An employee parking lot west of the building will provide 50 spaces. The entire site will be secured by a perimeter fence, with gates located at the vehicular access points to the site.

III. ALTERNATIVES TO THE PROPOSAL

The ad-hoc committee formed by APHIS formulated three alternatives in addition to the Hawaii rearing facility.

Alternative A

Construction of a modular design facility with production units for a 100 million pupae per week capacity. Such a facility would provide sterile flies for small incipient infestations. Such a facility could be constructed within a short period of time and additional units could be added as needed. Disease or species rearing problems would not necessarily affect all breeding units. Greater flexibility in the evolution of equipment and other technology would be provided by the research facility. However, each unit would require an irradiator so costs may be duplicated. A single unit may be inadequate for multiple outbreaks on the mainland and would not be adequate for a "tri-fly" program in Hawaii.

Alternative B

This would involve negotiating development agreements with other countries for rearing and purchase of sterile flies. This method has been employed with acquisition of flies from other countries including Mexico and Costa Rica. The advantages of this approach are primarily economic. New facilities are not required, capital outlay and annual operating costs are reduced, and flies are immediately available from current production. However, disruption of existing programs and lack of control over production are distinct disadvantages. Problems are also presented because of biological differences between the species raised. Additionally, shipping and lack of readily available quantities of desired species when needed would hamper existing or planned eradication programs.

Alternative C

Existing facilities in a state on the mainland would be converted for production of sterile fruit flies. This approach would have lower capital costs, and transporting of sterile flies would be easier to mainland infestations. Availability of personnel, equipment, and supplies would be less problematic and costs would be lower. However, this alternative would not readily support the "tri-fly" program in Hawaii. There would be objections about the security of the facility if the site were situated in a "clean" location. Cooperator support would also be more difficult.

Alternative D

A "no action" alternative should also be considered. If no rearing facility were available in Hawaii, a "tri-fly" eradication program would be seriously hampered. It would either have to rely on uncertain delivery of sterile flies from other countries or develop other methods.

IV. ENVIRONMENTAL IMPACTS OF THE PROPOSAL AND ALTERNATIVES

A. Overview of the Site and Surrounding Area

The proposed site consists of approximately 5 acres of land in Waimanalo, Oahu, and is part of the University of Hawaii's Waimanalo Agricultural Research Station, which totals some 128 acres. The land is owned by the State of Hawaii and is leased to the University. The project site is presently vacant and has been assigned to the fruit fly facility by the State of Hawaii.

The site is centrally located within the Waimanalo farm lots, one of Oahu's most productive agricultural centers. Diversified crops, nurseries, and dairy farms are the primary agricultural activities of this area. Single-family residential subdivisions are located north of the agricultural areas. Waimanalo's total population is 7,723 persons according to 1980 U. S. census figures. There is a total of 1,740 households, which approximates the total number of residential units.

Access to the site is from Kamehameha Highway via Poalima Street, Hihimanu Street and Ahiki Street. It is about three-fourths of a mile inland from the shoreline and about one mile from the intersection of Poalima Street and Kamehameha Highway.

The proposed site is surrounded on the east, south and west by the University of Hawaii's Waimanalo Research Station, with the other lands currently used for a variety of orchard and vegetable crops.

The site assigned for use by the sterile fly facility has been cultivated in the past for various agricultural experiments. The primary use prior to 1978 was for the experimentation of pasture grass species. Since that time, only portions of the site have been used. A small plot was planted in sweet potatoes in 1980 and a small plot was used until 1982 for an experimental sesbania legume crop. At the present time, the only active use of the project site is for a small plot where soil samples are taken. Allocation of uses immediately adjacent to the proposed sterile fly facility are leucaena (giant haole koa) to the west, vegetable crops and pasture grass to the south, and corn and pasture grass to the east.

The project site is relatively flat with an average gradient of 2 percent to the north. Unimproved field access roads border the site on the west and south and separate it from adjacent research plots. An additional access road bisects the site near its eastern edge. The east border of the site consists of a drainage swale which transports storm water runoff from uphill plots to an irrigation ditch north of the site. About one-fourth of the western portion of the site has a slightly lower elevation. During heavy rainstorms, the soils in this area remain very wet. This condition, in part, is due to inadequate perimeter drainage swales which should divert water from uphill fields to the existing drainage swale along Ahiki Street.

On the north boundary is located the "Tai-Lee" drainage ditch which is part of the Waimanalo irrigation system. The area along the ditch has a dense growth of haole koa, which physically and visually obscures the site from adjacent farms. The ditch is an earth channel with various wood gate structures for diverting water to adjacent farm

lands. Immediately north of this ditch are several small farm lots, most of which are planted with a variety of crops. One parcel has recently been subdivided into smaller lots, which are not being presently cultivated.

The surrounding environment can best be described as rural agricultural in character. Large and small farms predominate. There are a variety of agricultural structures and residences situated along the rural roads which traverse the area in an irregular pattern. The area is very scenic due to the landscaping of the open areas, planted fields, mature trees, and the spectacular backdrop formed by the shear cliffs of the Koolau Mountains.

A small portion of the site, at the northwest corner, lies within the approximate area of the 100-year floodplain as defined by the U. S. Army Corps of Engineers Federal Insurance Rate Map.

The following sections will describe various aspects of the affected environment and possible impacts from the proposed facility. Since the alternatives to the proposed facility would not impact the subject site, they are not pertinent to the discussion of characteristics and potential impacts.

B. Impacts on Physical Characteristics

This section will include consideration of the following characteristics: climate, topography, soils and water, flora and fauna, views and open space, drainage, noise, air quality, and odor.

Climate

Climatic data were obtained from the University of Hawaii's Waimanalo Research Station. The temperatures in the area are mild and uniform, with the monthly average ranging from 70°F. in January to 78°F. in August. The maximum temperature recorded at the site is 89°F. and the minimum is 54°F. The average maximum temperature is 82°F., and the average minimum is 71°F. The site is exposed to northeasterly trade winds, which occur about 80 percent of the year. Clouds often build up against the Koolau Mountains in the afternoon.

Average annual rainfall varies with elevation. At the shoreline, it averages about 40 inches annually. At the site, the average annual rainfall is about 55 inches, most of which falls between November and March.

Relative humidity in the area ranges between 70 and 80 percent and is somewhat higher during the winter months than the summer months. In general, the climate is considered mild and comfortable during most of the year.

Climatic conditions would be very suitable for the proposed sterile fly facility since there are no adverse conditions which affect the site. The proposed facility will include a temperature-controlled building necessary for many of the sterile fly rearing operations.

Topography

The Waimanalo Research Station ranges from 40 to 100 feet above sea level. The project site, which lies at the northern edge of the station, ranges in elevation from 43 to 52 feet and is relatively flat with an average slope of 2 percent to the north. There are no unusual topographic features on or near the project site.

The very gradual slope is suitable for the proposed facility and related site improvements. The facilities can be constructed with a minor amount of site grading.

Soils and Water

According to the U. S. Soil Conservation Service (SCS) Soil Survey of Oahu, the soil characteristics for the site and most of the research station are of the Waialua series, vertic haplustolls subgroup, which is a silty clay soil. It occurs along coastal areas in marine alluvium deposited when the sea stood much higher than it does now. The soils occur in long fans that originate in the mountains and spill out over the coastal plains. This soil type has moderate permeability. Runoff is slow and the erosion hazard is slight with moderate shrink-swell potential. When wet, the soil is very sticky and very hard when dry, making it difficult to work. The soil is moderately productive and can be used for a

variety of crops. Moderate limitations for cultivation reduces the choice of crops. The soil is black or dark gray in color, but has a low content of organic matter. The soil depth is greater than 5 feet with few large rocks, which are usually quite deep. The soil has low shear strength and bearing capacity due to the shrink-swell characteristic of this soil type.

The soil characteristics are generally suitable for the proposed use of the site. No adverse impacts would be caused by the development. The moderate shrink-swell may require specific procedures to be used in preparing the soils for the foundation and special foundation design features. Temporary measures, such as berms and grassing, would be required to control erosion during construction and avoid soil runoff into the adjacent irrigation ditch.

Water resources in the Waimanalo area include surface and groundwater resources. The Inoaole Stream System drains about 3.3 square miles of land in the vicinity of the Waimanalo Research Station. Inoaole Stream is intermittent and has a short tributary branch northeast of the proposed site. Groundwater types include dike-impounded water, basal water, and perched (or alluvial) water. The City and County of Honolulu Board of Water Supply has established a water conservation line to prevent degradation of basal groundwater resources. In Waimanalo, this line follows the forest reserve boundary, which is about 2,500 feet inland from the proposed site.

The proposed uses of the research station site will not have any effect on water resources. Significant groundwater resources are distant from the site, and there will be no appreciable runoff or other effects on the Inoaole Stream System.

Flora and Fauna

The site is part of the cultivated plains of Waimanalo. No significant vegetation exists. Most of the site is covered by pasture grasses, and a small area is planted with sesbania as part of the experimental program. A dense stand of haole koa borders the 'Tai-Lee' irrigation ditch north of the site. There are no threatened or endangered plant species located on the site and no known problems involving plant insects or diseases.

Wildlife which typically inhabit agricultural lands include feral dogs and cats, mongoose, and rats. A variety of bird species inhabit the Waimanalo area. These include common mynahs, barred doves, spotted doves, Japanese white-eyes, red-crested cardinals, spotted munias, red-vented bulbuls, house sparrows, and cattle egrets.

None of the plant, wildlife or bird species common to the area are considered threatened or endangered. The construction of the proposed facility will remove a majority of the existing plants and cause rodents and birds to leave the area until the facility is completed. The improvements will include landscaping around the facilities, so that wildlife would be expected to return. As the new landscape matures and produces cover and feed, the number of birds at the site may increase.

Views and Open Space

Conditions in and around the proposed site limit its visibility from surrounding public roads or public gathering places. The existing small farms and dense vegetation along Hihimanu Street block any view of the research station from the north. The dense haole koa along the northern irrigation ditch is about 30 feet high, which would screen any low-rise building from view. From Ahiki Street, the project site is partially visible in the area near the entry road to the research station. Partial views of the site are possible through the trees lining the road. The dense stand of leucaena (giant haole koa) west of the site and adjacent corn fields will completely block any view of the proposed facility. The koa is about 40 to 50 feet high.

The proposed facility will be one and two stories in height and will not be visible from the north, west or east due to the height and density of plant growth. It will be visible from the southwest along Ahiki Street at the entrance to the research station. Because the proposed site is not located adjacent to a public road and the existence of dense vegetation around the site, it can be concluded that the proposed facility will not result in an intrusion into the rural and agricultural landscape. Further, site landscaping around the facility will further soften its impact from the short stretch of Ahiki Street where it will be visible.

Drainage

Storm water drainage on the site today is influenced by the research station drainage system. This consists primarily of a series of grass swales and grass roads which divide the farn lands into rectangular plots. During heavy rains, water from uphill plots overflows the grass road on the south of the site. This occurs primarily because a drainage swale does not run the full length of this road, where storm waters could be discharged into the Ahiki Street roadway system. The project site drains itself by overland flow into the irrigation ditch north of the site. This ditch normally provides irrigation water to Waimanalo farmers and also acts to intercept storm water runoff from the project site and surrounding area to protect areas north of the ditch from flooding.

The proposed facility will provide drainage improvements as part of the development. These will include an underground drain system within the site perimeter road and parking areas. Storm water from the site will be collected in this system and conveyed to the irrigation ditch. A paved access road to the site from Ahiki Street will also be constructed. This will improve the collection of uphill storm water runoff and convey it to Ahiki Street. According to the Waimanalo Irrigation System Office, storm water from the site can be discharged into the irrigation ditch. The proposed project, therefore, will not alter the present drainage pattern on the site and will improve a portion of the drainage system for the research station.

Noise, Air Quality and Odor

Existing noise levels in the vicinity of the site are generally low. Vehicular traffic on Ahiki Street and Hihimanu Street are the primary sources and these are minimal due to the low volume of traffic.

The major noise impacts of the project will occur during construction. Chapter 42 of the Administrative Rules of the Department of Health, State of Hawaii, requires a permit from the Director for activities which generate excessive noise levels. This will regulate the daily and hourly times when excessive noise levels are permitted.

There will be no noise impacts once the facility is operating, since all activities are indoors. Vehicular noise will increase slightly from employees commuting to and from work.

Air quality in the area is far better than minimum standards established by the State. Vehicular traffic and an existing quarry operation are the major sources of pollution. However, the prevailing northeast trade winds dissipate any buildup of pollutants that could cause a problem.

The proposed facility will not significantly affect air quality. The only long-term effect will be from vehicular traffic destined to the site, which is not of a sufficient volume to affect air quality. Construction of the facility will produce airborne emissions from vehicles and equipment and fugitive dust. Their effect should be minimal and controlled by State Public Health Regulations governing construction activities. Existing odors in the vicinity of the site are typical of agricultural areas. The proposed facility will not produce any odors from its operations.

C. Impacts on Socio-Economics and Land Use

This section will include consideration of public plans for the Waimanalo area, land use and zoning controls, compatibility with neighbors, and the economic impacts of jobs to be generated by the proposed facility.

Plans, Land Use and Zoning

Public policy for use of the proposed site is estalished by State and County planning authorities. The State land use system designates all lands into four land use districts: urban, rural, agricultural, and conservation. The subject site is located within the agricultural district, which is intended to preserve productive lands for such use. The proposed facility is directly related to agricultural uses and is, therefore, appropriate within this land use district.

At the county level, land uses are controlled by the City and County of Honolulu General Plan, Koolaupoko Development Plan, and Comprehensive Zoning Code.

Objectives and policies of the General Plan encourage maintaining a viable agricultural industry on Oahu. The activities of the proposed sterile fly facility are consistent with the objectives and policies related to agriculture and would also further economic objectives to expand Oahu's job opportunities. The Koolaupoko Development Plan provides more specific guidelines for future growth and development. The Waimanalo area will remain a rural community with extensive acreage devoted to diversified agricultural pursuits surrounding a small low-density residential area. The Development Plan further designates the subject site as agricultural, which conforms to the AG-1 Restricted Agricultural zoning classification. Since the proposed facility is a use intimately related to the viability of the agriculture industry, it is consistent with the Koolaupoko Development Plan and zoning for the site. The proposed facility will conform to all applicable regulations concerning setbacks, building heights, lot coverage, and parking. This includes a maximum height of 25 feet, 15-foot setbacks, and 20 percent lot coverage of lots with slopes less than 20 percent.

Compatibility with Neighbors

The immediate neighbors that may be influenced by the proposed facility include the University of Hawaii's Waimanalo Research Station and private farms north and west of the site.

The plots of the experimental farm surround the site on three sides. The proposed facility will change the visual quality by replacing an open field with a major building and associated roads and parking areas. There will be no impact on the use of the adjacent plots except to improve site drainage by installing underground systems and grassed swales.

The neighboring private farms should be influenced minimally. The project site is well-screened by dense vegetation along the only common border with other farms. This will visually obscure any view of the facility from adjacent farms. There will be a noticeable increase in traffic during the morning and afternoon peak periods from employees of the facility. However, public roads in the vicinity have adequate capacity to accommodate this small increase of 370 vehicle trips daily without affecting traffic flow.

Economic Impacts

The sterile fly rearing program will employ approximately 76 persons full-time when full production is achieved. During standby operations, about 25 employees will work at the facility. These new jobs will require production personnel, technicians, researchers, administrators, and maintenance personnel. The availability of these positions will benefit the entire community and particularly Waimanalo, which has a higher than average unemployment rate.

D. Impacts on Historic and Cultural Elements

There are no sites listed on either the Federal or State historic registers which will be affected by the proposed project. The Waimanalo Irrigation Ditch System has been determined eligible for the State and National Register of Historic Places. This system consists of three ditches which traverse the Waimanalo farm lands. The 'Tai-Lee' ditch borders the project site on the north. This portion of the ditch is an unlined earth channel with control gates to divert water to adjoining small farms to the north.

The Waimanalo Watershed Plan, prepared by the U. S. Department of Agriculture, Soil Conservation Service, plans to replace the ditch system with a pressurized underground pipe system with new reservoirs for storage. This will increase by 377 acres the amount of irrigated agricultural lands in Waimanalo. The abandoned ditch system will be modified and maintained as necessary to operate as a storm runoff drainage system.

The irrigation system has historic value in providing a record of prehistoric agricultural practices in Waimanalo which will be useful to archaeologists in understanding the variability of prehistoric agricultural systems in Hawaii. The ditch system is a surviving structure associated with one of the large plantations which functioned so prominantly in Hawaiian history. It is typical of the large irrigation systems that were constructed in the 19th century and are now being replaced or abandoned. The significance of the ditch system lies primarily in the data it contains. Recording the data will preserve this significance.

The sterile fly facility development will not affect the 'Tai-Lee' ditch as the proposed structures are set back from the ditch by more than 80 feet. Storm water runoff from the site will be discharged into the ditch in a manner similar to present runoff patterns. The ditch itself is not visible from the site and is, therefore, not a historic resource which can be viewed or enjoyed by the public from this location.

E. Impacts on Utilities and Services

This section will include discussion of the availability and adequacy of police and fire service, solid and liquid waste, water supply, electricity, and telephone service.

Police and Fire

The subject site is served by the Waimanalo Fire Station and the Kailua Station of the Honolulu Police Department. Both services have adequate manpower and facilities to serve the project site. The design of the site will include perimeter security fencing and controlled entry to the building. These measures will minimize any forced entry to the premises.

The fire station is located on Kalanianaole Highway, about one and three-fourths miles from the site. There is adequate water for fire fighting purposes, and the response time to the site is within 3 minutes.

Solid and Liquid Waste

The City and County of Honolulu Department of Public Works provides collection services for solid and liquid wastes. The Refuse Division provides regularly scheduled collection service for solid waste, usually two days per week. This service will be available for the proposed facility. In addition to typical waste generated by an office and plant facility, the major waste product produced by the sterile fly rearing operations is the diet media used to raise the flies. Most of the estimated 8 tons per day of diet media will be solid waste. It contains the following ingredients: sugar, wheat bran, yeast, sugar beet bagasse, water, and preservatives. Once the larvae have completed development and emerged from the diet media, this material will be collected from the production trays, dried to a proper moisture

level, and pelletized and bagged. The prepared diet material is planned to be used for animal feed or other secondary uses. It is a suitable feed product for cattle, pigs, and fish. There may be potential for use as a chicken feed. Local consumers have used the diet media produced by research projects on Oahu over the past several years and have inquired about the continued availability of this product. It has been sold to ranches and farms at other fly rearing facilities and has been found to be a desirable animal feed. This method of disposing solid waste will minimize the impact on the public collection and disposal service and provide a useful product to the agriculture industry. All solid waste materials will be treated by heat or other suitable process to eliminate any flies or eggs from being released into the environment when solid waste is collected.

Liquid waste is collected in Waimanalo by a public sewage system of underground lines which discharge at the Waimanalo Wastewater Treatment Plant. The system serves approximately one-third of the Waimanalo community. Since the present use of cesspools for agricultural areas will continue in the future, the sterile fly facility will need to provide its own connection to the nearby public treatment plant. The City and County Department of Public Works has indicated no objections to the plans of the proposed facility connecting to the treatment plant in order to dispose of an estimated 22,000 gallons per day of wastewater. This will involve construction of approximately 0.6 of a mile of 8-inch sewer line from the site, makai on Honokio Street, and along Hihimanu Street to the plant. Construction and maintenance of this proposed off-site sewer line will be the responsibility of APHIS. The City will also require an industrial wastewater discharge certificate to determine the pretreatment requirements for the proposed facility.

Water Supply

The Board of Water Supply of the City and County of Honolulu is responsible for the domestic water system serving Waimanalo. It consists of tunnels, wells, storage tanks and reservoirs, pumps, water mains, and fire hydrants.

An existing 24-inch water main is located in the Honokio Street right-of-way, just east of the project site. This line originates at the Waimanalo "230" Reservoir, located just south of the research station.

The proposed project and its accessory facilities will require an estimated 26,000 gallons of water per day. The Board of Water Supply has indicated that this added water demand is not expected to affect groundwater resources in the area. Water to the project site will require connection to the existing 24-inch main, a distance of 400 feet.

A water commitment for the proposed facility will be addressed when final plans have been completed and submitted to the Board of Water Supply for review.

Electric and Telephone Service

Electric and telephone service is available at the research station from existing lines within the Honokio Street right-of-way and on Ahiki Street. Service to the site can be extended from these lines. Hawaiian Electric Company and Hawaiian Telephone Company have adequate facilities to serve the proposed project.

F. Impacts on Transportation and Parking

Access to the proposed project from Kalanianaole Highway is from Poalima Street, then to Hihimanu and Ahiki Streets. This is the route assumed for employees and visitors to the facility since it connects directly to highways which connect with the urban areas of Kailua, Kaneohe and Honolulu. Kalanianaole Highway is a two-lane facility passing through Waimanalo. The other surface streets leading to the project site are also two-lane roadways.

It is estimated that the proposed facility will generate about 370 daily vehicle trips and 70 vehicle trips during the peak hour. These figures are based on 58 employee and 14 visitor and administration parking stalls to be provided on-site with four trips per day for employee vehicles and a turnover rate of one vehicle per hour during a 10-hour day for administration and visitor vehicles. These assumptions are considered quite conservative and include delivery and other trips generated from the project site.

Existing traffic volumes on the affected roads, according to the latest available counts, show the following data for daily and p. m. peak hour trips:

	Daily	P. M. Peak Hour
Kalanianaole Highway	17,140	1,350
Hihimanu Street	3,010	270

These counts indicate that all the roadways have adequate capacity when compared to a design standard using a Level of Service "C" for stable flow conditions and assuming 800 vehicles per hour per lane for a 12-hour day for the highway and 300 vehicles per hour per lane for a 12-hour day for local streets. The Kalanianaole Highway design capacity is 19,200 vehicles per day and Hihimanu Street capacity is 7,200 vehicles per day. Peak hour design capacities are also comfortably greater than existing peak hour traffic. On Kalanianaole Highway, the existing peak hour count in the Kailua direction is 650 compared to 800 capacity. On Hihimanu Street, the peak hour count in the Kailua direction is 80 vehicles compared to a capacity of 300. This assumes a 70 percent to 30 percent directional split, with the heavy volume headed away from the project site during the more heavily-travelled peak hour.

The addition of about 370 vehicles per day, generated by the project, to the existing 17,140 volume on Kalanianaole Highway totals 17,510 vehicles, which is well below the existing design capacity of 19,200. When the same count generated by the project is added onto Hihimanu Street (370 + 3,010 = 3,380), the traffic volume is also below the design capacity of 7,200 vehicles per day.

The peak hour analysis of traffic impacts has similar results. On Kalanianaole Highway, the p. m. peak in the Kailua direction would be 720 vehicles (650 + 70) which is less than the design capacity of 800. On Hihimanu Street, the p. m. peak in the Kailua direction would be 150 (80 + 70), considerably less than the design capacity of 300. It should be noted that the peak hour trips generated by the proposed project will be headed in the opposite direction from residential and agricultural traffic occurring at the same time.

Based on these figures and assumptions, the proposed project will have little impact on the daily and peak hour traffic flows on the affected streets and highway since they have adequate design capacity to accommodate the additional traffic volume.

G. Impacts from Use of Irradiator and from Operations

One and possibly two Cesium-137 irradiators will be used to sterilize flies at the facility. This type has been used in other locations to sterilize fly species released into infested areas to prevent successful fly reproduction. Various types of irradiators also have been used locally for research of the fruit fly problem and for other agricultural research projects.

The irradiator(s) to be used in the proposed facility is to be a self-contained unit. Cannisters containing the pupae are loaded by gravity feed into the unit, exposed for a predetermined period of time and automatically unloaded by gravity. The unit is fully shielded and mounted on a skid to allow relocation with a forklift. The irradiator is designed to release a preset radiation dose as the cannister passes through the unit. The design also meets Nuclear Regulatory Commission Regulations and regulations for the safe transport of radioactive material.

In the more than 20 years of use of irradiators in Hawaii, there have been no safety or operational problems encountered. Safety precautions are well-developed as part of operating procedures and would be employed at the sterile fly facility to prevent accidents.

The potential for accidental release of sterile flies or eggs from the facility will be minimized by various precautionary measures. All personnel who utilize the production area of the building will shower upon exiting the facility. Entry to the production and laboratory areas will be through a double set of doors (airlock). The diet media will be sterilized using a cooker extruder, and all effluent will be steam treated. All materials entering and leaving the production area also will be subject to security screening operations.

Even with such precautions, accidental release could occur. The most critical stage for potential accidental release would be when Oahu is relatively free of the fruit fly pests. At this point, a chemical attracting agent could be used in the environment surrounding the plant which would attract flies to this area where they can be contained. In combination with the sterile flies released, this would provide an added safety factor.

V. AGENCIES CONSULTED

The following governmental agencies and private organizations were consulted during the preparation of the environmental assessment:

A. U. S. Government

U. S. Army Corps of Engineers
U. S. Department of Agriculture,
Soil Conservation Service
Science and Education Administration -
Agricultural Research

B. State of Hawaii

University of Hawaii, College of Tropical Agriculture
University of Hawaii, Waimanalo Research Station
Department of Land and Natural Resources
Waimanalo Irrigation System
Department of Transportation

C. City and County of Honolulu

Department of General Planning
Department of Land Utilization
Department of Transportation Services
Board of Water Supply
Department of Public Works

D. Rocky Road Products, Inc.

VI. DISTRIBUTION OF ENVIRONMENTAL ASSESSMENT

The environmental assessment will be sent to the following agencies and individuals:

A. City and County of Honolulu

Mr. Roy H. Tanji, Director
and Building Superintendent
Building Department
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Mr. Michael H. McElroy, Director
Department of Land Utilization
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dr. Michael J. Chun
Director and Chief Engineer
Department of Public Works
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Mrs. Emiko Kudo, Director
Department of Parks and Recreation
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Mr. Kazu Hayashida
Manager and Chief Engineer
Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, Hawaii 96813

Mr. William A. Bonnet, Director
Department of Transportation Services
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Mr. Melvin H. Nonaka, Fire Chief
Honolulu Fire Department
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Mr. Douglas Gibb, Police Chief
Honolulu Police Department
City and County of Honolulu
1455 South Beretania Street
Honolulu, Hawaii 96814

Mr. David Lum, Director
Office of Council Services
City and County of Honolulu
530 South King Street
Honolulu, Hawaii 96813

Mr. Willard T. Chow, Director
Department of General Planning
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813.

B. State of Hawaii

Hon. Georgiana Padeken, Director and Chairman
Department of Hawaiian Home Lands
State of Hawaii
335 Merchant Street, 3rd Floor
Honolulu, Hawaii 96813

Hon. Susumo Ono, Chairman of the Board and
State Historic Preservation Officer
Department of Land and Natural Resources
State of Hawaii
1151 Punchbowl Street
Honolulu, Hawaii 96813

Hon. Charles G. Clark, Director
Department of Health
State of Hawaii
1250 Punchbowl Street
Honolulu, Hawaii 96813

Dr. Doak C. Cox, Director
Environmental Center
University of Hawaii
2250 Campus Road, Crawford 317
Honolulu, Hawaii 96822

Hon. Ryokichi Higashionna, Director
Department of Transportation
State of Hawaii
869 Punchbowl Street
Honolulu, Hawaii 96813

Hon. Hideo Murakami, Comptroller
Department of Accounting and General Services
State of Hawaii
1151 Punchbowl Street
Honolulu, Hawaii 96813

Ms. Jacqueline Parnell, Director
Office of Environmental Quality Control
State of Hawaii
550 Halekauwila Street, Room 301
Honolulu, Hawaii 96813

Hon. Kent M. Keith, Director
Attention: State Clearinghouse
Department of Planning and Economic Development
250 South King Street
Honolulu, Hawaii 96813

Mr. Gordan Y. Furutani, Executive Director
Land Use Commission
State of Hawaii
335 Merchant Street, Room 104
Honolulu, Hawaii 96813

Dr. William R. Furtick
Dean/Director, HAES & CES
College of Tropical Agriculture
University of Hawaii at Manoa
3050 Maile Way
Honolulu, Hawaii 96822

Mr. Tadashi Tojo, Chairman
Agriculture Coordinating Committee
State of Hawaii
550 Halekauwila Street, Room 206
Honolulu, Hawaii 96813

Hon. Jack K. Suwa, Chairman
Board of Agriculture
State of Hawaii
1428 South King Street
Honolulu, Hawaii 96814

Hon. George R. Ariyoshi, Governor
State of Hawaii
State Capitol, Fifth Floor
Honolulu, Hawaii 96813

Honorable Speaker and Members of the
House of Representatives
State of Hawaii
Honolulu, Hawaii 96813

Honorable President and Members
of the Senate
State of Hawaii
Honolulu, Hawaii 96813

Ms. Irene Gomes
Hawaii State Library
Hawaii Documents Center
478 South King Street
Honolulu, Hawaii 96813

Environmental Quality Commission
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Honolulu, Hawaii 96813

Mr. Wallace Mitchell
University of Hawaii
Department of Entomology
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Honolulu, Hawaii 96822

Mr. Bernard Shinbara, Chief
Department of Agriculture
State of Hawaii
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Honolulu, HI 96804

Mr. Robert Brown
University of Hawaii
Procurement and Property Management Office
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C. Federal

Mr. Max C. Coray
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Agricultural, Stabilization and Conservation Service
P. O. Box 50008
Honolulu, Hawaii 96850

Mr. Wayne Redman
Department of Agriculture
Animal and Plant Health Inspection Service
Prince Kuhio Federal Building, Room 4117
Honolulu, Hawaii 96850

Mr. James E. Gilmore
Department of Agriculture
Science and Education Administration
Agricultural Research
P. O. Box 2280
Honolulu, Hawaii 96804

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

Mr. James E. Haragos
Army Corps of Engineers
Pacific Ocean Division, Building 230
Fort Shafter, Hawaii 96858

Ms. Vicki Tsuhako
Environmental Protection Agency
Prince Kuhio Federal Building, Room 1302
Honolulu, Hawaii 96850

Mr. Ernest Kosaka
Department of Interior
Fish and Wildlife Service
P. O. Box 50167
Honolulu, Hawaii 96850

Mr. Nishom Hisserian
Department of Labor
Occupational Safety and Health Administration
P. O. Box 50072
Honolulu, Hawaii 96850

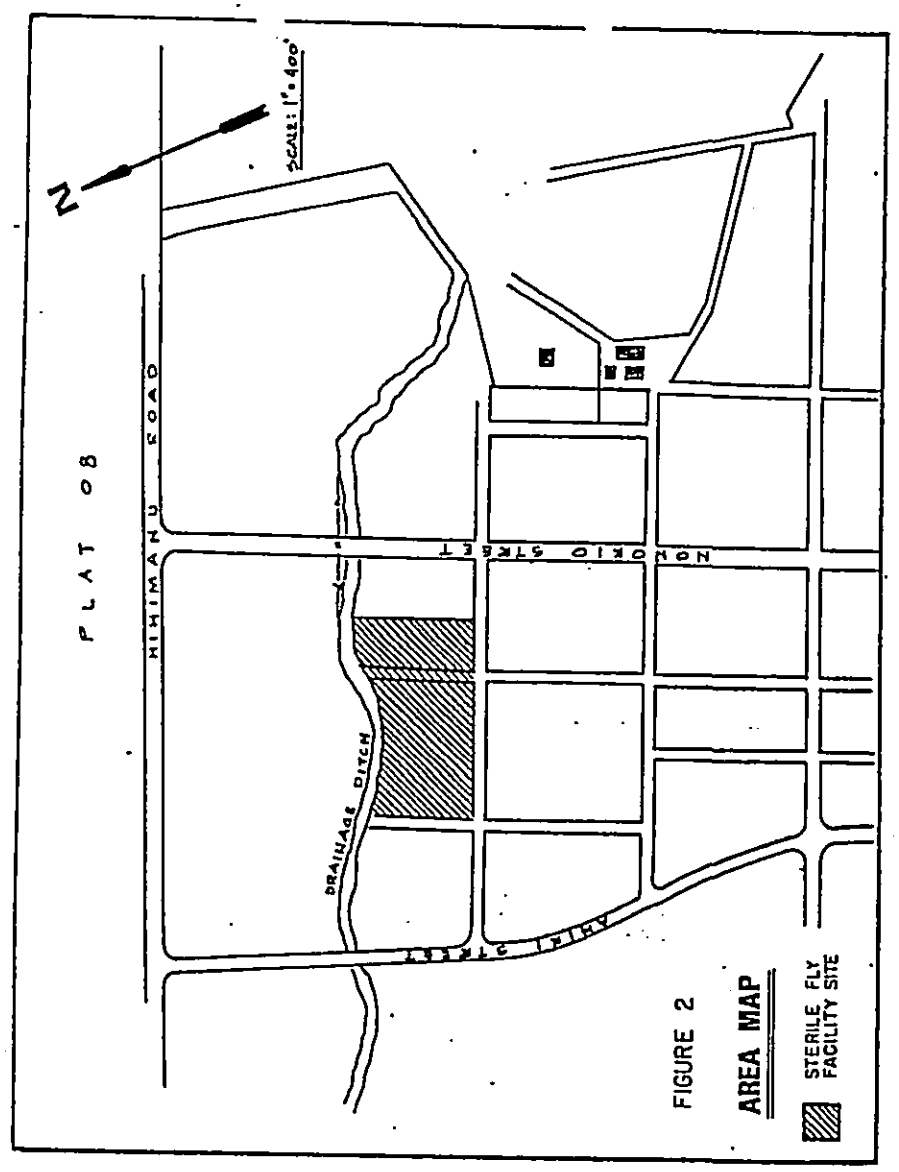
Dr. Leroy Williamson
Tropical Fruit and Vegetable Research Laboratory
P. O. Box 2280
Honolulu, Hawaii 96804

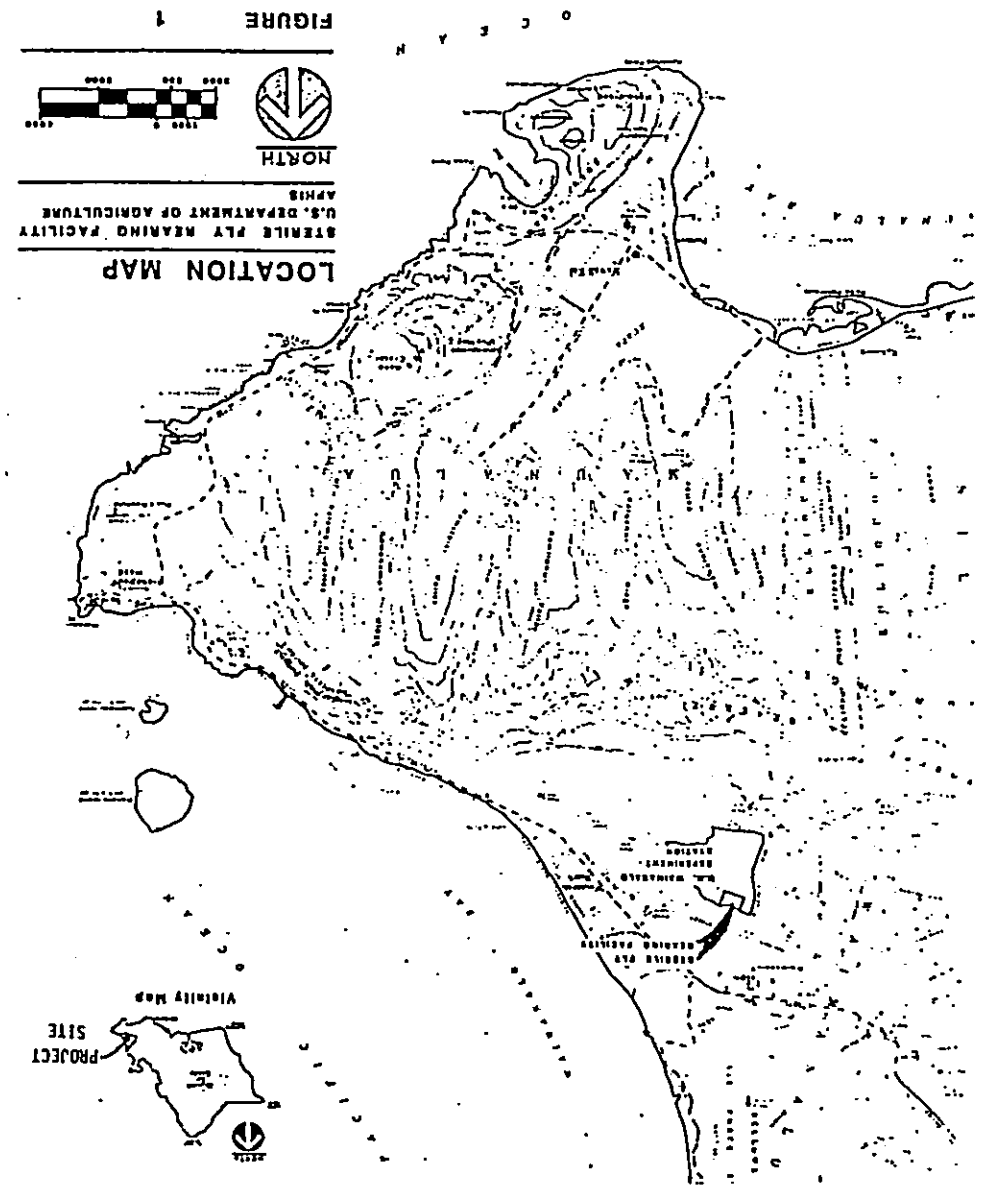
D. Private

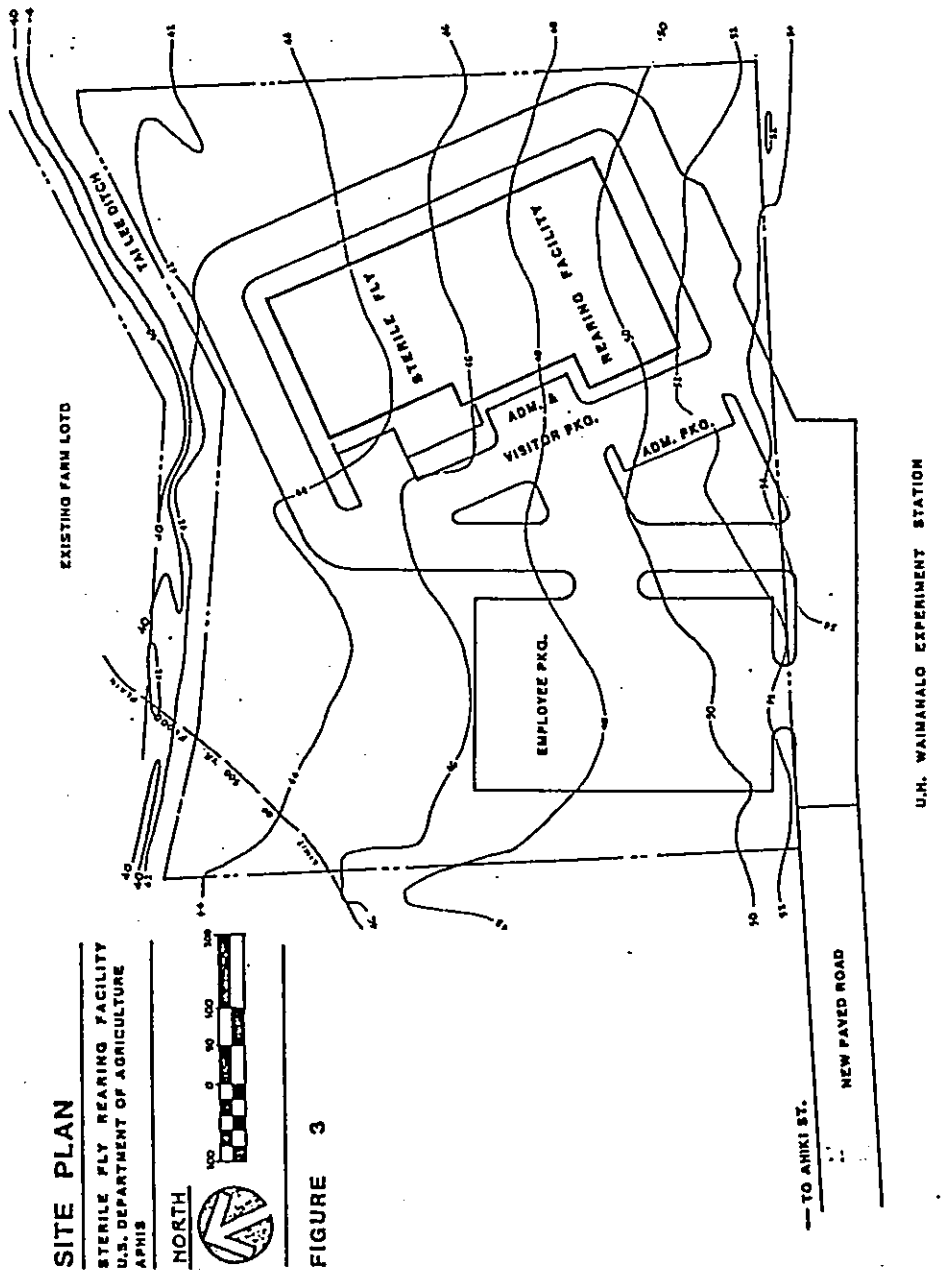
Mr. Ronald Terry, President
Hawaii Farm Bureau Federation
215 Mokauea Street, 2nd Floor
Honolulu, Hawaii 96813

Mr. Donald R. Morrison, Chairman
Waimanalo Neighborhood Board No. 32
P. O. Box 440
Waimanalo, Hawaii 96795

Mr. Richard Knoll
Department of Food and Agriculture
Division of Administrative Services
1220 N Street
Sacramento, California 95814







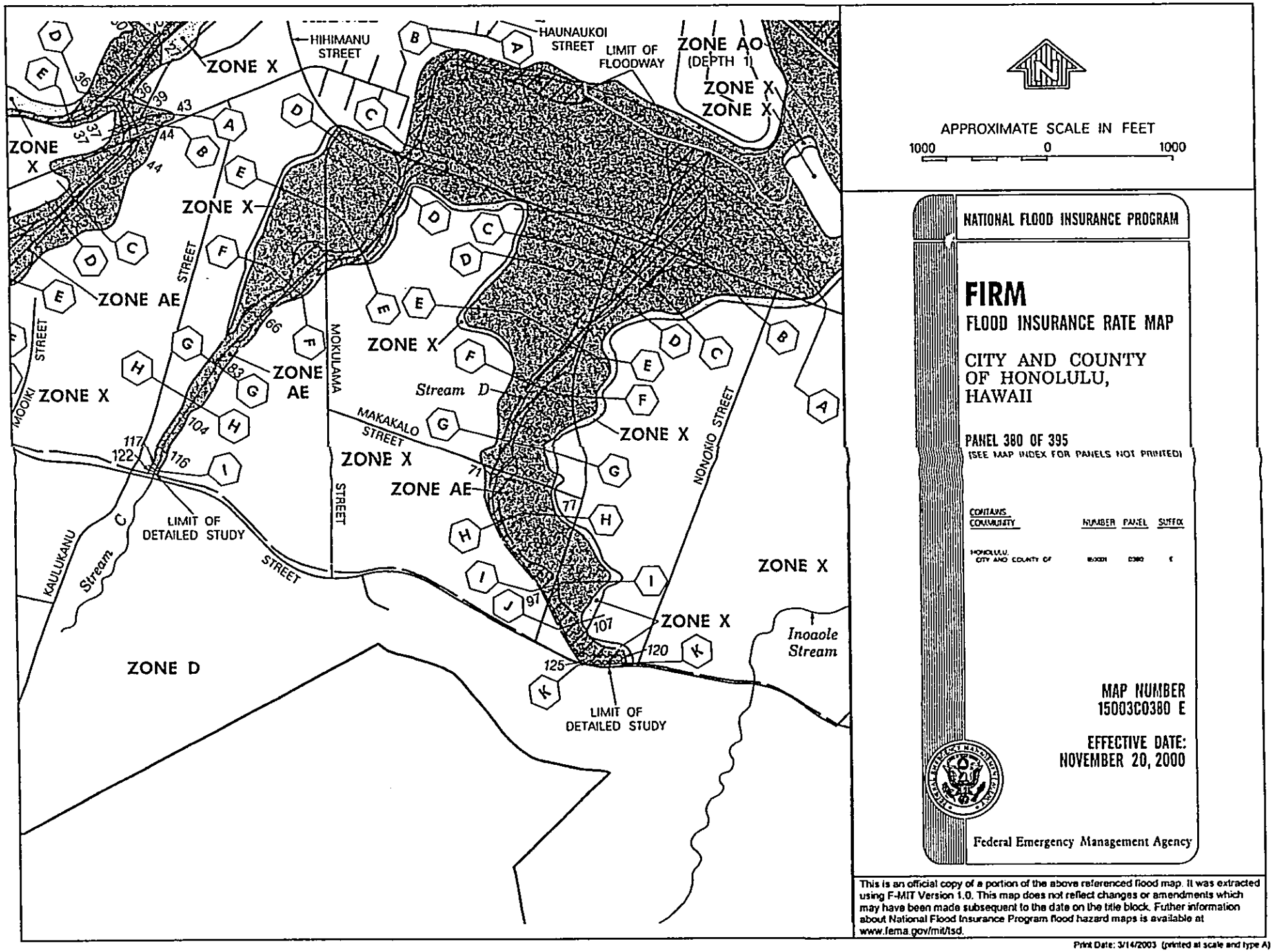
SITE PLAN

STERILE FLY REARING FACILITY
U.S. DEPARTMENT OF AGRICULTURE
APHIS

FIGURE 3

Appendix C

Flood Insurance Rate Map



This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT Version 1.0. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. Futher information about National Flood Insurance Program flood hazard maps is available at www.fema.gov/mit/tsd.

Print Date: 3/14/2003 (printed at scale and type A)

157°42'45"
21°30'00"

LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

ZONE A No base flood elevations determined.

ZONE AE Base flood elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE A99 To be protected from 100-year flood by Federal flood protection system under construction ; no base flood elevations determined.

ZONE V Coastal flood with velocity hazard (wave action); no base flood elevations determined.

ZONE VE Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

ZONE X Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.

OTHER AREAS

ZONE X Areas determined to be outside 500-year floodplain.

ZONE D Areas in which flood hazards are undetermined.

UNDEVELOPED COASTAL BARRIERS

Identified 1983 | Identified 1990 | Otherwise Protected Areas

Coastal barrier areas are normally located within or adjacent to Special Flood Hazard Areas.

Floodplain Boundary

Floodway Boundary

Zone D Boundary

Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones

APPROXIMATE SCALE IN FEET

1000 0 1000

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

CITY AND COUNTY OF HONOLULU, HAWAII

PANEL 280 OF 395

(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS: COMMUNITY	NUMBER	PANEL	SUFFIX
HONOLULU, CITY AND COUNTY OF	150001	0280	E

MAP NUMBER
15003C0280 E

EFFECTIVE DATE:
NOVEMBER 20, 2000

Federal Emergency Management Agency

Print Date: 3/17/2003 (printed at scale and type A)

JOINS PANEL 0285

Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones.

513 — Base Flood Elevation Line; Elevation in Feet. See Map Index for Elevation Datum.

D — D — Cross Section Line

(EL 987) — Base Flood Elevation in Feet Where Uniform Within Zone. See Map Index for Elevation Datum.

RM7 × — Elevation Reference Mark

• M2 — River Mile

97°07'30", 32°22'30" — Horizontal Coordinates Based on North American Datum of 1927 (NAD 27) Projection.

NOTES

This map is for use in administering the National Flood Insurance Program; it does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size, or all planimetric features outside Special Flood Hazard Areas. The community map repository should be consulted for more detailed data on BFE's, and for any information on floodway delineations, prior to use of this map for property purchase or construction purposes.

Areas of Special Flood Hazard (100-year flood) include Zones A, AE, A1-A30, AH, AO, A99, V, VE and V1-V30.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the Federal Emergency Management Agency.

Floodway widths in some areas may be too narrow to show to scale. Refer to Floodway Data Table where floodway width is shown at 1/20 inch.

Coastal base flood elevations apply only landward of 0.0 NGVD, and include the effects of wave action; these elevations may also differ significantly from those developed by the National Weather Service for hurricane evacuation planning.

Corporate limits shown are current as of the date of this map. The user should contact appropriate community officials to determine if corporate limits have changed subsequent to the issuance of this map.

This map may incorporate approximate boundaries of Coastal Barrier Resource System Units and /or Otherwise Protected Areas established under the Coastal Barrier Improvement Act of 1990 (PL 101-591).

For community map revision history prior to countywide mapping, see Section 6.0 of the Flood Insurance Study Report.

For adjoining map panels and base map source see separately printed Map Index.

MAP REPOSITORY

Refer to Repository Listing on Map Index

EFFECTIVE DATE OF

APPROXIMATE SCALE IN FEET

1000 0 1000

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

CITY AND COUNTY OF HONOLULU, HAWAII

PANEL 280 OF 395

(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS: COMMUNITY	NUMBER	PANEL	SUFFIX
HONOLULU, CITY AND COUNTY OF	150003	0280	E

MAP NUMBER
15003C0280 E

EFFECTIVE DATE:
NOVEMBER 20, 2000

Federal Emergency Management Agency

JOINS PANEL 0285

NOTES

This map is for use in administering the National Flood Insurance Program; it does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size, or all planimetric features outside Special Flood Hazard Areas. The community map repository should be consulted for more detailed data on BFE's, and for any information on floodway delineations, prior to use of this map for property purchase or construction purposes.

Areas of Special Flood Hazard (100-year flood) include Zones A, AE, A1-A30, AH, AO, A99, V, VE and V1-V30.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the Federal Emergency Management Agency.

Floodway widths in some areas may be too narrow to show to scale. Refer to Floodway Data Table where floodway width is shown at 1/20 inch.

Coastal base flood elevations apply only landward of 0.0 NGVD, and include the effects of wave action; these elevations may also differ significantly from those developed by the National Weather Service for hurricane evacuation planning.

Corporate limits shown are current as of the date of this map. The user should contact appropriate community officials to determine if corporate limits have changed subsequent to the issuance of this map.

This map may incorporate approximate boundaries of Coastal Barrier Resource System Units and /or Otherwise Protected Areas established under the Coastal Barrier Improvement Act of 1990 (PL 101-591).

For community map revision history prior to countywide mapping, see Section 6.0 of the Flood Insurance Study Report.

For adjoining map panels and base map source see separately printed Map Index.

MAP REPOSITORY
Refer to Repository Listing on Map Index

EFFECTIVE DATE OF
COUNTYWIDE FLOOD INSURANCE RATE MAP:
NOVEMBER 20, 2000

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL:

Refer to the FLOOD INSURANCE RATE MAP EFFECTIVE DATE shown on this map to determine when actuarial rates apply to structures in zones where elevations or depths have been established.

To determine if flood insurance is available, contact an insurance agent or call the National Flood Insurance Program at (800) 638-6620.

APPROXIMATE SCALE IN FEET
1000 0 1000

APPROXIMATE SCALE IN FEET
1000 0 1000

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

CITY AND COUNTY
OF HONOLULU,
HAWAII

PANEL 280 OF 395
(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS: COMMUNITY	NUMBER	PANEL	SUFFIX
HONOLULU, CITY AND COUNTY OF	150001	0280	E

MAP NUMBER
15003C0280 E

EFFECTIVE DATE:
NOVEMBER 20, 2000

Federal Emergency Management Agency

Print Date: 3/17/2003 (printed at scale and type A)

Appendix D

Biological Resources Assessment
Flora and Fauna Studies

BIOLOGICAL RESOURCES ASSESSMENT
FLORA AND FAUNA STUDIES
USDA HAWAII FRUIT FLY PRODUCTION FACILITY EXPANSION
WAIMANALO, O'AHU

by

Winona P. Char
CHAR & ASSOCIATES
Botanical/Environmental Consultants
Honolulu, Hawai'i

Prepared for: Hawaii Pacific Engineers

September 2002

BIOLOGICAL RESOURCES ASSESSMENT
FLORA AND FAUNA STUDIES
USDA HAWAII FRUIT FLY PRODUCTION FACILITY EXPANSION
WAIMANALO, O'AHU

INTRODUCTION

An assessment of the flora (botanical) and fauna resources was made for the proposed fruit fly production facility expansion area at Waimanalo, O'ahu, on 25 September 2002. The expansion area is bound by the Tai-Lee irrigation drainage ditch to the north, the existing USDA Hawaii Fruit Fly Production Facility to the east, an existing access driveway to the south, and Ahiki Street to the west. A 40-foot wide strip between the existing facility and the drainage ditch was also included in the survey.

The primary objectives of the field studies were to prepare a general description of the vegetation and vertebrate animal communities (birds and mammals) on the proposed expansion site, and to search for threatened and endangered species as well as species of concern. A walk-through survey method was used.

For the flora studies, notes were made on plant associations and distribution, soil types, topography, disturbances, etc. For the vertebrate fauna, field observations were made with the aid of binoculars and by listening for vocalizations. Attention was also paid to the presence of tracks and scats as indicators of bird and mammalian activity. No attempts were made to trap animals in order to obtain data on abundance and distribution on the site.

FLORA RESOURCES

The plant names used in the following discussion follow Wagner et al. (1990) and Wagner and Herbst (1999). The more recent name changes are those reported in the Hawaii Biological Survey series (Evenhuis and Miller, eds., 1999-2002).

Almost all of the site has been cultivated in the past: first by the sugar plantation and later by the University of Hawai'i Experimental Station. The site has been graded and is level with deep soils. A large planting of very tall koa haole (Leucaena leucocephala), 25 to 35 ft. tall, covers the majority of the site; these plantings are the "Hawaiian Giant" cultivar of Leucaena. On the northwest corner of the property is another experimental planting of trees (Sapium sp. ?) which is being monitered.

The koa haole trees have tall straight trunks with no lower branching, and the canopy is dense and closed (upper branches overlap). Ground cover is primarily Guinea grass (Panicum maximum), 3 to 5 ft. tall, although rouge plant or coral berry (Rivina humilis) can be abundant and form small patches in some places. Elephant grass (Pennisetum purpureum) and California grass (Brachiaria mutica) are abundant along the edge of the 40-foot wide strip area. Scattered through the koa haole plantings are a few weedy species; these include ivy gourd (Coccinia grandis), Senna pendula, huehue haole (Passiflora suberosa), octopus tree (Schefflera actinophylla), Java plum (Syzygium cumini), Christmas berry (Schinus terebinthifolius), and fiddlewood (Citharexylum caudatum). Two species commonly associated with landscape plantings have also established themselves here; these are mock orange (Murraya paniculata) and a palm, Pinanga sp.

The irrigation ditch is dry with barren soil in most places and does not appear to be in use any longer. Guinea grass lines most of its length, along with California grass and elephant grass in the area of the 40-foot wide strip. Two large clumps of bamboo (Bambusa sp.) are also found along the ditch.

Where the expansion parcel borders the existing access driveway, the vegetation is periodically maintained/mowed. It consists of a weedy mixture of grasses such as California grass, Guinea grass, Bermuda grass (Cynodon dactylon), and crabgrass (Digitaria sp.), and herbaceous species such as creeping indigo (Indigofera spicata), nodeweed (Synedrella nodiflora), Boerhavia coccinia, and Sida rhombifolia. A tangle of Macroptilium atropurpureum sprawls over the band of Guinea grass found between the mowed area and the koa haole planting.

FAUNA RESOURCES

The nomenclature for the birds follows Hawaii Audubon Society (1997), while the mammals are in accordance with van Riper and van Riper (1982).

A total of nine bird species were recorded from the site and are presented in Table 1. The most abundant species were the red-vented bulbil (Pycnonotus cafer) and house finch or papayabird (Carpodacus mexicanus), which were frequently heard and observed within the koa haole plantings. Other species recorded from the koa haole plantings include at least one pair of northern cardinal (Cardinalis cardinalis) and a few Japanese white-eye or meijiro (Zosterops japonica). Common myna (Acridotheres tristis), spotted dove (Streptopelia chinensis), and zebra dove (Geopelia striata) were observed flying over the site. One individual of Pacific golden plover or kolea (Pluvialis fulva) and six cattle egret (Bubulcus ibis) were observed on the grassy lawn area located between the existing facility and the 40-foot wide strip of koa haole planting.

Chickens (Gallus gallus) and goats (Capra hircus) are found on the neighboring parcel near the northwest corner of the existing facility and 40-foot wide strip area. The chickens often wander over to the proposed expansion site searching for seeds and invertebrates. A partially eaten chicken was found on the 40-foot wide strip area, probably the victim of the small Indian mongoose (Herpestes auropunctatus) or feral cat (Felis catus). Although not observed during this day-time survey, the roof rat (Rattus rattus), Pacific rat (Rattus exulans), and house mouse (Mus musculus) are expected to be present on the site and the adjacent farmlands.

CONCLUSIONS

Flora Resources: The proposed expansion area has been disturbed by cultivation for a long time. A planting of the "Hawaiian Giant" cultivar of koa haole covers most of the site along with a few stands of other experimental plantings. Guinea grass forms a dense cover between the woody components. Elephant grass and California grass are abundant on the 40-foot wide strip area.

TABLE 1
SUMMARY OF AVIFAUNA RECORDED FROM USDA EXPANSION SITE

Scientific name	Common name	[1]Status
Pluvialis fulva	Pacific Golden Plover	V
Bubulcus ibis	Cattle Egret	A
Zosterops japonicus	Japanese White-eye	A
Streptopelia chinensis	Spotted Dove	A
Geopelia striata	Zebra Dove	A
Pycnonotus cafer	Red-vented Bulbul	A
Acridotheres tristis	Common Myna	A
Cardinalis cardinalis	Northern Cardinal	A
Carpodacus mexicanus	House Finch	A

[1]Status (symbols follow Hawaii Audubon Society 1997).

V = visitor; regular migrants that arrive in the fall to spend the winter in Hawai'i and depart in spring.

A = alien; species introduced to and established in Hawai'i by humans.

The vegetation on the site is composed almost exclusively of introduced or alien species. Introduced species are all those plants brought to Hawai'i by humans, intentionally or accidentally, after Western contact. The only native species observed on the site was ricegrass or mau'u laiki (Paspalum scrobiculatum); it is indigenous, that is, it is native to Hawai'i and elsewhere.

None of the plants observed on the site is a threatened and endangered species or a species of concern (U.S. Fish and Wildlife Service 1999a, 1999b; Wagner et al. 1999). This is not surprising given the past and current uses of the site.

Fauna Resources: Nine bird species were recorded from the proposed expansion site. All are alien species except the kolea, which is a winter visiter. Mammals such as rats, mice, feral cats, and mongoose are expected to occur here. One would typically find these alien species at this elevation and in this type of disturbed habitat.

None of the animals recorded from the project site is a threatened and endangered species or a species of concern (U.S. Fish and Wildlife Service 1994, 1999b). Species which prefer more open, grassy areas such as the myna, kolea, and doves are expected to increase in numbers when the parcel is landscaped and maintained.

In conclusion, the proposed expansion project is not expected to have a significant impact on the plant and animal resources of the site or the general region. Introduced/alien species are the dominant components of the vegetation and animal communities on the site.

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Appendix E

Archaeological Inventory Survey

ARCHAEOLOGICAL INVENTORY SURVEY IN SUPPORT OF MODIFICATIONS OF THE USDA HAWAI`I FRUIT FLY PRODUCTION FACILITY AT WAIMĀNALO, KO`OLAUPOKO, O`AHU (TMK 4-1-26: Por. 1)

by

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and
Anthony R. Bush, B.Ed.

Prepared for

Hawai`i Pacific Engineers

CULTURAL SURVEYS HAWAI`I, INC.

September 2002

EXECUTIVE SUMMARY

Cultural Surveys Hawai`i, Inc. was contracted by Hawaii Pacific Engineers to perform an archaeological inventory survey of an approximately 6-acre parcel at Waimānalo, Ko`olaupoko, O`ahu, Hawai`i (TMK 4-1-26:1).

Traditional Hawaiian accounts indicate that the Waimānalo area was agriculturally very productive and populous. The *Māhele* records of the 1850s also indicate a high level of agricultural and cultural activity focused specifically along Waimānalo Stream, well to the west and north of the present project area, and to a lesser extent along the coast. No indications of specific activities in the vicinity of the present project area are given in traditional Hawaiian accounts or *Māhele* records

By the 1880s pasture land at Waimānalo including the vicinity of the present project area is being replaced by cultivated sugar cane, first grown by Chinese rice farmers. The early 1900s see an expansion of the Waimanalo Sugar Co. which eventually had some 2,600 acres under mechanized cultivation. C. Brewer and Co., which gained control of W. S. C. in 1910, liquidated it in 1947, ending nearly 70 years of sugar cultivation. Since the lands within the project area were leased government lands, they reverted first to the Territory of Hawaii and are now under State of Hawaii jurisdiction.

No sites of any kind were identified within the project area *per se*. No prehistoric archaeological features were observed within the project area. or are known from the general vicinity. The seaward or north edge of the project area, however, is demarcated by a ditch understood as the Tai-Lee Ditch associated with the individual of that name and the Chinese sugar cane growing period of 1876-1900. This Tai-Lee Ditch is understood as a historic property and has been designated as State Inventory of Historic Places Site # 50-80-15-6427. Much of the ditch is earthen without improvements although portions are lined with concrete and some water diversion and engineering constructions are present.

In the absence of any observable sites or any indication of the previous existence of any sites (other than the Tai-Lee Ditch) in the vicinity no further work in the project area *per se* is recommended. However, it is recommended that adverse impact to the Tai-Lee Ditch forming the north boundary of the project area be avoided. If construction work is to be carried out in the immediate vicinity of the Tai-Lee Ditch it is recommended that the ditch be fenced off with event fencing and that contractors working in the area be informed not to impact this historic property.

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I. INTRODUCTION

A. Scope of Work

Cultural Surveys Hawai`i, Inc. was contracted to perform an archaeological survey of an approximately 6-acre parcel at Waimānalo, Ko`olaupoko, O`ahu, Hawai`i (TMK 4-1-26: por.1) (See Figures 1-3) by Hawaii Pacific Engineers, Inc. This study was undertaken as part of an environmental assessment in support of proposed expansion of the USDA Fruit Fly Production Facility. The following Scope of Work was agreed upon.

The scope of work included:

1. Historical research to include study of archival sources, historic maps, Land Commission Awards and previous archaeological reports to construct a history of land use and to determine if archaeological sites have been recorded on or near this property.

2. Field inspection of the project area to identify any surface archaeological features and to investigate and assess the potential for impact to such sites. This assessment was to identify any sensitive areas that may require further investigation or mitigation before the project proceeds.

3. Preparation of a report to include the results of the historical research and the fieldwork with an assessment of archaeological potential based on that research, with recommendations for further archaeological work, if appropriate. It was also to provide mitigation recommendations if there are archaeologically sensitive areas that need to be taken into consideration.

Following the background research and field work it was determined that the only site present in the vicinity is the Tai-Lee Ditch designated Site # 50-80-15-6427 which forms the north (seaward) boundary of the project area. It seemed desirable to regard our survey as an archaeological inventory survey.

B. Project Aren Description

The project area is located on the windward side of the Island of O`ahu, in the district of Ko`olaupoko within the *ahupua`a* of Waimānalo (See Figures 1-3). Waimānalo is a broad amphitheater-shaped valley with a relatively level floor composed of moderately sloping alluvial fans. It is in the "late mature to old Age" stage of erosional development (MacDonald *et al.* 1983:217). The subject property is located in central Waimānalo on the "Waimānalo Plain" (Armstrong, *et al.* 1973:30) approximately 700 m inland of Kalaniana`ole Highway at approximately 40 foot elevation. The actual property location is at 41-650 Ahiki Street. It is bounded by Ahiki Street to the west, the Tai-Lee Irrigation Drainage Ditch to the north and the University of Hawaii Experimental Station to the east and south of the project area.

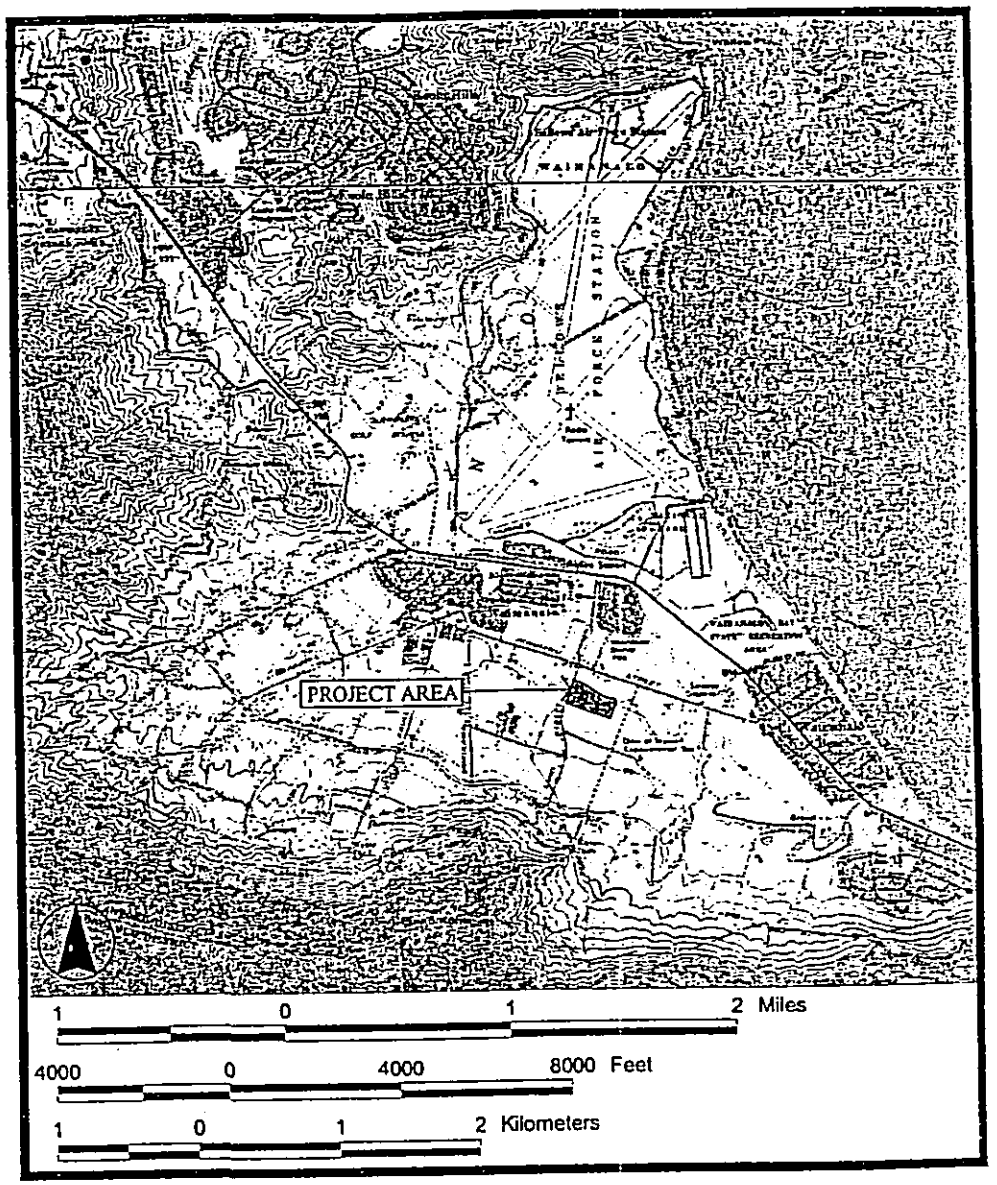

Figure 1: USGS Koko Head Quadrangle Map Showing Location of Project Area.

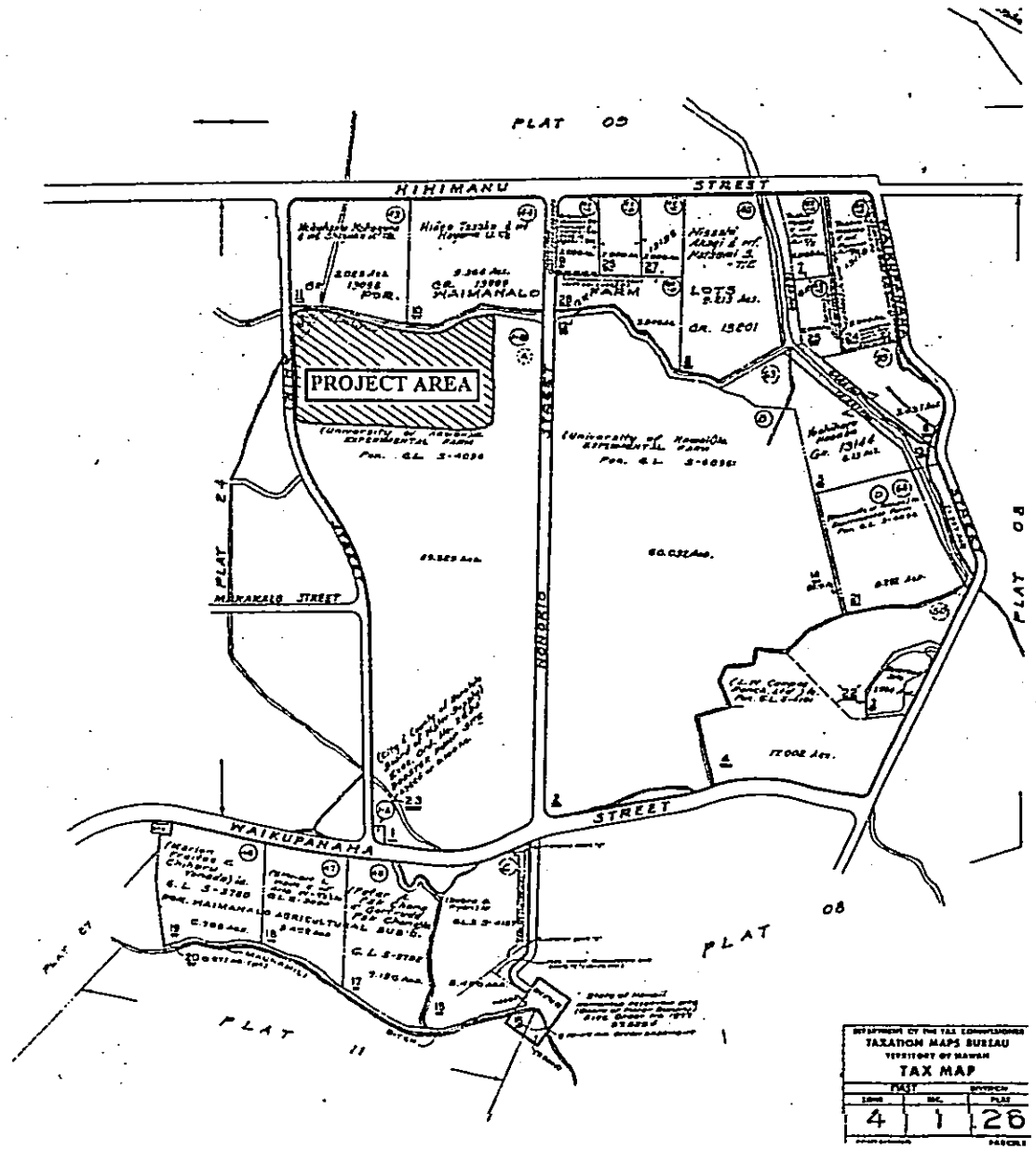

Figure 2: Portion of TMK 4-1-26 Showing Location of Project Area (batched).

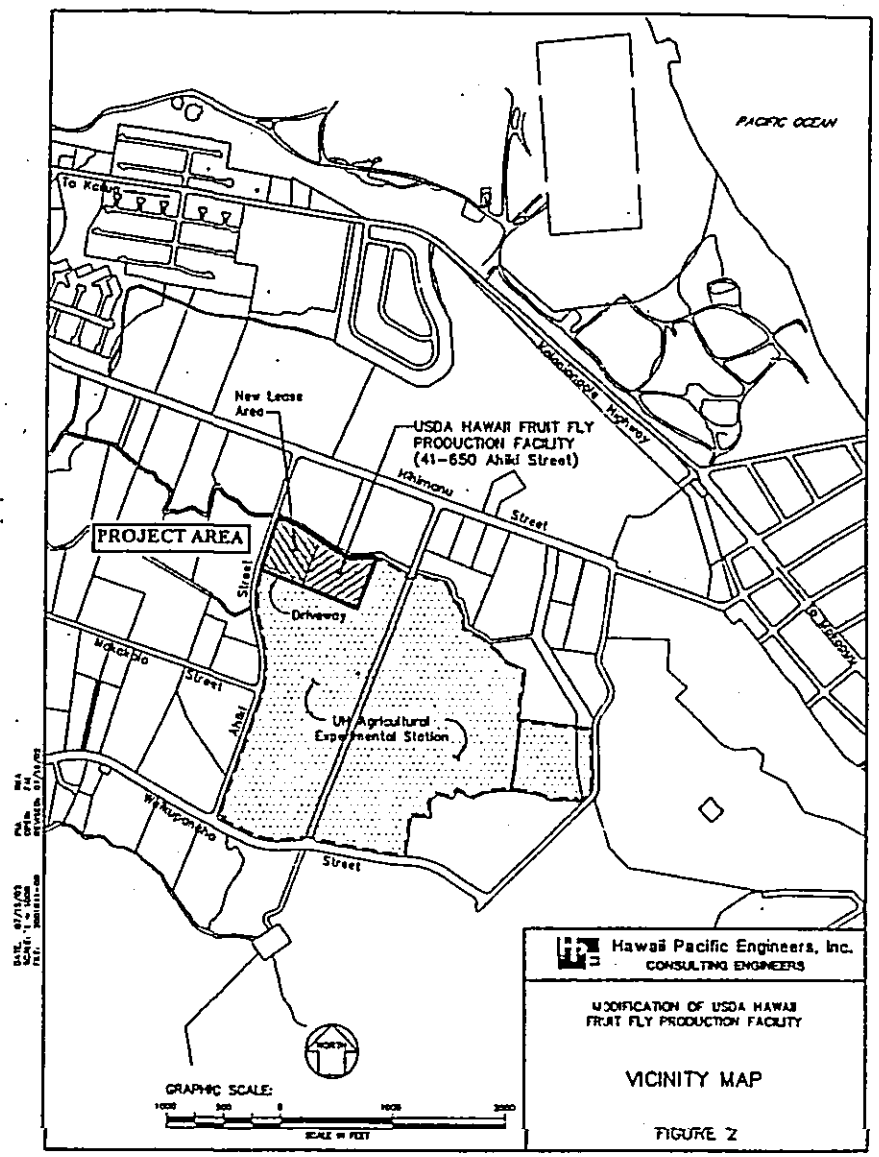

Figure 3 USDA Hawaii Fruit Fly Production Facility Location Map

Rainfall is relatively high, averaging between 1000 and 1500 mm (40 to 60 inches) per year (Giambelluca *et al.* 1986:73).

The soils within the project area are Haleiwa silty clay 2-6% slopes. These are well-drained soils developed in alluvium derived from basic igneous material, run-off is slow and the erosion hazard is slight.(Foote, *et al.* 1972:33).

Vegetation in these lower elevations of Waimānalo is overwhelmingly exotic (introduced) including *koa haole*, Christmas-berry, lantana, guava, and a variety of exotic weeds.

C. Methodology

Following background research the entire 6-acre project area was covered on foot by two archaeologists from Cultural Surveys Hawai'i Tony Bush, B.Ed. And David W. Shideler, M.A. under the overall direction of Hallett H. Hammatt, Ph.D. Conditions varied considerably. Much of the project area is occupied by the existing fruit fly rearing facility and maintained grounds with a short grass lawn. Along the margin of the Tai-Lee Ditch exotic California grass often towers four meters high and visibility is greatly restricted. Most of the western portion of the project area is in mature *haole koa* with good ground visibility with vegetation becoming significantly denser to the north toward the ditch. Representative photographs and a sketch map of the only complex portion of the Tai-Lee Ditch (understood as bounding the project area) were taken.

II. HISTORIC SETTING

A. Introduction

A number of historical sketches of the Waimānalo area have been done, notably, the mythological and archaeological material on Waimānalo found in *Sites of O'ahu* (Sterling and Summers, 1978), "A General Plan for Waimānalo Valley, Island of Oahu (Harold Bartholomew and Associates, 1959), and the "Historical Documentary Research" of Waimānalo with specific reference(s) to Bellows Air Force Station by Carol L. Silva (Rosendahl, ARA 20-020781, 1981). The following brief synopsis owes much to these works and credit must be given the authors for the bulk of the research.

Waimānalo "potable water" (Pukui, *et al.* 225:1974) is a large *ahupua'a* located in the district of Ko'olaupoko, O'ahu. "*Ahupua'a*" refers to the traditional land divisions that were basic units of social, economic, and political life in pre-contact Hawaii. "Ideally an *ahupua'a* land section stretched in a wedge from its apex at a mountain top to its base in the sea, thereby including within its boundaries all environments necessary for a self-sustaining community. Again, ideally the inhabitants of an *ahupua'a* were related by blood and through children and could claim some degree of relationship to the chiefly family to whom the *ahupua'a* had originally been assigned." (D. Barrère, 1970:3).

Mythological and early historical references about Waimānalo attest to the importance of the area during traditional Hawaiian times. Archaeological work along the shoreline of Waimānalo (Bellows Air Force Station) has detailed some of the earliest known sites in the Hawaiian Islands. Site 50-80-15-18 (018 Dune Site), which is situated at the present mouth of Waimānalo Stream, has an early date of circa A.D. 400 and is included on the National Register of Historic Places (as part of site 50-80 -15-511). While the early dates reported for Bellows Air Force Station have been a matter of much discussion and dispute they are still regarded as relatively early. However, this present research focuses on the *mauka* (inland) portion of Waimānalo.

B. Traditional Accounts

The traditional accounts infer some generally recurring themes about Waimānalo. The themes include the scarcity of water except for small springs and Waimānalo Stream, the abundance of food crops along Waimānalo Stream, the good fishing resources and the broad reef of the ocean fronting Waimānalo, and also the somewhat isolated nature of Waimānalo, especially in terms of land routes, but with the sandy beach frontage allowing easy access by sea.

An example of the mythological references to Waimānalo, from the Pele and Hi'iaka epic states: "As they traveled on, Makapu'u and its neighbor hills passed out of sight. Arriving at Ka-ala- pueo, they caught view of the desolate hill Pōhaku-loa, faint, famished, forlorn ...." (Emerson 1915:89). Hi'iaka is moved to chant a chant of the Big Island on the theme of privation including the line:

Wī `ai `ole, make i ka i`a `ole, e.
It's famine, privation of bread, of meat! (Emerson 1915:89).

Emerson's (1915:89) account goes on to relate regarding eastern Waimānalo: "It is indeed a barren land. Fish is the only food it produces. Our vegetables come from Waimānalo. When the people of that district bring down bundles of food we barter for it our fish."

Another theme associated with Hi`iaka's traverse of Waimānalo is her interactions with the local beauty `Āpuakea.. Fornander (1919: Vol. VI:343, "Philological and Miscellaneous Notes") relates: At Kapu`a in Ko`olau Muliwaiolena and her daughter `Āpuakea were killed because the latter compared herself to Hi`iaka in beauty." A fuller account is given in a rendition of the story of Hi`iaka-i-ka-poli-o-Pele in the Hawaiian language newspaper *Ka Leo o Ka Lāhui*

> They traveled past Kuhui (Kukui?) And Pāhonu where the people shouted at the beauty of Hi`iaka. The news reached the ears of `Āpuakea and she said to her mother, Muliwaiolena, "Oh, Muliwaiolena, go and take a look at the women whose beauty the people are shouting about and see if they are as beautiful as I am." Muliwaiolena came out and looked. Never had she seen anything on O`ahu to equal the beauty of these women. Turning to `Āpuakea she said, "Daughter, your beauty does not compare with their great beauty. You are like the soles of their feet." Hearing this the expression on `Āpuakea's face changed and she fainted away.
>
> Hi`iaka overheard the words of the woman to her daughter and she uttered this chant:
>
> O `Āpuakea-nui, you beautiful woman,
> Comparisons have been made of your charms,
> You are beautiful, beautiful indeed.
>
> Muliwaiolena then called out to Hi`iaka and her friend, "Come in, eat and drink and when you are full then continue on your long journey." But the travelers did not accept as they did not like the embarrassing comparison that had been made between themselves and the young girl, `Āpuakea.
>
> As the travelers went off Muliwaiolena suddenly fell dead. Shortly afterwards `Āpuakea died... (*Ka Leo o Ka Lāhui* March 14, 15 1893.)

It is said "that the people named the place [`Āpuakea, by the coast, central Waimānalo] for her and for her fair skin." (Alona Sept. 22, 1939 O`ahu Place Names)

Another myth (Thrum 1923:185 "Puna`aikoa`e") includes references to the surf of Waimānalo in which two lovers swim till they are out of sight of land and eventually land on Moloka`i.

In the famous story of Kahalaopuna her murderous fiancé is said to have been the son of a chief of Waimānalo, Kailua, Kāne`ohe and He`eia (Nakuina 1904:41)

In a canoe paddling race, Lonoikamakahiki is able to win O`ahu from the ruling chief Kākuhihewa in part through a stratagem of paddling to Kailua inside of the Waimānalo reef (Fornander 1917:IV 300301"Story of Lonoikamakahiki")

Waimānalo was a frequent point of arrival and departure in late pre-contact and early post-contact times as in the following account of the loss of O`ahu sovereignty.

> When King Kahekili of Maui heard of the death of the priest, Kaopulupulu, by Kahahana (a chief appointed by Kahekili to govern Oahu), he sent some of his men thither by canoe, who landed at Waimānalo, Ko`olau, where as spies, they learned from the people respecting Kaopulupulu and his death, with that of his son; therefore they returned and told the King the truth of these reports, at which the affection of Kahekili welled up for the dead priest, and he condemned the King he had established. Coming with an army from Maui, he landed at Waikīkī without meeting Kahahana, and took back the government of O`ahu under his own kingship. The chiefs and people of O`ahu all joined under Kahekili for Kahahana had been a chief of wrong-doing... (Thrum 1907:212-3).

Samuel Kamakau in 1875 related "The Ahupua`a of Waimanalo, including the fish pond at Maunalua and the traveling *uhu* of Makapu'u belonged to Maui-mua (First Maui), (*Kuokoa* Nov. 27, 1875; in Sterling and Summers 1973:244).

During Kamehameha's conquest of O'ahu, part of his fleet landed near Makapu`u and then joined with Kamehameha's other forces, finally conquering O'ahu. Prior to the invasion, Kamehameha sent a messenger to Kahekili;

> Ki'kane, Kamehameha's messenger to Kahekili, threw down two *maika* stones, this stone (the white) brings life through farming and fishing, rearing men, and providing them with food; this other stone (the black) brings war. Let the reader ponder the meaning of this answer. Kahekili asked, Is Kamehameha coming to O'ahu to fight? 'Yes' answered Ki-Kane. What harbor will he choose? It was Kiko'o's counsel to make Waimanalo the harbor and battle site. 'It is too low there to cast sling stones to reach the heights. It is good only for food and fish... (Kamakau 1961:250; in Silva 1981 A-16).

After Kamehameha's conquest of O`ahu and his apportionment of the island, among his chiefs, Waimānalo apparently was retained as his personal property. This seems to be the case as in 1845, when Kamehameha III, Kauikeaouli, who had "inherited" the land, as a son of Kamehameha I, claims the *ahupua`a* of Waimānalo "to be the private lands of his Majesty Kamehameha III, to have and to hold to himself, his heirs and successors, forever; and said lands shall be regulated and disposed of according to his Royal will and pleasure, subject only to the rights of tenants" (Com. of Public Lands, 1929:28).

C. Early Historic Accounts

Two early foreign visitors, both missionaries, were generally unimpressed with Waimānalo, however, their descriptions are of interest. Levi Chamberlain in 1828 comments on Waimānalo being a "considerable settlement" and while there, stayed in a native house, "a miserable place for the abode of human beings and presented a motley group of children and women, dogs, hogs and fowls" (Chamberlain 1857:80-1, in Silva 1981:A-20). In 1830, Edwin Hall writes, "we could not however, but notice, that most of the inhabitants on the eastern end of the island were much more degraded, and exhibited far less evidence of improvement than any we saw on other parts of the island; a fact calling for our sympathy and pity, and for our endeavors to enlighten and elevate them" (Hall 1939:111; in Silva 1981: A-21).

D. Māhele Data

The *ahupua'a* of Waimānalo was awarded to Victoria Kamāmalu subject to the *kuleana* claims of the commoners. She received the third largest share of lands among the *ali'i nui* of the Kingdom of Hawai'i including 47 other *ahupua'a*-sized parcels in addition to Waimānalo. Approximately 113 *kuleana* Land Commission Award claims were awarded in Waimānalo. Nearly all of these *kuleana* were along Waimānalo Stream or its upper tributaries in the west portion of the *ahupua'a* (Figure 4). There appear to have been only two Land Commission Awards in all of central and east Waimānalo, both located on the coast in east Waimānalo. The nearest Land Commission Awards to the present study area appear to have been 1.3 kilometers to the west. While it seems highly probable that the Hawaiian population of Waimānalo was much larger and more dispersed in pre-contact times, it nevertheless appears highly likely that the traditional Hawaiian population of Waimānalo was always very much focused along Waimānalo Stream and its upper tributaries far from the present study area.

E. Ranching Period

In 1828 an Englishman, Thomas Cummins, arrived in Hawai'i and soon after married the High Chiefess Kaumakaokane, who was related to Kamehameha I. This marriage provided Cummins with connections to the throne. Cummins received a Royal Patent to an estate of crown lands in Waimānalo in 1842 (Dorrence 1995:1) and in 1850 Kamehameha III leases the entire Waimānalo *Ahupua'a* (except for the *kuleana*) to Thomas Cummins. The original deed is dated Feb. 12, 1850 and was for a period of 50 years for 6,970 acres at $350.00 per annum. However, there was confusion over land title. Alexander Liholiho Kamehameha IV, "deeded" Waimānalo to a Wm. Webster in 1855 for $1. Wm. Webster mortgaged the land for some $2,000 with the mortgage being released in 1857. The same thing happened again in 1857 with the mortgage clearing by April 1858. These deeds and mortgages did not actually cause the control of lands to change, as Thomas Cummins retained his lease, but they apparently served as security for loans made to Alexander Liholiho.

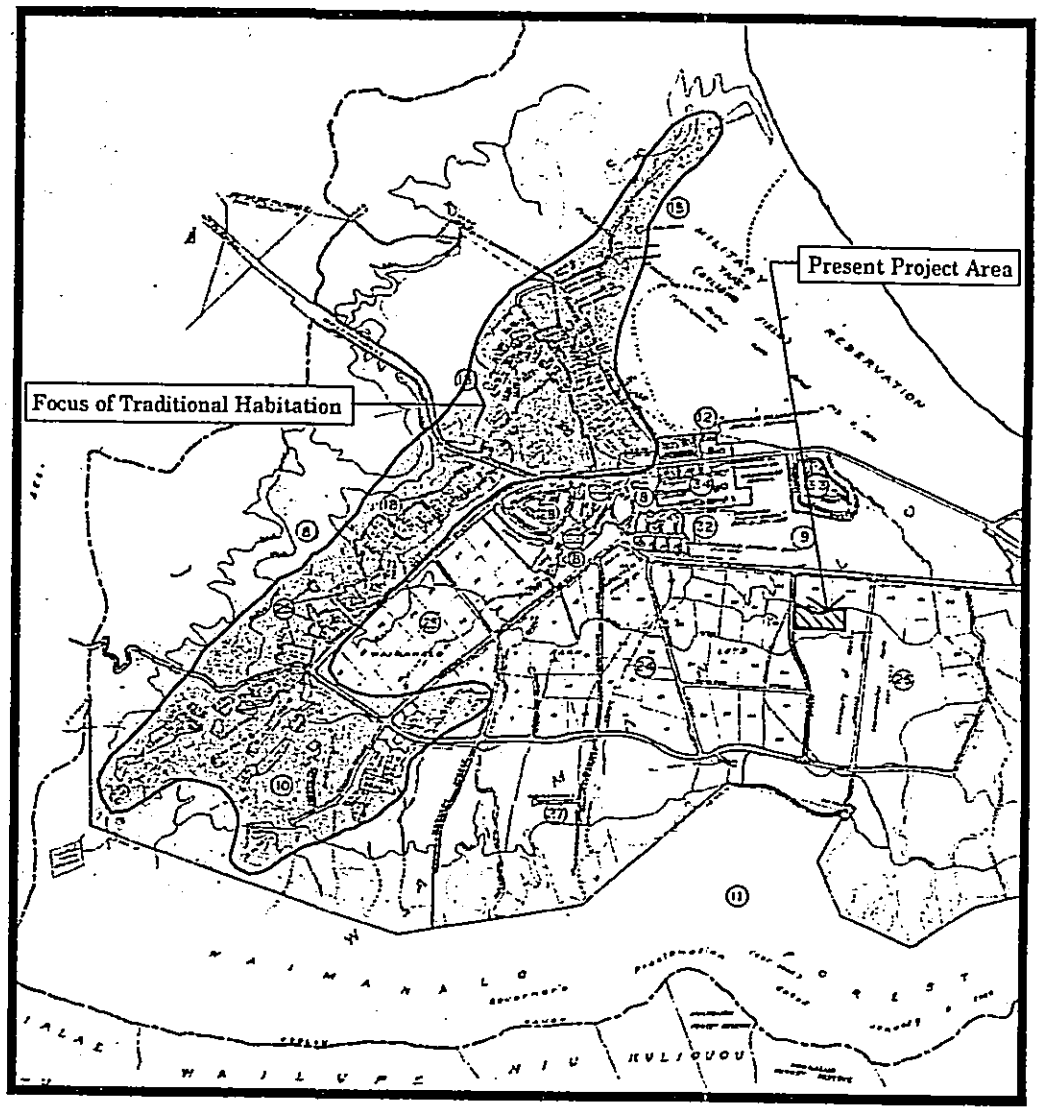

Figure 4 Map Showing Location of the Aggregation of *Kuleana* Land Commission Awards Along Waimānalo (Puhā) Stream in West Waimānalo

Thomas Cummins and his son John A. Cummins turned Waimānalo into a large cattle and horse ranch. The Cummins Estate, "Mauna Rose" was known for its lavish parties; Cummins was also host to American and British officers on warships visiting in Hawaiian waters. The Kamehamehas, King Kalākaua and Queen Lili'uokalani all made this part of the island their home, and they spent a great part of their time at the Cummins Estate" (*Star Bulletin* 6/22/1935:9; in Silva 1981:A-22).

However, it appears as if not all were enthusiastic about the cattle ranching.

> At the time, it seemed that the valley was filled with breadfruit, mountain apples, *kukui* and coconut trees. There were taro patches, with banks covered with *ti* and *wauke* plants. Grass houses occupied the dry lands, a hundred of them here and sweet potatoes and sugar cane were much grown. It was a great help toward their livelihood.... The whole *ahupua'a* of Waimānalo was leased to white men except the native *kuleana* and because the cattle wandered over them, they were compelled to build fences for protection. The taro patches that were neatly built in the time when chiefs ruled over the people and the land, were broken up. The sugar cane, *ti* and *wauke* plants were destroyed. The big trees that grew in those days, died because the roots could not get moisture. The valley became a place for animals (*Kuokoa*, Oct. 26, 1906; in Sterling and Summers 1973:244).

F. The Waimanalo Sugar Company

The Cummins Estate eventually began to buy up the *kuleana* of the native farmers, gaining some 200 acres in fee. By the early 1870's Chinese rice farmers were using some of these lands under agreement with John A. Cummins. In 1876 the Hawaiian Kingdom entered into a Reciprocity Treaty with the United States. This allowed the growing Hawaiian sugar industry a free market and the potential for great profits. One of the Chinese rice farmers, Tai Lee, began sugar cultivation on Cummins' land. Eventually Tai Lee and other Chinese farmers cultivated up to 1,200 acres of cane in Waimānalo.

John A. Cummins saw the potential of sugar production at Waimānalo and in 1880 started construction of a sugar mill. In 1890, J. A. Cummins renegotiates his father's lease for an additional 30 years and "sub-lets the lands of Waimānalo to the Waimanalo Sugar Company (W.S.C.) which he then controlled" (Bartholomew and Ass., 1959:14). The plantation continued to buy sugar from the Chinese farmers until around 1900, when W. S. C. did most of its own cultivation.

During this time, sugar and most goods were transported between Honolulu and Waimānalo by steamer. The Cummins Estate was still renowned for its extravagant hospitality. Lavish week long *luaus* were given for Hawaiian Royalty. King Kalākaua came and rode on the newly built railroad in 1882 and in 1885 Cummins was host in celebrating Queen Kapi'olani's birthday. The second steam engine Cummins bought in 1883 for his Waimānalo plantation, later named the "Olomana," is today in the Smithsonian Institution in Washington D.C. as a reminder of this period of history (Williams 1996:B1).

Waimanalo Sugar Co. continued to grow and business was good. More lands were being put under cultivation. New tracks were being laid and another locomotive was ordered. Interest in W. S. C. grew, and in 1885 W.G. Irwin of the W.G. Irwin & Co., agents for W. S. C., gained control with J. A. Cummins staying on as overseer. In 1894, J. A. Cummins sells the majority of shares in W. S. C. to two California men and a Kohala sugar planter Robert. R. Hind, with George Chalmers taking over duties as plantation manager. J. A. Cummins died in 1913 and his estate sold the remaining fee simple lands and the unexpired lease of Waimānalo to W. S. C. for $52,000. In 1910 W.G. Irwin and Co. merged with C. Brewer and C. Brewer controlled W. S. C. until its liquidation in 1947.

The present project area is understood to have been a portion of Field #6 (Figure 7) of the Waimanalo Sugar Co. It seems probable that the project area was entirely under commercial sugar cane cultivation from prior to 1900 up to the liquidation of the company in 1947.

The acquisition of the Bellows area, which was part of the original Cummins lease, began in 1916 and is well-documented elsewhere.

G. Irrigation Ditches

Water was a continuous problem for most sugar companies, including the Waimanalo Sugar Company. Irrigation for W. S. C. was dependent on three ditch and tunnel systems (Figure 5). The Maunawili Ditch and Tunnel is the uppermost system, the Kailua Ditch is the middle system and the Pump Ditch/ Reservoir Ditch is a name that was given to the most seaward. This Pump Ditch/ Reservoir Ditch is understood as another name for the Tai-Lee Ditch which bounds the seaward edge of the present project area. It is unclear when this ditch system was built, but water from Maunawili was used in Waimānalo as early as 1878. "Water sources in upper Maunawili Valley were first utilized prior to 1878 and have remained the basic supply for Waimānalo since that time" (Bartholomew and Ass. 1959:53). It is understood that this seaward ditch originally dates to the Chinese sugar cane growing period of 1876-1900 and was later modified by the WSC.

None of these three ditch systems appears on the 1919 Fire Control map series (Figure 6) although a ditch is shown running seaward of the mill. A 1922 "Fields of Waimanalo Sugar Company" Map (Figure 7) appears to show only the Kailua Ditch. The 1928 USGS map series (Figure 8) shows the two *mauka*-most ditches (Maunawili Ditch and Kailua Ditch) but does not show the Pump Ditch/ Reservoir Ditch (Tai-Lee Ditch). The same is true for the 1943 War Department map series (Figure 9). Thus, on the basis of the available maps, it would appear that the Kailua Ditch was built between 1919 and 1922, that the Maunawili Ditch was built between 1922 and 1928. Wilcox (1996:111) relates that "a second ditch, built in 1924, had its source in the Kawainui Swamp." This would fit the Kailua Ditch although the Waimanalo Sugar Company map suggests a slightly earlier date.

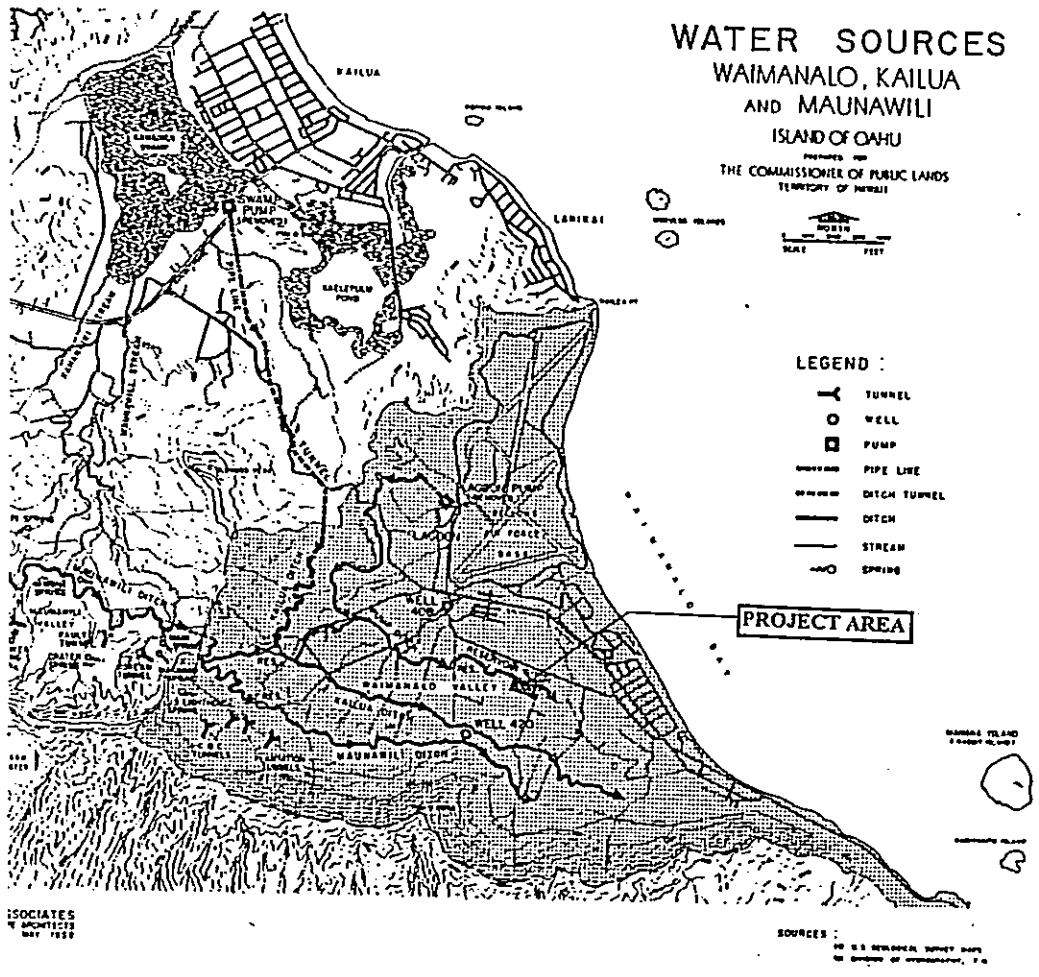

Figure 5 Water Systems of Waimānalo, Commissioner of Public Lands, 1958

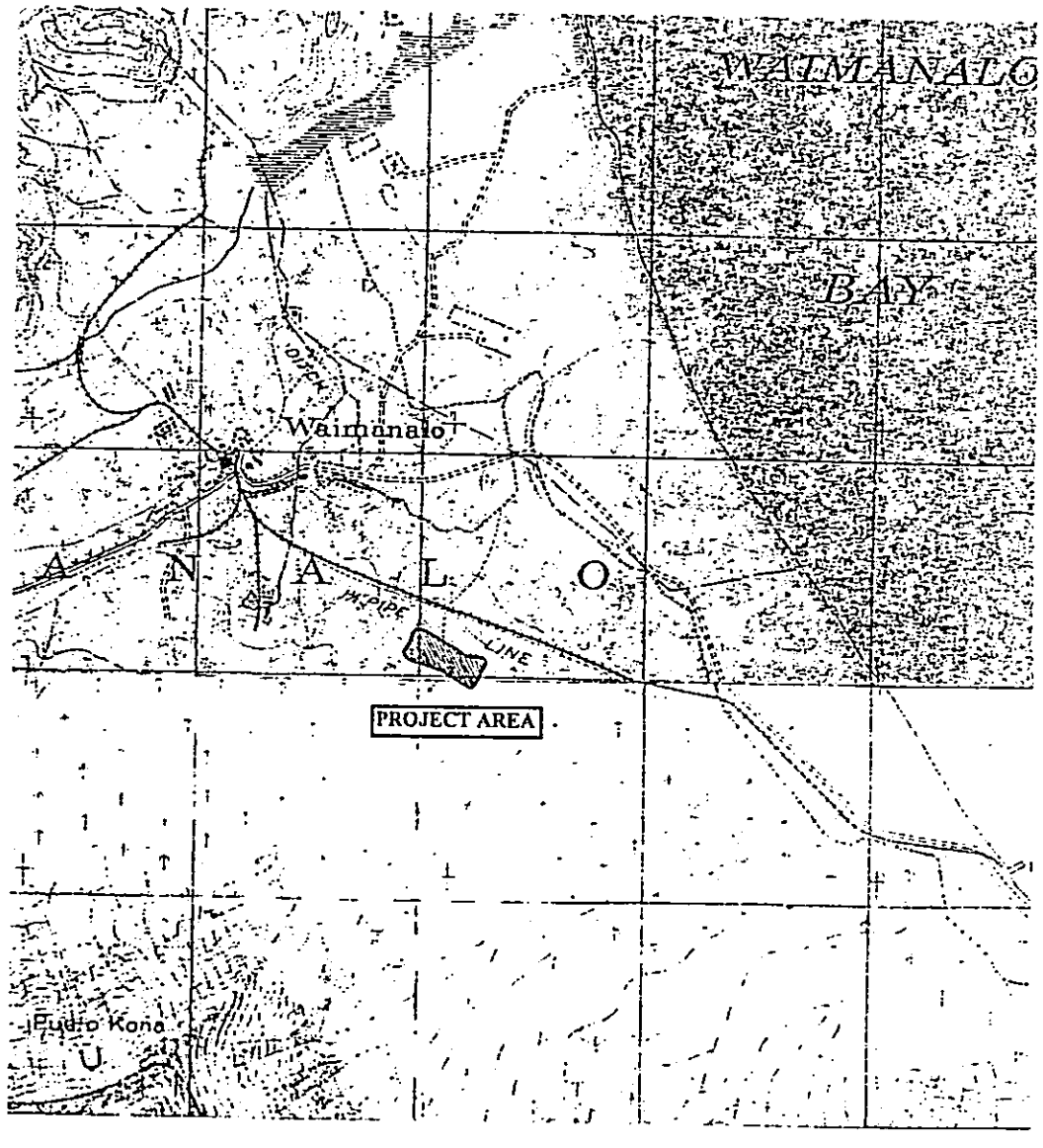

Figure 6 Portion of 1919 Fire Control Waimanalo and Koko Head Maps Showing Location of Project Area in Sugar Cane Fields

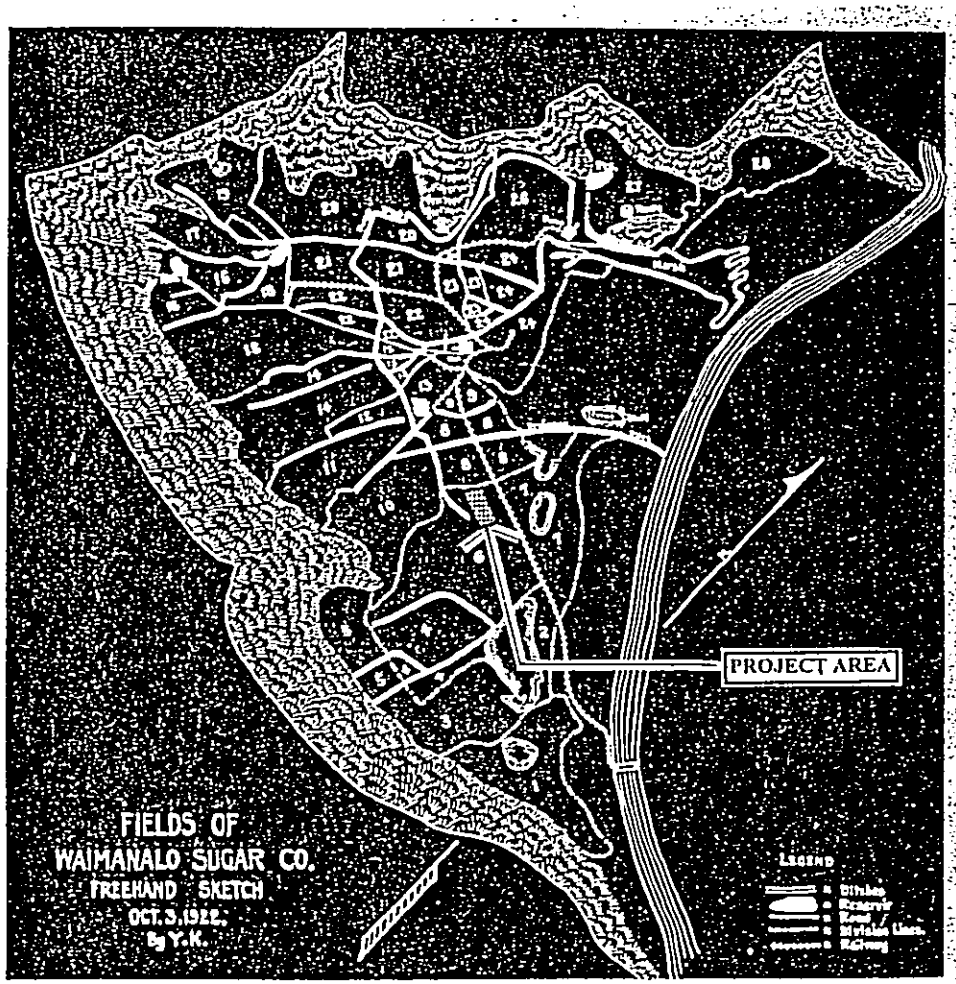

Figure 7 Portion of "Fields of Waimanalo Sugar Company Map (1922) Showing Project Area in Field 6

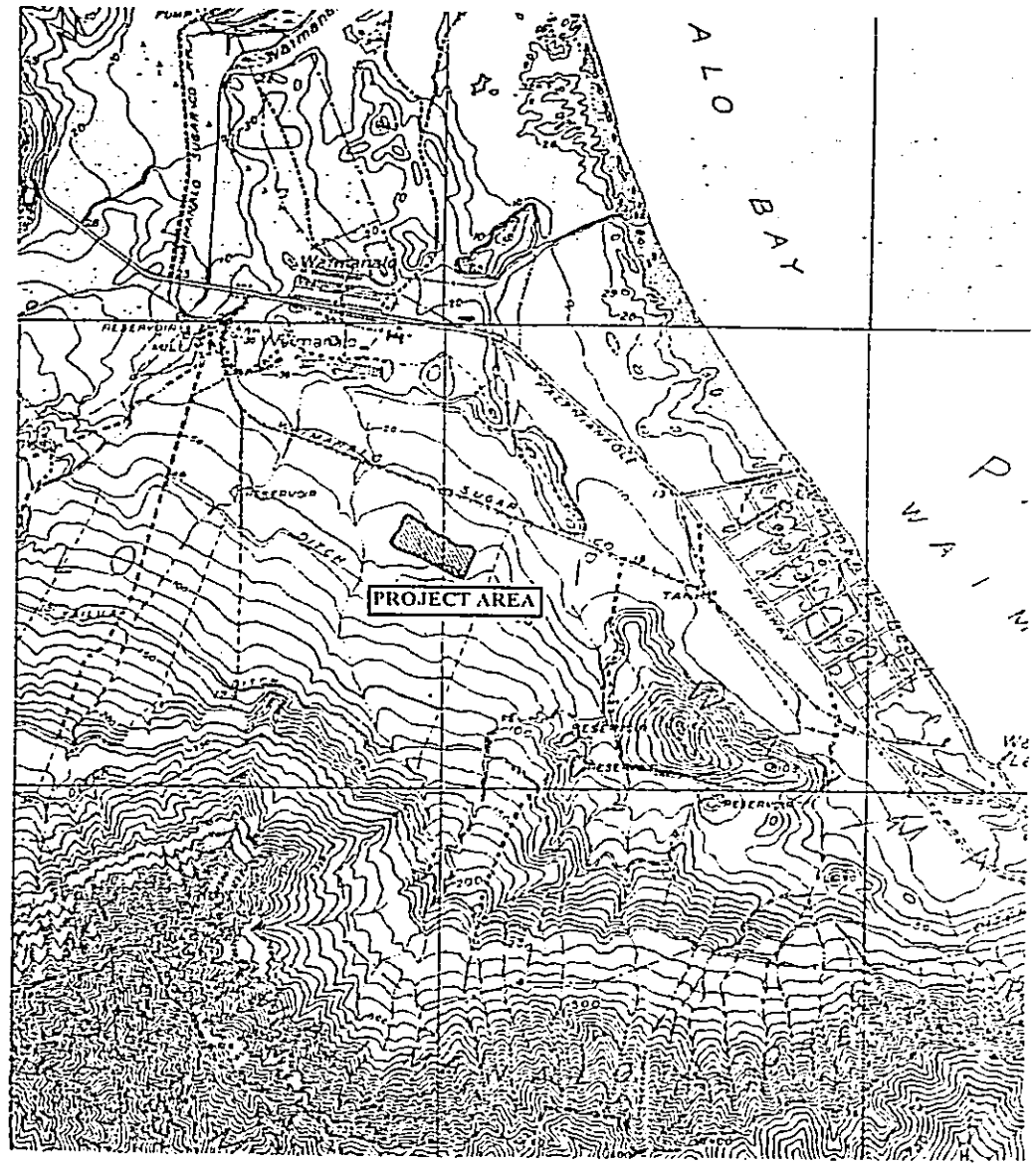

Figure 8 Portions of the 1928 USGS Mokapu and Koko Head Maps Showing Location of Project Area

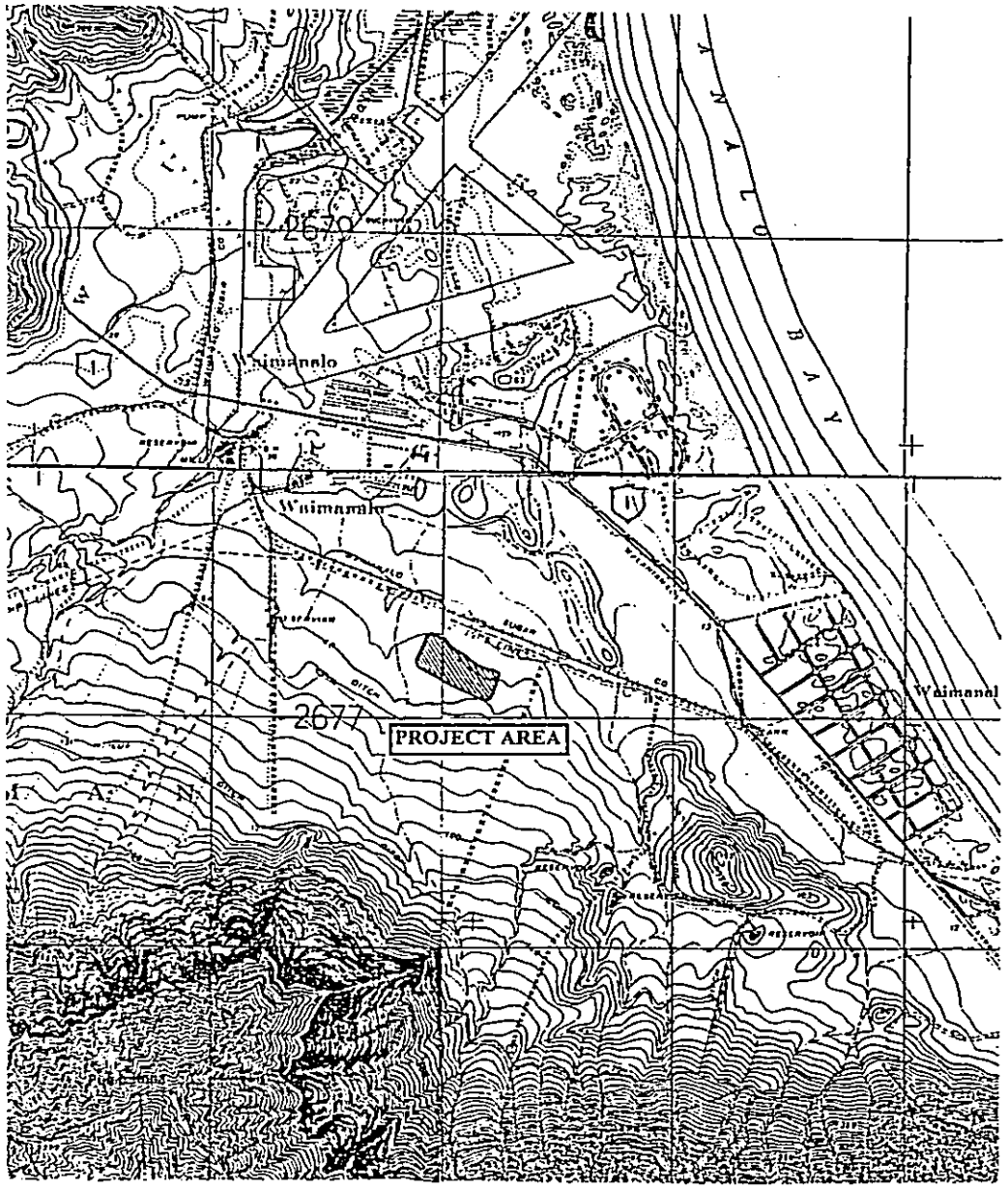

Figure 9 Portions of the 1943 War Department Kailua, Mokapu and Diamond Head Maps Showing Location of Project Area

The precise dating of the construction of the ditch on the *makai* side of the present project area remains uncertain. Supplied maps identify this as the "Tai-Lee Irrigation/Drainage Ditch" which would associate this ditch with the individual of that name and the Chinese sugar cane growing period of 1876-1900. This "Tai-Lee Irrigation/Drainage Ditch" does not appear on any maps known to us prior to the Tax Map Key 4-1 dating to 1957. It seems probable that this was simply not regarded as in the same league as the Kailua Ditch and Maunawili Ditch and may have gone undocumented (Wilcox 1996:106 shows the Kailua Ditch and Maunawili Ditch in a map of "Major ... Ditches" but does not show the Pump Ditch/Reservoir Ditch or the Tai-Lee Irrigation/Drainage Ditch).

G. Summary

Traditional Hawaiian accounts indicate that the Waimānalo area and specifically the area associated with Waimānalo Stream in western Waimānalo was agriculturally very productive. However, with the lease of Waimānalo to the Cummins family in 1850, rapid change not only of land tenure, but also of the landscape takes place. Taro patches, fruit trees, and other gardens give way to pasture land and rice fields. By the 1880s pasture land is being replaced by cultivated sugar cane, first grown by Chinese rice farmers. The early 1900s see an expansion of the Waimanalo Sugar Co., including water resource procurement from Maunawili Valley and Kawainui Marsh.

C. Brewer and Co., which gained control of W. S. C. in 1910, liquidated it in 1947, ending nearly 70 years of sugar cultivation but the ditch system developed for sugar continued to survive for the agricultural lands in Waimānalo. Since the lands within the project area were leased government lands, they reverted first to the Territory of Hawaii and are now under State of Hawaii jurisdiction.

III. PREVIOUS ARCHAEOLOGICAL RESEARCH

Waimānalo, in general, is distinguished as being the place of one of the earliest archaeological investigations in the Hawaiian Islands. In 1879, Mr. Otto Finsch reported on human burials in sand deposits and associated artifacts in an area which is now Bellows Air Force Base (Finsch 1879).

McAllister, in his 1930's Survey of the Island of Oahu, reports two sites in *mauka* Waimānalo (McAllister 1933:191). Both of these sites are *heiau*. Site 381 is located on the slope below Mr. Olomana to the northwest of the Agricultural Park. This *heiau* was reported to be 250 feet long and 130 feet wide, but its present condition is not known. Site 381 is referred to by the name of the place - Pōhakunui - and is 90 feet long and 50 feet wide (*Ibid.*:191). The structure stands on a hill near the top of Mahailua Road and has been visited by both authors and is still in a good state of preservation. The structure is on state land approximately one mile south of the Agricultural Park. It is of special interest to note that McAllister makes no mention of taro terraces in his 1930's survey. This could indicate that at this time taro cultivation had long been abandoned and the *lo'i* that survived were overgrown by forest.

With the exception of these early surveys, the major focus in archaeological research in Waimānalo has been the Bellows area.

Bellows Air force Station is one of the most extensively studied areas on O'ahu. Beginning in the 1960s, over 50 separate reconnaissance, survey, excavation and monitoring projects have taken place, most in conjunction with construction activity. A partial list of these projects is provided in Rosen dahl (1981:16) and again in Leidemann and Cleghorn (1983:7). Human burials, lithic scatters, soil features and/or occupation layers have been found almost everywhere archaeological investigation has taken place. Possibly, the most important finds occurred in dune deposits adjacent to the mouth of Waimānalo Stream. These dune deposits referred to as Site 018 yielded archaeological materials which are still considered to be among the oldest in Hawaii (Pearson *et al.* 1972, Cordy and Tuggle, 1976 and Kirch, 1985:71). Radiocarbon dates on charcoal from cultural layers within the dune would place the earliest occupation to around 300-400 C14 years A.D. (Tuggle *et al.* 1978). Much of the research since this discovery of early Bellows Dune occupation has focused on attempting to connect other archaeological finds in more inland areas of Bellows to this early Polynesian settlement. Bellows remains a focus of continuing archaeological research.

A. Anticipated Finds

Due to land altering activities such as commercial sugar cane and rice by the ditch and the development of the Unisyn Biowaste plant it is not expected that any culturally significant items will be found on this survey. According to Department of Land and Natural Resources, State Historic Preservation Division's records, this 21.25 acre parcel has not been surveyed for historic sites.

Table 1 Previous Archaeological Studies Within Waimānalo Ahupua'a

Year	Author(s)	Title	Comments
1879	Finsch, Otto; Alexander, A.D. (Translator)	*Bericht Uber Insel Oahu* (*Letters from the Island of O'ahu*)	Told there was "a place of skulls" in Waimānalo
1933	McAllister, Gilbert	*Archaeology of O'ahu*	Identified 3 *heiau* (380, 381, & 382), a *pu'uhonua* (383), a fishpond (383a), and abandoned coastal village(384)
1971	Gormley, Michael K.; Yent, Martha; Davis, Bertell D.; Imamoto, Shirley; Kavanagh, B. P.	*Site 3000: University of Hawaii at Manoa, Summer Field School, Summer 1971.*	Study of Kaupo Fishing Village area
1971	Pearson, Richard	*Archaeological Reconnaissance Survey; Waimanalo Bay State Recreation Area; Waimanalo, Oahu TMK 4-1-03:016*	Site 512 remnant sand dune & cultural layer & 513, cultural deposits, human remains
1971 (1967)	Pearson, R.J., P.V. Kirch & M. Pietrusewsk y	"An Early Prehistoric Site at Bellows Beach, Waimanalo, Oahu, Hawaiian Islands," *Archaeology and Physical Anthropology in Oceania* VI (3)	Reports study of stratigraphy, cultural finds & 5 setrs of human remains BAFS
1973	Davis Bertel	Kaupo Cave Shelter, Site 3000, Feature 1: A Preliminary Report on Artifact Analysis	UH Mānoa M.A. thesis based on field work at Kaupo Village complex
1974	Tuggle, H. David & M.J. Tomonari	*Surface and Sub-surface Survey of Selected Zones of Bellows Field Archaeological Area*	Summary of excavations historic deposits in 4 of 7 areas examined, BAFS
1975	Cordy, Ross	*O18 O'ahu Island New Work and New Interpretations*	Reports on further work at O18 and adjacent sites BAFS

1975	Nakama, Stella	*Archaeological Surveillance of a Drip Irrigation Line: Bellows Air Force Station, Oahu, Hawaii.*	Monitoring of a backhoe Trench - minimal findings BAFS
1975a	Tuggle H. David	*Report on Archaeological Investigations of the Bellow Archaeological Zone National Register Site and Adjoining Portions of Bellows Air Force Station, Spring 1975*	Presents findings at various zones of O18, BAFS
1975b	Tuggle, H. David	*Archaeological Surveillance of Construction Excavation in Bellows Field Archaeological Zone of the Bellows Air Force Station,* HI.	Brief study of construction . monitoring NE BAFS
1975c	Tuggle, H. David	*Preliminary Report on Subsurface Investigation of a Portion of Proposed Irrigation Line, Bellows Air Force Base, for Archaeological Evaluation*	Letter report,no features or artifacts, BAFS
1975d	Tuggle, H. David	*Archaeological Examination of Areas of Bellows Air Force Station Subject to Construction Activities.*	Evaluates various areas, BAFS
1975	Tuggle, H. David, Stella K. Nakama, and Thomas N. Manabe	*Subsurface Investigations of Site 511-5 Bellows AFS, Oahu, Hawaii, Pertaining to "Seawall Repair and Drip Line" Project*	Provides data and conclusions re: archaeological import of site 511-5, BAFS
1976	Cordy, Ross and David Tuggle,	*Bellows, Oahu, Hawaiian Island: New Work and New Interpretation.*	Reviews problems, includes results of investigations in inland areas, BAFS
1976	Davis, Bertell D.	*Archaeological Investigations at the Waimanalo Bay State Recreation Area, Ko`olaupoko, Waimanalo, O`ahu Island.*	Not seen
1976	Davis, Bertell	*Archaeological Survey and Testing at the Waimanalo Bay State Recreation Area, Ko`olaupoko, Waimānalo, Oahu Island, TMK 4-1-08:16*	Sterile cores, Site 512 found *imu*

1976	Nakama, Stella & H. David Tuggle	*A Report on Archaeological Monitoring of Repair of Water Distribution System, Bellows AFS*	42 features possibly dating to hawaiian traditional period, BAFS
1976	Tuggle, H. David and Thomas N. Manabe	*Archaeological Monitoring of Drip Irrigation Line Construction: Bellows Air Force Station #2.*	Results of second phase of drip irrigation monitoring, BAFS
1977	Davis, Bertell	*Archaeological Investigations at the Waimanalo Bay State Recreation Area, Ko`olaupoko, Waimānalo, Oahu Island: Phase I, Subsurface Survey*	Coring at Sites 512-513. Site 512 small stratified deposit with cultural features; Site 513 not locate reported burials or cultural deposit
1978	Davis, Bertell	*Subsurface Archaeological Reconnaissance of Selected Areas at Bellows AFS, O`ahu Island*	Reports cultural deposits and human remains from NE Bellows, BAFS
1978	Cox, David W.	*Waimanalo Bay State Recreation Area, Archaeological Monitoring of Fence Line, Water Line, Electrical Line, Sewer Line, Park Development, Phases I and II, Waimanalo, Koolaupoko, Oahu Island (TMK 4-1-15:15)*	1 burial, site 512 outlined
1979a	Beggerly, Patricia	*Archaeological Subsurface Investigation at Waimanalo Bay State Recreation Area, Koolaupoko, Oahu*	18 augur holes with no subsurface cultural deposits
1979b	Beggerly, Patricia	*Archaeological Monitoring and Subsurface Investigation at Waimanalo Bay State Recreation Area, Koolaupoko, Oahu*	No findings
1979	Carter, Laura	*Archaeological Monitoring of Selected Areas at Bellows Air Force Station, Oahu Island*	Presents data on site -9645 NE Bellows, BAFS
1979	Griffin, Agnes and Martha Yent	*Archaeological Subsurface Investigation at Waimanalo Bay State Recreation Area, Ko`olaupoko, O`ahu.*	Generally confirms absence of culture

1979	State Parks In-house Archaeologic al Team	*Archaeological Monitoring and Subsurface Investigation at Waimanalo Bay State Recreation Area, O'ahu. October 9, 1979-November 1, 1979.*	Not seen
1979	Yent, Martha; and Agnes Griffin	*Bulldozed Areas at Waimanalo Bay State Recreation Area, Ko'olaupoko, O'ahu*	No findings
1980	Beggerly, Patricia (Lovelace & Ota)	*Archaeological Test Coring at Waimanalo Bay State Recreation Area, Memorandum*	No cultural deposits located
1980	Lovelace, George & Jason Ota	*Archaeological Test Coring at Waimanalo Bay State Recreation Area*	No cultural deposits
1980	Ota, Jason	*Archaeological Monitoring at Waimanalo State Recreation Area Memorandum*	Modern trash under parking lot
1980	Riley, Thomas J.	*Archaeological Reconnaissance and Subsurface Testing of Proposed Boathouse Project Site at Bellows AFS, Hawaii*	Presents results of 111 auger borings & 10 1m² excavations - minimal findings, BAFS
1981	Kam, Wendell,	*Archaeological Report of a Human Burial at Manana Island, Koolaupoko, Waimanalo, Oahu*	Not seen
1981	Neller, Earl	*Waimanalo Ditch System: Photo Survey*	Photographs of ditches
1981	Rosendahl, Paul H.	*Archaeological Reconnaissance Survey of Proposed Additional Marine Corps Training Areas Bellows Air Force Station Oahu*	Extensive historical summary, BAFS
1981	Rosendahl, Paul H. and Carol L. Silva	*Archaeological Reconnaissance Survey of Proposed Additional Marine Corps Training Areas, Bellows Air Force Station, Oahu, Hawaii*	Surface survey of 356-acre parcel, relocated 5 previously recorded sites, no new sites, BAFS

1982	Tuggle, David	*Archaeological Reconnaissance: Bellows Air Force Station Waimanalo, Oahu, Hawaii.*	No significant findings, BAFS
1983	Leidemann, Helen & Paul L. Cleghorn	*Archaeological Monitoring of Vegetation Clearance on Antenna Fields at Bellows Air Force Station, Oahu, Hawaii*	Site 3312, gravestone complex 1917 era, BAFS
1983	Sue, Roy K., Martha Yent, and Jason Ota	*Waimanalo Watershed Project and Archaeological Survey of the Solid Waste Collection Site, Waimanalo, Oahu*	No sites located
1984a	Barrera, William	*Archaeological Services During Installation of Five Replacement Antennas at Bellows Air Force Station, Oahu, Hawaii*	Notes discontinuous but related archaeological deposits, BAFS
1984b	Barrera, William	*Waimanalo, O'ahu: Archaeological Survey at Proposed Well Locations*	Well sites III & IV, no significant findings
1985	Athens, J. Stephen	*Archaeological Monitoring for Soil Coring, Bellows Air Station, Waimanalo, Oahu.*	No significant findings, BAFS
1985	Griffin, P. Bion	*Test Excavations at the Searex Tower Site, Bellows Field Archaeological Area, Bellows Air Force Station, Waimanalo, Oahu*	No significant findings, BAFS
1985	Hammatt, Hallett H.	*Letter Report on Archaeological Monitoring at Bellows Air Force Station Post Exchange Site*	Minimal findings, BAFS
1985	Hammatt, Hallett	*Archaeological Monitoring for Fuel Tank Trench at Bellows Air Force Station, Waimanalo, Oahu*	Notes human bone and fire hearth, BAFS
1985	Hurlbett, Robert E.	*Preliminary Report upon Completion of Fieldwork: Archaeological Reconnaissance and Subsurface Testing for Recreation Library Project Sites, Bellows AFS, Oahu.*	No significant findings, BAFS

1985	Hurlbett, Robert E., Margaret Rosendahl, & Paul H. Rosendahl	*Archaeological Reconnaissance, Subsurface Testing and Monitoring of Proposed Projects HIC 84-1269, Recreation Library and HIC 86-3221, Recreation Library Utilities Support Project Sites at Bellows AFS, Waimanalo, Ko`olaupoko District, Island of O`ahu, Hawai`i (TMK:1-4-1--15:1),*	No evidence of cultural materials, BAFS
1985	Mc Neill, J.R.	*Archaeological Reconnaissance and Monitoring of Obstacle Course Construction at Bellows Air Force Station, Oahu, Hawaii.*	Minimal Findings, BAFS
1985	Neller, Earl	*An Archaeological Reconnaissance of Manana Island, Oahu*	Not seen
1986a	Athens, Stephen	*Preliminary Report: Archaeological Reconnaissance Survey for Proposed Omni Antenna, Bellows A.F.S., Waimanalo, Oahu, Hawaii.*	Mostly transit work, no surface remains, brief synopsis of augering, BAFS
1986b	Athens, Stephen	*Site Summary: Archaeological Deposits at the Bellows A.F.S. Omni Antenna Pad & Trench, Waimanalo, Oahu*	Presents results of work at Site -1445, BAFS
1986	Kam, Wendell	*Field Inspection of Bellows AFB Picnic Area #6, Waimanalo, Koolaupoko, Oahu, Memorandum,*	Not seen, BAFS
1986	Kam, Wendell	*Bellows Fence Repair Burial.*	Account of human remains uncovered during construction, BAFS
1986	Kam, Wendell	*Investigation of Discovery of Human Skeletal Remains, Bellows AFS, Koolaupoko, Oahu, Letter Report*	Account of human remains uncovered during construction, BAFS
1987	Athens, J. Stephen	*Archaeological Survey and Testing for Airfield Perimeter Fence Project, Bellows Air Force Station*	Designates sites -3709 subsurface cultural deposit and -3710 marsh deposits, BAFS

1987	Pietrusewsky, Michael	*Burial on Rabbit Island, Waimanalo Side, Waimanalo, Ko`olaupoko, O`ahu Island.*, Police, Honolulu; Medical Examiner, Honolulu	Not seen
1987	Spriggs, Matthew	*Report of Radiocarbon Dating Analysis*	Review of carbon dating, BAFS
1988a	Athens, J. Stephen	*Archaeological Reconnaissance and Subsurface Testing, Proposed Omni Antenna and Cable Trench, Bellows Air Force Station, Waimanalo, Oahu.*	Documents discontinuous subsurface deposits & an area of basalt debitage, BAFS
1988b	Athens, J. Stephen	*Archaeological Survey and Testing for Airfield Perimeter Fence Project, Bellows Air Force Station, Oahu, Hawaii*	2 C14 dates A.D. 1390-1505 A.D. 1400-1525, BAFS
1988	Hammatt, Hallett H.	*Archaeological Reconnaissance of a 3.9-Acre Parcel Adjacent to Sea Life Park, Waimānalo, O`ahu,*	No findings - parcel had been leveled and filled
1988	Hammatt, Hallett H. & Douglas Borthwick	*Archaeological Reconnaissance of the Mauka Portion of Phase II Waimanalo Agricultural Park Waimanalo, O`ahu*	Previously under cane cultivation, notes two taro complexes
1988	McNeil, Judith R.	*Intensive Archaeological Survey and Data Recovery at Site 50-80-15-3709, Bellows Air Force Station, O`ahu, Hawaii*	Describes essentially intact deposits of site -3709, BAFS
1988	Medical Examiner	*Police and Medical Examiner's Reports on Burial at Kaiona Beach Park, Honolulu*	Not seen
1988	Streck, Charles F. and Farley K. Watanabe	*Archaeological Reconnaissance of Areas Proposed for Emergency Flood Repair and Replacement of Structures, Bellows Air Force Statin (BAFS), Waimanalo, O`ahu Island.*	Minimal Findings, BAFS

1989a	Hammatt, Hallett H. & David W. Shideler	*Archaeological Survey and Testing at Bellows Air Force Station for New Antennas and Trench Lines, Waimanalo, Ko`olaupoko, O`ahu*	Delimits cultural deposits in the vicinity of the Bellows runways, BAFS
1989b	Hammatt, Hallett H. & David W. Shideler	*Archaeological Reconnaisance and Subsurface Testing of Proposed KNMD 773133, Park Complex, North Coastal Region of Bellows AFS, Waimanalo, O`ahu, Hawaii.*	Delimits cultural deposits in the vicinity of the NE portion of Bellows, BAFS
1989	McNiell, Judith R.	*Intensive Archaeological Investigations at Site 50-80-15-3709, Bellows Air Force Station, O`ahu, Hawaii*	Final Report of McNeal 1988, BAFS
1990	McMahon, Nancy; Michele T. Douglas, and Michael Pietrusewsk y	*Burial Removal at 41-042 Manana Street, O`ahu, Site No. 50-80-15-4118, TMK: 4-1-05:027.*	Burial of a single individual
1990	Rolett, Barry V.	*University of Hawaii Archaeological Research on Bellows Air Force Station: Report of the 1989 Field School and a Proposal for Further Research in 1990*	Summary of 1989 Reconnaissance and areal excavation, BAFS
1991	Hibbard, Don and Michael Kolb	*Field Inspection of Houselot and Neighboring Area at TMK: 4-1-36:18, Waimanalo, Ko`olaupoko, O`ahu*	Notes a stacked mound and tumbled wall of unknown function
1991	Kawachi, Carol	*Kaupo Beach Park Burials, Waimanalo, Ko`olaupoko, O`ahu.*	Not seen
1991	Miller, Lynn	*Archaeological Monitoring of the Tinker Road Bridge Repair (Replacement) Project, Bellows Air Force Station, Waimanalo, O`ahu Island, Hawai`i.*	Reports cultural evidence of site -511 including 3 distinct occupational levels, BAFS

1992	Carpenter, Alan	*Fieldcheck of Kealakipapa Valley Road Remnants, Makapu`u Head, Maunalua, Ko`olaupoko, O`ahu.*	Presents a historical review and field observations focused on road remnants
1992	Rolett, Barry V.	*1990 Archaeological Excavation at Site 50-80-15-3300 (Bellows Air Force Station, Oahu), Conducted by the University of Hawaii Archaeological Field School*	Results of field school excavation at Site -3300, BAFS
1992a	Shun, Kanalei	*Archaeological Monitoring and Sampling during Installation of Perimeter Security Fencing, Bellows Air Force Station, Waimanalo, Ko`olaupoko District, Island of Oahu, Hawaii*	A.D. 1410-1635 base layer A.D. 430-905 from charcoal in river bank, BAFS
1992b	Shun, Kanalei	*Archaeological Reconnaissance Survey and Subsurface Testing for Proposed Electric Tie Circuit, Bellows Air Force Station, Waimanalo, Ko`olaupoko District, Island of Oahu, Hawaii*	Presents testing results, only remnant localized cultural deposits, BAFS
1993	Athens, J. Stephen & Jerome V. Ward	"Environmental Change and Prehistoric Polynesian Settlement in Hawai`i," *Asian Perspectives*	Scholarly work, BAFS
1993	Cordy, Ross H. and H. David Tuggle	"Bellows, Oahu, Hawaiian Islands: New work and New Interpretations," *Archaeology and Physical Anthropology in Oceania* XI (3)	Scholarly work, BAFS
1993	Dixon, Boyd	*An Archaeological Reconnaissance of Five Board of Water Supply Wells on O`ahu, Hawai`i.*	Waimānalo Well III site - no significant findings

1993	Landrum, Jim & Allan Schilz	*Archaeological Reconnaissance Survey, Monitoring, and Subsurface Testing at the Proposed Mini-Putt Golf Course Site Project KNMD 929122, Bellows Air Force Station, Waimanalo Ahupua`a, Koolaupoko District, Island of O`ahu, Hawaii*	4 C14s - A.D. 1259-1489 and A.D. 1280-1530; 1411-1681, 1427-1666 (200 meters from shore, Site 4522, BAFS
1993	Shun, Kanalei	*Archaeological Monitoring and Sampling During Emergency Flood Repair Construction, Waimanalo and Inoaole streams, Bellows Air Force Station, Waimanalo, Koolaupoko District, Island of Oahu, Hawaii*	Cultural deposits, C14 A.D. 1500, A.D. 700, BAFS
1993	Sinoto, Aki and Jeffrey Pantaleo	*Archaeological Surface Assessment and Monitoring of 12.4 Acre Parcel for Hawaii Job Corps Center, Waimanalo, O`ahu*	Not seen
1993	Stride, Mark; Douglas F.Borthwick, and Hallett H. Hammatt	*Archaeological Reconnaissance Survey of the 56 Acres for the Proposed Olomana Golf Course Expansion Area (TMK: 4-1-13:11)*	Only parallel ditches and a reservoir were identified as a site (Site -4524), a component of Site -4042 Waimanalo Sugar Co. infrastructure
1994	Tuggle, H. David	*Archaeological Research of Areas Proposed for the development of Military Family Housing and Expansion of Military Training at Bellows Air Force Station, Oahu*	Site 4853, A.D. 380 to 600, BAFS
1995	Erkelens, Conrad	*Preliminary Report on Archaeological Monitoring and Data Recovery of Underground Storage Tank Removal, Bellows AFS, Waimanalo, Hawai`i*	C14 dates between A.D. 1400 to 1529 (73% probability), BAFS

1997	Carlson, Ingrid	*Archaeological Monitoring of Thirteen Locales for Site Assessment Field Sampling Activities at Bellows Air Force Station, Waimanalo, O`ahu, Hawai`i*	3 archaeological sites are located, no intact cultural deposits were found, BAFS
1997	Dega, Mike, Kyle, Latinis, and Randy Ogg	*Draft–Archaeological Monitoring and Sampling During Excavations for the Removal of Underground Storage Tanks at Bellows Air Force Station Hawai`i, Waimanalo, Ko`olaupoko District, Oahu, Hawai`i*	Understood as a draft of the following study, BAFS
1997	Latinis, D. Kyle, Michael F. Dega and Robert L. Spear	*Archaeological Monitoring and Salvage Data Recovery Excavations for the Removal of Underground Storage Tanks at Bellows AFS Hawai`i, Waimānalo, Ko`olaupoko District, O`ahu Island, Hawai`i.*	Reports site -5464 a disturbed cultural deposit & a human bone, BAFS
1997	Tuggle, David H.	*Final-Archaeological Research of Areas Proposed for Development of Military Family Housing and Expansion of Military Training at Bellows Air Force Station, O`ahu,*	Synthesis and reorganization of archaeological data, BAFS
1998	Carlson, Ingrid	*Archaeological Monitoring for Bellows Excess Lands Engineering Evaluation/Cost Analysis Phase I Field Sampling Activities Bellows Air Force Station, Waimanalo, O`ahu, Hawai`i*	Minimal findings at 13 areas, BAFS
1998	Carlson, Ingrid and Tom Dye	*Archaeological Monitoring Report for Site Investigations at Multiple Sites, Bellows Air Force Station, Waimanalo, Ko`olaupoko District, O`ahu, Hawai`i*	Identifies paleosols, but no cultural materials at two locations, BAFS

1998	Desilets, Michael and Thomas S. Dye	*Archaeological Monitoring and Sampling during Bellows OU7 UST Removal Project, Interim Remedial Action, Phase I, Bellows Air Force Station, Waimānalo, Ko`olaupoko, O`ahu*	Site 50-80-15-4853, Hawaiian-era deposits were located in swales of a beach ridge; large amount of imported rocks & coral, BAFS
1998	Dye, Thomas	*Archaeological Services in Support of the Final EIS for Proposed Expansion of Military Training and the Construction of Improvements to Existing Recreational Resources at Bellows Air Force Station, Waimānalo, Hawai`i*	Presents data on four sites -4851, -4853, -4855, -4857, BAFS
1999	Dye, Thomas and Coral Magnuson	*Archaeological Monitoring for Multiple Dump Sites DP06, Bellows AFS, Waimānalo, Ko`olaupoko District, O`ahu, Hawai`i*	Reports a deeply buried wetland sediment but no direct evidence of taro or other cultivation, BAFS
1999	Marine Option Program	*Waimānalo Landing - Underwater Survey*	Documents machinery, pilings and various pieces of loading equipment
1999	Ogg, Randy and Michael Dega	*Archaeological Monitoring and Sampling During Waterline Replacement at Bellows AFS, Waimānalo, Ko`olaupoko District, O`ahu Island, Hawai`i*	Reports results of monitoring of 1.4 kms of trenching - minimal findings, BAFS
2000	Desilets, Michael	*Archaeological Monitoring for Underground Storage Tank Removal on ST II Sites at Bellows AFS Hawai`i*	Documents 3 traditional Hawaiian sites (-4850, -5464, & -383) and 1 military site (–4859), BAFS
2000	Desilets, Michael	*Archaeological Monitoring and Sampling, Interim Removal Action Five Underground Storage Sites -047 Bellows AFS Hawai`i*	Traditional Hawaiian cultural remains identified at several POL sites including identification of two new sites -5799 & 5800, BAFS

2000	Eble, Francis and Lisa Anderson	*Results of Archaeological Pre-Construction Subsurface Reconnaissance for Replacement of Beach Cottages at Bellows AFS, Island of O`ahu, Hawai`i*	Reports recovery of cultural remains incl. midden and fishing gear from a disturbed context, BAFS
2000	McGuire, Ka`ohulani and Hallett H. Hammatt	*Archaeological Monitoring Report for the Installation of Light Poles for a Ballfield at Waimānalo Beach Park, Waimānalo, Ko`olaupoko District, Island of O`ahu (TMK: 4-1-003-016)*	Minimal findings
2000	McIntosh, James and Paul L. Cleghorn	*Report on Archaeological Pre-Constrction Reconnaissance Subsurface Testing and Sampling for Proposed Housing Facilities Construction, Bellows AFS, Waimānalo, O`ahu Island, Hawai`i, TMK 4-1-15*	Reports on 40 auger and 2 hand excavated test units - minimal findings, BAFS
2001	Addison, David J.	*Archaeological Subsurface Testing for the Removal of Pipeline Utilities Under the Installation Restoration Program at Bellows AFS, Waimānalo, Ko`olaupoko District, O`ahu, Hawai`i*	Reports results of 23 backhoe trenches & 3 test units documenting a wide-spread, partially intact cultural stratum, BAFS
2001	Leidemann, Helen	*Phase I Archaeological Inventory Survey of Housing Replacement at Bellows AFS Hawai`i TMK 1-4-1-15*	N edge of Bellows, minimal findings, BAFS
2001	Perzinski, David, John Winieski and Hallett H. Hammatt	*An Archaeological Monitoring Report for Waimānalo Sandwich Isles Communication Project, Waimānalo, Ko`olaupoko District, O`ahu, Hawai`i (TMK: 4-1-19,20, 21)*	Minimal findings
2002	Farrell, Nancy and Robert L. Spear	*Archival Research and Documentation of Battery Ricker, ST-10 USTS at Sherwood Forest State Park...*	Provides background data on history of Bellows Field area

2002	McGhee, Fred L. and Valerie Curtis	*Archaeological Monitoring and Sampling in Conjunction with Force Protection Installation Bellows Air Force Station*	Minimal findings, BAFS
2002	McIntosh, James and Paul L. Cleghorn	*Report of Archaeological Monitoring and Sampling During Placement of Electrical Poles at Bellows AFS, Waimānalo, Koʻolaupoko District, Oʻahu Island, Hawaiʻi, TMK 4-1-15*	Identified several buried cultural deposits at two locales, BAFS
2002	Ogg, Randy and Michael Dega	*Archaeological Testing and Sampling During Removal at Two Underground Storage Tanks at Sherwood Forest State Park, Waimānalo, Koʻolaupoko District, Oʻahu Island, Hawaiʻi*	None of 13 trenches yielded significant cultural resources, BAFS
2002	Perzinski, David, Brian Colin, and Hallett H. Hammatt	*Archaeological Monitoring Report for Waimānalo Kūpuna Housing Project at 41-209 Hauhole Street, Waimānalo Ahupuaʻa, Koʻolaupoko District, Oʻahu Hawaiʻi (TMK 4-1-19:32)*	3 human burials and a cultural layer are reported (Site -5939)
2002	Roberts, Alice K. S. and Patrick Bower	*Archaeological Monitoring 8-Inch Waterline Installation Project Bellows AFS, Waimānalo, Koʻolaupoko District, Oʻahu Island, Hawaiʻi (DACA 83-00-P-0038)*	Describes a new sub-surface site -5854, BAFS
2002	Roberts, Alice K. S. and Eric W. West	*Archaeological Monitoring and Sampling During Construction of Housekeeping Facilities (BFMV 955000) Bellows AFS, Waimānalo, Koʻolaupoko District, Oʻahu Island, Hawaiʻi (DACA 83-01-P-0019)*	No significant cultural remains, BAFS

B. Anticipated Finds

Due to the lack of natural water sources in the vicinity, the distance from the coast and particularly the many decades of land altering activities associated with commercial sugar cane cultivation little was expected within the project area. It was thought there might be some trace of Waimanalo Sugar Company land use.

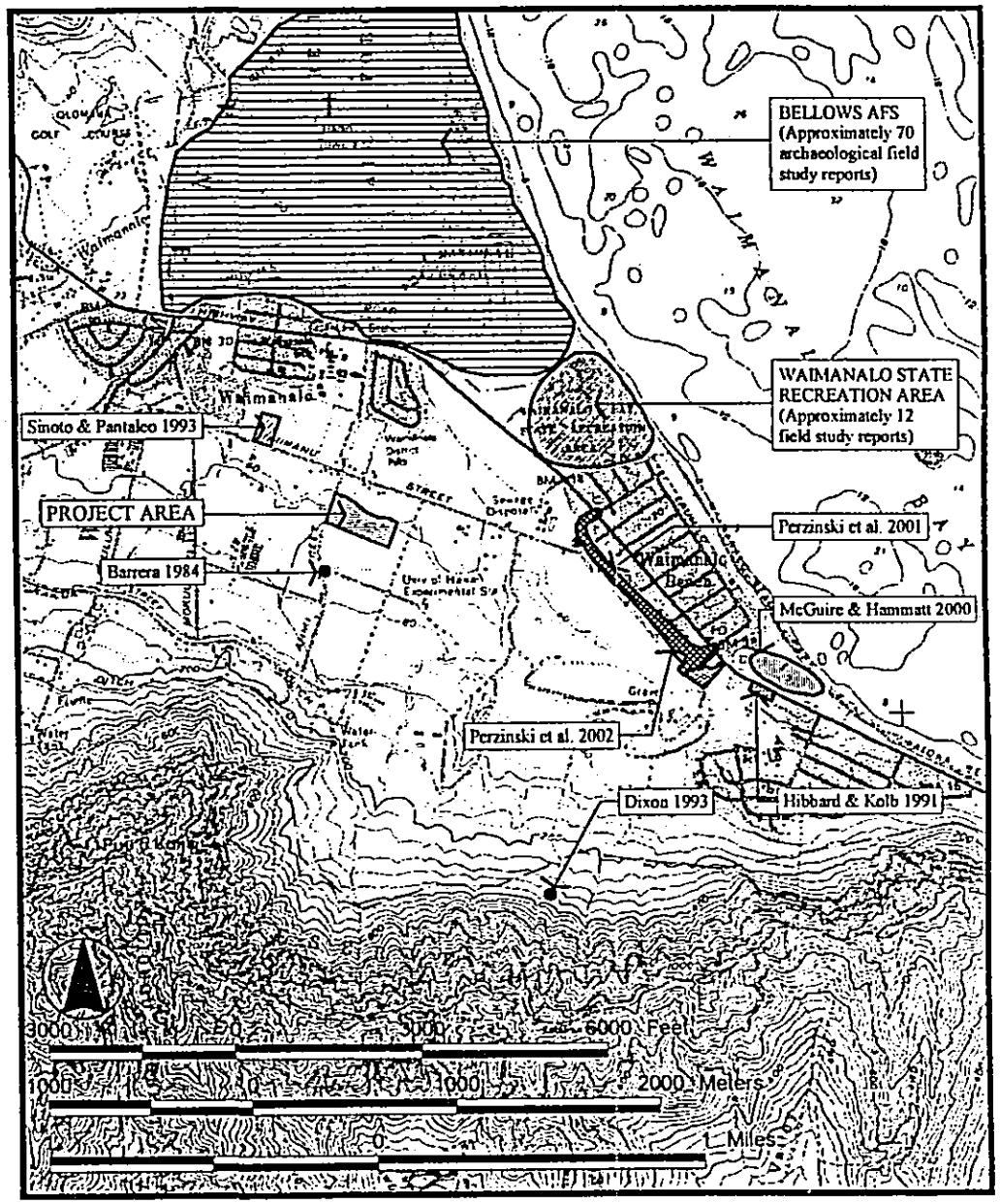

Figure 10 Map Showing the Location of Previous Archaeological Studies in Central Waimānalo Ahupuaʻa

IV. ARCHAEOLOGICAL FIELD WORK RESULTS

A. The Survey Area

Access to the project area was via the paved drive way entrance to the USDA Fruit Fly Rearing Facility off of Ahiki Street. The entire 6-acre project area (Figure 11) was covered on foot by two archaeologists from Cultural Surveys Hawai`i Tony Bush, B.Ed. and David W. Shideler, M.A. under the overall direction of Hallett H. Hammatt, Ph.D. Much of the project area is occupied by the existing fruit fly rearing facility (Figure 12) and maintained grounds with a short grass lawn (Figures 13 and 14). Along the margin of the Tai-Lee Ditch exotic California grass often towers four meters high (Figure 15) and visibility is greatly restricted. Most of the western portion of the project area is in mature *haole koa* with good ground visibility with vegetation becoming significantly denser to the north toward the ditch. Representative photographs and a sketch map of the only complex portion of the Tai-Lee Ditch (understood as bounding the project area) were taken.

B. Findings

No sites of any kind were observed within the project area *per se*. No pre-contact archaeological features were observed. The existing ground conditions show evidence of former sugar cane cultivation with mass grading of the land surface in all areas.

The Tai Lee Ditch also known as the Pump Ditch/ Reservoir Ditch bounds the project on the north (seaward) side (Figures 15 to 18). For most of its length this is simply an earthen ditch, typically 3.5 m wide and 1.1 m deep (Figure 15). The western portion of the ditch has been cemented with evidence of the boards used for the form-work visible in the hardened cement. Basalt cobbles were incorporated into the cement in some areas. The cemented portion is typically 1.07 m wide and 70 cm high.

One cement water diversion control feature (incorporating some train rails) was observed and sketched (Figures 16 to 18). This is believed to have served to divert water into fields on the seaward side and perhaps also on the upslope side. The presence of a gasoline powered sure prime water pump on the seaward side of the water diversion feature attests to the use of the ditch long after Tai Lee's time. Just to the west a stretch spanning a small gully in heavy vegetation is understood to have formed as a modest aqueduct. Whether these concrete appurtenances were "original" is unclear but it seems most likely that they relate to Waimanalo Sugar Company's later use of the "Pump Ditch/ Reservoir Ditch".

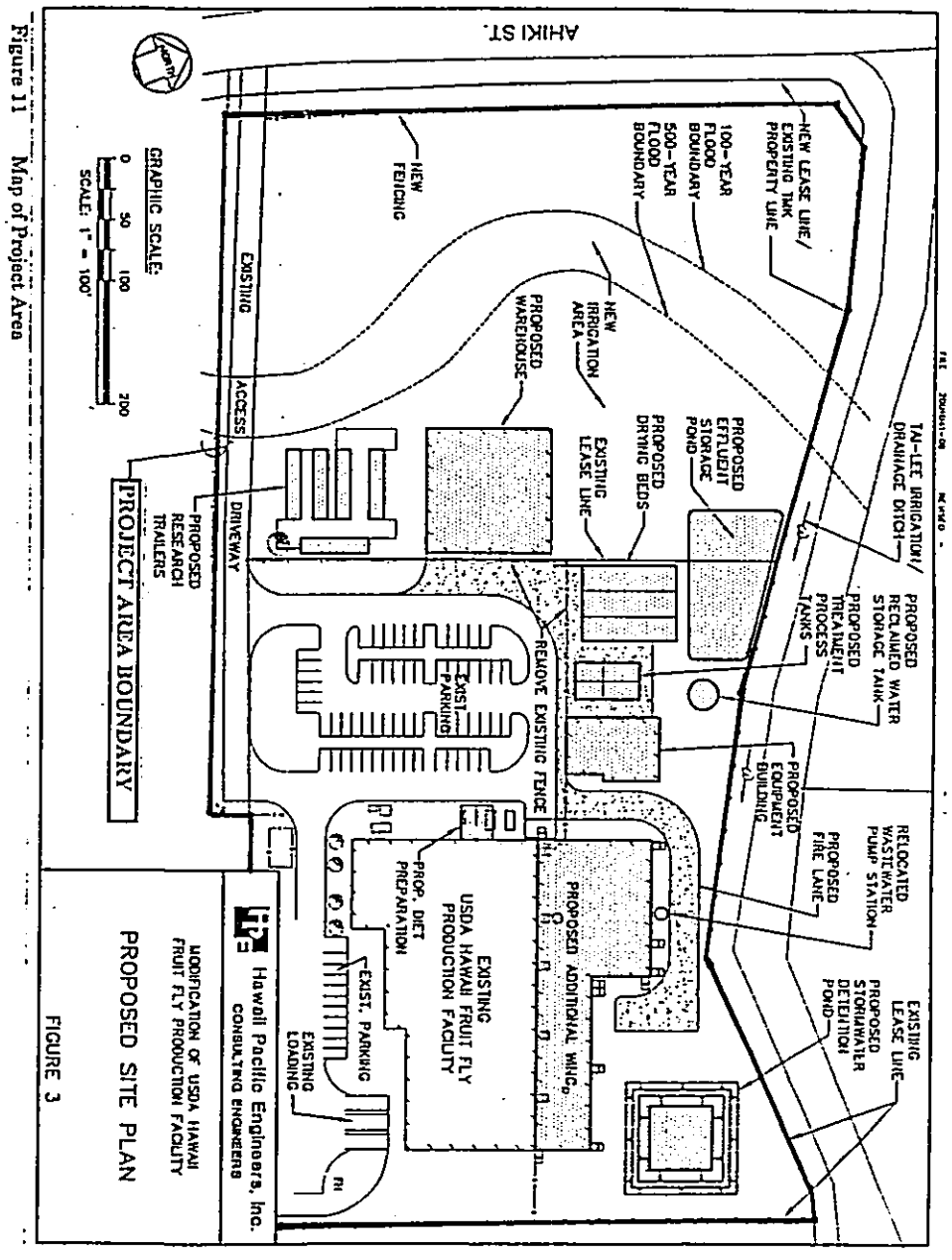

Figure 11 Map of Project Area

Figure 12 USDA Facilities and Parking Lot, View to Southeast.

Figure 13 USDA Facilities and Grounds, View to Southwest.

Figure 14 Vegetation Bordering USDA Facilities. Tai Lee Ditch Extends Through the Vegetation at the far corner of the picture. View to Northeast.

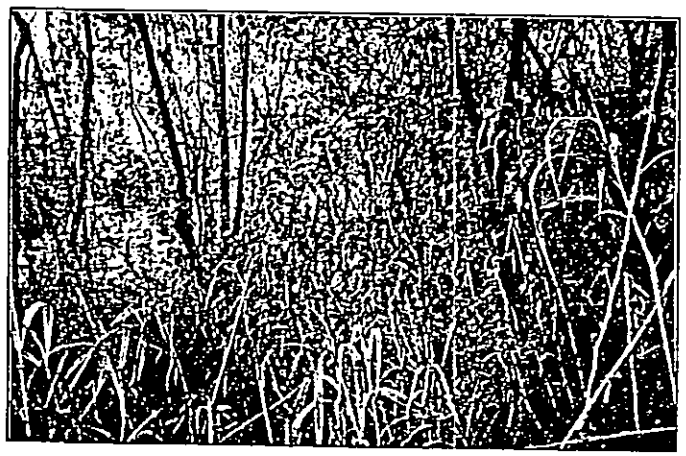

Figure 15 Tai Lee Ditch Overgrown with Vegetation. Project Area is on the Right Side of the Picture. Cement to Left is Outside the Project Area. View to Southeast.

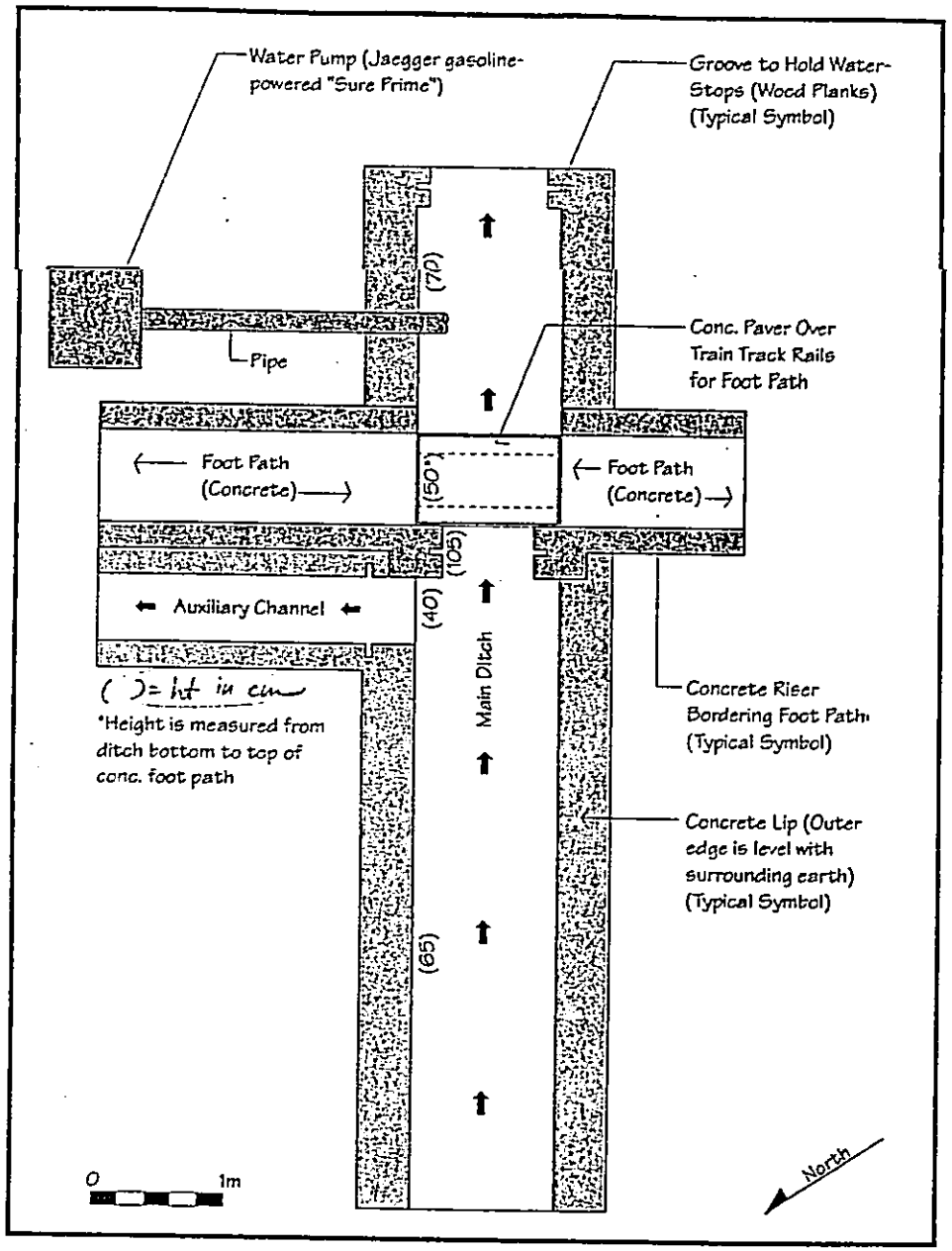

Figure 16 Plan View of Water Diversion Feature on Tai Lee Ditch (Pump Ditch/Reservoir Ditch)

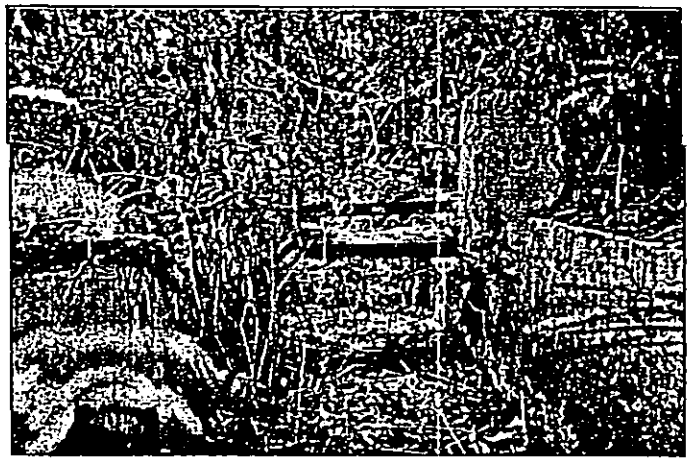

Figure 17 Tai Lee Ditch Water Diversion Structure, Taken from Tai Lee Ditch. View to Southeast.

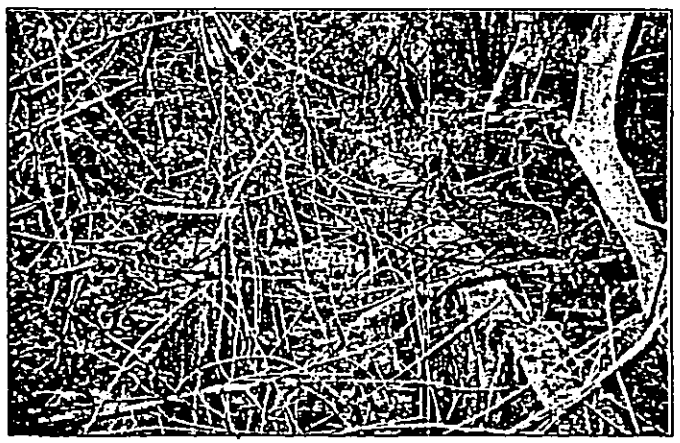

Figure 18 Tai Lee Ditch, Cement-Lined Portion. View to North-Northwest.

V. SIGNIFICANCE AND RECOMMENDATIONS

A. Significance

The one site, known variously as the Tai Lee Ditch and the Pump Ditch/ Reservoir Ditch", bounds the study area on the seaward side. In consultation with the State Historic Preservation Division it was decided to give the ditch State Inventory of Historic Places Site # 50-80-15-6427. Consideration was given to including this ditch within a general designation for Waimanalo Sugar Company infrastructure (Site # 50-80-15-4042) but the origins of the ditch are understood to pre-date the Waimanalo Sugar Company and reflect a different circumstance (independent Chinese cane growers working together).

Site -6427 is understood to be significant under State and National Register of Historic Places significance criteria:

A Site reflects major trends or events in the history of the state or nation,

B Site is associated with the lives of persons significant to our past, and

D Site may be likely to yield information important in prehistory or history.

B. Recommendations

No further archaeological work is recommended in the project area. In the exceedingly unlikely event that any human remains or other significant finds are uncovered during construction all work in the vicinity should cease and the Historic Preservation Division of the Department of Land and Natural Resources should be promptly notified.

It is recommended that adverse impact to the Tai-Lee Ditch forming the north boundary of the project area be avoided. If construction work is to be carried out in the immediate vicinity of the Tai-Lee Ditch (Site # 50-80-15-6427) it is recommended that the adjacent portions of the ditch be fenced off with event fencing to protect it and that contractors working in the area be informed not to impact this historic property. The ditch is quite clear to any one looking for it and the fencing need not be done under archaeologist supervision.

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Appendix F

Cultural Impact Assessment

CULTURAL IMPACT ASSESSMENT FOR PROPOSED MODIFICATIONS OF THE USDA HAWAI'I FRUIT FLY PRODUCTION FACILITY AT WAIMĀNALO, KO'OLAUPOKO, O'AHU (TMK 4-1-26: Por. 1)

by

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ABSTRACT

At the request of Hawaii Pacific Engineers, Cultural Surveys Hawai'i, Inc. conducted a Cultural Impact Assessment for the proposed USDA Fruit Fly Rearing Facility Expansion, Waimānalo *Ahupua'a*, Ko'olaupoko District, O'ahu (TMK 4-1-26: Por. 1). The assessment gathered information from historical documentation and archaeological investigations. Additionally, consultation was conducted with government agencies, private organizations, and the concerned community to identify knowledgeable *kūpuna* or *kama'āina* who could provide information on the history, previous land use and traditional practices of the study parcel. The organizations consulted included: the State Historic Preservation Division, the Office of Hawaiian Affairs, the O'ahu Island Burial Council, Alu Like, the Neighborhood Board Commission for Waimānalo (Number 32), the Waimānalo Hawaiian Civic Club, the Waimānalo Hawaiian Homes Association, Waimānalo Health Center, and the University of Hawai'i's Oral Research Center. Based on the recommendations by these agencies and organizations attempts were made to contact thirty-one individuals who either live in or have connections to Waimānalo. Twenty-five individuals with some knowledge of the Waimānalo area, through residency or professional concerns, were actually consulted. One individual was informally interviewed: Mr. Francisco Tabar, a *kama'āina* who worked and lived at the Waimanalo Sugar Plantation.

By the early 20th century, the project area was leveled and plowed for sugarcane cultivation which continued to the late 1940s. Subsequently the project area reverted to other agriculture or open, undeveloped land. These historic activities have removed any remnants of traditional Hawaiian use and activity within the project area. The community members consulted during the course of this assessment who had any knowledge of the project area could recall only the former sugarcane field. None of the individuals consulted could recall any traditional cultural resources, practices and beliefs that may have been associated with the project area. Neither did anyone mention any ongoing cultural activities associated with the area.

Based on the above considerations, it may be concluded that further development of the project area parcel should have no adverse impact on traditional cultural resources, practices or beliefs. The only precautionary note is the preservation of the Tai-Lee Ditch at the *makai* boundary of the project area.

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I. INTRODUCTION

A. Project Background

At the request of Hawai'i Pacific Engineers, Cultural Surveys Hawai'i, Inc. conducted a Cultural Impact Assessment for the proposed USDA Fruit Fly Rearing Facility Expansion, Waimānalo *Ahupua'a*, Ko'olaupoko District, O'ahu (TMK 4-1-26: Por. 1). (Figures 1 to 3).

The purpose of this cultural impact assessment is to consider the effects the proposed development may have on cultural traditions and practices, particularly those of native Hawaiians as it pertains to their right to practice traditional customs. The Hawai'i State Constitution, Article XII, Section 7 protects "all rights" of native Hawaiians that are "customarily and traditionally exercised for subsistence, cultural and religious purposes". The recently passed Act 50 expands the consideration of the cultural impact effects of a proposed action to consideration of the cultural practices of the community and State.

The Scope of Work (SOW) was designed to meet the cultural impact assessment concerns of the Office of Hawaiian Affairs (OHA), the Office of Environmental Quality Control (OEQC) and any other state and county agencies involved in the review process for the proposed project. The process for evaluating cultural impacts is evolving. There continue to be gray areas and unresolved issues pertaining to traditional access and gathering rights for native Hawaiians. Act 50 is an attempt to balance the scales between traditional lifestyles and development and economic growth.

B. Scope of Work

The cultural impact assessment is meant to satisfy requirements related to Native Hawaiian Gathering Rights and their applicability to the project area. CSH has completed many of these studies. The suggested scope is summarized as follows:

1) Examination of historical documents, Land Commission Awards, historic maps, with the specific purpose of identifying traditional Hawaiian activities including gathering of plant, animal and other resources or agricultural pursuits as may be indicated in the historic record.

2) A review of the existing archaeological information pertaining to the sites on the property as they may allow us to reconstruct traditional land use activities and identify and describe the cultural resources, practices and beliefs associated with the parcel and identify present uses, if appropriate.

3) Conduct scoping, consultations and informal oral interviews with persons knowledgeable about the historic and traditional practices in the project area and region.

4) Preparation of a report on items 1-3 summarizing the information gathered related to traditional practices and land use. The report will assess the impact of the proposed action on the cultural practices and features identified.

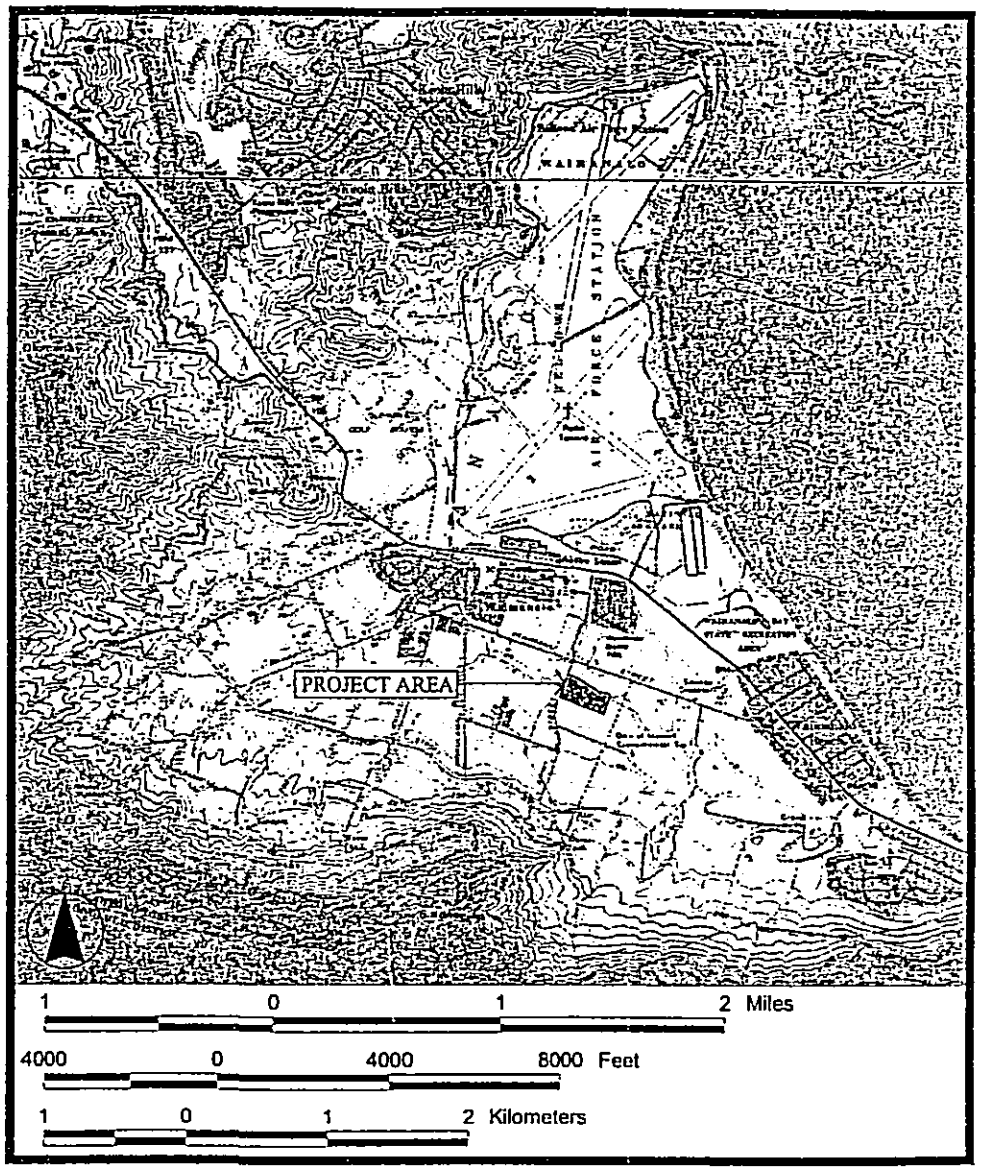

Figure 1: USGS Koko Head Quadrangle Map Showing Location of Project Area.

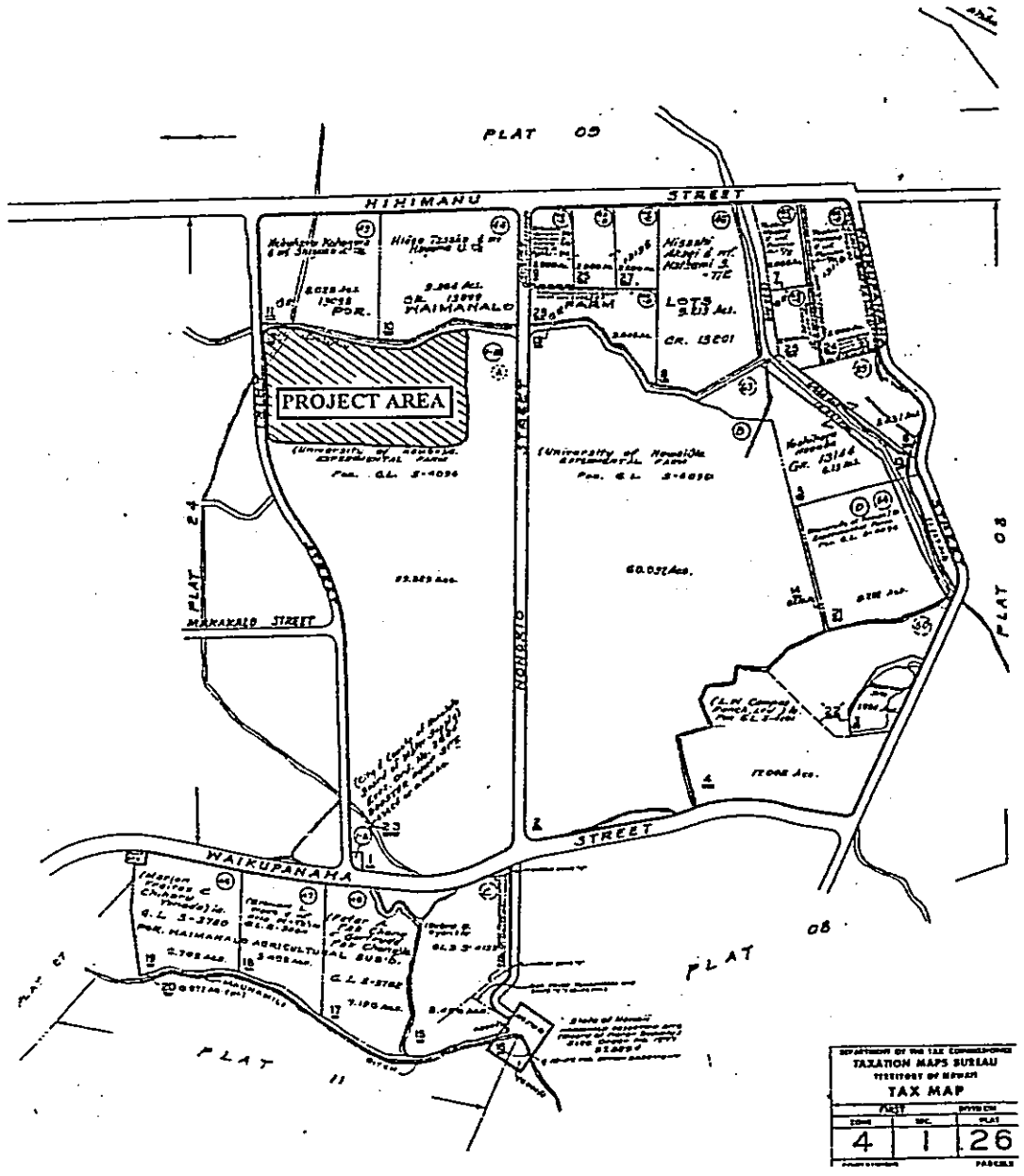

Figure 2: Portion of TMK 4-1-26 Showing Location of Project Area (hatched).

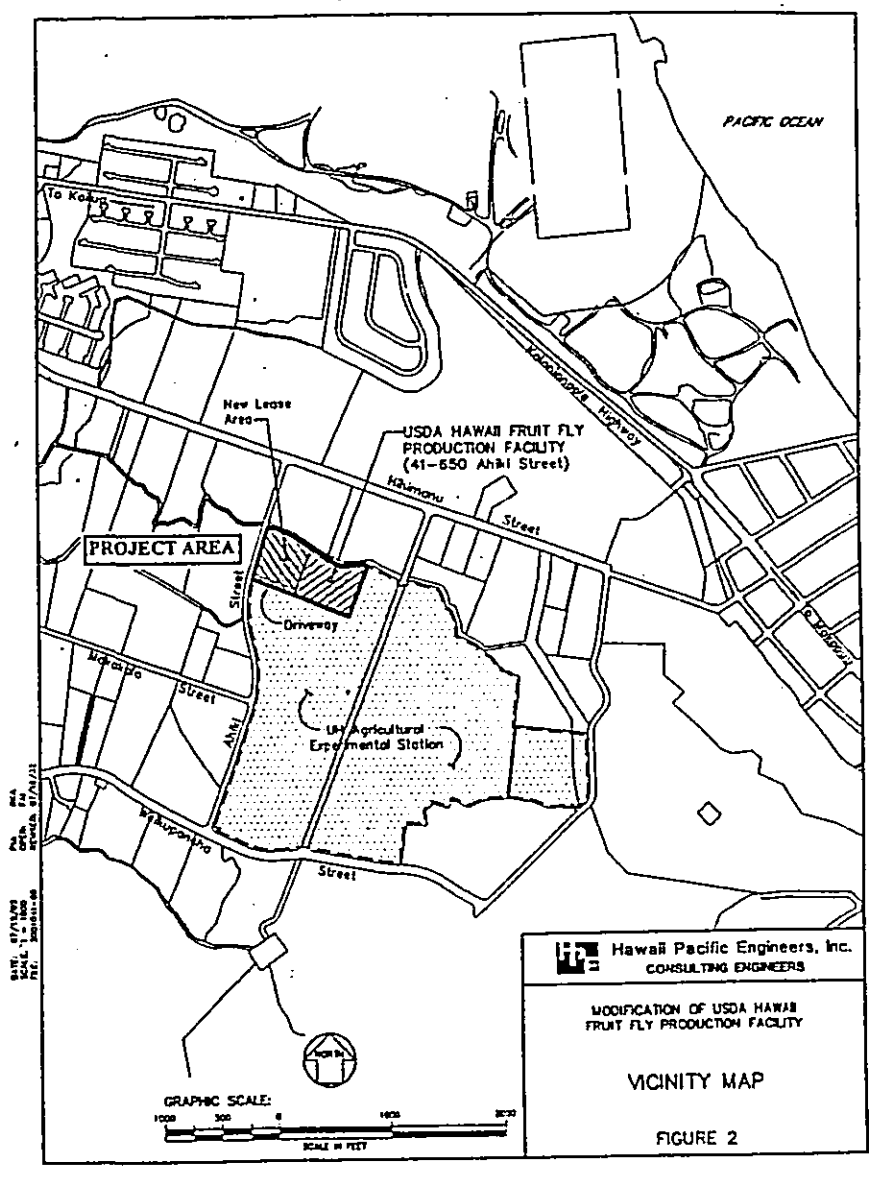

Figure 3 USDA Hawaii Fruit Fly Production Facility Location Map

C. Methodology

Historical documents and maps were researched at the Hawai'i State Archives, Hawai'i State Survey Office, State Historic Preservation Division library and files, Bishop Museum Photo Collection and the Cultural Surveys Hawai'i library.

Hawaiian organizations, agencies and community members were contacted in order to identify potentially knowledgeable individuals with cultural expertise and/or knowledge of the study area and the surrounding vicinity. A discussion of the consultation process can be found below in Section V. Results of Community Consultations. Please refer to Table 2 for a complete list of individuals and organizations contacted.

D. Study Area Description

The project area is located on the windward side of the Island of O`ahu, in the district of Ko`olaupoko within the *ahupua`a* of Waimānalo (See Figures 1-3). Waimānalo is a broad amphitheater-shaped valley with a relatively level floor composed of moderately sloping alluvial fans. It is in the "late mature to old Age" stage of erosional development (MacDonald *et al.* 1983:217). The subject property is located at 41-650 Ahiki Street in central Waimānalo on the "Waimānalo Plain" (Armstrong, *et al.* 1973:30) approximately 700 m inland of Kalaniana`ole Highway at approximately 40-foot elevation. It is bounded by Ahiki Street to the west, the Tai-Lee Irrigation Drainage Ditch to the north and the University of Hawaii Experimental Station to the east and south.

II. CULTURAL AND HISTORICAL DOCUMENTATION

A. Legends and Traditions Associated with Waimānalo

Traditional accounts present some generally recurring themes about Waimānalo. The themes include the scarcity of water except for small springs and Waimānalo Stream; the abundance of food crops along Waimānalo Stream; the good fishing resources and the broad reef of the ocean fronting Waimānalo; and the somewhat isolated nature of Waimānalo, especially in terms of land routes, but with a sandy beach frontage allowing easy access by sea.

An example of the mythological references to Waimānalo, occurs in the Pele and Hi`iaka epic; "As they traveled on, Makapu`u and its neighbor hills passed out of sight. Arriving at Ka-ala- pueo, they caught view of the desolate hill Pōhaku-loa, faint, famished, forlorn ...." (Emerson 1915:89). Hi`iaka is moved to chant a chant of Hawai`i Island on the theme of privation including the line:

> *Wī `ai `ole, make i ka i`a `ole, e.*
> It's famine, privation of bread, of meat! (Emerson 1915:89)

Emerson's (1915:89) account goes on to relate regarding eastern Waimānalo: "It is indeed a barren land. Fish is the only food it produces. Our vegetables come from Waimānalo. When the people of that district bring down bundles of food we barter for it our fish."

Another theme associated with Hi`iaka's traverse of Waimānalo is her interactions with the local beauty `Āpuakea.. Fornander (1919: Vol. VI:343, "Philological and Miscellaneous Notes") relates: "At Kapu`a in Ko`olau Muliwaiolena and her daughter `Āpuakea were killed because the latter compared herself to Hi`iaka in beauty." A fuller account is given in a rendition of the story of Hi`iaka-i-ka-poli-o-Pele in the Hawaiian language newspaper *Ka Leo o Ka Lāhui*;

> They traveled past Kuhui (Kukui?) And Pāhonu where the people shouted at the beauty of Hi`iaka. The news reached the ears of `Āpuakea and she said to her mother, Muliwaiolena, "Oh, Muliwaiolena, go and take a look at the women whose beauty the people are shouting about and see if they are as beautiful as I am." Muliwaiolena came out and looked. Never had she seen anything on O`ahu to equal the beauty of these women. Turning to `Āpuakea she said, "Daughter, your beauty does not compare with their great beauty. You are like the soles of their feet." Hearing this the expression on `Āpuakea's face changed and she fainted away.
>
> Hi`iaka overheard the words of the woman to her daughter and she uttered this chant:
>
> O `Āpuakea-nui, you beautiful woman,
> Comparisons have been made of your charms,
> You are beautiful, beautiful indeed.

Muliwaiolena then called out to Hi`iaka and her friend, "Come in, eat and drink and when you are full then continue on your long journey." But the travelers did not accept as they did not like the embarrassing comparison that had been made between themselves and the young girl, `Āpuakea.

As the travelers went off Muliwaiolena suddenly fell dead. Shortly afterwards `Āpuakea died... (*Ka Leo o Ka Lāhui* March 14, 15 1893.)

It is said "that the people named the place [`Āpuakea, by the coast, central Waimānalo] for her and for her fair skin" (Alona Sept. 22, 1939 O`ahu Place Names)

Another myth (Thrum 1923:185 "Puna`aikoa`e") includes references to the surf of Waimānalo in which two lovers swim till they are out of sight of land and eventually land on Moloka`i.

In the famous story of Kahalaopuna, her murderous fiancé is said to have been the son of a chief of Waimānalo, Kailua, Kāne`ohe and He`eia (Nakuina 1904:41).

In a canoe paddling race, Lonoikamakahiki is able to win O`ahu from the ruling chief Kākuhihewa in part through a stratagem of paddling to Kailua inside of the Waimānalo reef (Fornander 1917:IV 300301"Story of Lonoikamakahiki"):

Waimānalo was a frequent point of arrival and departure in late pre-contact and early post-contact times as in the following account of the loss of O`ahu sovereignty.

> When King Kahekili of Maui heard of the death of the priest, Kaopulupulu, by Kahahana (a chief appointed by Kahekili to govern Oahu), he sent some of his men thither by canoe, who landed at Waimānalo, Ko`olau, where as spies, they learned from the people respecting Kaopulupulu and his death, with that of his son; therefore they returned and told the King the truth of these reports, at which the affection of Kahekili welled up for the dead priest, and he condemned the King he had established. Coming with an army from Maui, he landed at Waikīkī without meeting Kahahana, and took back the government of O`ahu under his own kingship. The chiefs and people of O`ahu all joined under Kahekili for Kahahana had been a chief of wrong-doing... (Thrum 1907:212-3)

Samuel Kamakau in 1875 related: "The Ahupua'a of Waimanalo, including the fish pond at Maunalua and the traveling *uhu* of Makapu`u belonged to Maui-mua (First Maui)" (*Kuokoa* Nov. 27, 1875; in Sterling and Summers 1973:244).

During Kamehameha's conquest of O`ahu, part of his fleet landed near Makapu`u and then joined with Kamehameha's other forces, finally conquering O`ahu. Prior to the invasion, Kamehameha sent a messenger to Kahekili:

> Ki'kane, Kamehameha's messenger to Kahekili, threw down two *maika* stones, this stone (the white) brings life through farming and fishing, rearing men, and providing them with food; this other stone (the black) brings war. Let the reader ponder the meaning of this answer. Kahekili asked, Is Kamehameha coming to O`ahu to fight? 'Yes' answered Ki-Kane. What harbor will he choose? It was Kiko`o's counsel to make Waimanalo the harbor and battle site. 'It is too low there to cast sling stones to reach the heights. It is good only for food and fish... (Kamakau 1961:250; in Silva 1981 A-16).

After Kamehameha's conquest of O`ahu and his division of the island among his chiefs, Waimānalo apparently was retained as his personal property. This seems to be the case as in 1845, when Kamehameha III, Kauikeaouli, who had "inherited" the land as a son of Kamehameha I, claimed the *ahupua`a* of Waimānalo "to be the private lands of his Majesty Kamehameha III, to have and to hold to himself, his heirs and successors, forever; and said lands shall be regulated and disposed of according to his Royal will and pleasure, subject only to the rights of tenants" (Com. of Public Lands, 1929:28).

B. Early Historic Accounts

Two early foreign visitors, both missionaries, were generally unimpressed with Waimānalo; however, their descriptions are of interest. Levi Chamberlain in 1828 commented on Waimānalo being a "considerable settlement" and while there, stayed in a native house, "a miserable place for the abode of human beings and presented a motley group of children and women, dogs, hogs and fowls" (Chamberlain 1857:80-1, in Silva 1981:A-20). In 1830, Edwin Hall writes, "we could not however, but notice, that most of the inhabitants on the eastern end of the island were much more degraded, and exhibited far less evidence of improvement than any we saw on other parts of the island; a fact calling for our sympathy and pity, and for our endeavors to enlighten and elevate them" (Hall 1939:111; in Silva 1981: A-21).

C. Māhele Data

The *ahupua`a* of Waimānalo was awarded to Victoria Kamāmalu subject to the *kuleana* claims of the commoners. She received the third largest share of lands among the *ali`i nui* of the Kingdom of Hawai`i including 47 other *ahupua`a*-sized parcels in addition to Waimānalo. Approximately 113 *kuleana* Land Commission Award claims were awarded in Waimānalo. Nearly all of these *kuleana* were along Waimānalo Stream or its upper tributaries in the west portion of the *ahupua`a* (Figure 4). There appear to have been only two Land Commission Awards in all of central and east Waimānalo, both located on the coast in east Waimānalo. The Land Commission Awards nearest to the present study area is located to have been 1.3 kilometers to the west. While it seems highly probable that the Hawaiian population of Waimānalo was much larger and more dispersed in pre-contact times, it nevertheless appears highly likely that the traditional Hawaiian population of Waimānalo was always very much focused along Waimānalo Stream and its upper tributaries far from the present study area.

D. Ranching Period

In 1828 an Englishman, Thomas Cummins, arrived in Hawai`i and soon after married the High Chiefess Kaumakaokane, who was related to Kamehameha I. This marriage provided Cummins with connections to the throne. Cummins received a Royal Patent to an estate of crown lands in Waimānalo in 1842 (Dorrence 1995:1) and in 1850 Kamehameha III leased the entire Waimānalo *Ahupua`a* (except for the *kuleana*) to Thomas Cummins. The original deed is dated Feb. 12, 1850 and was for a period of 50 years for 6,970 acres at $350.00 per annum. However, there was confusion over land title. Alexander Liholiho Kamehameha IV, "deeded" Waimānalo to a Wm. Webster in 1855 for $1. Wm. Webster mortgaged the land for some $2,000 with the mortgage being released in 1857. The same thing happened again in 1857 with the mortgage clearing by April 1858. These deeds and mortgages did not actually cause the control of lands to change, as Thomas Cummins retained his lease, but they apparently served as security for loans made to Alexander Liholiho.

Thomas Cummins and his son John A. Cummins turned Waimānalo into a large cattle and horse ranch. The Cummins estate, "Mauna Rose" was known for its lavish parties. Cummins was also host to American and British officers on warships visiting in Hawaiian waters. The Kamehamehas, King Kalākaua and Queen Lili`uokalani all made this part of the island their home, and they spent a great part of their time at the Cummins Estate (*Star Bulletin* 6/22/1935:9; in Silva 1981:A-22).

However, it appears as if not all were enthusiastic about the cattle ranching:

> At the time, it seemed that the valley was filled with breadfruit, mountain apples, *kukui* and coconut trees. There were taro patches, with banks covered with *ti* and *wauke* plants. Grass houses occupied the dry lands, a hundred of them here and sweet potatoes and sugar cane were much grown. It was a great help toward their livelihood.... The whole *ahupua'a* of Waimānalo was leased to white men except the native *kuleana* and because the cattle wandered over them, they were compelled to build fences for protection. The taro patches that were neatly built in the time when chiefs ruled over the people and the land, were broken up. The sugar cane, *ti* and *wauke* plants were destroyed. The big trees that grew in those days, died because the roots could not get moisture. The valley became a place for animals (*Kuokoa*, Oct. 26, 1906; in Sterling and Summers 1973:244)

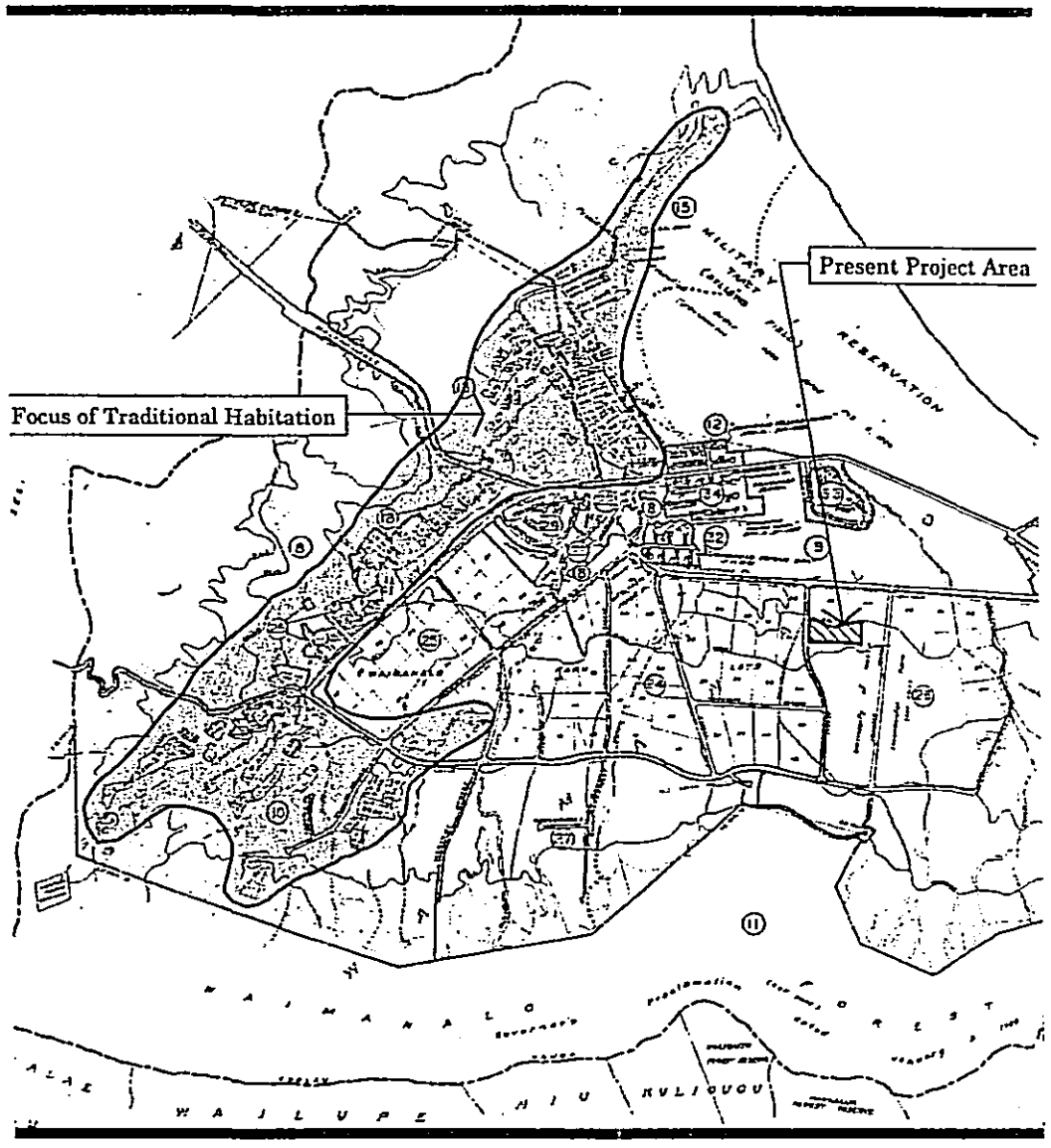

Figure 4 Map Showing Location of the Aggregation of *Kuleana* Land Commission Awards Along Waimānalo (Puhā) Stream in West Waimānalo

E. The Waimanalo Sugar Company

The Cummins family eventually began to buy up the *kuleana* of the native farmers, gaining some 200 acres in fee. By the early 1870's Chinese rice farmers were using some of these lands under agreement with John A. Cummins. In 1876 the Hawaiian Kingdom entered into a Reciprocity Treaty with the United States. This allowed the growing Hawaiian sugar industry a free market and the potential for great profits. One of the Chinese rice farmers, Tai Lee, began sugar cultivation on Cummins' land. Eventually Tai Lee and other Chinese farmers cultivated up to 1,200 acres of cane in Waimānalo.

John A. Cummins saw the potential of sugar production at Waimānalo and in 1880 started construction of a sugar mill. In 1890, J. A. Cummins renegotiated his father's lease for an additional 30 years and "sub-lets the lands of Waimānalo to the Waimanalo Sugar Company (W.S.C.) which he then controlled" (Bartholomew and Ass., 1959:14). The plantation continued to buy sugar from the Chinese farmers until around 1900, when W. S. C. did most of its own cultivation.

During this time, sugar and most goods were transported between Honolulu and Waimānalo by steamer. The Cummins estate was still renowned for its extravagant hospitality. Lavish week long *luaus* were given for Hawaiian royalty. King Kalākaua came and rode on the newly built railroad in 1882 and in 1885 Cummins was host in celebrating Queen Kapi'olani's birthday. The second steam engine Cummins bought in 1883 for his Waimānalo plantation, later named the "Olomana," is today in the Smithsonian Institution in Washington D.C. as a reminder of this period of history (Williams 1996:B1).

Waimanalo Sugar Co. continued to grow and business was good. More lands were being put under cultivation. New tracks were being laid and another locomotive was ordered. Interest in W. S. C. grew, and in 1885 W.G. Irwin of the W.G. Irwin & Co., agents for W. S. C., gained control with J. A. Cummins staying on as overseer. In 1894, J. A. Cummins sold the majority of shares in W. S. C. to two California men and a Kohala sugar planter Robert. R. Hind, with George Chalmers taking over duties as plantation manager. J. A. Cummins died in 1913 and his estate sold the remaining fee simple lands and the unexpired lease of Waimānalo to W. S. C. for $52,000. In 1910 W.G. Irwin and Co. merged with C. Brewer and C. Brewer controlled W. S. C. until its liquidation in 1947.

The present project area is understood to have been a portion of Field #6 (Figure 7) of the Waimanalo Sugar Co. It seems probable that the project area was entirely under commercial sugar cane cultivation from before 1900 up to the liquidation of the company in 1947, but the ditch system developed for sugar continued to survive for the agricultural lands in Waimānalo. . After the sugar company liquidated the land reverted back to the Territory of Hawaii since the land within the project area were leased government land, are now under State of Hawaii jurisdiction. Up until 1990 when the Fruit Fly Facility was built, the land was used for ranching and agriculture.

F. Irrigation Ditches

Water was a continuous problem for most sugar companies, including the Waimanalo Sugar Company. Irrigation for W. S. C. was dependent on three ditch and tunnel systems. The Maunawili Ditch and Tunnel is the uppermost system, the Kailua Ditch is the middle system and the Pump Ditch/ Reservoir Ditch is a name that was given to the most seaward. This Pump Ditch/ Reservoir Ditch is understood as another name for the Tai-Lee Ditch which bounds the seaward edge of the present project area. It is unclear when this ditch system was built, but water from Maunawili was used in Waimānalo as early as 1878. "Water sources in upper Maunawili Valley were first utilized prior to 1878 and have remained the basic supply for Waimānalo since that time" (Bartholomew and Ass. 1959:53). It is understood that this seaward ditch originally dates to the Chinese sugar cane growing period of 1876-1900 and was later modified by the W.S.C.

None of these three ditch systems appears on the 1919 Fire Control map series although a ditch is shown running seaward of the mill. A 1922 "Fields of Waimanalo Sugar Company" Map appears to show only the Kailua Ditch. The 1928 USGS map series shows the two *mauka*-most ditches (Maunawili Ditch and Kailua Ditch) but does not show the Pump Ditch/ Reservoir Ditch (Tai-Lee Ditch). The same is true for the 1943 War Department map series. Thus, on the basis of the available maps, it would appear that the Kailua Ditch was built between 1919 and 1922, and that the Maunawili Ditch was built between 1922 and 1928. Wilcox (1996:111) relates that "a second ditch, built in 1924, had its source in the Kawainui Swamp." This would fit the Kailua Ditch although the Waimanalo Sugar Company map suggests a slightly earlier date.

The precise dating of the construction of the ditch on the *makai* side of the present project area remains uncertain. Supplied maps identify this as the "Tai-Lee Irrigation/Drainage Ditch" which would associate this ditch with the individual of that name and the Chinese sugar cane growing period of 1876-1900. This "Tai-Lee Irrigation/Drainage Ditch" does not appear on any maps known to us prior to the Tax Map Key 4-1 dating to 1957. It seems probable that this was simply not regarded as in the same league as the Kailua Ditch and Maunawili Ditch and may have gone undocumented (Wilcox 1996:106 shows the Kailua Ditch and Maunawili Ditch in a map of "Major ... Ditches" but does not show the Pump Ditch/Reservoir Ditch or the Tai-Lee Irrigation/Drainage Ditch).

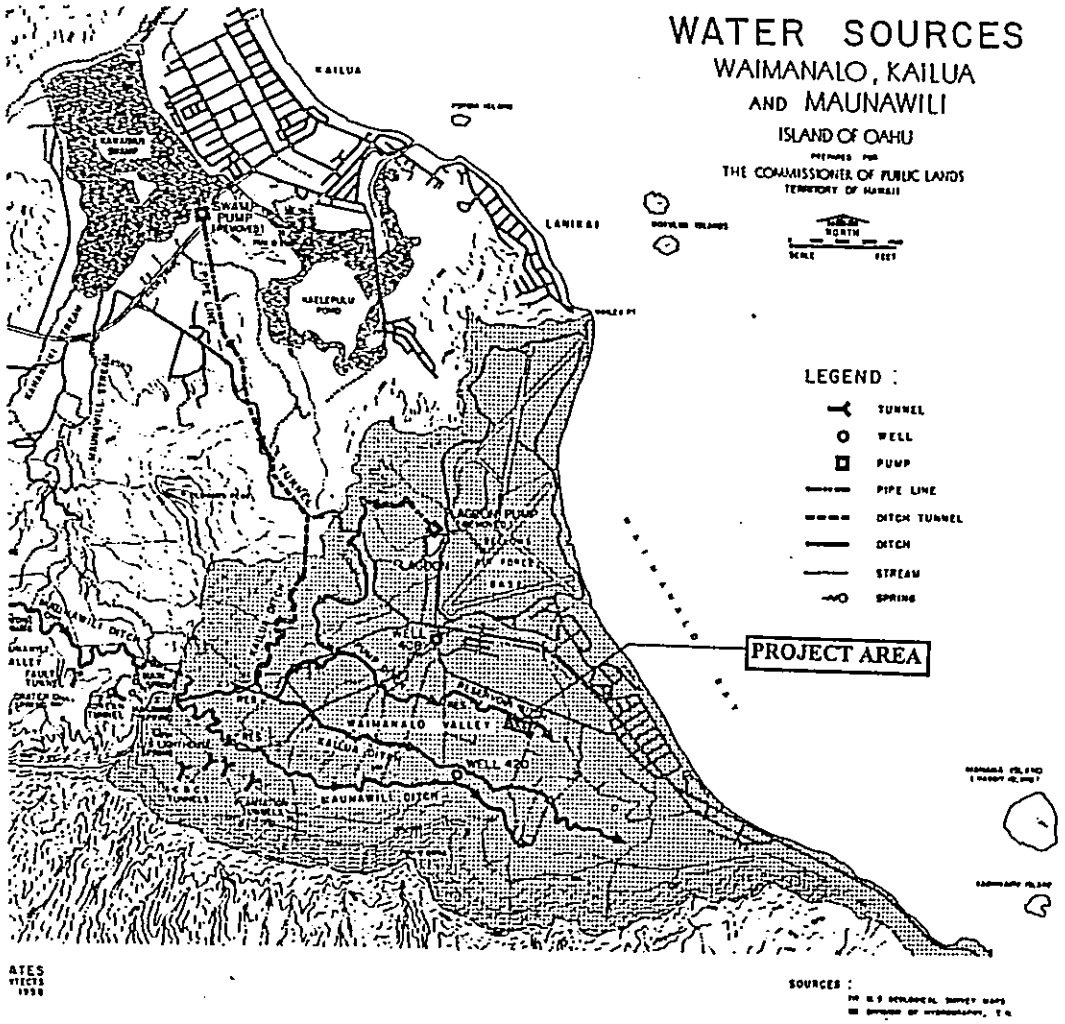

Figure 5 Water Systems of Waimānalo, Commissioner of Public Lands, 1958

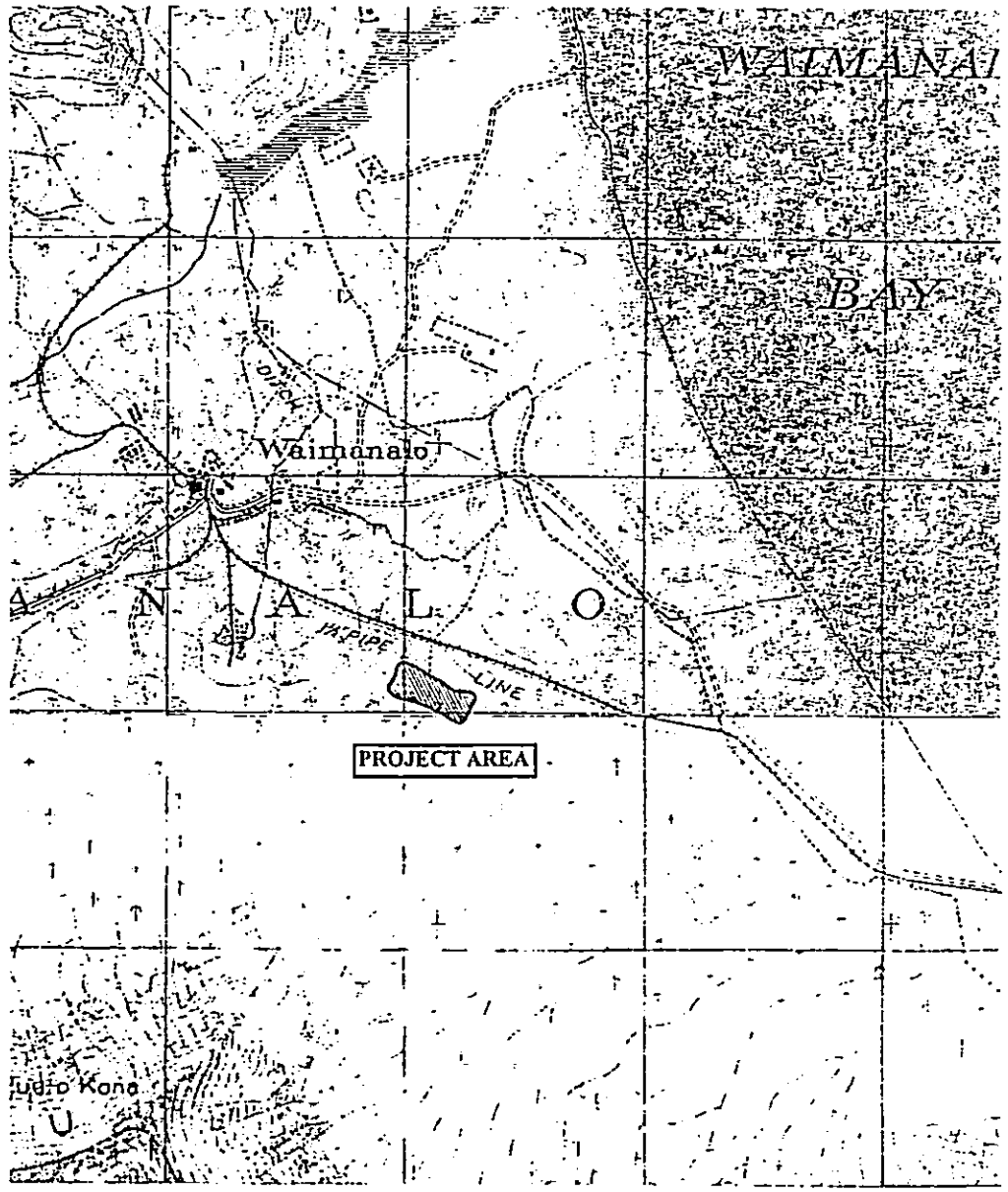

Figure 6 Portion of 1919 Fire Control Waimanalo and Koko Head Maps Showing Location of Project Area in Sugar Cane Fields

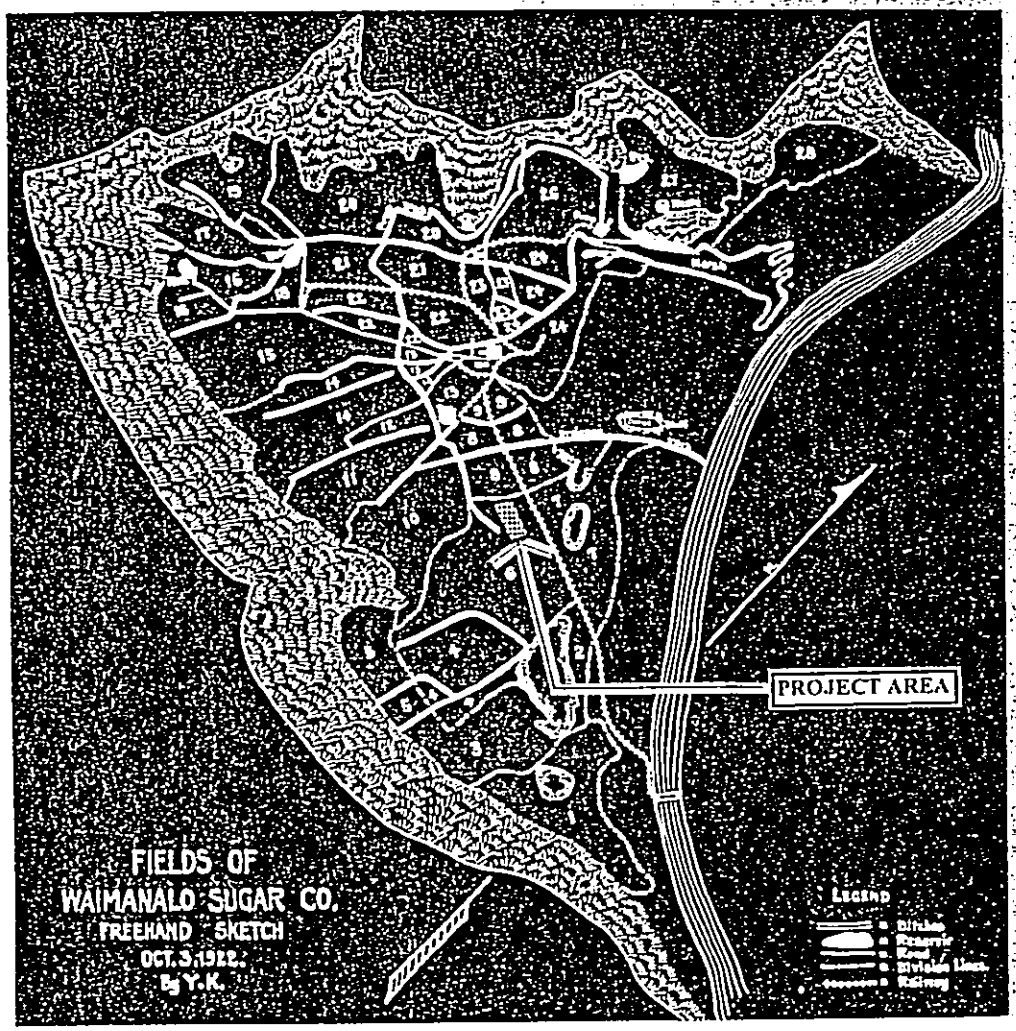

Figure 7 Portion of "Fields of Waimanalo Sugar Company Map (1922) Showing Project Area in Field 6

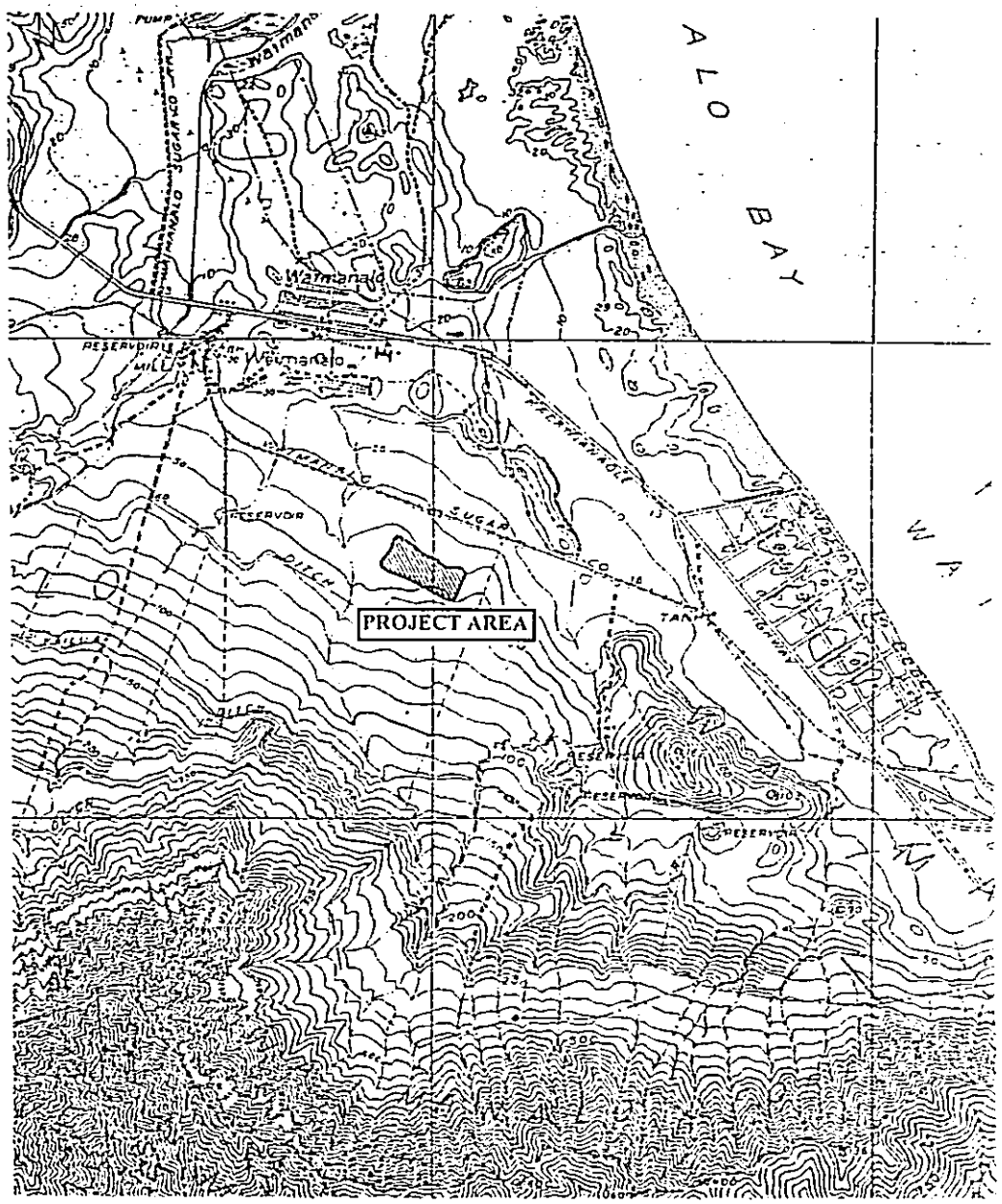

Figure 8 Portions of the 1928 USGS Mokapu and Koko Head Maps Showing Location of Project Area

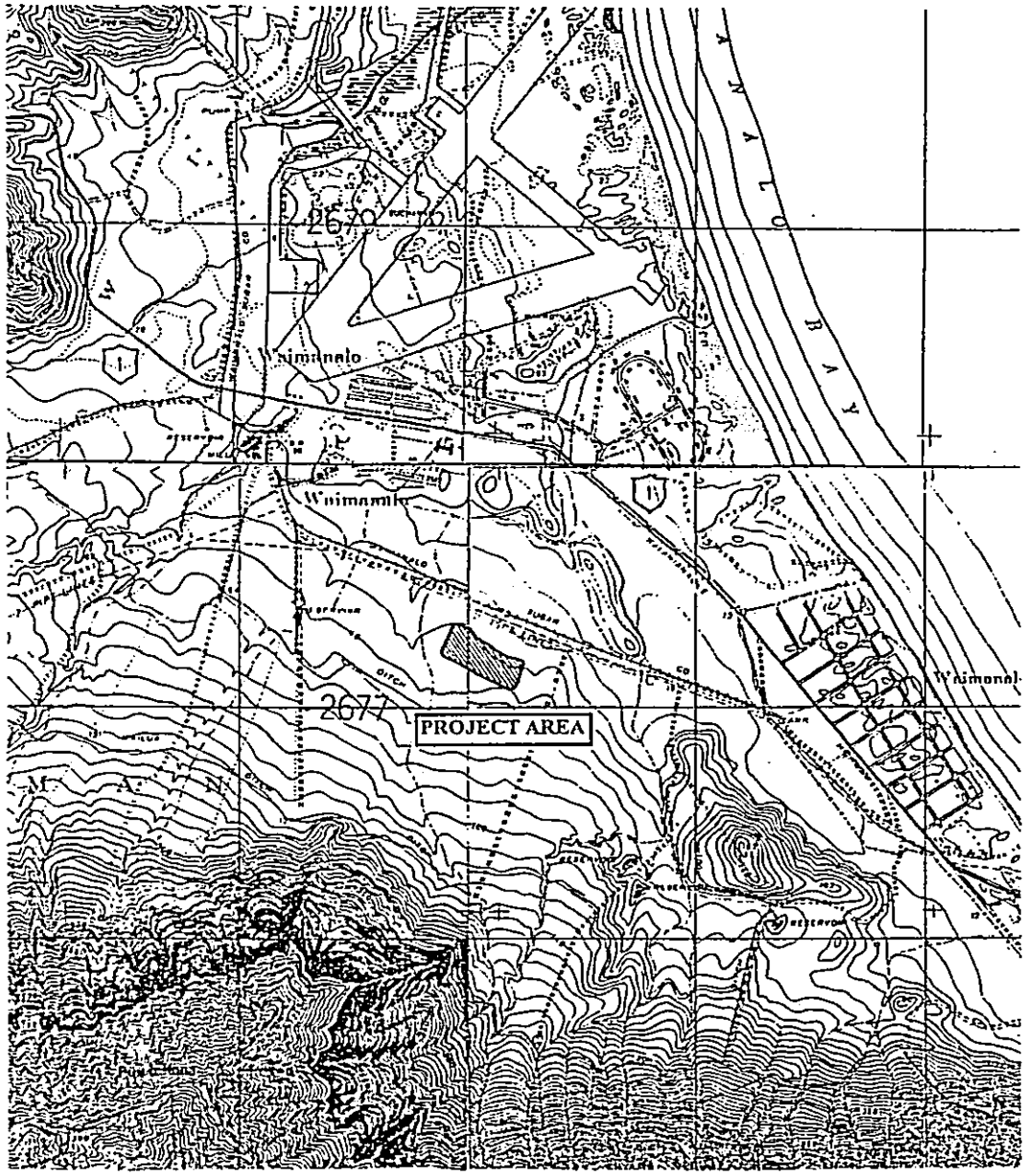

Figure 9 Portions of the 1943 War Department Kailua, Mokapu and Diamond Head Maps Showing Location of Project Area

III. PREVIOUS ARCHAEOLOGICAL RESEARCH

Waimānalo, in general, is distinguished as being the place of one of the earliest archaeological investigations in the Hawaiian Islands. In 1879, Mr. Otto Finsch reported on human burials in sand deposits and associated artifacts in an area which is now Bellows Air Force Base (Finsch 1879).

McAllister, in his *Archaeology Oahu*, reports two sites in *mauka* Waimānalo (McAllister 1933:191). Both of these sites are *heiau*. Site 381 is located on the slope below Mt. Olomana to the northwest of the present study area. Site 382 is referred to by the name of the place - Pōhakunui - and stands on a hill near the top of Mahailua Road west-southwest of the present project area.

The major focus in archaeological research in Waimānalo has been the Bellows area and to a much lesser extent the Waimānalo State Recreation Area. Bellows Air force Station is one of the most extensively studied areas on O'ahu. Beginning in the 1960s, approximately 70 separate reconnaissance, survey, excavation and monitoring projects have taken place, most in conjunction with construction activity. Human burials, lithic scatters, soil features and/or occupation layers have been found almost everywhere archaeological investigation has taken place. Possibly the most important finds occurred in dune deposits adjacent to the mouth of Waimānalo Stream referred to as Site 018. Radiocarbon dates on charcoal from cultural layers within the dune which placed the earliest occupation to around 300-400 C14 years A.D. (Tuggle *et al.* 1978) have been much disputed but these deposits are still considered to be among the oldest in Hawaii (Pearson *et al.* 1972, Cordy and Tuggle, 1976 and Kirch, 1985:71). Much of the research since this discovery of early Bellows Dune occupation has focused on attempting to connect other archaeological finds in more inland areas of Bellows to this early Polynesian settlement.

Approximately a dozen archaeological studies were carried out at the Waimānalo State Recreation Area just south of Bellows mostly between 1976 and 1980. There was hope that the occupation layers documented just to the north might be present in the State Recreation Area but findings thus far have been disappointing.

Relatively little work has been conducted in Waimānalo *Ahupua'a* inland of Kalaniana'ole Highway. No inventory-level archaeological investigations have been conducted within or adjacent to the present project area. Studies in the general vicinity of the present project area by Barrera (1984), Dixon (1993), and Sinoto and Pantaleo (1993) have reported nothing of significance. Perzinski *et al.* 2002 report three inadvertently disturbed human burials and a cultural layer (State site #50-80-15-5939) which were encountered during construction activities on Department of Hawaiian Home Lands. These finds were, however, in Jaucas sand deposits and much closer to the coast.

Due to the lack of natural water sources in the vicinity, the distance from the coast and particularly the many decades of land altering activities associated with commercial sugar cane cultivation little was found in an archaeological inventory survey of the project

area conducted by Cultural Surveys Hawai'i in September of 2002. No sites of any kind were identified within the project area *per se*. No prehistoric archaeological features were observed within the project area. The seaward or north edge of the project area, however, is demarcated by a ditch understood as the Tai-Lee Ditch associated with the individual of that name and the Chinese sugar cane growing period of 1876-1900. This Tai-Lee Ditch is understood as a historic property and has been designated as State Inventory of Historic Places Site # 50-80-15-6427. Much of the ditch is earthen without improvements, although portions are lined with concrete and some water diversion and engineering constructions are present.

Table 1 below lists and summarizes the findings of previous archaeological research in Waimānalo.

Table 1 Previous Archaeological Studies Within Waimānalo *Ahupua`a*

Year	Author(s)	Title	Comments
1879	Finsch, Otto; Alexander, A.D. (Translator)	*Bericht Uber Insel Oahu (Letters from the Island of O`ahu)*	Told there was "a place of skulls" in Waimānalo
1933	McAllister, Gilbert	*Archaeology of O`ahu*	Identified 3 *heiau* (380, 381, & 382), a *pu`uhonua* (383), a fishpond (383a), and abandoned coastal village(384)
1971	Gormley, Michael K.; Yent, Martha; Davis, Bertell D.; Imamoto, Shirley; Kavanagh, B. P.	*Site 3000: University of Hawaii at Manoa, Summer Field School, Summer 1971.*	Study of Kaupo Fishing Village area
1971	Pearson, Richard	*Archaeological Reconnaissance Survey; Waimanalo Bay State Recreation Area; Waimanalo, Oahu TMK 4-1-03:016*	Site 512 remnant sand dune & cultural layer & 513, cultural deposits, human remains

1971 (1967)	Pearson, R.J., P.V. Kirch & M. Pietrusewsky	"An Early Prehistoric Site at Bellows Beach, Waimanalo, Oahu, Hawaiian Islands," *Archaeology and Physical Anthropology in Oceania* VI (3)	Reports study of stratigraphy, cultural finds & 5 setrs of human remains BAFS
1973	Davis Bertel	Kaupo Cave Shelter, Site 3000, Feature 1: A Preliminary Report on Artifact Analysis	UH Mānoa M.A. thesis based on field work at Kaupo Village complex
1974	Tuggle, H. David & M.J. Tomonari	*Surface and Sub-surface Survey of Selected Zones of Bellows Field Archaeological Area*	Summary of excavations historic deposits in 4 of 7 areas examined, BAFS
1975	Cordy, Ross	*O18 O`ahu Island New Work and New Interpretations*	Reports on further work at O18 and adjacent sites BAFS
1975	Nakama, Stella	*Archaeological Surveillance of a Drip Irrigation Line: Bellows Air Force Station, Oahu, Hawaii.*	Monitoring of a backhoe Trench - minimal findings BAFS
1975a	Tuggle H. David	*Report on Archaeological Investigations of the Bellow Archaeological Zone National Register Site and Adjoining Portions of Bellows Air Force Station, Spring 1975*	Presents findings at various zones of O18, BAFS
1975b	Tuggle, H. David	*Archaeological Surveillance of Construction Excavation in Bellows Field Archaeological Zone of the Bellows Air Force Station, HI.*	Brief study of construction monitoring NE BAFS
1975c	Tuggle, H. David	*Preliminary Report on Subsurface Investigation of a Portion of Proposed Irrigation Line, Bellows Air Force Base, for Archaeological Evaluation*	Letter report, no features or artifacts, BAFS
1975d	Tuggle, H. David	*Archaeological Examination of Areas of Bellows Air Force Station Subject to Construction Activities.*	Evaluates various areas, BAFS

1975	Tuggle, H. David, Stella K. Nakama, and Thomas N. Manabe	*Subsurface Investigations of Site 511-5 Bellows AFS, Oahu, Hawaii, Pertaining to "Seawall Repair and Drip Line" Project*	Provides data and conclusions re: archaeological import of site 511-5, BAFS
1976	Cordy, Ross and David Tuggle,	*Bellows, Oahu, Hawaiian Island: New Work and New Interpretation.*	Reviews problems, includes results of investigations in inland areas, BAFS
1976	Davis, Bertell D.	*Archaeological Investigations at the Waimānalo Bay State Recreation Area, Ko`olaupoko, Waimānalo, O`ahu Island.*	Not seen
1976	Davis, Bertell	*Archaeological Survey and Testing at the Waimānalo Bay State Recreation Area, Ko`olaupoko, Waimānalo, Oahu Island, TMK 4-1-08:16*	Sterile cores, Site 512 found *imu*
1976	Nakama, Stella & H. David Tuggle	*A Report on Archaeological Monitoring of Repair of Water Distribution System, Bellows AFS*	42 features possibly dating to Hawaiian traditional period, BAFS
1976	Tuggle, H. David and Thomas N. Manabe	*Archaeological Monitoring of Drip Irrigation Line Construction: Bellows Air Force Station #2.*	Results of second phase of drip irrigation monitoring, BAFS
1977	Davis, Bertell	*Archaeological Investigations at the Waimānalo Bay State Recreation Area, Ko`olaupoko, Waimānalo, Oahu Island: Phase I, Subsurface Survey*	Coring at Sites 512-513. Site 512 small stratified deposit with cultural features; Site 513 not locate reported burials or cultural deposit
1978	Davis, Bertell	*Subsurface Archaeological Reconnaissance of Selected Areas at Bellows AFS, O`ahu Island*	Reports cultural deposits and human remains from NE Bellows, BAFS
1978	Cox, David W.	*Waimānalo Bay State Recreation Area, Archaeological Monitoring of Fence Line, Water Line, Electrical Line, Sewer Line, Park Development, Phases I and II, Waimānalo, Ko`olaupoko, O`ahu Island (TMK 4-1-15:15)*	1 burial, site 512 outlined

1979a	Beggerly, Patricia	*Archaeological Subsurface Investigation at Waimānalo Bay State Recreation Area, Ko`olaupoko, O`ahu*	18 augur holes with no subsurface cultural deposits
1979b	Beggerly, Patricia	*Archaeological Monitoring and Subsurface Investigation at Waimānalo Bay State Recreation Area, Ko`olaupoko, O`ahu*	No findings
1979	Carter, Laura	*Archaeological Monitoring of Selected Areas at Bellows Air Force Station, O`ahu Island*	Presents data on site -9645 NE Bellows, BAFS
1979	Griffin, Agnes and Martha Yent	*Archaeological Subsurface Investigation at Waimānalo Bay State Recreation Area, Ko`olaupoko, O`ahu.*	Generally confirms absence of culture
1979	State Parks In-house Archaeological Team	*Archaeological Monitoring and Subsurface Investigation at Waimānalo Bay State Recreation Area, O`ahu. October 9, 1979-November 1, 1979.*	Not seen
1979	Yent, Martha; and Agnes Griffin	*Bulldozed Areas at Waimānalo Bay State Recreation Area, Ko`olaupoko, O`ahu*	No findings
1980	Beggerly, Patricia (Lovelace & Ota)	*Archaeological Test Coring at Waimānalo Bay State Recreation Area, Memorandum*	No cultural deposits located
1980	Lovelace, George & Jason Ota	*Archaeological Test Coring at Waimānalo Bay State Recreation Area*	No cultural deposits
1980	Ota, Jason	*Archaeological Monitoring at Waimānalo State Recreation Area Memorandum*	Modern trash under parking lot
1980	Riley, Thomas J.	*Archaeological Reconnaissance and Subsurface Testing of Proposed Boathouse Project Site at Bellows AFS, Hawaii*	Presents results of 111 auger borings & 10 1m^2 excavations - minimal findings, BAFS

1981	Kam, Wendell,	*Archaeological Report of a Human Burial at Manana Island, Ko`olaupoko, Waimānalo, O`ahu*	Not seen
1981	Neller, Earl	*Waimānalo Ditch System: Photo Survey*	Photographs of ditches
1981	Rosendahl, Paul H.	*Archaeological Reconnaissance Survey of Proposed Additional Marine Corps Training Areas Bellows Air Force Station Oahu*	Extensive historical summary, BAFS
1981	Rosendahl, Paul H. and Carol L. Silva	*Archaeological Reconnaissance Survey of Proposed Additional Marine Corps Training Areas, Bellows Air Force Station, Oahu, Hawaii*	Surface survey of 356-acre parcel, relocated 5 previously recorded sites, no new sites, BAFS
1982	Tuggle, David	*Archaeological Reconnaissance: Bellows Air Force Station Waimānalo, O`ahu, Hawai`i.*	No significant findings, BAFS
1983	Leidemann, Helen & Paul L. Cleghorn	*Archaeological Monitoring of Vegetation Clearance on Antenna Fields at Bellows Air Force Station, O`ahu, Hawai`i*	Site 3312, gravestone complex 1917 era, BAFS
1983	Sue, Roy K., Martha Yent, and Jason Ota	*Waimānalo Watershed Project and Archaeological Survey of the Solid Waste Collection Site, Waimānalo, O`ahu*	No sites located
1984a	Barrera, William	*Archaeological Services During Installation of Five Replacement Antennas at Bellows Air Force Station, Oahu, Hawaii*	Notes discontinuous but related archaeological deposits, BAFS
1984b	Barrera, William	*Waimānalo, O`ahu: Archaeological Survey at Proposed Well Locations*	Well sites III & IV, no significant findings
1985	Athens, J. Stephen	*Archaeological Monitoring for Soil Coring, Bellows Air Station, Waimānalo, O`ahu.*	No significant findings, BAFS

1985	Griffin, P. Bion	*Test Excavations at the Searex Tower Site, Bellows Field Archaeological Area, Bellows Air Force Station, Waimānalo, O`ahu*	No significant findings, BAFS
1985	Hammatt, Hallett H.	*Letter Report on Archaeological Monitoring at Bellows Air Force Station Post Exchange Site*	Minimal findings, BAFS
1985	Hammatt, Hallett	Archaeological Monitoring for *Fuel Tank Trench at Bellows Air Force Station, Waimānalo, O`ahu*	Notes human bone and fire hearth, BAFS
1985	Hurlbett, Robert E.	*Preliminary Report upon Completion of Fieldwork: Archaeological Reconnaissance and Subsurface Testing for Recreation Library Project Sites, Bellows AFS, O`ahu.*	No significant findings, BAFS
1985	Hurlbett, Robert E., Margaret Rosendahl, & Paul H. Rosendahl	*Archaeological Reconnaissance, Subsurface Testing and Monitoring of Proposed Projects HIC 84-1269, Recreation Library and HIC 86-3221, Recreation Library Utilities Support Project Sites at Bellows AFS, Waimānalo, Ko`olaupoko District, Island of O`ahu, Hawai`i (TMK:1-4-1-- 15:1),*	No evidence of cultural materials, BAFS
1985	Mc Neill, J. R.	*Archaeological Reconnaissance and Monitoring of Obstacle Course Construction at Bellows Air Force Station, O`ahu, Hawai`i.*	Minimal Findings, BAFS
1985	Neller, Earl	*An Archaeological Reconnaissance of Manana Island, O`ahu*	Not seen
1986a	Athens, Stephen	*Preliminary Report: Archaeological Reconnaissance Survey for Proposed Omni Antenna, Bellows A.F.S., Waimānalo, O`ahu, Hawai`i.*	Mostly transit work, no surface remains, brief synopsis of augering, BAFS

1986b	Athens, Stephen	*Site Summary: Archaeological Deposits at the Bellows A.F.S. Omni Antenna Pad & Trench, Waimānalo, O`ahu*	Presents results of work at Site -1445, BAFS
1986	Kam, Wendell	*Field Inspection of Bellows AFB Picnic Area #6, Waimānalo, Ko`olaupoko, O`ahu, Memorandum,*	Not seen, BAFS
1986	Kam, Wendell	*Bellows Fence Repair Burial.*	Account of human remains uncovered during construction, BAFS
1986	Kam, Wendell	*Investigation of Discovery of Human Skeletal Remains, Bellows AFS, Ko`olaupoko, O`ahu, Letter Report*	Account of human remains uncovered during construction, BAFS
1987	Athens, J. Stephen	*Archaeological Survey and Testing for Airfield Perimeter Fence Project, Bellows Air Force Station*	Designates sites -3709 subsurface cultural deposit and -3710 marsh deposits, BAFS
1987	Pietrusewsky, Michael	*Burial on Rabbit Island, Waimānalo Side, Waimānalo, Ko`olaupoko, O`ahu Island.*, Police, Honolulu; Medical Examiner, Honolulu	Not seen
1987	Spriggs, Matthew	*Report of Radiocarbon Dating Analysis*	Review of carbon dating, BAFS
1988a	Athens, J. Stephen	*Archaeological Reconnaissance and Subsurface Testing, Proposed Omni Antenna and Cable Trench, Bellows Air Force Station, Waimānalo, O`ahu.*	Documents discontinuous subsurface deposits & an area of basalt debitage, BAFS
1988b	Athens, J. Stephen	*Archaeological Survey and Testing for Airfield Perimeter Fence Project, Bellows Air Force Station, Oahu, Hawaii*	2 C14 dates A.D. 1390-1505 A.D. 1400-1525, BAFS
1988	Hammatt, Hallett H.	*Archaeological Reconnaissance of a 3.9-Acre Parcel Adjacent to Sea Life Park, Waimānalo, O`ahu,*	No findings - parcel had been leveled and filled

1988	Hammatt, Hallett H. & Douglas Borthwick	*Archaeological Reconnaissance of the Mauka Portion of Phase II Waimānalo Agricultural Park Waimānalo, O`ahu*	Previously under cane cultivation, notes two taro complexes
1988	McNeill, Judith R.	*Intensive Archaeological Survey and Data Recovery at Site 50-80-15-3709, Bellows Air Force Station, O`ahu, Hawai`i*	Describes essentially intact deposits of site -3709, BAFS
1988	Medical Examiner	*Police and Medical Examiner's Reports on Burial at Kaiona Beach Park, Honolulu*	Not seen
1988	Streck, Charles F. and Farley K. Watanabe	*Archaeological Reconnaissance of Areas Proposed for Emergency Flood Repair and Replacement of Structures, Bellows Air Force Station (BAFS), Waimānalo, O`ahu Island.*	Minimal Findings, BAFS
1989a	Hammatt, Hallett H. & David W. Shideler	*Archaeological Survey and Testing at Bellows Air Force Station for New Antennas and Trench Lines, Waimānalo, Ko`olaupoko, O`ahu*	Delimits cultural deposits in the vicinity of the Bellows runways, BAFS
1989b	Hammatt, Hallett H. & David W. Shideler	*Archaeological Reconnaissance and Subsurface Testing of Proposed KNMD 773133, Park Complex, North Coastal Region of Bellows AFS, Waimānalo, O`ahu, Hawaii.*	Delimits cultural deposits in the vicinity of the NE portion of Bellows, BAFS
1989	McNeill, Judith R.	*Intensive Archaeological Investigations at Site 50-80-15-3709, Bellows Air Force Station, O`ahu, Hawai`i*	Final Report of McNeal 1988, BAFS
1990	McMahon, Nancy; Michele T. Douglas, and Michael Pietrusewsky	*Burial Removal at 41-042 Manana Street, O`ahu, Site No. 50-80-15-4118, TMK: 4-1-05:027.*	Burial of a single individual

1990	Rolett, Barry V.	*University of Hawaii Archaeological Research on Bellows Air Force Station: Report of the 1989 Field School and a Proposal for Further Research in 1990*	Summary of 1989 Reconnaissance and areal excavation, BAFS
1991	Hibbard, Don and Michael Kolb	*Field Inspection of Houselot and Neighboring Area at TMK: 4-1-36:18, Waimānalo, Koʻolaupoko, Oʻahu*	Notes a stacked mound and tumbled wall of unknown function
1991	Kawachi, Carol	*Kaupo Beach Park Burials, Waimānalo, Koʻolaupoko, Oʻahu.*	Not seen
1991	Miller, Lynn	*Archaeological Monitoring of the Tinker Road Bridge Repair (Replacement) Project, Bellows Air Force Station, Waimānalo, Oʻahu Island, Hawaiʻi.*	Reports cultural evidence of site -511 including 3 distinct occupational levels, BAFS
1992	Carpenter, Alan	*Fieldcheck of Kealakipapa Valley Road Remnants, Makapuʻu Head, Maunalua, Koʻolaupoko, Oʻahu.*	Presents a historical review and field observations focused on road remnants
1992	Rolett, Barry V.	*1990 Archaeological Excavation at Site 50-80-15-3300 (Bellows Air Force Station, Oahu), Conducted by the University of Hawaii Archaeological Field School*	Results of field school excavation at Site -3300, BAFS
1992a	Shun, Kanalei	*Archaeological Monitoring and Sampling during Installation of Perimeter Security Fencing, Bellows Air Force Station, Waimānalo, Koʻolaupoko District, Island of Oahu, Hawaii*	A.D. 1410-1635 base layer A.D. 430-905 from charcoal in river bank, BAFS
1992b	Shun, Kanalei	*Archaeological Reconnaissance Survey and Subsurface Testing for Proposed Electric Tie Circuit, Bellows Air Force Station, Waimānalo, Koʻolaupoko District, Island of Oahu, Hawaii*	Presents testing results, only remnant localized cultural deposits, BAFS

1993	Athens, J. Stephen & Jerome V. Ward	"Environmental Change and Prehistoric Polynesian Settlement in Hawaiʻi," *Asian Perspectives*	Scholarly work, BAFS
1993	Cordy, Ross H. and H. David Tuggle	"Bellows, Oahu, Hawaiian Islands: New work and New Interpretations," *Archaeology and Physical Anthropology in Oceania* XI (3)	Scholarly work, BAFS
1993	Dixon, Boyd	*An Archaeological Reconnaissance of Five Board of Water Supply Wells on Oʻahu, Hawaiʻi.*	Waimānalo Well III site - no significant findings
1993	Landrum, Jim & Allan Schilz	*Archaeological Reconnaissance Survey, Monitoring, and Subsurface Testing at the Proposed Mini-Putt Golf Course Site Project KNMD 929122, Bellows Air Force Station, Waimānalo Ahupuaʻa, Koʻolaupoko District, Island of Oʻahu, Hawaii*	4 C14s - A.D. 1259-1489 and A.D. 1280-1530; 1411-1681, 1427-1666 (200 meters from shore, Site 4522, BAFS
1993	Shun, Kanalei	*Archaeological Monitoring and Sampling During Emergency Flood Repair Construction, Waimānalo and Inoaole streams, Bellows Air Force Station, Waimānalo, Koʻolaupoko District, Island of Oʻahu, Hawaii*	Cultural deposits, C14 A.D. 1500, A.D. 700, BAFS
1993	Sinoto, Aki and Jeffrey Pantaleo	*Archaeological Surface Assessment and Monitoring of 12.4 Acre Parcel for Hawaii Job Corps Center, Waimānalo, Oʻahu*	Not seen
1993	Stride, Mark; Douglas F. Borthwick, and Hallett H. Hammatt	*Archaeological Reconnaissance Survey of the 56 Acres for the Proposed Olomana Golf Course Expansion Area (TMK: 4-1-13:11)*	Only parallel ditches and a reservoir were identified as a site (Site -4524), a component of Site -4042 Waimanalo Sugar Co. infrastructure

1994	Tuggle, H. David	*Archaeological Research of Areas Proposed for the development of Military Family Housing and Expansion of Military Training at Bellows Air Force Station, Oahu*	Site 4853, A.D. 380 to 600, BAFS
1995	Erkelens, Conrad	*Preliminary Report on Archaeological Monitoring and Data Recovery of Underground Storage Tank Removal, Bellows AFS, Waimanalo, Hawai`i*	C14 dates between A.D. 1400 to 1529 (73% probability), BAFS
1997	Carlson, Ingrid	*Archaeological Monitoring of Thirteen Locales for Site Assessment Field Sampling Activities at Bellows Air Force Station, Waimanalo, O`ahu, Hawai`i*	3 archaeological sites are located, no intact cultural deposits were found, BAFS
1997	Dega, Mike, Kyle, Latinis, and Randy Ogg	*Draft–Archaeological Monitoring and Sampling During Excavations for the Removal of Underground Storage Tanks at Bellows Air Force Station Hawai`i, Waimanalo, Ko`olaupoko District, Oahu, Hawai`i*	Understood as a draft of the following study, BAFS
1997	Latinis, D. Kyle, Michael F. Dega and Robert L. Spear	*Archaeological Monitoring and Salvage Data Recovery Excavations for the Removal of Underground Storage Tanks at Bellows AFS Hawai`i, Waimānalo, Ko`olaupoko District, O`ahu Island, Hawai`i.*	Reports site -5464 a disturbed cultural deposit & a human bone, BAFS
1997	Tuggle, David H.	*Final-Archaeological Research of Areas Proposed for Development of Military Family Housing and Expansion of Military Training at Bellows Air Force Station, O`ahu,*	Synthesis and reorganization of archaeological data, BAFS
1998	Carlson, Ingrid	*Archaeological Monitoring for Bellows Excess Lands Engineering Evaluation/Cost Analysis Phase I Field Sampling Activities Bellows Air Force Station, Waimanalo, O`ahu, Hawai`i*	Minimal findings at 13 areas, BAFS

1998	Carlson, Ingrid and Tom Dye	*Archaeological Monitoring Report for Site Investigations at Multiple Sites, Bellows Air Force Station, Waimanalo, Ko`olaupoko District, O`ahu, Hawai`i*	Identifies paleosols, but no cultural materials at two locations, BAFS
1998	Desilets, Michael and Thomas S. Dye	*Archaeological Monitoring and Sampling during Bellows OU7 UST Removal Project, Interim Remedial Action, Phase I, Bellows Air Force Station, Waimānalo, Ko`olaupoko, O`ahu*	Site 50-80-15-4853, Hawaiian-era deposits were located in swales of a beach ridge; large amount of imported rocks & coral, BAFS
1998	Dye, Thomas	*Archaeological Services in Support of the Final EIS for Proposed Expansion of Military Training and the Construction of Improvements to Existing Recreational Resources at Bellows Air Force Station, Waimānalo, Hawai`i*	Presents data on four sites -4851, -4853, -4855, -4857, BAFS
1999	Dye, Thomas and Coral Magnuson	*Archaeological Monitoring for Multiple Dump Sites DPU6, Bellows AFS, Waimānalo, Ko`olaupoko District, O`ahu, Hawai`i*	Reports a deeply buried wetland sediment but no direct evidence of taro or other cultivation, BAFS
1999	Marine Option Program	*Waimānalo Landing - Underwater Survey*	Documents machinery, pilings and various pieces of loading equipment
1999	Ogg, Randy and Michael Dega	*Archaeological Monitoring and Sampling During Waterline Replacement at Bellows AFS, Waimānalo, Ko`olaupoko District, O`ahu Island, Hawai`i*	Reports results of monitoring of 1.4 kms of trenching - minimal findings, BAFS
2000	Desilets, Michael	*Archaeological Monitoring for Underground Storage Tank Removal on ST II Sites at Bellows AFS Hawai`i*	Documents 3 traditional Hawaiian sites (-4850, -5464, & -383) and 1 military site (–4859), BAFS

2000	Desilets, Michael	*Archaeological Monitoring and Sampling, Interim Removal Action Five Underground Storage Sites -047 Bellows AFS Hawai`i*	Traditional Hawaiian cultural remains identified at several POL sites including identification of two new sites -5799 & 5800, BAFS
2000	Eble, Francis and Lisa Anderson	*Results of Archaeological Pre-Construction Subsurface Reconnaissance for Replacement of Beach Cottages at Bellows AFS, Island of O`ahu, Hawai`i*	Reports recovery of cultural remains incl. midden and fishing gear from a disturbed context, BAFS
2000	McGuire, Ka`ohulani and Hallett H. Hammatt	*Archaeological Monitoring Report for the Installation of Light Poles for a Ballfield at Waimānalo Beach Park, Waimānalo, Ko`olaupoko District, Island of O`ahu (TMK: 4-1-003-016)*	Minimal findings
2000	McIntosh, James and Paul L. Cleghorn	*Report on Archaeological Pre-Construction Reconnaissance Subsurface Testing and Sampling for Proposed Housing Facilities Construction, Bellows AFS, Waimānalo, O`ahu Island, Hawai`i, TMK 4-1-15*	Reports on 40 auger and 2 hand excavated test units - minimal findings, BAFS
2001	Addison, David J.	*Archaeological Subsurface Testing for the Removal of Pipeline Utilities Under the Installation Restoration Program at Bellows AFS, Waimānalo, Ko`olaupoko District, O`ahu, Hawai`i*	Reports results of 23 backhoe trenches & 3 test units documenting a wide-spread, partially intact cultural stratum, BAFS
2001	Leidemann, Helen	*Phase I Archaeological Inventory Survey of Housing Replacement at Bellows AFS Hawai`i TMK 1-4-1-15*	N edge of Bellows, minimal findings, BAFS
2001	Perzinski, David, John Winieski and Hallett H. Hammatt	*An Archaeological Monitoring Report for Waimānalo Sandwich Isles Communication Project, Waimānalo, Ko`olaupoko District, O`ahu, Hawai`i (TMK: 4-1-19,20, 21)*	Minimal findings

2002	Farrell, Nancy and Robert L. Spear	*Archival Research and Documentation of Battery Ricker, ST-10 USTS at Sherwood Forest State Park...*	Provides background data on history of Bellows Field area
2002	McGhee, Fred L. and Valerie Curtis	*Archaeological Monitoring and Sampling in Conjunction with Force Protection Installation Bellows Air Force Station*	Minimal findings, BAFS
2002	McIntosh, James and Paul L. Cleghorn	*Report of Archaeological Monitoring and Sampling During Placement of Electrical Poles at Bellows AFS, Waimānalo, Ko`olaupoko District, O`ahu Island, Hawai`i, TMK 4-1-15*	Identified several buried cultural deposits at two locales, BAFS
2002	Ogg, Randy and Michael Dega	*Archaeological Testing and Sampling During Removal at Two Underground Storage Tanks at Sherwood Forest State Park, Waimānalo, Ko`olaupoko District, O`ahu Island, Hawai`i*	None of 13 trenches yielded significant cultural resources, BAFS
2002	Perzinski, David, Brian Colin, and Hallett H. Hammatt	*Archaeological Monitoring Report for Waimānalo Kūpuna Housing Project at 41-209 Ilauhole Street, Waimānalo Ahupua`a, Ko`olaupoko District, O`ahu Hawai`i (TMK 4-1-19:32)*	3 human burials and a cultural layer are reported (Site -5939)
2002	Roberts, Alice K. S. and Patrick Bower	*Archaeological Monitoring 8-Inch Waterline Installation Project Bellows AFS, Waimānalo, Ko`olaupoko District, O`ahu Island, Hawai`i (DACA 83-00-P-0038)*	Describes a new sub-surface site -5854, BAFS
2002	Roberts, Alice K. S. and Eric W. West	*Archaeological Monitoring and Sampling During Construction of Housekeeping Facilities (BFMV 955000) Bellows AFS, Waimānalo, Ko`olaupoko District, O`ahu Island, Hawai`i (DACA 83-01-P-0019)*	No significant cultural remains, BAFS

IV. PLACE NAMES OF WAIMĀNALO

Place names or *wahi pana* ("legendary place" Pukui and Elbert, 1968: 376) are an integral part of Hawaiian culture. "In Hawaiian culture, if a particular spot is given a name, it is because an event occurred there which has meaning for the people of that time"(McGuire, 2000: 23). The *wahi pana* were then passed on through language and the oral tradition, thus preserving the unique significance of the place. Hawaiians named all sorts of objects and places, points of interest which may have gone unnoticed by persons of other cultural backgrounds:

> Hawaiians named taro patches, rocks and trees that represented deities and ancestors, sites of houses and *heiau* (places of worship), canoe landings, fishing stations in the sea, resting places in the forests, and the tiniest spots where miraculous or interesting events are believed to have taken place. (Pukui and Elbert, 1974:x)

An attempt was made to include the proper diacritical marks for all known and generally accepted translations of place names. Making incorrect assumptions about the pronunciation and where to place the diacritical marks in a name can entirely change the meaning of a name, (e.g. *pūāā*: "scattered; to flee in disorder and fright"; *puaʻa*: "pig, pork"). Therefore, in cases where the pronunciation of a name was uncertain, diacritical marks were not used and no attempt was made to translate the name. In some cases, cultural relationships were made based on the literal translation of the root word.

Place Names of Hawai'i (Pukui *et al.*, 1974) was used as the primary source for all place name translations. Where there were no known translations, a literal translation of the place name was made using the *Hawaiian Dictionary* (Pukui and Elbert, 1986). The intent of the author's to merely present the available information and let the reader come to his own conclusions.

One of the beauties of the Hawaiian language is the dualism in names and the double meanings – the literal meaning and the *kaona* or hidden meaning. It should be remembered that the true significance of a place name lies only with the people who use them and know their history.

Ahiki	*ʻIli* in Waimānalo associated with 7 Land Commission Awards; one of three peaks (least pointed one) of Mount Olomana on Waimānalo side, named for the *konohiki* of Kaʻelepulu and Kawainui fishponds (Pukui *et al.* 1974:5)
Alekini	*ʻIli* in Waimānalo associated with 1 Land Commission Award
ʻĀpuakea	Place near coast named for a maiden whose skin was fair Lit. "Fair ʻĀpua" (Alona, Sept. 22, 1939 *Oahu Place Names)*
Bellows	Air Force Base and Beach Park named after Lt. F. B. Bellows

Haununaniho	A small hill said to have been sacred and a place of refuge (McAllister's site 383), see Hūnānaniho.
Hoʻoinuwai	Name of a female uncarved stone image at Waimānalo, location unknown (Sterling and Summers 1978:256)
Hoʻolawa	Name of a male uncarved stone image at Waimānalo, location unknown (Sterling and Summers 1978:256)
Hoʻoneʻe	*ʻIli* in Waimānalo associated with 1 Land Commission Award
Hūnānaniho	A hill near ʻĀpuakea, same as Haununaniho. Lit. "tooth concealment" (Alona, Sept. 22, 1939 *Oahu Place Names)*
Inikiolohe	At the Makapuʻu end of Waimānalo was an old *koʻa* or shrine dedicated to the fish goddess Mālei which increased the catch of *moi* and *uhu*
ʻIole	*ʻIli* in Waimānalo associated with 2 Land Commission Awards, *Lit.* "Rat"
Kuʻākaupapa	Next to Pāhonu associated with saying "*Papa ke kānaka, papa ke akua, papa nā mea apau* - Multitudes of people, multitudes of gods, all in multitudes" (Alona, Sept. 14, 1939 *Oahu Place Names)*
Kaʻalo	*ʻIli* in Waimānalo associated with 1 Land Commission Award
Kaaoao	*ʻIli* in Waimānalo associated with 6 Land Commission Awards
Kaeʻe	*ʻIli* in Waimānalo associated with 3 Land Commission Awards
Kahalekai	While said to have been a fish shrine this construction in the sea at the Makapuʻu end of Waimānalo is understood as a watchtower or place to watch for canoes (Alona, Sept. 14, 1939 *Oahu Place Names)*
Kahikiea	*ʻIli* in Waimānnlo associated with 1 Land Commission Award
Kahuelua	*ʻIli* in Waimānnlo associated with 1 Land Commission Award
Kaʻiliʻili	*ʻIli* in Waimānalo associated with 3 Land Commission Awards; Lit. "The pebble" (Pukui *et al.* 1974:68)
Kākalaioa	Rock in the sea off Makapuʻu (named after a thorny bramble -rocks here are as sharp as *kākalaioa* thorns)(Pukui *et al.* 1974:71)

Kalaeki'ona	Coastal point near Kaluahine; Lit. "Excrement Point" The *`alaea* (red earth) here was used in medicine (Alona, Sept. 14, 1939 *Oahu Place Names)*
Kalapueo	General name for the area near Makapu`u (including Kahalekai and Pōhakupa`akikī) that was a scene of fighting between Ka`eo and O`ahu forces in 1793; Lit. "owl proclamation" (owls called on others here to battle) or "rallying-of-the-owls" (Pukui *et al.* 1974:75; Alona, Sept. 14, 1939 *Oahu Place Names)*
Kalāwehekohe	A hill below Olomana and Ahiki where a young chiefess lost her virginity, Lit. "The-day-of-opening-the-vagina" (Alona, Sept. 22, 1939 *Oahu Place Names)*
Kaloloko	*`Ili* in Waimānalo associated with 1 Land Commission Award
Kaluaaula	*`Ili* in Waimānalo associated with 3 Land Commission Awards
Kaluahine	Near Makapu`u, where the *milo* trees grow by the lower side of the road, a place where a beautiful maiden lived who when very young turned into an old woman but was still beautiful with the charm and beauty of age. A *ko`a* fishing shrine was located here; Lit. "old woman"(Alona, Sept. 14, 1939 *Oahu Place Names)*
KaluaoPele	An old crater above Puhā a source of *pālolo* clay used for the scalp; Lit. "Pele's pit" (Alona, Sept. 22, 1939 *Oahu Place Names)*
Kaluapalolo	*`Ili* in Waimānalo associated with 2 Land Commission Awards
Kāohikaipu	An off-shore rock near Makapu`u -sometimes the name is (mis)-applied to Moku-Hope Island; Lit. "hold back the container" so called because the rock blocked sea-swept matter (Pukui *et al.* 1974:86)
Kapouli	*`Ili* in Waimānalo associated with 1 Land Commission Award
Kapu`a	Land Division on central coast where Muliwaiolena and `Āpuakea were killed because the later compared herself to Hi`iaka in beauty (Fornander; *Ka Leo o Ka Lahui*); Lit. "the whistle" (Pukui *et al.* 1974:89). Also said to be "Kapua" - the arrow or dart such as Pikoi-a-ka-`alalā used in rat-shooting there (*Kuokoa* "Pikoi-a-ka-`alalā" December 16, 1865)
Kapua`a	*`Ili* in Waimānalo associated with 2 Land Commission Awards
Kapuiki	*`Ili* in Waimānalo associated with 7 Land Commission Awards

Kaulanaka`iole	A resting place above Kapu`a on a trail traversed by Pikoi-a-ka-`alalā on his way across the Ko`olau to Mānoa and/or a place where Pikoi shot a rat (*Kuokoa* "Pikoi-a-ka-`alalā" December 16, 1865)
Kaulukanu	*`Ili* in Waimānalo associated with 5 Land Commission Awards
Kaupō	Once a fishing village near the present Sea Life Park (McAllister's site 384), previously known as Ko`onāpou (also known as Ke-ana-a-Kapoi and Koanapou); Lit. "landing [of canoes] at night" (Pukui *et al.* 1974:96)
Kaupokuhale	A low hill, half-way up the cliff-side, with a long ridge running from it to the foot of the hill. An abundance of superlative *`awa* was in the vicinity (Alona, Sept. 22, 1939 *Oahu Place Names)*
Kawaikupanaha	Makapu`u side of Puka-kukui, once a pool where people got their water, the road covered it up (Alona, Sept. 14, 1939 *Oahu Place Names)*
Kaweloloko	*`Ili* in Waimānalo associated with 1 Land Commission Award
Keaalakaalae	*`Ili* in Waimānalo associated with 1 Land Commission Award
KeanaaKapoi	At Ko`onāpou (also known as Koanapou and later known as Kaupō) at the present Sea Life Park, this was the home of Kapoi who was a healer and wizard; Lit. the cave of Kapoi (Alona, Sept. 14, 1939 *Oahu Place Names)*
Keanapa`ū	On the east side of Pōhakuloa, a very small spot, Lit. "constantly moist cave" but there is no cave here of any kind - perhaps a figurative reference to a woman (Alona, Sept. 14, 1939 *Oahu Place Names)*
Keawaaka`iole	Near Pukakukui, a spot in the sea where there were no waves, a stone on the bottom was given the name; Lit. "the channel of the rat" or "rat's sea port"(Alona, Sept. 14, 1939 *Oahu Place Names)*
Keohe	*`Ili* in Waimānalo associated with 1 Land Commission Award
Kilohana	Understood as the summit of the Niu to Waimānalo Trail (*Kuokoa* February 10, 1922)
Kini	A female sacred rock and fish god that attracted *akule* and *`ō`io* fish and was offered *`awa* and first fish - moved to *mauka* side of Kalaniana`ole by road workers; Lit. "multitudes" (Pukui *et al.* 1974:112)

Koanapou	A variant of Ko`onāpou (also known as Ke-ana-a-Kapoi and later known as Kaupō)
Koha	A place above Kapu`a on a trail traversed by Pikoi-a-ka-`alalā on his way across the Ko`olau to Mānoa (*Kuokoa* "Pikoi-a-ka-`alalā" December 16, 1865)
Ko`onāpou	Once a fishing village near the present Sea Life Park (McAllister's site 384), commonly known as Kaupō (also known as Ke-ana-a-Kapoi and Koanapou); Lit. "staff posts (posts supported thatched roofs of the stone houses in this village)(Pukui *et al.* 1974:117)
Kuikui	Easternmost of four hills (east of highest Māilo) above Waimānalo (Pualewa W. N., *Ke Au Okoa* Nov. 12, 1866)
Kukui	Area on Makapu`u side of Pāhonu that was a scene of fighting between Ka`eo and O`ahu forces in 1793(trenches and earthworks were thrown up there), a small poor fishing settlement; Lit. "Candle-nut lamp, light of any kind" (Pukui *et al.* 1974:122)
Kuli`ou`ou	*`Ili* in Waimānalo associated with 1 Land Commission Award
Kumakaiwa	*`Ili* in Waimānalo associated with 2 Land Commission Awards
Kumuhau	*`Ili* in Waimānalo associated with 7 Land Commission Awards
Kupuna	*`Ili* in Waimānalo associated with 1 Land Commission Award
Kupunakāne	A spring in the uplands that would call out to the Kupunawahine spring on calm sunny days and exchange temperature (become warm) on overcast days (*Hōkū o Hawai`i "Nā `Ano`ai o O`ahu Nei"* March 11, 1930)
Kupunawahine	A spring in the lowlands that would call out to the Kupunakāne spring on calm sunny days and exchange temperature (become cool) on overcast days (*Hōkū o Hawai`i "Nā `Ano`ai o O`ahu Nei"* March 11, 1930)
Lanipō	Peak (2,621 feet elevation) where Waimānalo and Kailua meet with Kona District; Lit. "dense (as plant growth)" (Pukui *et al.* 1974:129)
Laukupu	A coastal area later known as Pu`a (Kapu`a) (Alona, Sept. 14, 1939 *Oahu Place Names)*
Luamano	*`Ili* in Waimānalo associated with 2 Land Commission Awards

Maelo	Variant of Māilo, one of four hills above Waimānalo (Pualewa W. N., *Ke Au Okoa* Nov. 12, 1866)
Maha`ilua	*`Ili* in Waimānalo associated with 3 Land Commission Awards; across from Bellows field at the base of the cliff once thickly populated because there was a good water supply (Alona, Sept. 22, 1939 *Oahu Place Names)*
Māilo	The tallest peak said to be named after a strong chief; Lit. "thin" (Alona, Sept. 14, 1939 *Oahu Place Names;* Pukui *et al.* 1974:139)
Makakalo	*`Ili* in Waimānalo associated with 2 Land Commission Awards
Mānana	Off-shore island (67 acres, 200 feet high) popularly known as Rabbit Island (Pukui *et al.* 1974:145)
Maunalua	*`Ili* in Waimānalo associated with 1 Land Commission Award, in 20th century was transferred to Honolulu (Kona) District
Mokuhope	Island (11 acres, 40 feet elevation) off Makapu`u Lit. "island-behind [behind Mānana Island]"
Mokulama	*`Ili* in Waimānalo associated with 3 Land Commission Awards
Mo`oiki	*`Ili* in Waimānalo associated with 5 Land Commission Awards
Muliwaiolena	Famous as a stream mouth or pool of yellow or yellowish-green water near Kapu`a in central coastal Waimānalo (Uaua, W. H., *Ke Au Okoa* Dec. 8, 1870)
Nonokio	*`Ili* in Waimānalo associated with 4 Land Commission Awards
Nu`ukauila	Westernmost of four hills (west of highest Māilo) above Waimānalo (Pualewa W. N., *Ke Au Okoa* Nov. 12, 1866)
Ohea	*`Ili* in Waimānalo associated with 5 Land Commission Awards
Olohana Heiau	McAllister thought the name applied to one of the Waimānalo *heiau* he described
Olomahā	Area once thickly populated with a spring and house sites (Alona, Sept. 22, 1939 *Oahu Place Names)*
Pāhonu	*`Ili* in Waimānalo associated with 3 Land Commission Awards; off-shore pond (McAllister site 383-A) where captured turtles were kept for chiefs, Lit. "Turtle enclosure" (Pukui *et al.* 1974:174)

PalioKau	Understood as a dark spot almost at the base of the cliff ascended by the Waimānalo/Niu Trail -perhaps named after the wife of the strong man Māilo (Alona, Sept. 14, 1939 *Oahu Place Names)*
Paliuli	One of four hills (west of highest Māilo) above Waimānalo (Pualewa W. N., *Ke Au Okoa* Nov. 12, 1866)
Panene	*`Ili* in Waimānalo associated with 2 Land Commission Awards
Pueo Heiau	McAllister thought the name applied to one of the Waimānalo *heiau* he described
Pōhakuloa	A large stone on the Makapu`u-side of Puka-kukui - another personage Hi`iaka met (Alona, Sept. 14, 1939 *Oahu Place Names;* Fornander 1919:343*)*
Pōhakunui	*`Ili* in Waimānalo associated with 7 Land Commission Awards; Lit."Large stone" Location of a small *heiau* (McAllister site 382)
Pōhakupa`akikī	A stone awash in the sea where offerings to the shark god Kamohoali`i were made and where kahuna would pray for healing; Lit. "hard stone" or "stubborn stone".
Poka`a	*`Ili* in Waimānalo associated with 1 Land Commission Award
Pu`a	A coastal area later known as Kapu`a (Alona, Sept. 14, 1939 *Oahu Place Names)*
Puahia	*`Ili* in Waimānalo associated with 1 Land Commission Award
Pu`ewai	Name of surf at mouth of Puhā Stream when backed up waters were released, Lit. "Agitated water" (Cummins *The Mid-Pacific Magazine* Sept 1913 p. 235)
Puhā	*`Ili* in Waimānalo associated with 7 Land Commission Awards; Stream, Lit. "a hollow (as in a tree" (Pukui *et al.* 1974:192)
Pukakukui	A channel, not a very straight one leading to a landing place for canoes near Kukui (Alona, Sept. 14, 1939 *Oahu Place Names)*
Pukani	*`Ili* in Waimānalo associated with 1 Land Commission Award
Pu`u kilo i`a	East pf Puhā, here one looked for schools of fish and signaled to the men of the canoes where to go; Lit. "Hill for the sighting of fish" (Alona, Sept. 22, 1939 *Oahu Place Names)*

Pu`u Loa	Peak above Waimānalo (Handy 1940:Vol. 1 p 100)
Pu`uoKaha`i	A sand hill near Makapu`u Beach (different from the Mōkapu hill of the same name); Lit. "Kaha`i's hill" (Alona, Sept. 14, 1939 *Oahu Place Names)*
Pu`u o Kona	Peak above Waimānalo (2,200 feet high); Lit. "hill of leeward" (Handy 1940:Vol. 1 p 100; (Pukui *et al.* 1974:204)
Pu`u o Molokai	A low hill back from the coast in east/central Waimānalo where new-comers from Molokai made their home and kept to themselves (Alona, Sept. 14, 1939 *Oahu Place Names)*
Rabbit Island	Off-shore island (67 acres, 200 feet high) properly known as Mānana
Waikupanaha	*`Ili* (apparently in two pieces one in the uplands and one near the sea) in Waimānalo associated with 6 Land Commission Awards; a spring in a valley *mauka* of the mill which fed taro patches. (Alona, Sept. 22, 1939 *Oahu Place Names)* Lit. "marvelous water"
WaiLea	Point between Lanikai and Waimānalo (Lit. Water of Lea,(canoe maker's goddess; also the name of a fish god that stands on this point) (Pukui *et al.* 1974:224)
Waimānalo	Name of *Ahupua`a*; Lit. "Potable water" (Pukui *et al.* 1974:225)

V. RESULTS OF COMMUNITY CONSULTATION

As partial fulfillment for the Scope of Work (SOW), consultation with government agencies, various organizations, and the concerned community was conducted to identify knowledgeable *kūpuna* or *kama`āina* who could provide information on the history, previous land use and traditional practices of the study parcel. The organizations consulted included: the State Historic Preservation Division, the Office of Hawaiian Affairs, the O`ahu Island Burial Council, Alu Like, the Neighborhood Board Commission for Waimānalo (Number 32), the Waimānalo Hawaiian Civic Club, the Waimānalo Hawaiian Homes Association, Waimānalo Health Center, and the University of Hawai`i's Oral Research Center. Based on the recommendations by these agencies and organizations attempts were made to contact thirty-one individuals who either live in or have connections to Waimānalo.

It was possible to contact twenty-five of the thirty-one recommended *kūpuna* and *kama`āina*. Most of those contacted stated that anyone who might have had some long-term recollections of the project area have passed on within the last few years. Some of the contacts pointed out that many of the Waimānalo area *kūpuna* are transplants from different parts of the islands who moved there in the early '40s and late '50s with the development of Hawaiian Homestead lands. The individuals contacted who were familiar with the project area recalled only former sugarcane fields and, following the shutdown of cane operations, diversified agricultural land.

An informal interview was conducted with Francisco Tabar at his home in Waimānalo. Frank, as he likes to be called, was born in Waimānalo in 1926. He remembers the project area covered with sugar cane, and after that it was diversified agricultural and farm lands. He mentioned that if anything significant was there before the plantation era it would have been destroyed during the plowing of the fields. At the time fields were plowed the workers would place all the rocks in piles destroying any remaining historic sites. Frank is the oldest former plantation worker alive and living in Waimānalo at this time.

Table 2: Individuals With Whom Consultation was Attempted

Key:
Y=Yes
N=No
A=Attempted (at least 3 attempts were made to contact individual, with no response)
S=Some knowledge of project area
D=Declined to comment
U=Unable to contact, i.e., no phone or forwarding address, phone number unknown
FFF=Fruit Fly Facility

NAME	AFFILIATION	CONTACTED	KNOWLEDGE OF PROJECT AREA	COMMENTS
Adviente, Grace	Hawaiian Civic Club of Waimānalo	Y	S	No comment
Aila, Ku`ulei	Hawaiian Civic Club of Waimānalo	Y	S	Made referral
Aiu, Pua	Office of Hawaiian Affairs	Y	N	Made referrals
Aragon, Joseph A.	Waimānalo Neighborhood Board No. 32	Y	S	No comment
Burns, Richard	Waimānalo Public Library	Y	N	No comment
Ellsworth, Phillip and Lilac	Waimānalo Neighborhood Board No. 32	Y	S	Made referrals
Field, Greg	Waimānalo Community Development	Y	N	Made referral
Hale, Lilia (Mama Hale)	Hawaiian Language teacher/ Local resident	Y	N	No comment
Hewitt, Frank	Waimānalo Health Center/Kumu Hula	Y	S	Made referral
Ho, Kekoa	Waimānalo Neighborhood Board (Chair) No. 32	Y	Y	Made referrals
Jourdane, Muffett	SHPD/O`ahu Archaeologist	Y	N	No comment
Kaaihui, Gorden	Local Resident	Y	S	Made referrals
Kaaihui, Joseph	Local Resident	Y	S	Made referrals

Kaaihui, Lilian	Local Resident	Y	S	Most of the old timers are gone now
Kalama, Kim and David	Local Residents/Cultural Practitioner	Y	Y	Concerned that the FFF is bad for the community ,made Referrals
Kanahele, Bumpy	Nation of Hawai'i	N	-	No number
Kini, Kalei	O'ahu Island Burial Council	Y	N	No comment
Lo, Jan	Local Resident	A	-	
Makaila, Penny	Local Resident	Y	N	No comment
Markell, Ka'iana	SHPD: Burials Division	Y	N	No comment
McEldowney, Holly	SHPD/Culture and History Branch	Y	S	No comment
Mendoza, Helen	Local Resident	A	-	
Pakelo, Margret	Local Resident	Y	Y	Made referral
Park, Kevin	Local Resident/FFF employee	Y	N	Made referral
Richards, Paul	Waimānalo Hawaiian Homes Association	-	-	No longer work for the Association
Robins, Mary	Local Resident	A	-	
Sang, Tony	Waimānalo Hawaiian Homes Association	Y	N	Most of the *Kūpunas* are not from the area
Silva, John	FFF employee and local resident	Y	S	Made referrals
Stein, Stuart	FFF employee	Y	N	Made referral
Tabar, Francisco	Co-Chair of Nalo Plantation Reunion	Y	Y	Informally interviewed on 11-5-02
Wright, Agnes Kainoa	Hawaiian Civic Club of Waimānalo (Historian)	A	-	

VI. TRADITIONAL CULTURAL PRACTICES

Traditional cultural practices, activities, and sites that may have been or currently are associated with a specific area typically include: hunting, ocean and stream resources, plant gathering, sacred sites, trails, and burials. However, none of these practices, activities and sites can be identified within the present Waimānalo project area. As documented in Section II above, the project area was under cultivation of sugarcane through most of the first half of the 20th century and, following the shutdown of cane operations, was open agricultural land or a vacant lot. These modern activities have permanently altered the project area landscape, leaving no evidence of any Hawaiian cultural practices or activities that might have been associated with the area. The only historic site associated with the area is the Tai-Lee Ditch at the *makai* edge of the project area, which lies outside the project boundaries.

VII. SUMMARY AND RECOMMENDATIONS

By the early 20th century, the project area was leveled and plowed for sugarcane cultivation which continued to the late 1940s. Subsequently the project area reverted to other agriculture or open, undeveloped land. These historic activities have removed any remnants of traditional Hawaiian use and activity within the project area. The community members consulted during the course of this assessment who had any knowledge of the project area could recall only the former sugarcane field. None of the individuals consulted could recall any traditional cultural resources, practices and beliefs that may have been associated with the project area. Neither did anyone mention any ongoing cultural activities associated with the area.

Based on the above considerations, it may be concluded that further development of the project area parcel should have no adverse impact on traditional cultural resources, practices or beliefs. The only precautionary note is the concern for preservation of the Tai-Lee Ditch at the *makai* boundary of the project area.

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Appendix G

Correspondence and Consultation Documentation

Appendix G-1

Pre-Assessment Consultation Correspondence and Documentation

SAMPLE LETTER REQUESTING INPUT

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Phone: (808) 524-3771 Fax: (808) 538-0445
E-mail: hpeinc@hawaiipacificengineers.com

March 3, 2003

Ms. Genevieve Salmonson, Director
State Department of Health
Office of Environmental Quality Control
235 S. Beretania St., Room 702
Honolulu, HI 96813

SUBJECT: Modification of USDA Hawaii Fruit Fly Production Facility (HFFPF)
Waimanalo, Hawaii (TMK 4-1-26:1)
Pre-assessment Consultation for Environmental Assessment for Temporary Research Modules

Hawaii Pacific Engineers, Inc. (HPE), on behalf of the United States Department of Agriculture (USDA), would like to inform you of changes to proposed plans to modify and expand the Hawaii Fruit Fly Production Facility (HFFPF) in Waimanalo.[1] In May and June of 2001, HPE solicited pre-assessment comments on the proposed construction of an onsite water reclamation facility for recycling of HFFPF's processwastewater. In July and August of 2002, HPE solicited pre-assessment comments for an expanded project involving additional fruit fly production and temporary research facilities, a new warehouse, and upgraded mechanical and electrical systems, in addition to a new water reclamation facility. USDA, however, has now found it necessary to defer implementing the proposed expansion of the HFFPF until funding issues are resolved.

As a result of the delays associated with funding, USDA has decided to only proceed with the construction of the temporary research facilities at the present time. Due to the urgent need for research facilities and to avoid potential lapsing of funds for this portion of the expansion project, USDA will be preparing a separate environmental assessment to address only the research facilities. This correspondence is intended to describe and solicit pre-assessment comments on the proposed research modules.

USDA plans to issue a second environmental assessment at a later date to address the impacts associated with the larger expansion project. Funding issues are currently being resolved, and in addition, studies are being conducted to address previously expressed community concerns on the treatment and disposal of USDA's process wastewater. The cost-effectiveness of demolishing the existing production facility building and constructing an entirely new larger building is also currently being investigated by USDA. The initial environmental assessment for the temporary research modules will briefly describe the expansion project to provide general background information on future plans for the HFFPF site.

Proposed Research Facility Project

The HFFPF, located off Ahiki Street, is on land owned by the University of Hawaii at Manoa Waimanalo Research Station (TMK 4-1-26:1). A location map, vicinity map, and proposed site plan for the research facility are shown on the attached Figures 1, 2 and 3, respectively. USDA plans to lease approximately four acres of additional land located west of the existing facility to accommodate the temporary research modules and a stormwater detention basin. The additional land is also anticipated to be used in the future for a new warehouse, and as a storage and irrigation site for excess reclaimed water (see Figure 3).

The proposed research facilities are comprised of five prefabricated steel-panel modules providing approximately 3,900 square feet of workspace. The modules will be installed on reinforced concrete foundations and provided with potable water, power and sewer connections. An underground storage tank, with a capacity of approximately 5,000 gallons, will be provided to store process and washdown water that is

[1] The HFFPF was previously known as the Hawaii Fruit Fly Rearing Facility (HFFRF).

not permitted to be discharged to the sewer system due to its high organic strength. Approximately 10 employees will work in the new research modules.

Need for the Project

The research facility project is under the jurisdiction of the Hawaii Plant Protection Laboratory (HPPL) of USDA's Animal and Plant Health Inspection Service, Plant Protection and Quarantine (APHIS-PPQ). HPPL assists HFFPF in resolving sterile fruit productivity and quality issues and will play a vital role in implementing new production technology at the HFFPF. Existing HPPL functions currently in the main HFFPF building are proposed to be relocated to the new research modules, together with other off-site HPPL functions such as ecology and genetics studies.

The HFFPF is one of only two domestic sources of sterile Mediterranean fruit flies available to support eradication and preventive programs in the United States. Each week, the USDA ships 300 million sterile Medflies to southern California. New infestations of Medfly are projected to cost several billion dollars in agricultural losses, ultimately resulting in higher food costs in Hawaii and elsewhere. The use of sterile fruit flies avoids the need for widespread application of pesticides in agricultural and urban areas.

The temporary HPPL research modules will be an integral component of the HFFPF. The HFFPF requires considerable onsite research support to develop and implement production of improved fruit fly strains and to increase production efficiency. The use of the proposed prefabricated modular buildings is a cost-effective means to meet the research needs of HFFPF.

Preliminary Project Assessment

The environmental impacts associated with the research facility project will be evaluated in the environmental assessment to be prepared by HPE. USDA intends to mitigate any negative impacts to the extent practicable. The following is a preliminary assessment of the project and potential impacts.

The proposed research facilities will require the clearing of approximately one-half acre of the neighboring site to be leased from the University of Hawaii at Manoa. Much of the existing trees and vegetation will remain in place to screen the site from Ahiki Street and thereby minimize visual impacts. Grading work is anticipated in the immediate vicinity of the new modules and along the northern boundary for a stormwater detention basin. The increase in peak stormwater runoff generated by the addition of impermeable areas (building roofs and walkways) will be minimized by diverting runoff to the stormwater detention basin.

USDA has completed flora and fauna, archeological and cultural impact studies for the areas anticipated to be impacted by the research facility project as well as the future HFFPF expansion project. No endangered species, archaeological resources or cultural practices are anticipated to be impacted. Construction activities will be confined to the USDA site to eliminate impacts to the historic Tai Lee Ditch located on the northern boundary of HFFPF. Due to the use of Federal funds for the project, compliance with Section 106 of the National Historic Preservation Act will be required.

Since operations at the main production facility have been suspended until expansion of the HFFPF is completed, the domestic wastewater flow will be temporarily reduced. Future increases in domestic wastewater that would occur once the HFFPF is expanded and brought back into operation will be addressed in the environmental assessment for the future expansion project. Non-domestic wastewater, primarily consisting of fruit fly rearing and washdown water, will be collected and hauled offsite for treatment and disposal.

The construction cost for the project is estimated to be approximately $500,000, entirely funded by USDA.

The HPPL temporary research modules will help ensure the long-term viability of the HFFPF. The HFFPF's contribution to the eradication and control of Medflies benefits agricultural productivity and the United States economy. Hawaii's economy benefits from the construction work generated and the continued expenditure of Federal dollars locally for HFFPF salaries, supplies, and services.

Request for Input and Comments

We would appreciate receiving any pre-assessment input and comments that you may have by April 4, 2003. Please submit your comments to the address shown on this letterhead (Attention: RoyAbe). We will make every effort to address your concerns in the draft environmental assessment. A brief presentation on the project is scheduled for the Waimanalo Neighborhood Board meeting on March 10, 2003.

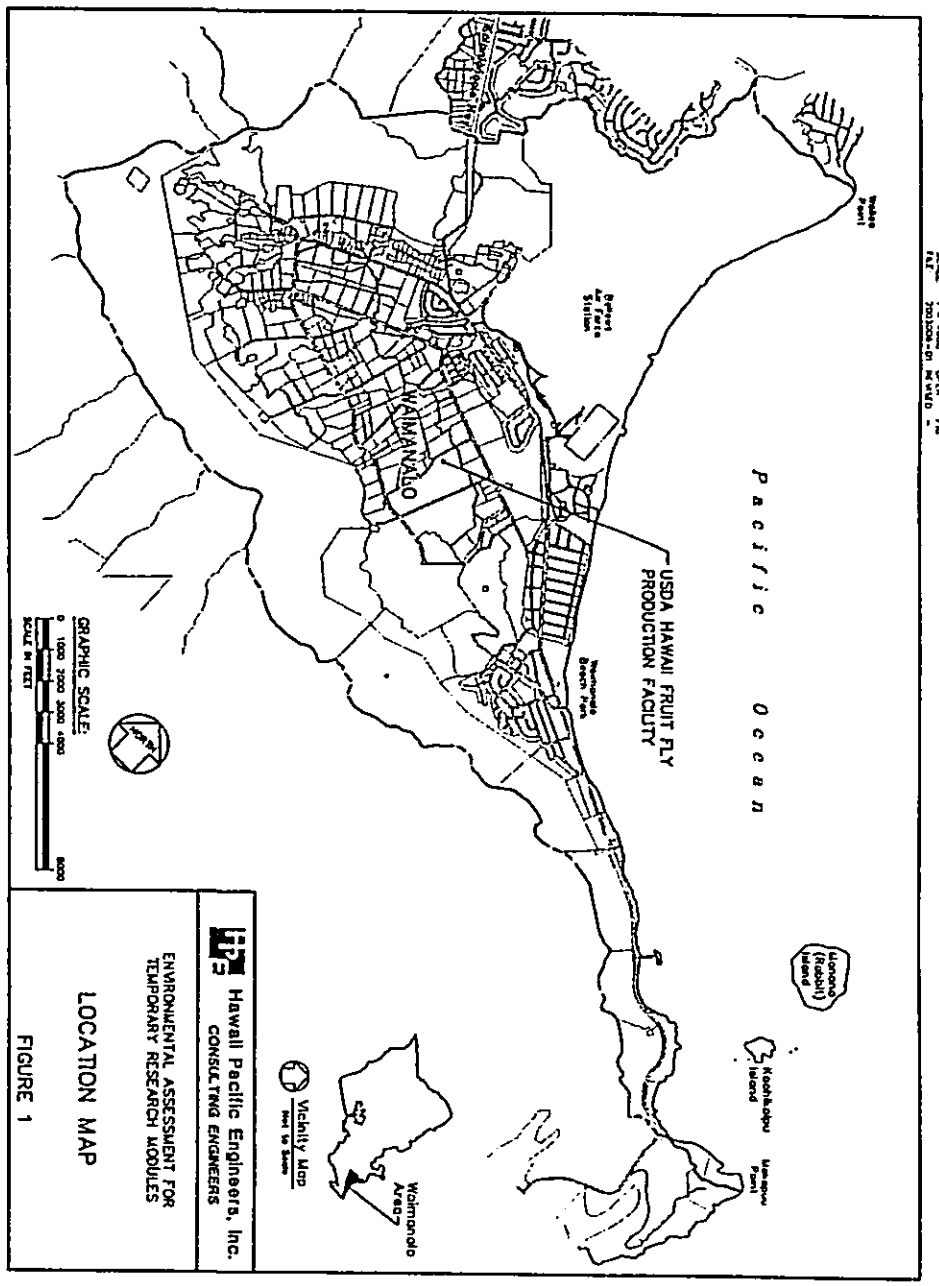
Please feel free to call me at 522-7425 to discuss any aspect of the proposed HPPL research modules project. Thank you in advance for your participation in the environmental review process for this project.

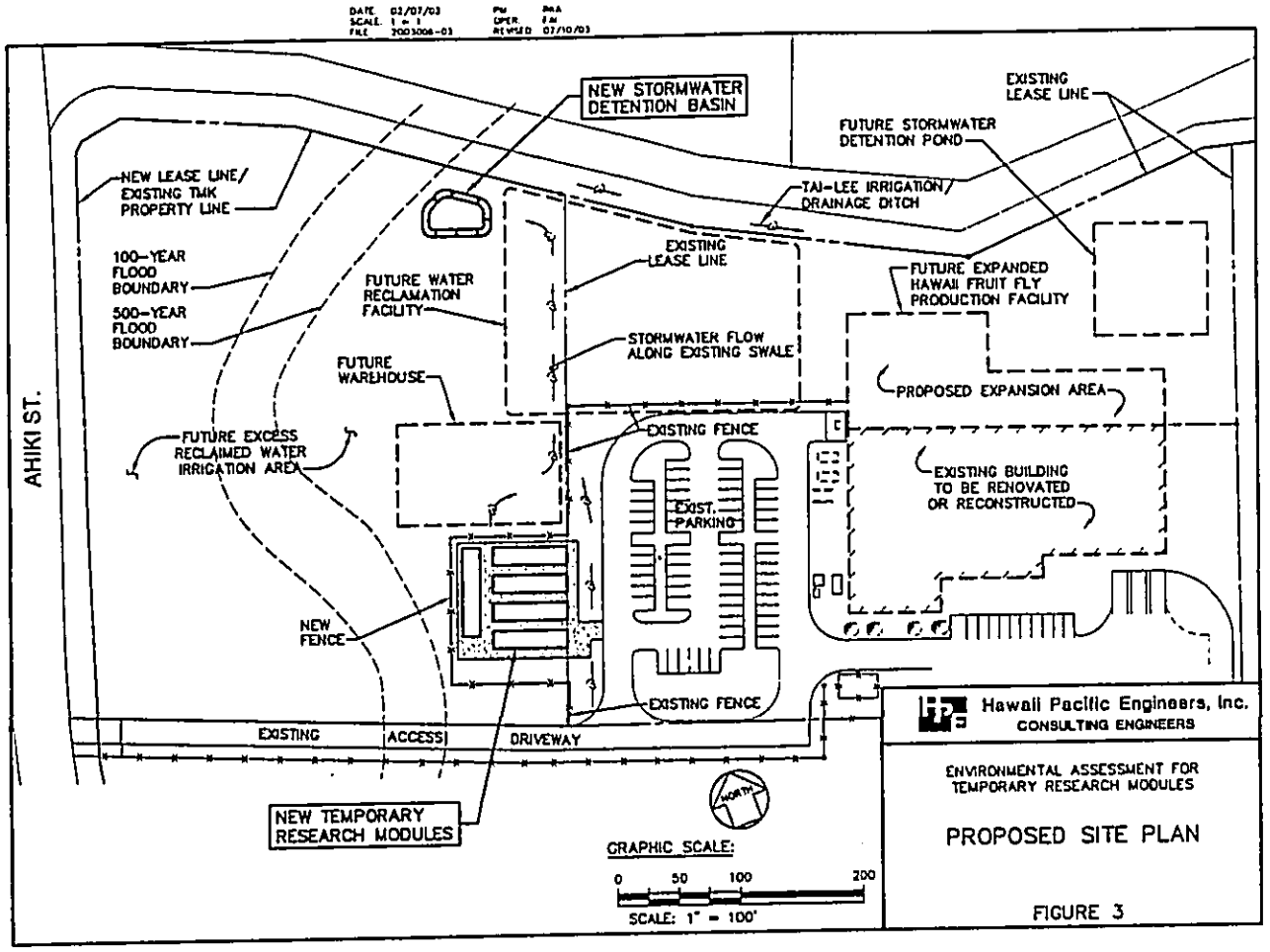
Sincerely,

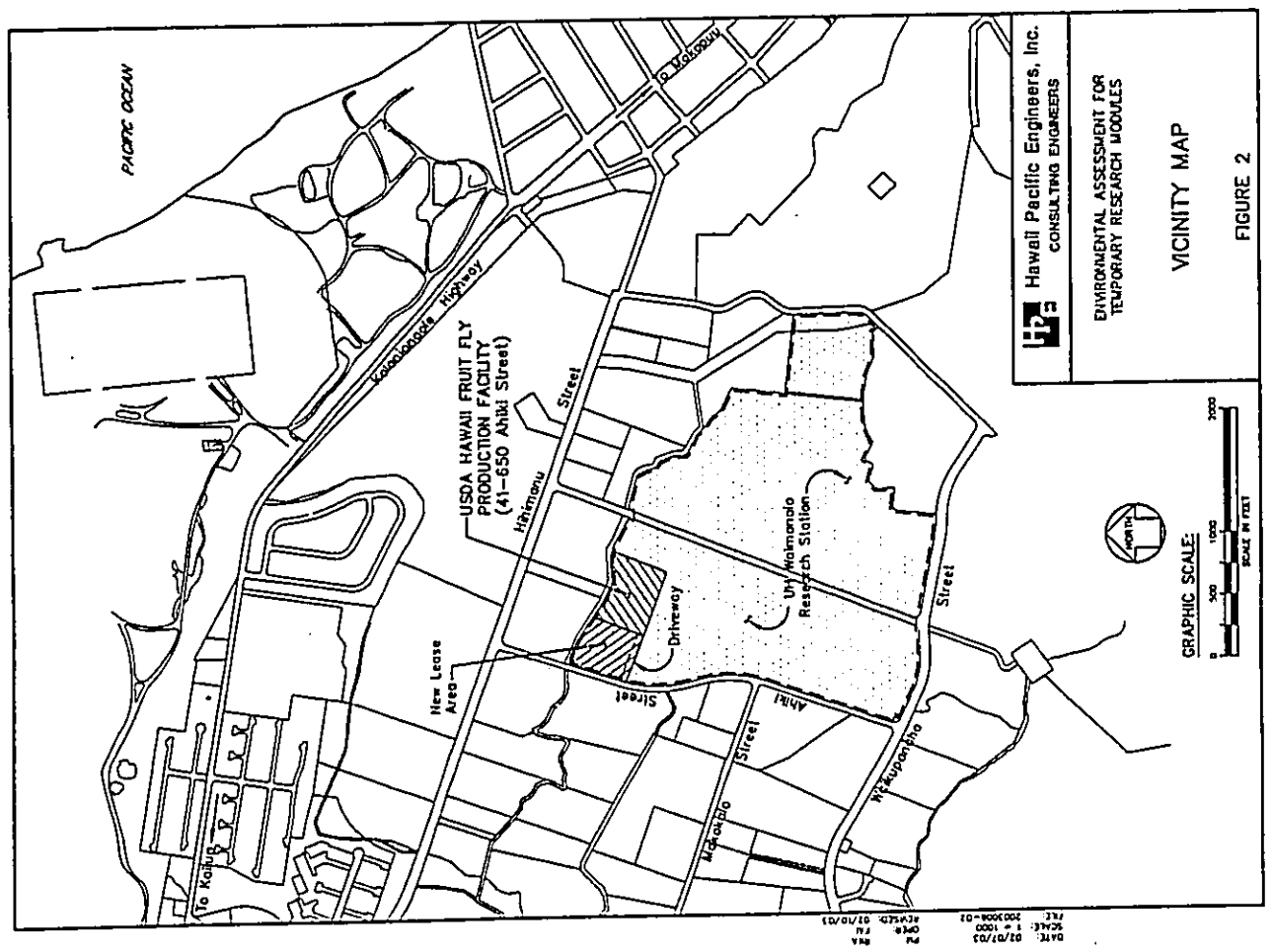
Roy K. Abe
Vice President

cc: Dr. Dr. Kingsley Fisher, USDA

Attachment (3 figures)




NEW STORMWATER DETENTION BASIN
EXISTING LEASE LINE
FUTURE STORMWATER DETENTION POND
NEW LEASE LINE/ EXISTING TMK PROPERTY LINE
TAI-LEE IRRIGATION/ DRAINAGE DITCH
100-YEAR FLOOD BOUNDARY
500-YEAR FLOOD BOUNDARY
FUTURE WATER RECLAMATION FACILITY
EXISTING LEASE LINE
FUTURE EXPANDED HAWAII FRUIT FLY PRODUCTION FACILITY
STORMWATER FLOW ALONG EXISTING SWALE
FUTURE WAREHOUSE
PROPOSED EXPANSION AREA
AHIKI ST.
FUTURE EXCESS RECLAIMED WATER IRRIGATION AREA
EXISTING FENCE
EXISTING BUILDING TO BE RENOVATED OR RECONSTRUCTED
EXIST. PARKING
NEW FENCE
EXISTING FENCE
EXISTING ACCESS DRIVEWAY
NEW TEMPORARY RESEARCH MODULES
NORTH
GRAPHIC SCALE:
0 50 100 200
SCALE: 1" = 100'
Hawaii Pacific Engineers, Inc.
CONSULTING ENGINEERS
ENVIRONMENTAL ASSESSMENT FOR TEMPORARY RESEARCH MODULES
PROPOSED SITE PLAN
FIGURE 3


PACIFIC OCEAN
Kalaniana'ole Highway
To Kahului
USDA HAWAII FRUIT FLY PRODUCTION FACILITY (41-650 Ahiki Street)
Hikimoe Street
New Lease Area
Driveway
Uh/Waimanalo Research Station
Ahiki Street
Makaiko Street
Kikukponoho Street
GRAPHIC SCALE:
Hawaii Pacific Engineers, Inc.
CONSULTING ENGINEERS
ENVIRONMENTAL ASSESSMENT FOR TEMPORARY RESEARCH MODULES
VICINITY MAP
FIGURE 2

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

REPLY TO ATTENTION OF

May 29, 2001

Civil Works Technical Branch

RECEIVED
JUN 4 - 2001
HAWAII PACIFIC ENGINEERS INC.

Mr. Roy Abe
Hawaii Pacific Engineers, Inc.
1132 Bishop Street, Suite 1003
Honolulu, Hawaii 96813-0445

Dear Mr. Abe:

Thank you for the opportunity to review and comment on the Pre-assessment Consultation for the USDA Hawaii Fruit Fly Rearing Facility Project, Waimanalo, Oahu (TMK 4-1-26: 1). The following comments are provided in accordance with Corps of Engineers authorities to provide flood hazard information and to issue Department of the Army (DA) permits.

a. Based on the information provided, a DA permit will not be required for the project.

b. According to the enclosed Federal Emergency Management Agency's Flood Insurance Rate Map, panel number 150001 0380E, dated November 20, 2000, the project site is located in Zone X (unshaded; areas determined to be outside of the 500-year floodplain); Zone X (shaded; areas located in the 500-year floodplain); and Zone AE (areas located in special flood hazard areas inundated by the 100-year flood). The upper region of the project located in Zone AE has base flood elevations ranging from 45 to 125 feet. The lower region located in Zone AE has base flood elevations ranging from 86 to 125 feet.

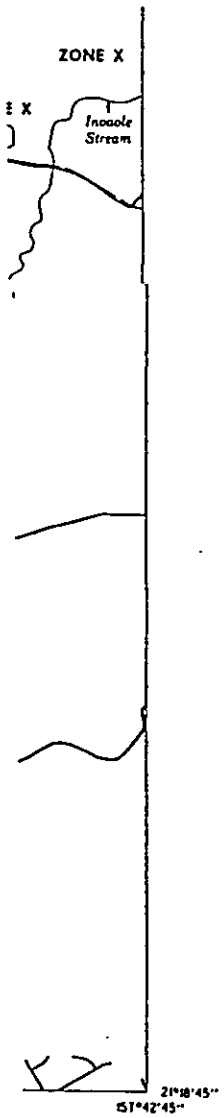
Should you require additional information, please contact Ms. Jessie Dobinchick of my Civil Works Technical Branch staff at 438-8876.

Sincerely,

James Pennaz

James Pennaz, P.E.
Chief, Civil Works
Technical Branch

Enclosures



Refer to the FLOOD INSURANCE RATE MAP EFFECTIVE DATE shown on this map to determine when actuarial rates apply to structures in zones where elevations or depths have been established.
To determine if flood insurance is available contact an insurance agent or call the National Flood Insurance Program at (800) 638-6620.

APPROXIMATE SCALE IN FEET
1000 0 1000

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

CITY AND COUNTY OF HONOLULU, HAWAII

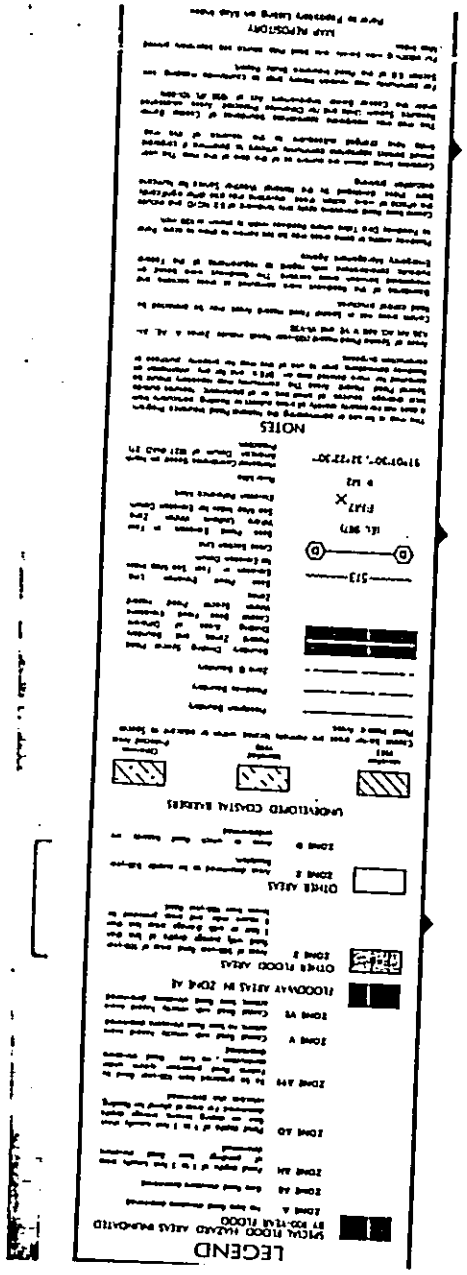
PANEL 380 OF 395
(SEE MAP INDEX FOR PANELS NOT PRINTED)

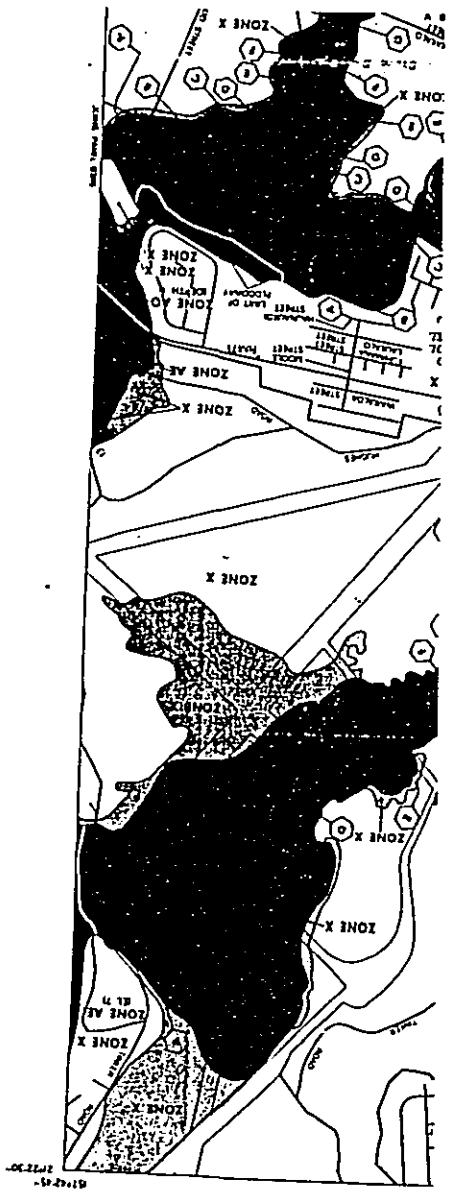
COMMUNITY	NUMBER	PANEL	SUFFIX
HONOLULU, CITY AND COUNTY OF	150001	0380	E

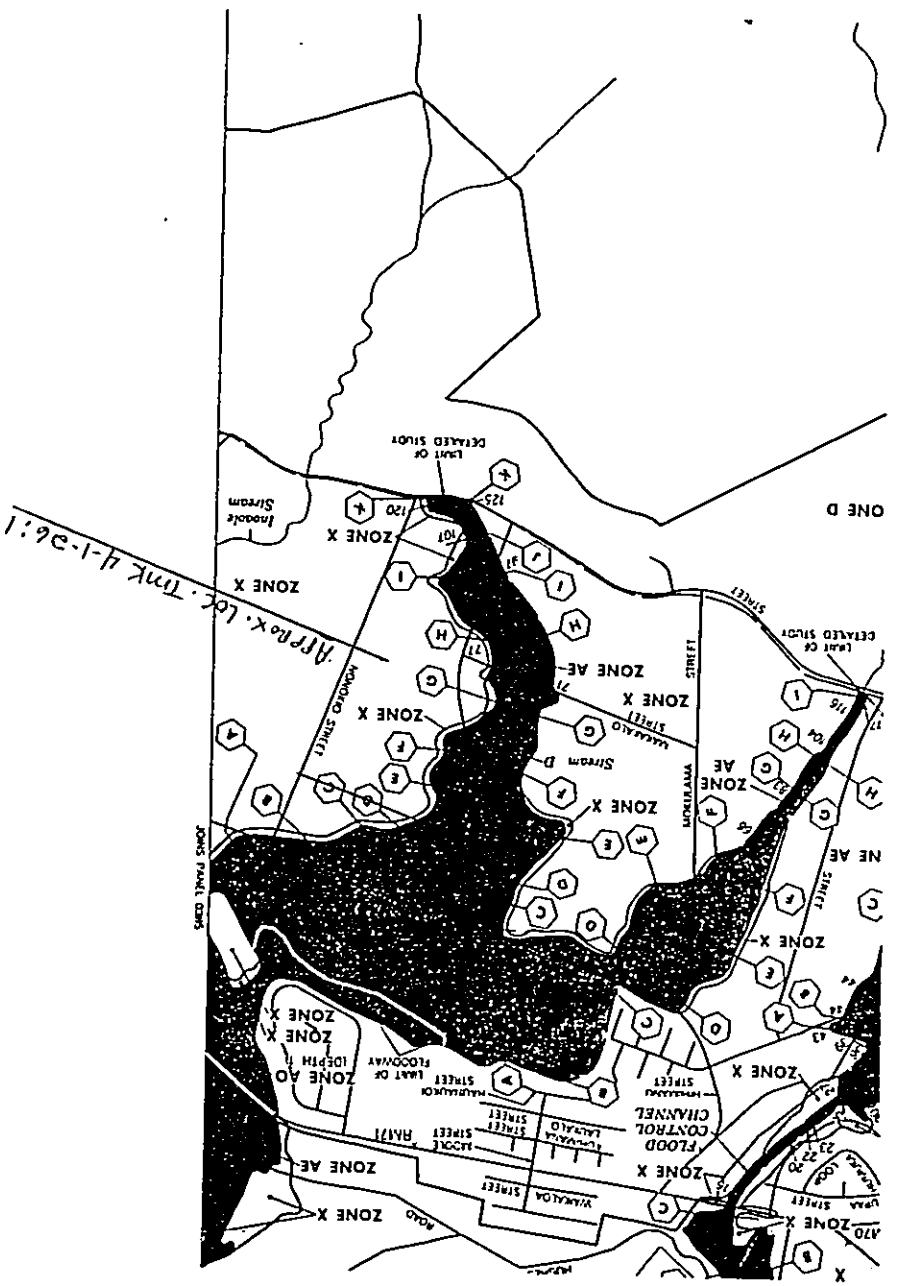
MAP NUMBER
15003C0380 E

EFFECTIVE DATE:
NOVEMBER 20, 2000

CUSTOMER COPY







BENJAMIN J. CAYETANO
GOVERNOR

STATE OF HAWAII
OFFICE OF ENVIRONMENT QUALITY CONTROL
235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186

GENEVIEVE SALMONSON
DIRECTOR

July 31, 2002

Mr. Roy Abe
Vice President
Hawaii Pacific Engineers, Inc.
1132 Bishop St., Suite 1003
Honolulu, HI 96813-2830

Subject: Modification of USDA Hawaii Fruit Fly Production Facility, Waimanalo, Hawaii (TMK 4-1-26:1) Pre-assessment Consultation for EA

Dear Mr. Abe,

We have reviewed the description of the subject project provided by your letter dated July 29, 2002.

We suggest the Waimanalo neighborhood board and adjoining neighbors are consulted.

Should you have any questions, please feel free to call the office at 586-4185.

Sincerely,

Genevieve Salmonson
Director

LINDA LINGLE
GOVERNOR OF HAWAII

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

CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

In reply, please refer to:
EMD / WB
030178

March 11, 2003

Mr. Roy K. Abe, P.E.
Vice President
Hawaii Pacific Engineers, Inc.
1132 Bishop Street, Suite 1003
Honolulu, Hawaii 96813-2830

Dear Mr. Abe:

Subject: Modification to the USDA Hawaii Fruit Fly Production Facility (HFFPF)
Pre-assessment Consultation for Environmental Assessment for
Temporary Research Modules
Waimanalo, Oahu, Hawaii
TMK (1) 4-1-26:1

The Department of Health (Department) received your letter of March 3, 2003 regarding the subject matter. An underground 5,000 gallons-storage tank is being proposed to store non-domestic process wastewater that will be generated from the facility.

In discussing this project with our staff, you verbally indicated that process wastewater will be hauled to and treated at the nearby California Medfly wastewater treatment works or be hauled to the East Honolulu Community Services WWTP. The Department has no objection to either of the proposed treatment and disposal alternatives. However, if wastewater is hauled to the California Medfly facility, written authorization from the owners is needed as well as an assessment of the existing treatment works capabilities and irrigation/disposal system to handle the additional flows. If wastewater is hauled to the East Honolulu Community Services WWTP, written authorization from the owners is needed.

Please be informed that the Department will require the owner of the project to submit details of the wastewater collection and removal including where it will ultimately be disposed of. Once this information is submitted, we will review the plans to insure that all applicable provisions of Hawaii Administrative Rule, Chapter 11-62.

Should you have any questions, please feel free to contact the Wastewater Branch at 586-4294.

Sincerely,

HAROLD YEE, P.E.
Acting Chief, Wastewater Branch

BENJAMIN J. CAYETANO
Governor

State of Hawaii
DEPARTMENT OF AGRICULTURE
1428 South King Street
Honolulu, Hawaii 96814-2512

JAMES J. NAKATANI
Chairperson, Board of Agriculture

LETITIA N. UYEHARA
Deputy to the Chairperson

Mailing Address:
P.O. Box 22159
Honolulu, Hawaii 96823-2159

Fax: (808) 973-9613

May 30, 2001

RECEIVED
JUN 5 - 2001
HAWAII PACIFIC
ENGINEERS INC.

Mr. Roy K. Abe
Vice President
Hawaii Pacific Engineers, Inc.
1132 Bishop Street, Suite 1003
Honolulu Hawaii 96813-2830

Dear Mr. Abe:

Subject: USDA Hawaii Fruit Fly Rearing Facility
20,000 gpd wastewater reclamation facility
TMK: 4-1-26: 1 Waimanalo, Oahu

The Department of Agriculture has reviewed the subject proposal and offers the following comment and information.

We support the proposed project that will increase the economic viability of the HFFRF and it's efforts to control and eradicate fruit flies. For your information, the proposed facility will be abutting a segment of an abandoned irrigation water ditch that was part of the Waimanalo Irrigation System.

Should you require further information about the Waimanalo Irrigation System, please contact Mr. Randolph Teruya, Property Manager, Agricultural Resource

Management Division, at 973-9478. For other matters, please contact Earl Yamamoto at 973-9466.

Sincerely,

JAMES J. NAKATANI
Chairperson, Board of Agriculture

c: Mr. Randolph Teruya
Lyle Wong, Ph.D., Administrator, Plant Industry Division

usdalltr e01

BENJAMIN J. CAYETANO
Governor

JAMES J. NAKATANI
Chairperson, Board of Agriculture

LETITIA N. UYEHARA
Deputy to the Chairperson

State of Hawaii
DEPARTMENT OF AGRICULTURE
1428 South King Street
Honolulu, Hawaii 96814-2512

Fax (808) 973-9613

August 30, 2002

RECEIVED
SEP 1 1 2002
HAWAII PACIFIC
ENGINEERS INC.

Mr. Roy K. Abe, Vice President
Hawaii Pacific Engineers, Inc.
1132 Bishop St., Suite 1003
Honolulu, HI 96813-2830

Subject: Modification of USDA Hawaii Fruit Fly Production Facility (HFFPF)
Waimanalo, Hawaii (TMK 4-1-26:1)
Pre-assessment Consultation for Environmental Assessment

Dear Mr. Abe:

Thank you for your July 29, 2002, request for any pre-assessment input and comments on the proposed HFFPF in Waimanalo.

The proposed renovations will address one of two problems that have been associated with rearing fruit flies in the Waimanalo area. The proposal seems adequate in handling the liquid effluent as the current method of having a private contractor dispose of the liquid effluent in the Waimanalo area has not been desirable considering how wet this area can be at times.

The other problem has to do with the disposal of spent media. The plan calls for disposing this semi-dry organic material in drying beds and then disposing this non-hazardous solid waste at a landfill. The current practice of bagging the semi-dry spent media in large plastic bags prior to disposal was advantageous in that organisms (flies and other insects) were killed in these bags when placed in the sun for several days due to the heat generated in the bags. If spent media is placed in drying ponds soon after its use, what is to prevent flies and other organisms from breeding in this semi-dry material and causing nuisance problems in the Waimanalo area?

Thank you for the opportunity to comment on this proposal. If you have any questions, please call Plant Industry Administrator Lyle Wong at 973-9535.

Sincerely,

for JAMES J. NAKATANI
Chairperson, Board of Agriculture

JJN:LMN:ss
hffpf-Roy Abe/Pi/Bio_Cm

Hawaii Pacific Engineers, Inc.
1132 BISHOP STREET, SUITE 1003
HONOLULU, HAWAII 96813-2830
Phone: (808) 524-3771 Fax: (808) 538-0445
E-mail: hpeinc@hawaiipacificengineers.com

September 27, 2002

Mr. James J. Nakatani, Director
State of Hawaii
Department of Agriculture
1428 South King Street
Honolulu, Hawaii 96814

SUBJECT: Modification of USDA Hawaii Fruit Fly Production Facility (HFFPF)
Waimanalo, Hawaii (TMK 4-1-26:1)
Pre-Assessment Consultation for Environmental Assessment

Dear Mr. Nakatani:

Thank you for responding to our request for Pre-Assessment Consultation. We would like to take this opportunity to respond to your concern expressed in your August 30, 2002 correspondence related to the disposal of spent fruit fly feed media and clarify the handling of wastewater solids from the proposed water reclamation facility.

Disposal of Spent Feed Media

The USDA intends to continue its current practice of disposing the semi-dry spent feed media by bagging the material in large heavy-duty plastic bags and having it hauled offsite for use as a cattle feed supplement. As noted in your letter, fruit flies and other insects in the diet material are killed due to the heat generated within the bags. This scheme, utilizing the plastic bags in combination with a woven fabric outer lifting bag, has proven to be a satisfactory means of containing and transporting the media and preventing the escape and proliferation of unwanted insects.

Disposal of Wastewater Solids

Residual wastewater solids generated by the proposed water reclamation facility will include solids that are initially screened from the raw wastewater and solids generated by the biological treatment process. The proposed handling of these solids is briefly described below.

Solids screened from the untreated process wastewater will contain material similar in nature to the spent feed media. The screened material will be bagged in a manner similar to the spent feed media for inactivation of insects. The bagged material is proposed to either be used as cattle feed supplement similar to the spent feed material or disposed of as a non-hazardous solid waste.

The material proposed to be placed in sludge drying beds is the excess biological waste solids generated by the water reclamation process. Spent feed media will not be placed in the drying beds. Prior to placement in the drying beds, the wastewater solids will have been subjected to biological treatment and aerobic digestion processes that will stabilize the organic material to avoid potential health and nuisance problems associated with odors and vectors. Fruit flies, larvae and other organisms not removed by the initial screening process would be inactivated and destroyed in the wastewater treatment process. The dried sludge cake is proposed to be disposed of at a sanitary landfill as a non-hazardous solid waste. The dried material could also potentially be beneficially reused as a soil amendment.

The proposed methodology for handling the wastewater solids is similar to that currently employed at the California Department of Food and Agriculture's Fruit Fly Rearing Facility, also located in Waimanalo. The methodology is also similar in concept to that employed at municipal wastewater treatment plants, which handle solids having greater odor potential and public health concerns.

We will forward a copy of the Draft Environmental Assessment for your review. The Department of Agriculture's continued participation as a consulted party is appreciated. In the meantime, please feel free to call me at 522-7425 if there are any questions or additional concerns.

Sincerely,

Roy K. Abe
Vice President

c: Stuart Stein, USDA
Sam Gillie, HECO
Tracy Yamamoto, HECO

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

GILBERT S. COLOMA-AGARAN, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DEPUTIES
ERIC T. HIRANO
LINNEL NISHIOKA

HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING, ROOM 555
601 KAMOKILA BOULEVARD
KAPOLEI, HAWAII 96707

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND
STATE PARKS

August 28, 2002

Mr. Roy K. Abe, Vice President
Hawaii Pacific Engineers, Inc.
1132 Bishop Street, Suite 1003
Honolulu, Hawaii 96813-2830

RECEIVED
SEP 5 - 2002
HAWAII PACIFIC ENGINEERS INC.

LOG NO: 30502
DOC NO: 0208SC10

Dear Mr. Abe:

SUBJECT: National Historic Preservation Act - Section 106 Compliance – Proposed Modification to the US Department of Agriculture (USDA) Hawaii Fruit Fly Production Facility (HFFPF)
Waimanalo, Ko`olaupoko, O`ahu
TMK: (1)-4-1-026: 001

Thank you for the opportunity to comment on the proposed modifications to the USDA's HFFPF in Waimanalo, O`ahu. The USDA proposes to modify the existing HFFPF by constructing an onsite water reclamation facility, additional fruit fly production and research facilities, a new warehouse, and upgrading the mechanical and electrical systems. Our review is based on historic maps, aerial photographs, records, and reports maintained at the State Historic Preservation Division; no field inspection was made of the subject parcel.

Since the USDA is the project proponent, it appears that the proposed modifications to the HFFPF meet the definition of an undertaking, as defined in 36 CFR Part 800, §800.16 of the implementing regulations for Section 106 of the National Historic Preservation Act. Consequently, the USDA will need to comply with the provisions of Section 106 Compliance as outlined in 36 CFR Part 800, §800.3 and 800.4. These sections include identification of the Area of Potential Effect (APE)(which currently is not clear to us), and identification of any historic sites within the APE (which seems to be missing from the information that you submitted). In addition, the USDA will need to consult with consulting parties and interested members of the public. Consulting parties include our office, and Native Hawaiian organizations such as the Office of Hawaiian Affairs, Hui Malama i Na Kupuna O Hawai`i Nei, and the O`ahu Island Burial Council. Interested members of the public may include the Waimanalo Neighborhood Board and other community organizations.

We look forward to receiving information from the USDA clarifying the Area of Potential Effect and the presence/absence of historic sites. Should you have any questions, please feel free to contact Sara Collins at 692-8026.

Aloha,

Gilbert Coloma-Agaran
State Historic Preservation Officer

SC:jk

c: Ms. Carol Kawachi, Cultural Resources Specialist, US Dept of Agriculture, Natural Resources Conservation Service, PL Box 50004, Honolulu, HI 96850

LINDA LINGLE
GOVERNOR OF HAWAII

STATE OF HAWAII

PETER T. YOUNG, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING, ROOM 555
601 KAMOKILA BOULEVARD
KAPOLEI, HAWAII 96707

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND RESOURCES ENFORCEMENT
CONVEYANCES
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND
STATE PARKS

January 17, 2003

David W. Shideler
O`ahu Office Manager
Cultural Surveys Hawai`i Inc.
733 N. Kalāheo Avenue
Kailua, Hawai`i 96734

RECEIVED
JAN 2 7 2003
HAWAII PACIFIC ENGINEERS INC.

LOG NO: 31449
DOC NO: 0301EJ05

Dear Mr. Shideler:

SUBJECT: National Historic Preservation Act Section 106 Review – Archaeological Inventory Survey Report of the USDA Fruit Fly Production Facility at Waimānalo, Ko`olaupoko, O`ahu
Waimānalo, Ko`olaupoko, O`ahu
TMK: (1) 4-1-026:por. 002

Thank you for the opportunity to review this report documenting the results of an archaeological inventory survey at the site proposed expansion of the USDA Fruit Fly Production Facility (Hammatt et al. 2002. *Archaeological Inventory Survey in Support of Modifications of the USDA Hawaii Fruit Fly Production Facility at Waimānalo, Ko`olaupoko, O`ahu* Cultural Surveys Hawaii ms.). The survey was conducted to respond to SHPD comments to Hawaii Pacific Engineers, Inc. during a Section 106 compliance review (SHPD Log 30502). We received the subject report on November 18, 2002, and provide the following comments.

The historical and archaeological background sections are satisfactory and provide sufficient information for theorizing about probable, past settlement patterns and land use in the project area.

The survey of the 6-acre parcel was carried out through pedestrian survey of the entire area; no subsurface testing was conducted. The existing fruit fly facility and maintained grass lawn covered much of the parcel; California grass exists in the northern margins and mature *haole koa* in the western portions. Visibility was generally good except within the California grass. The land had clearly been altered through commercial agricultural and development activities throughout the subject parcel. No traditional Hawaiian historic sites were found.

One single significant historic site was found - State Site No. 50-80-6427, a portion of the Tai Lee Ditch (alternately known as the Pump Ditch or Reservoir Ditch). We agree that Site 6427 is significant under Criteria A, B and D. We also agree that any adverse impact to the Tai Lee Ditch can be avoided by the installation of construction fencing as a buffer prior to contractors work in the area. We also believe that since the ditch is readily visible we agree that the fencing can be installed without an archaeologist and that no additional archaeological work is recommended for this project.

In sum, we find the report acceptable and believe that "no historic properties will be affected" by development of the project area. The historic preservation review process is concluded for this project.

In the unlikely event that historic remains such as artifacts, burials, concentrations of shell or charcoal be encountered during construction activities, work shall cease immediately in the immediate vicinity of the find, and the find shall be protected from further damage. The contractor shall immediately contact the State Historic Preservation Division (692-8015), which will assess the significance of the find and recommend an appropriate mitigation measure, if necessary.

Should you have any questions, please feel free to call Sara Collins at 692-8026 or Elaine Jourdane at 692-8027.

Aloha,

Elaine H. Jourdane
Assistant Archaeologist, Oahu Island

P. Holly McEldowney, Acting Administrator
State Historic Preservation Division

EJ:jk

USDA United States Department of Agriculture
Animal and Plant Health Inspection Service
Plant Protection and Quarantine
USDA APHIS PPQ
Hawaii State Office
300 Ala Moana Blvd. Rm 8-152
P. O. Box 50002
Honolulu, HI 96850

Federal Relay Service (Voice/TTY/ASCII/Spanish)
1-800-877-8339

February 10, 2003

Dr. Holly McEldowney, Acting Administrator
Historic Preservation Division
Department of Land and Natural Resources
State of Hawaii
Kakuhihewa Building, Room 555
601 Kamokila Boulevard
Kapolei Hawaii 96707,

Subject: Compliance with Section 106 of the National Historic Preservation Act (NHPA)
Modification of USDA Hawaii Fruit Fly Production Facility (HFFPF)

Dear Dr McEldowney:

The United States Department of Agriculture (USDA) is planning to modifiy its Hawaii Fruit Fly Production Facility (HFFPF) located on an approximately six acre parcel at Waimanalo, Hawaii (TMK: 4-1-26: Por. 2). The Area of Potential Effects (APE) is anticipated to be limited to the project area that is shown on Figures 1 and 2. The proposed project will increase the size of the facilities to allow for an increase in sterile fruit fly production used in domestic Preventative Release Programs.

Since the proposed HFFPF will be receiving federal funds, Section 106 of NHPA applies. Thus in accordance with the Code of Federal Regulations (36 CFR Part 800), the USDA seeks to initiate Section 106 review as appropriate. The USDA has retained Hawai'i Pacific Engineers, Inc. and Cultural Surveys Hawai'i, Inc. to facilitate consultation with appropriate consulting agencies. Specific agencies that will be consulted in this regard include:

1) Office of Hawaiian Affairs
2) Hui Malama i Nu Kupuna o Hawai'i Nei
3) O'ahu Island Burial Council
4) Waimanalo Neighborhood Board (NB32)

If to your knowledge there are other agencies or individuals that have a demonstrated interest in the project and should have consulting status in this regard please so advise. Our designated agents will be reporting to you in writing the results of consultations with the indicated agencies.

commissioned Cultural Surveys Hawai'i to carry out an evaluation of the historic resources on the parcel. The study entitled: *Archaeological Inventory Survey in Support of Modifications of the USDA Hawai'i Fruit Fly Production Facility at Waimanalo, Ko'olaupoko, O'ahu (TMK: 4-1-26: Por.2)* (Hammatt *et al.* 2002), concluded:

> "No sites of any kind were identified within the project area *per se*. No prehistoric archaeological features were observed within the project area or are known from the general vicinity...."
>
> "In the absence of any observable sites or any indication of the previous existence of any sites (other than the Tai-Lee Ditch) in the vicinity no further work in the project area *per se* is recommended. However, it is recommended that adverse impact to the Tai-Lee Ditch forming the north boundary of the project area be avoided. If construction work is to be carried out in the immediate vicinity of the Tai-Lee Ditch it is recommended that the ditch be fenced off with event fencing and that contractors working in the area be informed not to impact this historic property."

This study was formally reviewed by your office (January 17, 2003; LOG NO 31449, DOC NO 0301EJ05). This SHPD review letter concludes:

> "In sum, we find the report acceptable and believe that "no historic properties will be affected" by development of the project area. The historic preservation review process is concluded for this project."

The USDA will take steps to ensure that the indicated measures (erection of event fencing, informing contractors) will be taken to avoid impact to the adjacent Tai-Lee Ditch. With this understood, we have determined that no historic properties will be affected by this undertaking. We are requesting the concurrence of the SHPO in this regard.

Should you have any questions, please contact David Shideler, Cultural Surveys Hawaii, (808) 262-9972

Sincerely,

Vernon Harrington

Vernon Harrington
State Plant Health Director
Hawaii State Office, PPQ-WR

cc:
Kingsley Fisher
Roy Abe
Eduard Royzman

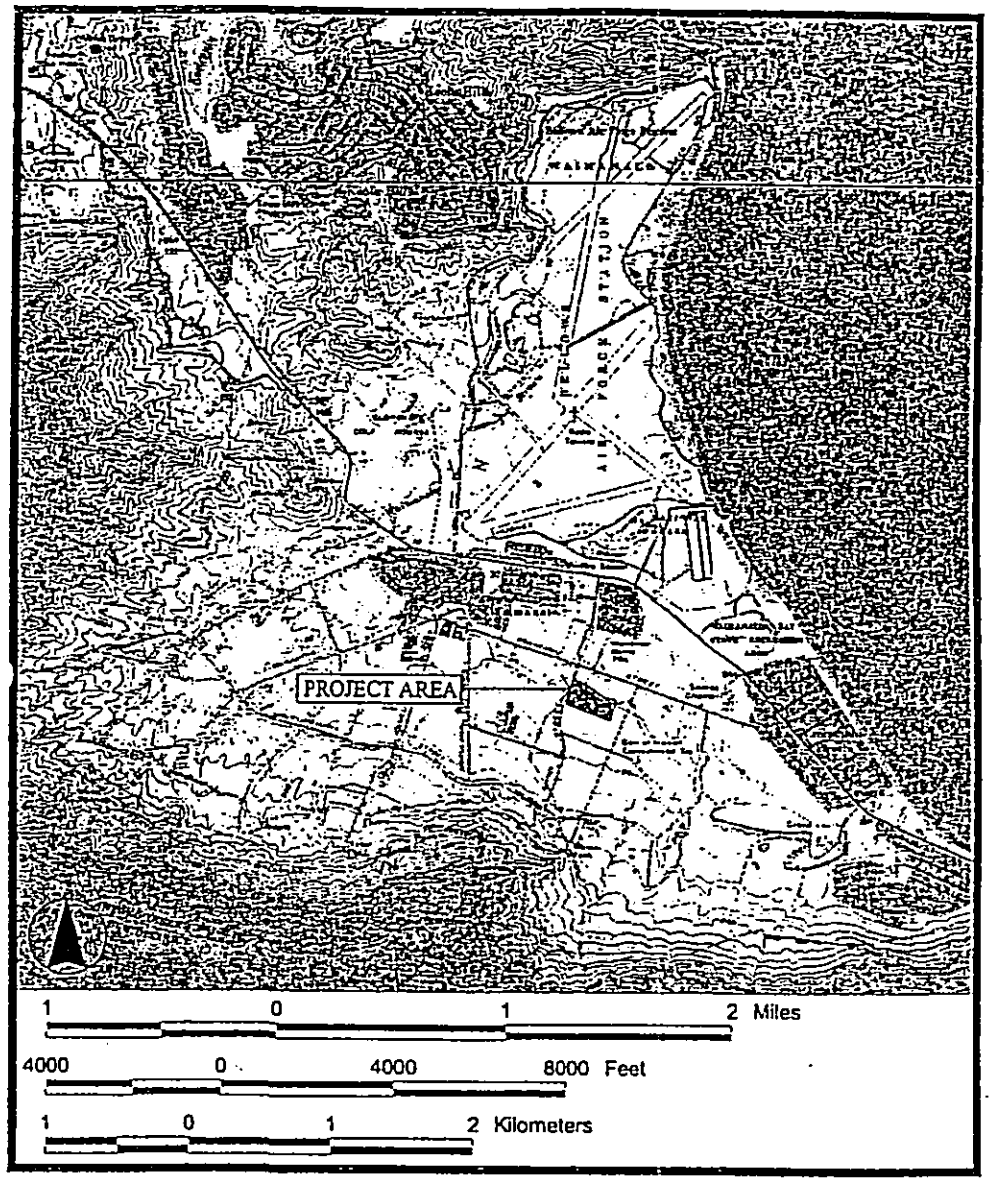


Figure 1: USGS Koko Head Quadrangle Map Showing Location of Project Area.

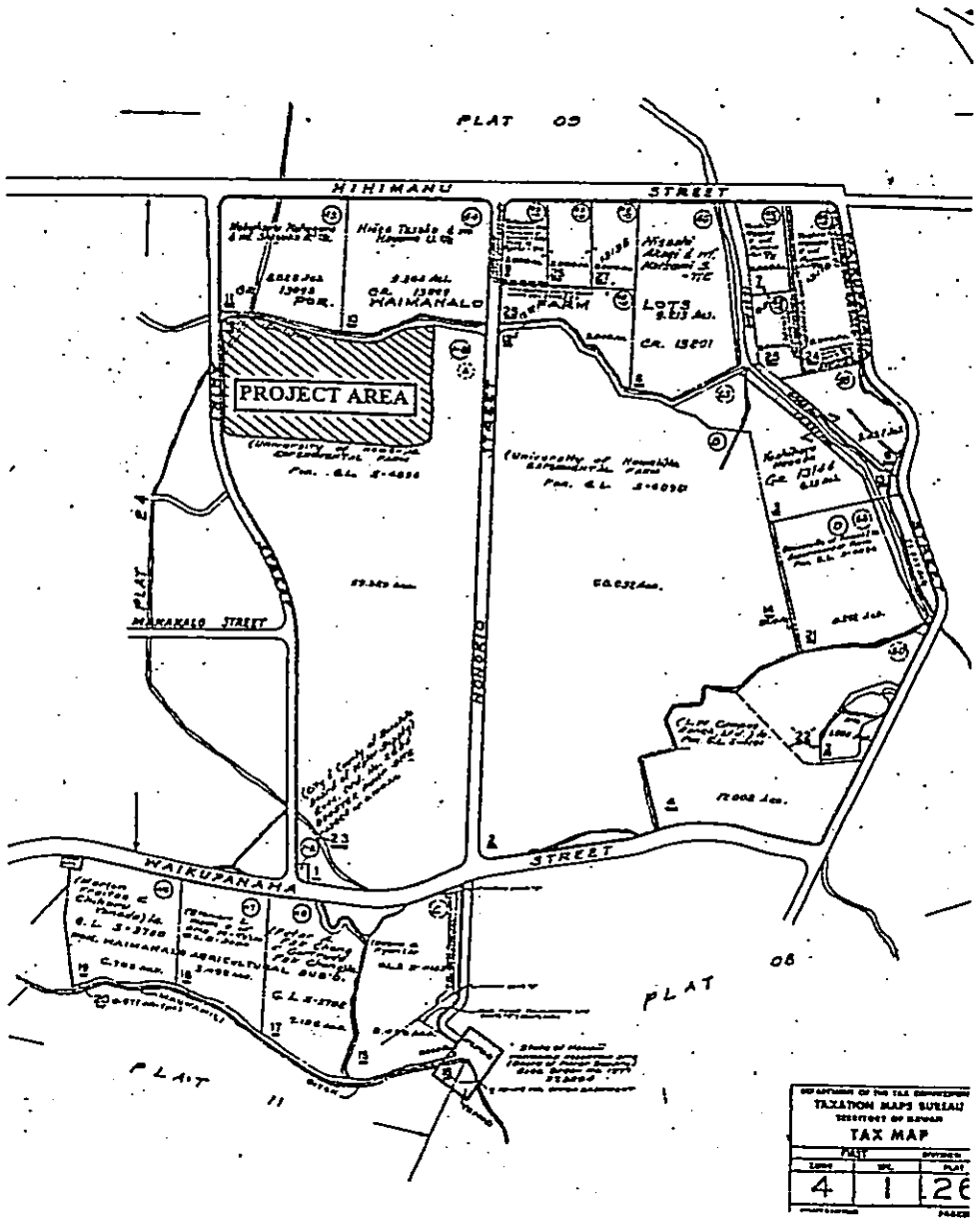


Figure 2: Portion of TMK 4-1-26 Showing Location of Project Area (hatched).

02/24/03 MON 14:56 FAX 808 541 1975 USDA-APHIS-PPQ ... HI T HAIMANALO 001

LINDA LINGLE
GOVERNOR OF HAWAII

PETER T. YOUNG, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DEPUTY
ERNEST Y. W. LAU

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING, ROOM 555
601 KAMOKILA BOULEVARD
KAPOLEI, HAWAII 96707

FEB 19 2003

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND RESOURCES ENFORCEMENT
CONVEYANCES
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND
STATE PARKS

HAWAI'I HISTORIC PRESERVATION DIVISION REVIEW

Log #: 31700
Doc #: 0302EJ19

Applicant/Agency: Vernon Harrington
State Plant Health Director
Address: Hawaii State Office, USDA APHIS PPQ
300 Ala Moana Blvd, Rm. 8-152
Honolulu, Hawaii 96850

SUBJECT: National Historic Preservation Act Section 106 Review - Modification of USDA Hawaii Fruit Fly Production Facility

Ahupua'a: Waimanalo
District, Island: Ko'olaupoko, O'ahu
TMK: (1) 4-1-026:002 por.

1. We believe there are no historic properties present, because:

___ a) intensive cultivation has altered the land
___ b) residential development/urbanization has altered the land
___ c) previous grubbing/grading has altered the land
✓ d) an acceptable archaeological assessment or inventory survey found no historic properties
___ e) other:

2. This project has already gone through the historic preservation review process, and mitigation has been completed ___.

✓ Thus, we concur with your "no historic properties affected" determination for this undertaking

Sincerely,

Peter T. Young
State Historic Preservation Officer

SPHD
SOSO
ASA
Sec.
WU-1
WU-2
WU-3
WU-4
WU-5
WU-6
WU-7
R. O.
fax #'s

LINDA LINGLE
GOVERNOR OF HAWAII

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING, ROOM 555
601 KAMOKILA BOULEVARD
KAPOLEI, HAWAII 96707

PETER T. YOUNG, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCES MANAGEMENT

DEPUTY
ERNEST Y. W. LAU

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND RESOURCES ENFORCEMENT
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STATE PARKS

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MAR 3 1 2003

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APR - 1 2003
HAWAII PACIFIC ENGINEERS INC.

Roy K. Abe, Vice President
Hawaii Pacific Engineers, Inc
1132 Bishop Street, Suite 1003
Honolulu, Hawaii 96813-2830

LOG NO: 2003.0032
DOC NO: 0303EJ15

Dear Mr. Abe:

SUBJECT: **National Historic Preservation Act Section 106 Review - Pre-Environmental Assessment Consultation for Temporary Research Modules at the USDA Hawaii Fruit Fly Production Facility Waimānalo, Ko`olaupoko, O`ahu**
TMK:(1) 4-1-026:002 por.

Thank you for the opportunity to comment on the proposal to construct temporary research facilities, comprised of five pre-fabricated steel-panel modules, at the existing research facility. These modifications are part of a larger plan to modify and expand the Hawaii Fruit Fly production Facility in Waimānalo. We received notification of this revised undertaking from you on March 5, 2003, and provide the following comment.

An acceptable archaeological assessment inventory survey found no traditional Hawaiian historic sites within the proposed expansion area. (Hammatt et al. 2002. *Archaeological Inventory Survey in Support of Modifications of the USDA Hawaii Fruit Fly Production Facility at Waimānalo, Ko'olaupoko, O'ahu* Cultural Surveys Hawaii ms.). One single significant historic site was found - State Site No. 50-80-6427, a portion of the Tai Lee Ditch (alternately known as the Pump Ditch or Reservoir Ditch). We agreed that Site 6427 is significant under Criteria A, B and D. We also agreed that any adverse impact to the Tai Lee Ditch can be avoided by the installation of construction fencing as a buffer prior to contractors work in the area. We also believe that since the ditch is readily visible we agree that the fencing can be installed without an archaeologist and that no additional archaeological work is recommended for this project.

We note that the temporary research facilities included in this phase of the EA are not located near the Tai Lee Ditch. In sum, we believe that "no historic properties will be affected" by development of the temporary research facilities.

In the unlikely event that historic remains such as artifacts, burials, concentrations of shell or charcoal be encountered during construction activities, work shall cease immediately in the immediate vicinity of the find, and the find shall be protected from further damage. The contractor shall immediately contact the State Historic Preservation Division (692-8015), which will assess the significance of the find and recommend an appropriate mitigation measure, if necessary.

Should you have any questions, please feel free to call Sara Collins at 692-8026 or Elaine Jourdane at 692-8027.

Sincerely,

Peter T. Young, Chairperson and
State Historic Preservation Officer

EJ:jk

PHONE (808) 594-1888

FAX (808) 594-1865

STATE OF HAWAI'I
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAI'I 96813

August, 19, 2002

Mr. Roy K. Abe
Vice President
Hawai'i Pacific Engineers, Inc.
1132 Bishop Street, Suite 1250
Honolulu, HI 96813-2830

(HRD #01-161/102-161B)

Subject: Modification of USDA Hawai'i Fruit Fly Production Facility (HFFRF)
Pre-assessment Consultation for Environmental Assessment
Water Reclamation Facility – TMK: 4-1-26:1
Waimanalo, O'ahu, Hawai'i

Dear Mr. Abe:

Thank you for the opportunity to comment on the above referenced project. The Office of Hawaiian Affairs (OHA) offers the following comments.

Historical and Cultural Sites

The State of Hawai'i Historic Preservation Division should be consulted with as to the presence of any historical and cultural resources on the proposed project site.

Cultural Impacts

As stated in Section I of Act 50, 2000 Session Laws, Hawai'i, "There is a need to clarify that the preparation of environmental assessments or environmental impact statements should identify and address effects on Hawai'i's culture and traditional and customary rights." In addition, it also states: "Article IX and XIII of the state constitution, other state laws, and the courts of the state impose on government agencies a duty to promote and protect cultural beliefs, practices, and resources of native Hawaiians as well as other ethnic groups.

Moreover, past failure to require native Hawaiian cultural impact assessments has resulted in the loss and destruction of many important cultural resources and has interfered with the exercise of native Hawaiian Culture.

Due consideration of the effects of human activities on native Hawaiian culture and the exercise thereof is necessary to ensure continued existence, development, and exercise of native Hawaiian culture."

OHA requests that the DEA address any adverse impacts on native Hawaiian culture, Pursuant to Act 50, Session Laws, Hawai'i that may occur as a result of the proposed project.

NHPA Section 106 Consultation

We note that federal funds are being used for this project, which requires a NHPA Section 106 Consultation. A formal consultation does not begin until a written Request for Consultation is made by the respective Federal agency to OHA. The request should be sent by mail to the following address:

Attn: Request for Section 106 Consultation
Administrator
Office of Hawaiian Affairs
711 Kapiolani Blvd. – Suite 500
Honolulu, HI 96813-5249

Stakeholder Identification

OHA's position with regards to the propriety and adequacy of any and all Section 106 consultations is that without proper identification of all potentially interested stakeholders at the outset, the consultation process will be flawed and inadequate. NHPA requires any Federal agency contemplating an undertaking to attempt to identify all potentially interested stakeholders.

OHA cannot speak for all Hawaiian organizations and individuals that may be affected by an undertaking. Some potential organizations that you should contact include:

- Local Hawaiian civic clubs
- Local chapters of the royal societies

- Individuals familiar with cultural practices of the areas affected by your undertakings

We anticipate the DEA and will further comment upon our review. If you have any questions, please contact Mark A. Mararagan, policy analyst at 594-1756, or e-mail him at markm@oha.org.

Sincerely,

Jalna Keala
Acting Hawaiian Rights Division Director

cc: OHA Board of Trustees
Administrator

PHONE (808) 594-1888 FAX (808) 594-1865

STATE OF HAWAI'I
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAI'I 96813

HRD03-161C

April 2, 2003

RECEIVED
APR - 3 2003
HAWAII PACIFIC
ENGINEERS INC.

Roy K. Abe
Vice President
Hawaii Pacific Engineers, Inc.
1132 Bishop Street, Ste 1003
Honolulu, HI 96813-2830

RE: Modification of USDA Hawaii Fruit Fly Production Facility (HFFPF), Waimanalo, HI (TMK: 4-1-26:1.

Dear Mr. Abe,

OHA is in receipt of your March 3, 2003 request for pre-assessment consultation on the above referenced project. OHA understands that this request also serves to notify us that the original project, for which we sent comments on August 9, 2002, has been modified.

Because this project qualifies as an undertaking as defined in 36 CFR Part 800 §800.16, USDA is also required to comply with the provisions of Section 106 of the National Historic Preservation Act. OHA suggests that in addition to consulting with our office, that you also consult with Hui Malama I Na Kupuna o Hawaii Nei, the O'ahu Island Burial Council, the Waimanalo Hawaiian Homestead Association, and local Hawaiian Civic Clubs, which may be affected by the undertaking. We look forward to receiving information clarifying the Area of potential effect and the presence or absence of historic sites.

In addition to historic sites, OHA is concerned about the treatment of wastewater in the area. The documentation you provided our office suggests that a new wastewater facility will not be constructed. Rather, wastewater will hauled off-site for treatment and disposal. OHA would like information regarding the storage of wastewater before it is taken off-site, and the potential for wastewater to escape into the environment. The USDA should also address the potential for children to come into contact with the wastewater or any other harmful chemicals at the site.

We also request that you address environmental justice issues pursuant to President Clinton's 1994 Executive Order on Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. Waimanalo is a Hawaiian homestead area, and has considerably lower socio-economic demographics than its neighbors, Kailua and Hawaii Kai. Thus, it is incumbent upon the USDA to show that this project is not unduly affecting minority residents.

Thank you for the opportunity to comment. If you have further questions, please contact Pua Aiu at 594-1931 or e-mail her at paiu@oha.org.

Sincerely,

Peter L. Yee
Director
Nationhood and Native Rights

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET • HONOLULU, HAWAII 96813
TELEPHONE: (808) 523-4414 • FAX: (808) 527-6743 • INTERNET: www.co.honolulu.hi.us

JEREMY HARRIS
MAYOR

RANDALL K. FUJIKI, AIA
DIRECTOR

LORETTA K.C. CHEE
DEPUTY DIRECTOR

2002/ELOG-2221(ry)

August 23, 2002

RECEIVED
AUG 26 2002
HAWAII PACIFIC
ENGINEERS INC.

Mr. Roy K. Abe, Vice President
Hawaii Pacific Engineers, Inc.
1132 Bishop Street, Suite 1003
Honolulu, Hawaii 96813-2830

Dear Mr. Abe:

Subject: Pre-Assessment Consultation for Proposed Expansion to the USDA Hawaii Fruit Fly Production Facility
Tax Map Key 4-1-26: 1, Waimanalo, Oahu, Hawaii

A. Engineering

The Draft Environmental Assessment (DEA) should address measures to prevent the ocean discharge of storm water runoff which had contact with the drying bed or residual solids associated with the water reclamation process.

B. Wastewater Disposal

The existing municipal sewer lines are adequate to support the proposed project. However, the Waimanalo Wastewater Treatment Plant (WWTP) is at or near its design capacity. The applicant should coordinate its project with the Department of Environmental Services (ENV). Concerns and mitigative measures, if any, regarding the WWTP design capacity should be disclosed in the DEA. Applications for sewer connection cannot be approved without written approval from ENV.

C. Koolaupoko Sustainable Communities Plan (SCP)

The proposed expansion is consistent with the Koolaupoko SCP Agricultural Use General Policy to provide support infrastructure, services and facilities to foster and sustain agricultural operations.

Thank you for the opportunity to comment. If you have any questions, please contact Raymond Young of our staff at 527-5839.

Sincerely yours,

for RANDALL K. FUJIKI
Department of Planning and Permitting

RKF:lh
Doc 172843

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
Telephone: (808) 523-4414 • Fax: (808) 527-6743 • INTERNET: www.co.honolulu.hi.us

JEREMY HARRIS
MAYOR

ERIC G. CRISPIN, AIA
DIRECTOR

BARBARA KIM STANTON
DEPUTY DIRECTOR

2003/ELOG-841(RY)

April 9, 2003

RECEIVED
APR - 9 2003
HAWAII PACIFIC
ENGINEERS INC.

Mr. Roy K. Abe, Vice President
Hawaii Pacific Engineers, Inc.
1132 Bishop Street, Suite 1003
Honolulu, Hawaii 96813-2830

Dear Mr. Abe:

Subject: Pre-Assessment Consultation for Proposed Temporary Research Modules at the USDA Hawaii Fruit Fly Production Facility
Tax Map Key 4-1-26: 1, Waimanalo, Oahu, Hawaii

We have reviewed the subject request and have no comments to offer at this time. Please submit 5 copies of the Draft Environmental Assessment to the DPP for review when it becomes available.

Thank you for the opportunity to comment. If you have any questions, please contact Raymond Young of our staff at 527-5839.

Sincerely yours,

for ERIC G. CRISPIN, AIA
Director of Planning and Permitting

EGC:lh
Doc 211962

WAIMANALO NEIGHBORHOOD BOARD NO. 32
41-696 KALANIANAOLE HWY. • WAIMANALO, HAWAII 96795-1757
PHONE: (808) 527-5749 • FAX: (808) 527-5760 • INTERNET: www.co.honolulu.hi.us

REGULAR MEETING MINUTES
MONDAY, JUNE 18, 2001
WAIMANALO PUBLIC AND SCHOOL LIBRARY

CALL TO ORDER: Chair Wilson Kekoa Ho called the meeting to order at 7:30 p.m. with a quorum established.

MEMBERS PRESENT: Wilson Kekoa Ho, Joseph Aragon, Phillip Ellsworth, Andrew Jamila Jr., Kuulani Reynolds, Kawika Eckart and Lawrence Nagasawa. Mabel Ann Spencer and Nani Akeo were appointed to fill a single vacancy in Subdistricts 5 and 3 respectively.

MEMBERS ABSENT: Michael Buck and Scotty Reis-Moniz.

GUESTS: Lt. Andrew Speese, Major Susan Dowsett & Sgt. Timothy Wong (HPD), Robert McEldowney (Councilmember John Henry Felix's Office staff), Representative Joe Gomes, Senator Fred Hemmings, Shannon & Jim Wood (Koolau News), Captain Job Harris (HFD), Shelly Tokugawa & Meala Bishop (Hakipu'u Learning Center), Captain Justin Hall (Bellows Air Force Station), Sarah Fry (Marine Corps Base Hawaii), Colonel Miyagi & Commander Mike Rawlins (Hawaii National Guard – Bellows Air Force Station), Greig Gaspar (Waimanalo Health Center), Ben Kama (Mayor's Representative), Connie Oki, Donnel Nunes (President, Hawaii Kiteboarding Association), Debi Pawloski, Dave Larsen, David Bettencourt, Joe Kaakua (Board of Water Supply), Joe Correa (Waimanalo Vision Team), Glenn & Elizabeth Martinez (Olomana Gardens), Ikaika Anderson, John M. Knox, Marilyn Abejon, Vincent Depaolo, Solomon Spencer, Ray Lum, Doug Toews (United States Department of Agriculture), Stuart Stein (United States Department of Agriculture – Waimanalo Fruit Fly Plant), Roy Abe (Hawaii Pacific Engineers), Brett White (Hawaii Kai Neighborhood Board No. 1); Lisa Keala Carter, Anna Hoover, David Matthews, & Adrienne King (Ka Iwi Action Council); Robert Reeder, Eve Anderson, Kelly & David Washino (East Honolulu Community Coalition) and Jamal Siddiqui (Neighborhood Commission Office staff).

PULE: Ellsworth offered the pule.

ADMINISTRATION OF OATH OF OFFICE: Neighborhood Assistant Siddiqui administered the oath of office to Board members who could not make to the installation ceremony.

INTRODUCTION OF ELECTED BOARD MEMBERS: Board members introduced themselves at this time.

INITIAL CONVENING OF THE BOARD

ELECTION OF CHAIR FOR 2001-2002 TERM: Ellsworth moved to nominate Wilson Kekoa Ho as Chair. There being no other nominations, Jamila moved to close the nominations and Reynolds seconded. Ho was elected Chair by acclamation, 7-0-0.

ELECTION OF VICE CHAIR AND TREASURER FOR 2001-2002 TERM: Jamila moved to nominate Ellsworth as Vice Chair. There being no other nominations, Reynolds moved to close the nominations. Ellsworth was elected Vice Chair by acclamation, 7-0-0.

Reynolds moved to nominate Jamila as Treasurer. There being no other nominations, Ellsworth moved to close the nominations. Jamila was elected Treasurer by acclamation, 7-0-0.

FILLING OF VACANCIES

SUBDISTRICT 4: Chair Ho asked if there were anyone who would volunteer to fill the vacancy in Subdistrict 4. There were no interested candidates present.

Spencer moved and Ellsworth seconded that the Waimanalo Neighborhood Board No. 32 oppose any permit especially the Special Management Area (SMA) Use Permit.

Discussion followed: (1) Nagasawa stated that Board should allow the process to move forward. (2) Spencer commented that this proposal is a classic example of the Waimanalo community being railroaded. She suggested that monies should instead be spent on community needs.

The motion carried 7-0-2. Ayes: Ho, Ellsworth, Jamila, Eckart, Reynolds, Akeo, Spencer. Nays: None. Abstain: Aragon, Nagasawa.

Akeo left at 10:10 p.m. There were eight members present.

FRUIT FLY FARM IN WAIMANALO: Stuart Stein, representing the U.S. Department of Agriculture (USDA), announced that USDA has a 25.8 acre fruit fly farm in Waimanalo that employs 49 people including 15 to 25 area residents along with 12 scientists from the Hawaii Plant Protection Laboratory (HPPL) that is using cutting edge technology to develop and implement conservation measures for energy and water usage along with the developing of a technique known as Sterile Insect Technique where it rears massive number of sterile Mediterranean Fruit Flies and releasing them to overwhelm wild female Mediterranean Fruit Flies that would eradicate and prevent re-infestation. The facility is using approximately 20,000 gallons of water per day. To help offset this trend, USDA is working with Hawaii Pacific Engineering to develop a system to allow the facility to reuse 70% of their water.

Discussion followed: (1) Spencer stated that the proposed fruit fly farm is a classic example of the Waimanalo Community being railroaded. She pointed out that Waimanalo has sewage problems and that construction of the fruit fly farm is selfish on the part of USDA. (2) Kama noted that the State has not appropriated $12 million for sewage clean up, therefore if the fruit fly farm can spend their money on the sewage clean up, it would be most appreciated. (3) Stein pointed out that cattle would be fed fiber waste and that he has worked on this project with three former Board members' Joe Ryan, Lisa Ferentinos and Nancy Glover. With support of these former Board members, Spencer felt reassured, therefore expressed personal support for the project as presented. (4) Jamila asked if excess water would be treated at the plant. Stein replied yes.

ADJOURNMENT: There being no further Board business, the meeting adjourned at 10:21 p.m.

Submitted by,

Jamal Siddiqui
Neighborhood Assistant

WAIMANALO NEIGHBORHOOD BOARD NO. 32

41-696 KALANIANAOLE HWY. • WAIMANALO, HAWAII 96795-1757
PHONE: (808) 527-5749 • FAX: (808) 527-5760 • INTERNET: www.co.honolulu.hi.us

MINUTES OF REGULAR MEETING
MONDAY, AUGUST 12, 2002
WAIMANALO PUBLIC AND SCHOOL LIBRARY

CALL TO ORDER: Chair Wilson Kekoa Ho called the meeting to order at 7:30 p.m. with a quorum present.

MEMBERS PRESENT: Wilson Kekoa Ho, Michael Buck, Phillip Ellsworth, Andrew Jamila, Jr., Mabel Ann Spencer, Kawika Eckart, Scotty Reis-Moniz, Nani Akeo and Joseph Ryan.

MEMBERS ABSENT: Joseph Aragon, Alexandria Cummings, Kuulani Reynolds and Priscilla Ho.

GUESTS: Clifford Migita (Waimanalo Agricultural Association, Lt. Andrew Speese and Sergeant Mike Kuroda (Honolulu Police Department), Captain Robert Methered (Honolulu Fire Department), Joe Kaakua (Board of Water Supply), Kenny McDonald (Councilmember John Henry Felix's Office staff), Senator Fred Hemmings, Shannon Wood (Ko'olau News), Tasha Josue and Dede Chang (Blanche Pope Elementary School), Nina O'Donnell (Waimanalo Public and School Library), Major Chris Hughes (Marine Corps Base Hawaii), Major Justin Hall (Base Commander, Bellows Air Force Station), Major Steve Clutter and Mark Peterson (Hickam Air Force Base), Jim Andrews and Carroll Cox (Environwatch), Dave, Kathleen and Shane Larsen, Elizabeth Martinez (Olomana Gardens), Tommy Waters and J. Ikaika Anderson (Democratic Candidates for State House District No. 51 – Waimanalo, Keolu Hills and Lanikai), Jackie Young (Democratic Candidate for Senate District 25 – Kailua, Keolu Hills, Lanikai, Waimanalo, Queen's Beach, Koko Marina, and Portlock), Barbara Marshall and Kimberly Kalama (Candidates for Honolulu City Council District III – Waimanalo, Kailua and Kaneohe), Milo Kalama, Jody Green, Solomon Spencer, Arthur Lum, Ray Lum, Albert Lewis, Clifton Ziems, Kevin Andrews (Plant Research Company), Georgina Illich, Page Barber (Nanakuli Neighborhood Housing), Lavina Aina, Frankie Vaughn, Johnette Wong, Keith and Leona Ventura (Waimanalo Beach Park Hui), Kimberly and Lee Brown, Roy Abe (Hawaii Pacific Engineers), Stuart Stein (United States Department of Agriculture), Sheila Wensel (Department of Parks and Recreation), Laura Thielen (Candidate for Board of Education – Windward Oahu), Christine and Sidney Waiolamea, Paul Kekuewa, Joseph Hanawahine, Julie Dugan (Hawaii Job Corps), Kaui Kauhi (Hawaiian Beach Barbeque), Seriaco "Rocky" Kaholi (Pastor, Waimanalo Assembly of God Church), Lisa Ferentinos (University of Hawaii, Agriculture Diagnostic Service Center), Shelly Teixeira-Vickery (Resident Manager, Waimanalo Villages), Greg Field (Waimanalo Community Development Corporation), Ralph Apo, Jacob Johnson, David Woodside, Lillian Hong (Olelo) and Jamal Siddiqui (Neighborhood Commission Office staff).

PULE: Ellsworth offered the pule.

A moment of silence was observed in memory of Dara Onishi who was struck down by a loose boulder on Friday, August 9, 2002. Note: Onishi gave two presentations on the City's Smart Board Technology.

EMERGENCY PUBLIC INPUT (PART 1)

HONOLULU FIRE DEPARTMENT (HFD): Captain Robert Methered reported the following: (1) Statistics for July 2002: Fires – one brush, one rubbish and one vehicle. Emergencies – twenty-six medical calls (eighteen medical assistance, eight emergency medical services), one search/rescue, (surfer in distress) and four miscellaneous (one smoke scare, one unauthorized burn, one barbeque and one false alarm). (2) Safety Tip of the Month: Important documents such as legal, financial and personal history records should be kept in a bank's safety-deposit box or in a fire proof vault/container for safekeeping. In the event of a fire, your records would expedite the processing of insurance claims.

HONOLULU POLICE DEPARTMENT (HPD): Lt. Andrew Speese reported the following: (1) Statistics for July 2002: twenty-seven thefts from automobiles, one auto accessory, one bicycle theft, fifteen other thefts and five auto thefts. (2) He received a letter from the Board addressed to Police Chief Lee Donohue expressing concern with illegal camping at Waimanalo Beach Park. Since receiving the letter, HPD has done nine citations and one arrest.

Reis-Moniz arrived at 7:40 p.m.

such as no water, low water pressure, a broken fire hydrant, or a suspected water main break (water coming up from the road surface), please call 527-5207.

UNFINISHED BUSINESS

MOTION TO CLOSE THE CAMPING GROUNDS FOR THREE MONTHS AT WAIMANALO BEACH PARK: Jamila reported that he received a phone call from William Balfour, Director of the Department of Parks and Recreation, announcing that camping at Waimanalo Beach Park would be closed after Labor Day to January 2003 in order to repair the infrastructure making it user friendly by spreading out the cubicles and removing overgrown grasses. Sheila Wensel stated that the Department of Parks and Recreation would work closely with the Board.

Discussion followed: (1) It was noted that there are permits available for three-day weekend camping at Kaiona Beach Park. (2) Spencer suggested that the camping issue should be addressed once the construction of the Waimanalo Beach Park Canoe Halau is completed.

NEW BUSINESS

Report provided for a proposed bus stop in front of Jack-In-The-Box: Spencer reported that the proposed bus stop in front of the Waimanalo Jack-In-The-Box is not feasible due to a lack of space where it is not wide enough for TheBus to pull aside to where it would not create a traffic jam. An alternate location for a new proposed bus stop is near the City Wastewater Plant.

Waimanalo Christian Concert: Seriaco "Rocky" Kaholi, Pastor of Waimanalo Assembly of God Church announced that the 2nd Annual Waimanalo Christian Concert will be taking place on Saturday, September 21, 2002 at Waimanalo Beach Park from 9:00 a.m. to 6:00 p.m. Kaholi stated that event's primary objective is preaching the Gospel of Jesus Christ. Kaholi noted that fourteen churches are sponsoring the event including a Maui-based Prison Ministry.

Expansion of the University of Hawaii's Fruit Fly Lab: Roy Abe, from Hawaii Pacific Engineers, informed the Board that the University of Hawaii plans to expand its current Fruit Fly Lab in Waimanalo, located off Ahiki Street, by an additional 17,000 square feet. The expansion will consist of a single-story concrete, masonry and steel addition that will be architecturally integrated with the existing building. Features include energy efficient air conditioning and lighting systems. Added emergency power generation capacity, production process improvements, and miscellaneous renovations to streamline and improve operations while allowing increased fruit fly production level, thus making it possible for to compete with fruit fly production facilities all over the world. Abe noted that a year ago, he gave a presentation to the Board where he solicited pre-assessment comments on the proposed construction of an onsite water reclamation facility for recycling the Hawaii Fruit Fly Production Facility's (HFFPF) process wastewater. The U.S Department of Agriculture (USDA) plans to implement an expansion and upgrade program to maintain the economic viability the facility and upgraded mechanical and electrical systems, in addition to a new water reclamation facility.

Discussion followed: (1) Carroll Cox inquired to what percentage of nitrogen would be removed and further asked how much of the water would go into the soil. Kevin Andrews expressed similar concern with the drainage system. Stuart Stein replied that the water would be cleaner. Cox noted that one of the byproducts being produced at the facility is phosphorus he asked if there would be an environmental assessment. Abe replied yes. (2) Abe mentioned that the facility would provide more jobs for the Waimanalo community. (3) Kim Kalama inquired about the cost of the project. Abe replied $20 million. Kalama asked why Waimanalo was chosen at the site for the fruit fly lab. Stuart Stein replied that Hawaii is the only state in the nation where the Mediterranean Fruit Fly exists. (6) Spencer commented that Waimanalo does not need another UNISYN – which left behind contaminants at its former site leased by Meadow Gold. (7) Cox asked if USDA has received complaint at similar facilities. Stein replied no. (8) Ryan asked how many Mediterranean Fruit Flies exist in Hawaii. Stein could not give a definitive response.

Hawaiian Beach Barbeque Tour: Kaui Kauhi informed the Board that the Hawaiian Beach Barbeque Tour provides the following: (1) Helping the police patrol area beaches. (2) Organization members are certified lifeguards. (3) Helping the Department of Parks and Recreation clean up area parks. Volunteering their time and resources to help fund summer fun programs at Waimanalo Beach Park. Kauhi stated that his organization's goal is doing good deeds, thus setting a good example for the community.

WAIMANALO NEIGHBORHOOD BOARD NO. 32
41-696 KALANIANAOLE HWY. • WAIMANALO, HAWAII 96795-1757
PHONE: (808) 527-5749 • FAX: (808) 527-5760 • INTERNET: www.co.honolulu.hi.us

MINUTES OF REGULAR MEETING
MONDAY, OCTOBER 14, 2002
WAIMANALO PUBLIC AND SCHOOL LIBRARY

CALL TO ORDER: Chair Wilson Kekoa Ho called the meeting to order at 7:30 p.m. with a quorum present.

MEMBERS PRESENT: Wilson Kekoa Ho, Joseph Aragon, Michael Buck, Phillip Ellsworth, Andrew Jamila, Jr., Mabel Ann Spencer, Kawika Eckart, Scotty Reis-Moniz, Nani Akeo, Joseph Ryan and Priscilla Ho. Note: Alexandria Cummings and Kuulani Reynolds have moved outside Subdistrict 4 and 9 respectively, thus their seats are vacant.

MEMBERS ABSENT: None.

GUESTS: Lieutenant Charles Chong, Lieutenant Andrew Speese and Sergeant Timothy Quintana (Honolulu Police Department), Captain Robert Methered (Honolulu Fire Department), Ron Boyer (Councilmember John Henry Felix's Office staff), Senator Fred Hemmings, Representative Joe Gomes, Shannon Wood (Ko'olau News), Richard Burns (Waimanalo Public and School Library), Fred Millen (Bellows Air Force Station), Elizabeth Martinez (Olomana Gardens), Tommy Waters, Jody Green, Solomon Spencer, Arthur Lum, Ray Lum, Barbara Marshall, Clifton Ziems, Georgina Illich, Audra Chang (Kailua High School), Marian Holokai (Waimanalo Elementary and Intermediate School), Julie Dugan (Hawaii Job Corps), Sheila Wensel (Department of Parks and Recreation), Kawahine Kamakea-Ohelo and Greig Gaspar (Waimanalo Health Center), Lucy Akau, Sus Shawhan, Kaniau Meyer, Richard Soto, Sui Lan Kepa, Alexander Kufu, Lisa Ferentinos (Waimanalo Watershed Project), Roberta D'Adams, Moana DeMello, Margaret Puhelo, Jackie Wong (Ohana Produce), Kyle Kajihiro (American Friends Services Committee), Vernon Harrington and Stuart Stein (United States Department of Agriculture), Roy Abe (Hawaii Pacific Engineers), Honolulu City Prosecutor Peter Carlisle, Jim Fulton (Office of the Honolulu City Prosecutor), Lillian Hong (Olelo), Neighborhood Commissioner Pohai Ryan, Benjamin Kama (Mayor's Representative) and Jamal Siddiqui (Neighborhood Commission Office staff).

PULE: Ellsworth offered the pule.

NEW NEIGHBORHOOD COMMISIONER: Chair W. Ho acknowledged the presence of Pohai Ryan, the newest member of the Neighborhood Commission.

EMERGENCY PUBLIC INPUT (PART 1)

HONOLULU FIRE DEPARTMENT (HFD): Captain Robert Methered reported the following: (1) Statistics for September 2002: Fires – three brush, one rubbish and six vehicle. Emergencies – sixteen medical calls and seven miscellaneous. (2) Safety Tip of the Month: When there is a fire in a high-rise building, always use the stairs to exit the building. Should there be a power outage, the elevators will trap the occupants or possibly open the doors on the floor with the fire. (3) The Fire Fighter's Safety and Health Guides have been distributed to the various elementary schools to coincide with Fire Prevention Week. This year's theme is "Team Up for Safety." (4) Events marking Fire Prevention Week, October 6 to 12, 2002, have been scheduled at various locations throughout Oahu.

HONOLULU POLICE DEPARTMENT (HPD): Lt. Andrew Speese reported the following statistics for September 2002: two burglaries, forty-three thefts from automobiles, two auto accessories, two bicycle thefts, nine other thefts, one robbery and two auto thefts.

At this time, Lieutenant Charles Chong informed the community the need to establish the 311 non-emergency line for three reasons: (1) There are one million calls to the 911 line that accepts both emergency and nonemergency calls thereby overburdening the current 911 emergency line. The volume of calls to the 911 emergency line will rise due to increase of population density along with the growing popularity of cellular phones; (2) President Bill Clinton signed the Wireless Communications and Public Safety Act of 1999 that defined 911 as the national emergency number. It was noted that this act does not apply to cellular phones; and (3) The terrorist attacks of September 11th, 2001 significantly altered the mindset of emergency providers, 911 operation centers and of the public who depend on these services.

Discussion followed: Ryan pointed out that federal law requires the United States Military to return these surplus lands to the City or State once they are cleaned up.

REPRESENTATIVE JOE GOMES: Representative Gomes announced that he has secured written agreements from the State Departments of Education, Public Safety, and Transportation, for the construction of the Kailua High School Access Road.

SENATOR FRED HEMMINGS: Senator Hemmings had no report.

BOARD OF WATER SUPPLY (BWS): No BWS representative was present.

UNFINISHED BUSINESS

UNITED STATES DEPARTMENT OF AGRICULTURE'S (USDA) FRUIT FLY FARM EXPANSION IN WAIMANALO UPDATE: Vernon Harrington, State Plant Director for the United States Department of Agriculture's Animal and Plan and Health Inspection Services' Plant Protective Quarantine Division, explained that Fruit Fly Farm in Waimanalo needs to be renovated and expanded in order to meet current fruit fly production demands to produce nitrogen and phosphorous along with water remediation to eradicate fruit flies.

Discussion followed: (1) Ryan asked if the USDA has done an environmental assessment. Roy Abe, from Hawaii Pacific Engineers, stated that the environmental assessment remains a work in progress. (2) Jamila inquired about the status of plant employees including how many of them are from Waimanalo. Abe replied that 25% of the current plant staff are Waimanalo residents. Harrington followed by mentioning that the USDA is working with Hawaiian Electric Company (HECO) in the fruit fly plant renovation/expansion project would be going out to bid soon. Jamila pointed out that there are numerous licensed contractors who reside in Waimanalo who are seeking employment should be given the opportunity to work in this project. (3) Spencer mentioned that the proposed fruit fly expansion project would affect a nearby stream where water has not been flowing. She suggested that USDA inform neighboring farmers on their proposed expansion project. She added that grading is needed to revive water flow in that particular stream.

Aragon left the meeting at 9:26 p.m.

TOUR DE CURE BIKE RIDE ON SUNDAY, NOVEMBER 17, 2002: Kawika Eckart reported that since last month's meeting, he has worked with the American Diabetes Association to arrange the Waimanalo route in to the Tour De Cure Bike Ride scheduled for Sunday, November 17, 2002 from 7:00 a.m. to 2:00 p.m. Eckart noted that the proposed Waimanalo route is the same route that was used for the recent 21st Century Bike Ride.

Discussion followed: Jamila requested that HPD have at least one officer present on Kumuhau, Hihimanu and Oluolu Streets during the upcoming event. Jamila noted that at the previous 21st Century Bike Ride Event, there were HPD officers present that resulted in bikers getting lost on Kalanianaole Highway.

Ellsworth moved and Buck seconded that the Waimanalo Neighborhood Board support the 2002 Tour De Cure Bike Ride scheduled for Sunday, November 17, 2002. The motion carried 8-2-0. Nays: Ryan, Spencer.

STATE DEPARTMENT OF TRANSPORTATION (DOT) PRESENTATION ON LEFT TURN ON KALANIANAOLE HIGHWAY: No DOT representative was present.

Aragon arrived back at the meeting at 9:36 p.m.

NEW BUSINESS

OHANA PRODUCE: Jackie Wong reported that Ohana Produce, along with the Hawaii Foodbank, has for the past two years been distributing food to needy families on the first two Fridays of the month from 1:30 p.m. to 4:30 p.m. in front of Waimanalo Elementary and Intermediate School. Wong stated that individuals should walk in, sign up and apply for a card and bring boxes for food carry their donations. Wong noted that this program stretches from Waimanalo to Kahalu'u.

WAIMANALO NEIGHBORHOOD BOARD

MINUTES OF REGULAR MEETING

MONDAY, MARCH 10, 2003

WAIMANALO PUBLIC AND SCHOOL LIBRARY

CALL TO ORDER: Vice Chair Joseph Ryan called the meeting to order at 7:30 p.m. with a quorum present.

MEMBERS PRESENT: Michael Buck, Phillip Ellsworth, Andrew Jamila, Jr., Kawika Eckart, Nani Akeo, Joseph Ryan and Priscilla Ho.

MEMBERS ABSENT: Wilson Kekoa Ho, Joseph Aragon, Bob Kimo Lastimosa and Mabel Ann Spencer.

GUESTS: Vernon Harrington, Stuart Stein and Susan McCombs (United States Department of Agriculture); Roy Abe (Hawaii Pacific Engineers), Kekai, Keone and Kala Seabury, Lieutenant John Cheong (Honolulu Police Department), Captain Job Harris (Honolulu Fire Department), Councilmember Barbara Marshall, April Coloretti (Councilmember Barbara Marshall's Office staff), Rock Riggs (Councilmember Mike Gabbard's Office staff), Brysen Poulten (Senator Fred Hemmings' Office staff), Representative Tommy Waters, Richard Burns (Waimanalo Public and School Library), Audra Chang (Kailua High School), Kimo Troche (Marine Corps Base Hawaii), Major Justin Hall (Bellows Air Force Station), Julie Dugan (Hawaii Job Corps), Kevin Andrews and Liz Martinez (Waimanalo Chamber of Commerce), Clifford Migita (Waimanalo Agricultural Association), Joe Ka'akua (Board of Water Supply), Greig Gaspar (Waimanalo Health Center), Christina Shoemaker-Simmons (Waimanalo Womens, Infants and Childrens [WIC] Program), Jody Green (Waimanalo Beach Lots Association), Annette Lee (Waimanalo Game Breeders Association), Nickie Hines (St. Matthew's Church), Noa Alo, Gordon and Helene Mattos, Melanie Maghinay, Eduardo Moreno, Omar Hakim, Lucy Akau, Jade Kamai, Lisa Burns, Jonathan, Jo and Melody Youngs, Marilyn Abejon, Ray Lum, Lillian Hong (Olelo), and Jamal Siddiqui (Neighborhood Commission Office staff).

MOMENT OF SILENCE: Jamila asked for a moment of silence for those who have recently passed away: Honolulu Police Department Officer Glen Gaspar – killed while apprehending a suspect for attempted murder. Jamila stated that Officer Gaspar and he were fellow canoe paddlers. Note: Officer Gaspar's brother Greig is the Marketing Director for the Waimanalo Health Center; Lita Cook – kupuna who rode her horse in the Annual Waimanalo Christmas Parade; Remus Seabury – killed in a recent auto accident on Kalanianaole Highway, located near Olomana Golf Course. Seabury was a fellow coworker at Hawaiian Dredging; and Walter Miller – a welder at the Waimanalo Construction Coalition who was killed while his motorcycle collided with a vehicle. A moment of silence was observed.

PULE: Ellsworth offered the pule.

RESIDENTS CONCERNS

Tragedy on the curve of Kalanianaole Highway near Olomana Golf Course: Members of the Seabury Family told the Board that in the wake of Remus' untimely death, they have collected more than 2,900 signatures to request the placement of a barrier along the curves of Kalanianaole Highway located near Olomana Golf Course. It was further mentioned that an individual who survived an auto accident along Kalanianaole Highway to this date still has neck injuries. The Seaburys asked the community to please STOP THE KILLINGS.

BOARD OF WATER SUPPLY (BWS): Joe Ka'akua reported the following:

(1) There was one water main break in February 2003.

(2) General Water Announcements: For the past several years, BWS has dedicated a renewed effort to work with agencies, landowners, and community groups to preserve our island's watersheds. Forests along the Ko'olau and W'aianae mountain ranges are Oahu's primary water resources for streams and groundwater supplies and to nurture Hawaii's native plants and animals. These watersheds were nearly lost in the early 1900's when the mountains were stripped of vegetation largely due to the release of domesticated animals such as goats, pigs and cattle that turned feral and increased their population. In 1903, the Territorial Legislature enacted the first legislation to protect the mountain watersheds as forest reserves. Fences were constructed and forests were replanted. BWS is celebrating 2003 as the Year of the Hawaiian Forest that renews BWS' commitment toward protecting the forest watersheds. Feral animals still threaten the watershed, however BWS is also concerned with other threats such as fire, insects, diseases and invasive non-native plants. BWS is involved in partnerships islandwide for watershed protection including the Ahupua'a Restoration Council of Heeia, the Punalu'u Watershed Partnership and the Kahalu'u Valley Partnership.

(3) BWS supports City Council Resolution 03-09: Establishing a policy in the City and County of Honolulu opposing the placement of landfills over potable aquifers.

UNFINISHED BUSINESS

WAIMANALO FRUIT FLY EXPANSION PROJECT: Vernon Harrington, from the United States Department of Agriculture, informed the Board that the current Fruit Fly Facility located in Ahiki Street is being renovated while Hawaii Pacific Engineers is doing an Environmental Assessment of the Temporary Research Modules. Cost to construct the Temporary Research Modules is $25 million that would be paid in 15 years. The temporary research modules will help ensure the long term viability of the Waimanalo Fruit Fly Facility's mission of eradicating the Mediterranean Fruit Flies and helps Hawaii's economy with construction work generated and continued expenditure of federal dollars locally for the facility's supplies and services as well as salaries of personnel.

Discussion followed: Buck expressed concern with the proposed facility expansion that could increase the chances of flooding in Waimanalo.

TRAFFIC CALMING IN WAIMANALO: Item was deferred citing time constraints.

NEW BUSINESS

CITY COUNCIL RESOLUTION 03-09 ESTABLISHING A CITY & COUNTY OF HONOLULU POLICY THAT PROHIBITS PLACING LANDFILLS ABOVE THE CITY'S UNDERGROUND DRINKING WATER SOURCES; SENATE BILL 1532/HOUSE BILL 1622: REQUIRING COUNTIES TO ALLOW THE PLACING OF LANDFILLS ABOVE THE CITY'S UNDERGROUND DRINKING WATER SOURCES: Jamila moved and Ellsworth seconded that the Waimanalo Neighborhood Board No. 32 support City Council Resolution 03-09 – Establishing a policy of the City and County of Honolulu prohibiting the construction of landfills over potable water aquifers and in opposition to Senate Bill 1532/House Bill 1622 that would mandate counties to allow the construction of landfills over potable water aquifers. The motion was adopted by a unanimous vote of 7-0-0.

ADJOURNMENT: There being no further Board business, the meeting adjourned at 10:10 p.m.

Submitted by,

Jamal Siddiqui

Neighborhood Assistant

WAIMANALO NEIGHBORHOOD BOARD NO. 32

41-696 KALANIANAOLE HWY. • WAIMANALO, HAWAII 96795-1757
PHONE: (808) 527-5749 • FAX: (808) 537-5760 • INTERNET: www.co.honolulu.hi.us

MINUTES OF REGULAR MEETING
MONDAY, JULY 14, 2003
WAIMANALO PUBLIC AND SCHOOL LIBRARY

CALL TO ORDER: Chair Wilson Kekoa Ho called the meeting to order at 7:30 p.m. with a quorum present.

MEMBERS PRESENT: Wilson Kekoa Ho, Mabel Ann Spencer, Michael Buck, Philip Ellsworth, Andrew Jamila, Jr., Bob Kimo Lastimosa, Solomon Spencer, Kawika Eckart, Orrin Kupau, Priscilla Ho, Joseph Ryan, Jr., and Malcolm Lee.

MEMBERS ABSENT: Nani Akeo.

GUESTS: Lieutenant John Cheong and Officer K. Nakamura (Honolulu Police Department), Acting Captain Scott Jacobs (Honolulu Fire Department), Benjamin Kama (Mayor's Representative), Councilmember Barbara Marshall, Ikaika Anderson (Councilmember Barbara Marshall's Office staff), Senator Fred Hemmings, Representative Tommy Waters, Kimo Troche (Marine Corps Base Hawaii), Kevin Andrews (Waimanalo Chamber of Commerce), Joe Ka'akua (Board of Water Supply), Chuck Braden and Greig Gaspar (Waimanalo Health Center), Dennis Bumpy Kanahele and John Kirkley (Aloha First), Richard Burns (Branch Manager, Waimanalo Public and School Library), George Eschew (First Baptist Church of Waimanalo), Jim and Shannon Wood (Ko'olau News), Micah Kane (Governor's Representative), Paul Richards (President, Waimanalo Hawaiian Homesteads Association), Peter Yee and Leona Kalima (Office of Hawaiian Affairs), Julie Dugan (Hawaii Job Corps); Stuart Stein, Vernon Harrington, Susan McCombs and Carol Russell (United States Department of Agriculture); Roy Abe (Hawaii Pacific Engineers); Ann Marie Beck, Maile Makalii, Pat Clough, Lillian and Verna Naino (Habitat for Humanity), Jody Green (Waimanalo Beach Lots Association), Annette Lee (Waimanalo Agricultural Association), Jim Andrews (Bellows Restoration Advisory Board [RAB]), Rocky Like (New Hope Fellowship Church), Joseph Lapilio (Ho'oakea), Richard and Bobbie Ubersax, Kim and Milo Kalama, Eunice McElroy, Dr. Christine Kealoha,, Mr. Kealoha, Kimberly Clark, Doris Dobersberger, Duke Artuyo, Ray Lum, Lucy Akau, Harriet Seabury, Lillian Hong (Olelo) and Jamal Siddiqui (Neighborhood Commission Office staff).

PULE: Ellsworth offered the pule.

BOARD COMMITTEE ASSIGNMENTS: Chair W. Ho announced the following assignments for Board Committee Chairs:

Water Quality	-	Michael Buck
Environmental	-	Joseph Ryan, Jr.
Parks and Recreation	-	Mabel Ann and Solomon Spencer
Transportation	-	Kawika Eckart
Alternative Transportation (i.e. Bike Ride Races)	-	Nani Akeo
Anti-Drug Enforcement	-	Priscilla Ho
Special Issues and Legislative Concern	-	Orrin Kupau
Planning and Zoning	-	Andrew Jamila
Waimanalo Vision/Empowerment	-	Bob Kimo Lastimosa
Public Safety and Law Enforcement	-	Malcolm Lee

RESIDENTS' CONCERNS REGARDING POLICE AND FIRE

Illegal Camping and Overgrown Grass in Waimanalo Beach Parks: Jamila received reports from parks workers the continuing problem of illegal camping at area beaches including throughout Waimanalo that includes littering, stripping trucks, graffiti, people performing indecent behavior. It was suggested that a barrier be placed next to the river at Waimanalo Beach Park to prevent cars from being stripped. In addition, grass is overgrown and must be cut immediately.

Speeding on Oluolu Street: Kupau stated that speeding on Oluolu Street continues to remain a problem. He noted that there is a petition drive to request the placement of speed bumps.

Placing fluorescent toys to slow down traffic while kids are playing: Jody Green heard a suggestion from a fellow Beach Lots resident a solution to the speeding problem at Laumilo Street – buy and set up at curbside a toy with a yellow fluorescent guy with a flag cautioning vehicles to slow down while kids are playing.

(2) Summer is traditionally a time of high water consumption and this year is no exception. In fact, the month of June began with an all time record high or more than 180 million gallons of water used per day on the island of Oahu. That's 15 million gallons a day more than in the same week last year. Thanks to conservation conscious consumers, our water use is down to a more reasonable 167 million gallons a day according to our latest report. You can help by practicing water conservation at home and reporting water waste to BWS.

(3) Come visit the BWS booth and exhibit at the Hawaii State Farm Fair. This year the fair will begin on Friday, July 18, 2003 and continue for three consecutive weekends ending on Sunday August 3, 2003.

(4) BWS also invites you to their Halawa Xeriscape Garden Open House and Plant Sale on Saturday, August 2, 2003 from 9:00 a.m. to 3:00 p.m. The xeriscape garden is presently closed to the public because of Homeland Security concerns so this is a good opportunity to visit and learn about the drought tolerant plants.

STATE DEPARTMENT OF TRANSPORTATION (DOT): A representative was not present to provide a report.

KAILUA BAY ADVISORY COUNCIL (KBAC) UPDATE: A representative was not present to provide a report.

UNFINISHED BUSINESS

Fruit Fly Farm Expansion: Vernon Harrington, from the United States Department of Agriculture (USDA), stated that they would submit an Environmental Assessment by Tuesday, July 29, 2003. The proposal includes building a new irradiator/storage and temporary research module buildings. Once construction is completed, the existing irradiator/storage and temporary research module buildings would be torn down.

Discussion followed:

(1) Chair W. Ho commented that the Waimanalo Neighborhood Board voted against expansion of the fruit fly farm facility where it has no value for the Waimanalo community and as well as local farmers.

(2) Ryan suggested that the USDA should give regular updates informing the community what activities are occurring at the facility including information that should have been presented to the Board prior to presenting their facility expansion proposal to the University of Hawaii's Board of Regents. Ryan further asked how many fruit flies are being released to California noting that this project is detrimental to Hawaii.

(3) Mabel Spencer pointed out that Waimanalo is suffering from sewage problems, where as the fruit fly expansion project is getting $10 million, while the improvements to the Waimanalo Wastewater Treatment Plant is getting less than $1 million in improvements. Harrington replied that the monies funding the fruit fly expansion project is a $25 million loan from a private company that would be paid back within a period of 15 years.

(4) Jamila stated that Waimanalo would put up a good fight opposing the facility's expansion. However, if the project proceeds forward, how many people working in the plant reside in Waimanalo and would the facility purchase supplies from Waimanalo-based businesses and vendors such as Waimanalo Feed Supply. Stuart Stein, from USDA, replied that 25% of the facility's employees are from Waimanalo and that 50% of the supplies they purchase from Waimanalo-based vendors.

(5) Kimberly Clark asked what materials are used to irradiate the fruit flies. Harrington replied Serium 137. Harrington noted that the fruit fly facility would utilize funds from the U.S. Department of Homeland Security.

(6) Buck asked what plan would be used to release the fruit flies statewide. Harrington replied that USDA would double the production capability of producing sterile fruit flies.

(7) Kim Kalama inquired if the fruit fly facility is on land owned by the University of Hawaii. Harrington replied yes. USDA is paying rent to the University of Hawaii.

Date: June 2, 2001

To: Files

From: Roy Abe

Project: USDA Fruit Fly Rearing Facility Water Reclamation Facility, Waimanalo, Oahu

Subject: Meeting on June 2, 2001 with Waimanalo Neighborhood Board Representatives (see attendance list)

1. The December 1983 environmental assessment for the fruit fly facility should be appended to the water reclamation facility EA.

2. The use of the leaching field to dispose of excess effluent should be avoided. Ms. Ferentinos indicated that although the amount of nitrogen being discharged is not significant, every amount counts and this project should be used to set a good example of nutrient control. Irrigation of trees on adjacent land or new trees planted along the fence line should be considered. Ms. Glover recommended that Dr. James Brubaker be contracted regarding possible irrigation of the trees in the adjacent area.

3. The additional runoff generated from the added impervious surfaces needs to be addressed.

4. Mr. Ryan expressed a concern for use of prime agricultural land for the facility.

USDA Hawaii Fruit Fly Rearing Facility Site Visit
June 2, 2001

Name	Organization	Phone No.
WILSON KEOLA JR	WAIMANALO NEIGHBORHOOD BOARD	
Nancy Glover	WAIMANALO HEALTH CENTER	
Lisa Ferentinos	Waimanalo Health Center	
Joe Ryan	HECO	
Stuart Stein	USDA - Fruit Fly Facility	
Roy Abe	Hawaii Water Environment	

Appendix G-2

Draft Environmental Assessment Comments and Responses

United States Department of Agriculture
Natural Resources Conservation Service
P.O. Box 50004
Honolulu, HI 96850
808-541-2600

Our People...Our Islands...In Harmony

August 29, 2003

Walter T. Harada
University of Hawaii at Manoa
College of Tropical Agriculture and Human Resources
3050 Maile Way, Gilmore 207
Honolulu, HI 96872

Subject: Hawaii Fruit Fly Production Facility

Attention: Mr. Walter T. Harada

We have reviewed the above mentioned document and have no comment to offer at this time.

Thank you for the opportunity to review this document.

Sincerely,

LAWRENCE T. YAMAMOTO
State Conservationist

Hawaii Pacific Engineers, Inc.
1132 BISHOP STREET, SUITE 1003
HONOLULU, HAWAII 96813-2830
Phone: (808) 524-3771 Fax: (808) 538-0445
E-mail: hpeinc@hawaiipacificengineers.com

September 19, 2003

Mr. Lawrence T. Yamamoto, State Conservationist
National Resouces Conservation Service
United States Department of Agriculture
P.O. Box 50004
Honolulu, Hawaii 96850

SUBJECT: Draft Environmental Assessment for Temporary Research Modules Project
USDA Hawaii Fruit Fly Production Facility
Waimanalo, Hawaii (TMK 4-1-26: Por. 1)

Dear Mr. Yamamoto:

On behalf of the University of Hawaii College of Tropical Agriculture and Human Resources and the U.S. Department of Agriculture, thank you very much for reviewing the subject document and for your correspondence of August 29, 2003. We acknowledge that the National Resources Conservation Service has no comments to offer at this time.

A copy of your letter and this response will be included in the final environmental assessment. Please feel free to contact me at 522-7425 if there are any questions.

Sincerely,

Roy K. Abe
Vice President

cc: Dr. Kingsley Fisher, USDA
Walter Harada, UH CTAHR

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

REPLY TO ATTENTION OF

August 13, 2003

Regulatory Branch

RECEIVED
AUG 15 2003
HAWAII PACIFIC ENGINEERS INC.

Mr. Roy K. Abe
Hawaii Pacific Engineers, Inc.
1132 Bishop Street, Suite 1003
Honolulu, Hawaii 96813-2830

Dear Mr. Abe:

This letter responds to your request for a review of the Draft Environmental Assessment (DEA) for the Temporary Research Modules Project, dated August 4, 2003. Based on the information contained in the DEA I have determined that the project will not involve the discharge of dredged or fill material into waters of the United States, including wetlands, therefore a Department of the Army (DA) permit will not be required for this project.

If you have any questions concerning this determination, please contact William Lennan of my staff at 438-6986 or FAX 438-4060, and reference File No. 200100316.

Sincerely,

George P. Young, P.E.
Chief, Regulatory Branch

Hawaii Pacific Engineers, Inc.
1132 BISHOP STREET, SUITE 1003
HONOLULU, HAWAII 96813-2830
Phone: (808) 524-3771 Fax: (808) 538-0445
E-mail: hpeinc@hawaiipacificengineers.com

September 19, 2003

Mr. George P. Young, P.E., Chief
Regulatory Branch
Department of the Army
U.S. Army Engineer District, Honolulu
Ft. Shafter, Hawaii 96858-5440

SUBJECT: Draft Environmental Assessment for Temporary Research Modules Project
USDA Hawaii Fruit Fly Production Facility
Waimanalo, Hawaii (TMK 4-1-26: Por. 1)

Dear Mr. Young:

On behalf of the University of Hawaii College of Tropical Agriculture and Human Resources and the U.S. Department of Agriculture, thank you very much for reviewing the subject document and for your correspondence of August 13, 2003. We acknowledge your comments indicating that a Department of Army Permit will not be required for the project.

A copy of your letter and this response will be included in the final environmental assessment. Please feel free to contact me at 522-7425 if there are any questions.

Sincerely,

Roy K. Abe
Vice President

cc: Dr. Kingsley Fisher, USDA
Walter Harada, UH CTAHR
Les Sugundo, OEQC
John Nakagawa, Hawaii CZM Program

DEPARTMENT OF BUSINESS,
ECONOMIC DEVELOPMENT & TOURISM

OFFICE OF PLANNING
235 South Beretania Street, 6th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

LINDA LINGLE
GOVERNOR
THEODORE E. LIU
DIRECTOR
RAYMOND M. JEFFERSON
DEPUTY DIRECTOR
MARY LOU KOBAYASHI
PLANNING PROGRAM ADMINISTRATOR
OFFICE OF PLANNING

Telephone: (808) 587-2846
Fax: (808) 587-2824

Ref. No. P-10221

September 19, 2003

RECEIVED
SEP 23 2003
HAWAII PACIFIC
ENGINEERS INC.

Mr. Stuart H. Stein
U.S. Department of Agriculture, APHIS
41-650 Ahiki Street
Waimanalo, Hawaii 96795

Dear Mr. Stein:

Subject: Hawaii Coastal Zone Management (CZM) Program Federal Consistency Review for the Hawaii Plant Protection Laboratory Temporary Research Modules, Waimanalo, Oahu

The Hawaii CZM Program has completed its review of the proposed construction of temporary research facilities and an irradiator/storage building for the Hawaii Plant Protection Laboratory adjacent to the existing Hawaii Fruit Fly Production Facility in Waimanalo. We concur with your determination that the proposal is consistent to the maximum extent practicable with the Hawaii CZM Program on the basis that the following mitigation measures proposed in the Draft Environmental Assessment (July 29, 2003) are implemented.

1. According to the EA (p. 4-1) the "USDA will provide construction inspection and monitoring services to ensure that the contractor performing the work adheres to all environmental regulations applicable to construction activities."

2. The State Historic Preservation Division Section 106 Review, letter dated January 27, 2003, states that it believes no historic properties will be affected by development of the project area, but adds a precautionary mitigation measure: if historic remains such as artifacts, burials, concentrations of shell or charcoal are encountered during construction activities, work shall cease immediately in the immediate vicinity of the find, and the find shall be protected from further damage. The contractor shall immediately contact the State Historic Preservation Division, which will assess the significance of the find and recommend an appropriate mitigation measure, if necessary.

3. According to the EA (p. 2-14) process wastewater is not permitted to be discharged to the city sewer system. Therefore, process wastewater is to be processed at the wastewater treatment plant at the California Department of Food and Agriculture

Fruit Fly Rearing Facility in Waimanalo or the East Honolulu Wastewater Treatment Plant. An aerated watertight underground storage tank, with a capacity of 3,000 to 5,000 gallons, will store process wastewater until it is transferred to a treatment plant.

4. To mitigate storm water runoff from the site a detention basin will be constructed to meet City and County of Honolulu requirements for peak runoff attenuation and reduction in sediment and storm water pollution. (EA, p. 2-12)

5. According to the EA (p. 2-12 – 2-13), although the project site is located outside of the 100-year and 500-year flood boundary, the research modules will be constructed above the 100-year flood level.

CZM consistency concurrence is not an endorsement of the project nor does it convey approval with any other regulations administered by any State or County agency. Thank you for your cooperation in complying with Hawaii's CZM Program. If you have any questions, please call John Nakagawa with CZM Hawaii at 587-2878.

Sincerely,

Mary Lou Kobayashi

Mary Lou Kobayashi
Planning Program Administrator

c: Mr. Roy K. Abe, Hawaii Pacific Engineers, Inc.
Department of Land & Natural Resources
Historic Preservation Division
Department of Planning and Permitting,
City & County of Honolulu

Hawaii Pacific Engineers, Inc.
1132 BISHOP STREET, SUITE 1003
HONOLULU, HAWAII 96813-2830
Phone: (808) 524-3771 Fax: (808) 538-0445
E-mail: hpeinc@hawaiipacificengineers.com

October 6, 2003

Ms. Mary Lou Kobayashi
Planning Program Admnistrator
Office of Planning
Department of Business, Economic Development & Tourism
State of Hawaii
P.O. Box 2359
Honolulu, Hawaii 96804

SUBJECT: Hawaii CZM Program Federal Consistency Certification and Draft Environmental Assessment for Temporary Research Modules Project at USDA Hawaii Fruit Fly Production Facility Waimanalo, Hawaii (TMK 4-1-26: Por. 1)

Dear Ms. Kobayashi:

On behalf of the University of Hawaii College of Tropical Agriculture and Human Resources and the U.S. Department of Agriculture, thank you very much for reviewing the subject documents and for your correspondence of September 19, 2003. We acknowledge your concurrence with USDA's consistency determination with the Hawaii CZM Program on the basis that mitigation measures proposed in the DEA and outlined in your letter are implemented.

A copy of your letter and this response will be included in the final environmental assessment. Please feel free to contact me at 522-7425 if there are any questions.

Sincerely,

Roy K. Abe
Vice President

cc: Dr. Kingsley Fisher, USDA
Walter Harada, UH CTAHR
Genevieve Salmonson, OEQC

NOBUHIRO GIOVETANO
GOVERNOR

ANTHONY J.H. CHR
EXECUTIVE OFFICER

STATE OF HAWAII
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM
LAND USE COMMISSION
P.O. Box 2359
Honolulu, HI 96804-2359
Telephone: 808-587-3822
Fax: 808-587-3827

October 2, 2003

Mr. Roy K. Abe, Vice President
Hawaii Pacific Engineers, Inc.
1132 Bishop Street, Suite 1003
Honolulu, Hawaii 96813-2830

Dear Mr. Abe:

Subject: DRAFT ENVIRONMENT ASSESSMENT ("DEA") REVIEW
United States Department of Agriculture ("USDA") Hawaii Fruit Fly Production Facility
Applicant: USDA
TMK No.: 4-1-26:Portion of 1
Waimanalo, Oahu, Hawaii

This is to acknowledge receipt of your letter dated September 11, 2003 transmitting the subject DEA and requesting confirmation that a Special Use Permit would be required for the proposed water reclamation and composting facilities.

We have the following comments:

1. We confirm that the subject parcel is designated within the boundary of the State Land Use Agricultural District.

2. We note that relevant permissible uses within the State Land Use Agricultural District (§205-4.5(a)(5) HRS) include public institutions and buildings, which are necessary for agricultural practices. This same section also notes that buildings and uses, including but not limited to mills, storage, and *processing* facilities, maintenance facilities, and vehicle and equipment storage areas that are normally considered directly accessory to the abovementioned uses and are permitted under section 205-2(d) are permissible within the agricultural district.

   - Both your description and that received from the State Department of Agriculture would seem to indicate that your program qualifies as both necessary for agricultural practice and/or an agricultural processing facility.

3. On the question, whether a Special Use Permit is required for your future project which is anticipated to include an onsite 40,000 gallons per day water reclamation facility, we offer the following comments.

   - Any person who desires to use land within an agricultural or rural district for than a permissible use agricultural or rural use may petition the county planning commission within which the land is located for a special permit to use the land in the manner desired. Special permits for areas greater than 15 acres require approval of both the Planning Commission, City and County of Honolulu ("Planning Commission") and the Land Use Commission (LUC).

   - Should your organization proceed with its future project, additional information will need to be provided which confirms that the proposed water reclamation facility is a processing facility that is normally considered accessory to an agricultural or permissible use.

   - In the alternative, application for a special permit should be made of the Planning Commission.

4. With respect to other sections of the subject DEA:

   - We recommend that the Applicant clarify if an environmental assessment (EA) or environmental impact statement (EIS) will be submitted for the permanent facility planned to commence in 2005.

   - Chapter 2. B., General Background on Hawaii Fruit Fly Production Facility. We recommend that the Applicant clarify how many irradiators were used for the Hawaii Fruit Fly Production Facility ("HFFPF") and the duration of their use. Appendix B indicated that either one or two irradiators were used beginning in December 1993 or 1994.

5. We would appreciate an opportunity to provide additional comment should an EA or EIS be issued for the future project.

Should you require clarification or further assistance in this matter, please do not hesitate to contact Russell Kumabe of my staff at 587-3822.

Sincerely,

ANTHONY J. H. CHING
Executive Officer

Hawaii Pacific Engineers, Inc.
1132 BISHOP STREET, SUITE 1003
HONOLULU, HAWAII 96813-2830
Phone: (808) 524-3771 Fax: (808) 538-0445
E-mail: hpeinc@hawaiipacificengineers.com

October 6, 2003

Mr. Anthony J.H. Ching
State of Hawaii Land Use Commission
State Office Tower
235 S. Beretania Street, Suite 406
Honolulu, Hawaii 96813

SUBJECT: Draft Environmental Assessment for Temporary Research Modules Project at USDA Hawaii Fruit Fly Production Facility Waimanalo, Hawaii (TMK 4-1-26: Por. 1)

Dear Mr. Ching:

On behalf of the University of Hawaii College of Tropical Agriculture and Human Resources and the U.S. Department of Agriculture, thank you very much for reviewing the subject documents and for your correspondence of October 2, 2003. We offer the following responses to your comments:

1) Land Use Classification. We acknowledge LUC's confirmation that the subject parcel is within the boundary of the State Land Use Agricultural District.

2) Permissible Uses. We acknowledge LUC's comment indicating that the USDA's fruit fly research and production program would appear to qualify "as both necessary for agricultural practice and/or an agricultural processing facility."

3) Special Use Permit for Future Project. We acknowledge LUC's comment that a Special Use Permit may be required for the water reclamation facility that is proposed to be constructed in the future project. We hope that the LUC will consider the water reclamation facility to be an accessory processing facility since it is similar in nature and function to a waste stabilization pond used to store and treat livestock manure and contaminated runoff. Most fruit fly mass production/processing facilities in the world have a wastewater treatment system as an accessory facility to the production process (e.g. Texas, Guatemala, Argentina, Chile, Australia, and Japan). We will seek additional input from LUC in the pre-assessment consultation phase of the environmental assessment for the future project.

4) Other DEA Items. At the current time, USDA anticipates that an environmental assessment for the new facility will be sufficient to comply with the HRS 343 environmental review requirements. The proposed facilities are not anticipated to have significant impacts, as defined by Section 11-200-12 of Chapter 200, Hawaii Administrative Rules.

The number of irradiators used at the HFFPF will be clarified. Two irradiators have been used at the HFFPF in the past. The same two irradiators will be used in the future.

5. Opportunity for Future Comments. The LUC will be included as a consulted party for the EA or EIS to be prepared for the future project.

Thank you once again for your input. A copy of your letter and this response will be included in the final environmental assessment. Please feel free to contact me at 522-7425 if there are any questions.

Sincerely,

Roy K. Abe
Vice President

cc: Dr. Kingsley Fisher, USDA
Walter Harada, UH CTAHR
Genevieve Salmonson, OEQC
John Nakagawa, Hawaii CZM Program

LINDA LINGLE
GOVERNOR OF HAWAII

CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

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

In reply, please refer to:
EMD / WB

04 1 026 P001 wpd
WP9 030694

August 11, 2003

RECEIVED
AUG 14 2003
HAWAII PACIFIC
ENGINEERS INC.

Mr. Roy K. Abe, Vice President
Hawaii Pacific Engineers, Inc.
1132 Bishop Street, Suite 1003
Honolulu, Hawaii 96813-2830

Dear Mr. Abe:

Subject: Draft Environmental Assessment for Temporary Research Modules Project
USDA Hawaii Fruit Fly Production Facility
Waimanalo, Koolaupoko, Oahu, Hawaii
TMK: (1) 4-1-026: Portion 001 9.680 acres

We have reviewed the subject document which proposes to construct temporary Hawaii Plant Protection Laboratory (HPPL) research facilities comprised of five single - story prefabricated steel-panel modules with workspace totaling approximately 3,900 square feet.

As domestic wastewater treatment and disposal have been addressed through a newly installed small package-typ grinder pump station connected to the City's sewer system, we have no objections to this method of wastewater disposal. With regards to process wastewater, the temporary hauling of this waste to either the East Honolulu Wastewater Treatment Plant or the CDFA treatment facility is acceptable provided that neither process is upset with the increase in wastewater. Should the facilities be unable to handle process wastewater, the HFFPF will have to immediately construct its own wastewater treatment and disposal facility. Pretreatment of process wastewater and connection to the City's sewer system is another alternative to be explored.

All wastewater plans must conform to applicable provisions of the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater Systems." We do reserve the right to review the detailed wastewater plans for conformance to applicable rules.

Should you have any questions, please contact the Planning & Design Section of the Wastewater Branch at 586-4294.

Sincerely,

HAROLD K. YEE, P.E., CHIEF
Wastewater Branch

Hawaii Pacific Engineers, Inc.
1132 BISHOP STREET, SUITE 1003
HONOLULU, HAWAII 96813-2830
Phone: (808) 524-3771 Fax: (808) 538-0445
E-mail: hpeinc@hawaiipacificengineers.com

September 19, 2003

Mr. Harold K. Yee, P.E., Chief
Wastewater Branch
Department of Health
State of Hawaii
P.O. Box 3378
Honolulu, Hawaii 96801

SUBJECT: Draft Environmental Assessment for Temporary Research Modules Project
USDA Hawaii Fruit Fly Production Facility
Waimanalo, Hawaii (TMK 4-1-26: Por. 1)

Dear Mr. Yee:

On behalf of the University of Hawaii College of Tropical Agriculture and Human Resources and the U.S. Department of Agriculture, thank you very much for reviewing the subject document and for your correspondence of August 11, 2003.

We acknowledge your comments indicating that the DOH Wastewater Branch concurs with the proposed means of domestic and process wastewater disposal and that the construction plans must conform to the DOH Chapter 11-62 requirements and are subject to DOH review. We further acknowledge that alternative means of process wastewater disposal will be required in the event that the East Honolulu Wastewater Treatment Plant and the CDFA treatment facility are unable to accommodate the process wastewater.

A copy of your letter and this response will be included in the final environmental assessment. Please feel free to contact me at 522-7425 if there are any questions.

Sincerely,

Roy K. Abe
Vice President

cc: Dr. Kingsley Fisher, USDA
Walter Harada, UH CTAHR
Les Sugundo, OEQC
John Nakagawa, Hawaii CZM Program

LINDA LINGLE
GOVERNOR OF HAWAII

RECEIVED
AUG 27 2003
HAWAII PACIFIC ENGINEERS INC.

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING, ROOM 555
601 KAMOKILA BOULEVARD
KAPOLEI, HAWAII 96707

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

AUG 22 2003

Mr. Roy K. Abe, Vice President
Hawaii Pacific Engineers, Inc
1132 Bishop Street, Suite 1003
Honolulu, Hawaii 96813-2830

LOG NO: 2003.1574
DOC NO: 0308EJ24

Dear Mr. Abe:

SUBJECT: National Historic Preservation Act Section 106 Review -Draft Environmental Assessment for Temporary Research Modules Project, USDA Hawaii Fruit Fly Production Facility
Waimanalo, Ko`olaupoko, O`ahu
TMK: (1) 4-1-026: por. 001

Thank you for the opportunity to comment on the DEA for the Temporary Research Modules Project, USDA Hawaii Fruit Fly Production Facility at Waimanalo, O`ahu. We received the DEA for comment on August 7, 2003.

The DEA correctly incorporates our earlier comments and our concurrence with a "no historic properties affected" determination for this project. Our complete comments are included in Appendix G of the DEA.

Should you have any questions, please feel free to call Sara Collins at 692-8026 or Elaine Jourdane at 692-8027.

Sincerely,

Peter T. Young, Chairperson and
State Historic Preservation Officer

EJ:jk

Hawaii Pacific Engineers, Inc.
1132 BISHOP STREET, SUITE 1003
HONOLULU, HAWAII 96813-2830
Phone: (808) 524-3771 Fax: (808) 538-0445
E-mail: hpeinc@hawaiipacificengineers.com

September 19, 2003

Mr. Peter Young
Chairperson and State Historic Preservation Officer
Historic Preservation Division
Department of Land & Natural Resources
State of Hawaii
601 Kamokila Boulevard, Room 555
Honolulu, Hawaii 96707

SUBJECT: National Historic Preservation Act Section 106 Review - Draft Environmental Assessment for Temporary Research Modules Project
USDA Hawaii Fruit Fly Production Facility
Waimanalo, Hawaii (TMK 4-1-26: Por. 1)

Dear Mr. Young:

On behalf of the University of Hawaii College of Tropical Agriculture and Human Resources and the U.S. Department of Agriculture, thank you very much for reviewing the subject document and for your correspondence of August 22, 2003. We acknowledge your comments indicating that the State Historic Preservation Division concurs with the "no historic properties affected" determination for the project.

A copy of your letter and this response will be included in the final environmental assessment. Please feel free to contact me at 522-7425 if there are any questions.

Sincerely,

Roy K. Abe
Vice President

cc: Dr. Kingsley Fisher, USDA
Walter Harada, UH CTAHR
Les Sugundo, OEQC
John Nakagawa, Hawaii CZM Program

PHONE (808) 594-1888

STATE OF HAWAI'I
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAI'I 96813

FAX (808) 594-1865

HRD03/1095

August 26, 2003

Roy K. Abe
Vice President
Hawaii Pacific Engineers, Inc.
1132 Bishop St. Ste 1003
Honolulu, HI 96813-2830

RE: Request for Consultation under Section 106 of the National Historic Preservation Act and Draft Environmental Assessment for Temporary Research Modules Project.

Dear Mr. Abe,

OHA is in receipt of you August 6, 2003 request for consultation on the above referenced project. Given the information provided, we agree with your "no historic properties affected" determination. We will rely on your assurances that should burials be found, work will stop and the appropriate agencies will be contacted pursuant to applicable law.

We offer the following comments on the Draft Environmental Assessment:

Ceded Land Revenues

The proposed facility is on ceded land leased by the University of Hawaii at no cost to the USDA. The State and OHA are entitled to revenue from these facilities and the State should make every effort to ensure that it collects revenue from these lands. OHA is entitled to 20% of revenue from the ceded lands.

Master Plan

OHA questions why an environmental assessment for the entire HFFPF project, including proposed permanent facilities was not done. OHA is concerned that cumulative effects of wastewater from the project may impact the already overburdened Waimanalo Wastewater Treatment Plant, and add to the current nutrient overload being discharged into offshore waters.

Additional buildings may affect historic view planes. OHA requests that future 106 consultations take into account the combined effect of all HFFPF undertakings.

Wastewater

The conclusion provided on p. 4-4 regarding the significance of the total contribution of nitrogen and phosphorous from the facility, in comparison to other nitrogen generation in the area fails to address the problem of excess nutrients in wastewater in Waimanalo. While OHA does not expect the USDA/UH to address this problem on its own, we do expect UH to work with the community to help to alleviate wastewater nutrients.

Socio-Economic Impacts and Environmental Justice Considerations

The EA states that the HFFPF benefits Waimanalo by providing a substantial number and wide range of job opportunities, however, this assertion is not documented. Please provide documentation in the Final EA.

OHA suggests that the Draft Environmental Assessment be distributed to the Waimanalo Hawaiian Homestead Association, in addition to other community groups.

Thank you for this opportunity to comment on this project. If you have further questions, please contact Pua Aiu at 594-1931 or e-mail her at paiu@oha.org.

Sincerely,

Peter L. Yee
Director
Nationhood and Native Rights

Hawaii Pacific Engineers, Inc.
1132 BISHOP STREET, SUITE 1003
HONOLULU, HAWAII 96813-2830
Phone: (808) 524-3771 Fax: (808) 538-0445
E-mail: hpenc@hawaiipacificengineers.com

October 6, 2003

Mr. Peter L. Yee, Director
Nationhood and Native Rights
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu Hawaii 96813-5249

SUBJECT: Draft Environmental Assessment for Temporary Research Modules Project
USDA Hawaii Fruit Fly Production Facility
Waimanalo, Hawaii (TMK 4-1-26: Por. 1)

Dear Mr. Yee:

On behalf of the University of Hawaii (UH) College of Tropical Agriculture and Human Resources (CTAHR) and the U.S. Department of Agriculture (USDA), we would like to thank you for reviewing the subject document and for your correspondence of August 26, 2003. We offer the following responses to your comments:

1) Historic Sites. USDA assures OHA that should burials be found, work will stop and the appropriate agencies will be contacted.

2) Ceded Land Revenues. The USDA is a non-profit organization that on occasion forms partnerships with various State authorities, as a conduit to achieve various focused goals. Sometimes the rent is waived (as in this case) under a cooperative agreement, because of the indirect benefits that flow from the agreement to the public. A cooperative agreement exists between USDA, UH and the State of Hawaii.

   CTAHR is providing USDA with land for the Hawaii Fruit Fly Production Facility (HFFPF) due to planned cooperative research programs. Joint facilities and programs with USDA are within the CTAHR vision for an Agribusiness Incubation and Outreach Center at Waimanalo. CTAHR envisions the HFFPF as a key element in future programs to implement a fruit fly eradication or suppression program in Hawaii that will significantly benefit agriculture and Hawaii's economy. Joint USDA and CTAHR research and training facilities will lead to cutting edge research programs that will ensure that Hawaii remains a world leader in the science of fruit fly detection and management. CTAHR anticipates being able to attract significant funds through grants, contracts and cooperative agreements. Cooperative projects and programs involving leading USDA scientists, together with state-of-the-art USDA equipment and USDA research funding, will significantly benefit CTAHR faculty and graduate students.

   Regarding the ceded land revenues, the following statements were provided to us by the UH Office of University General Counsel through CTAHR:

"The University of Hawaii Board of Regents and Administration have and will continue to support Native Hawaiian Programs and provide financial aid for needy Native Hawaiian students."

"The support of public education is one of five enumerated purposes of the ceded lands public trust. Thus, to the extent that revenues generated from ceded lands under the control of the UH are used to fulfill the University's mandate to support public education, the trust obligations are satisfied. This is and has been the University's position from the start. The University realizes that the issue of what constitutes "revenues" and how the trust obligations, including the betterment of the conditions of Native Hawaiians, will be fulfilled is a matter that will be taken up by the legislature, especially in light of the Hawaii Supreme Court decision in *Office of Hawaiian Affairs v. State of Hawaii*. The University also understands that it will be the legislature which will ultimately define how the ceded lands public trust obligations are to be fulfilled. Until the matter is settled by the legislature, the University will continue to use the revenues generated from ceded lands under its control to fulfill the University's mandate to support public education."

Based on a review of the project, Mr. Walter Kirimitsu, UH Vice President for Legal Affairs and University General Counsel, concluded that the property and project fall within the exemption from any revenues owed to OHA.

3) Master Plan. We agree that the environmental assessment for the temporary research modules should have been incorporated into the environmental assessment for the entire Hawaii Fruit Fly Production Facility (HFFPF) redevelopment project. However, as noted in Chapter 1 of the Draft Environmental Assessment (DEA), this was not possible for several reasons: a) the research modules project is funded separately and the project funds will expire if not used in a timely manner, b) there is an urgent need for the research modules project to conduct important fruit fly research, and c) the future HFFPF project is currently not adequately defined to perform an environmental assessment. USDA has found a need to abandon its original plans to expand and renovate the existing HFFPF main production building, and instead prepare a completely new master plan for a new HFFPF to accommodate new technologies in fruit fly biology and energy efficiency.

The project to masterplan the future upgrade and expansion was only recently initiated. The second environmental assessment to address the much larger project will address the cumulative impacts associated with wastewater disposal, historic view planes, and other issues of concerns. Additional Section 106 consultations will be conducted to address the combined effect of all proposed new HFFPF. USDA will continue to work closely with the community to address all concerns

Currently plans call for USDA to construct an onsite water reclamation facility to provide a high degree of treatment (including reduction of nutrients) for its future process wastewater to allow much of the water to be recycled. This will minimize the consumption of potable water and minimize discharge of nutrients to coastal waters. The future construction of onsite treatment facilities should dispel concerns related to the discharge of process

wastewater to the overburdened Waimanalo Wastewater Treatment Plant and adverse water quality impacts that result from nutrient discharges to Waimanalo Bay. See also the additional discussions on the wastewater issue below.

4) Wastewater. USDA has also expressed concern about the nutrient levels and algal bloom problems in Waimanalo Bay. As discussed in the DEA, the amount of nitrogen generated by the temporary research modules project is not significant compared to nutrient loads from other sources. These sources include livestock wastes, agricultural fertilizers, decaying vegetation, onsite wastewater disposal systems, and wastewater injection wells at the Waimanalo Wastewater Treatment Plant. If algal blooms in Waimanalo Bay are to be eliminated, funds and effort need to be directed toward reducing the mass emissions from the major sources of nutrients in Waimanalo.

The temporary research modules will generate a few hundred gallons of wastewater daily, which will be properly treated at State-permitted wastewater treatment plants. USDA is also committed to ensuring that process wastewater from the new HFFPF will not contribute to water quality problems in Waimanalo. In the case of the new facility, the master plan calls for a small wastewater treatment plant dedicated to the proper treatment of wastewater from both the research modules and the new HFFPF. As part of the planning effort for the new HFFPF, USDA's consultants have retained the services of Dr. Roger Babcock of the UH Department of Civil and Environmental Engineering and Dr. Adam Reinhart, a former UH soil scientist. Dr. Babcock has been involved in bench scale testing of the fruit fly rearing process wastewater utilizing state-of-the-art membrane bioreactor (MBR) technology to verify that a high level of treatment, including substantial removal of nutrients, can be achieved. Dr. Reinhart has conducted soil testing and nutrient modeling to determine appropriate irrigation rates for excess treated effluent that can be employed to virtually eliminate discharge of nutrients to ground and surface waters in Waimanalo. USDA anticipates that its efforts in managing nutrients will serve as an excellent role model for others involved in dealing with waste and nutrient management issues in Waimanalo.

5) Socio-Economic Impacts and Environmental Justice Considerations. An expanded discussion on economic benefits similar to the following will be included in the final environmental assessment.

The research modules, in concert with the new HFFPF, will offer job opportunities and other indirect benefits to Waimanalo. The HFFPF, prior to its suspension of operations in September of 2002, provided the Waimanalo community with a source of jobs and income. Approximately 25 percent of the 45 former employees of the HFFPF were from Waimanalo. The HFFPF offers a wide range of job opportunities, including positions such as managerial, maintenance engineering, supervisory, technical and production worker. The HFFPF had an annual operating budget of $2.5 million per year for supplies and services. It is estimated that about 50 percent of the expenditures went to Waimanalo businesses. Furthermore, employees of the HFFPF patronize Waimanalo restaurants, gas

stations, shops, plant nurseries and other businesses. The research modules will have approximately 10 employees and buy provisions through local businesses.

A copy of the DEA has been forwarded to the Waimanalo Hawaiian Homestead Association. The list of consulted parties in Chapter 7 of the DEA will be revised from "Waimanalo Hawaiian Homes Association" to "Waimanalo Hawaiian Homestead Association." A copy of the DEA has also been sent to the Waimanalo Hawaiian Civic Club.

Thank you very much for taking time to comment on the DEA. We hope that we have adequately addressed your concerns. A copy of your letter and this response will be included in the final environmental assessment. Please feel free to call me at 522-7425 to if there are any questions or if additional information is required.

Sincerely,

Roy K. Abe
Vice President

cc: Dr. Kingsley Fisher, USDA
Walter Harada, CTAHR, UH
Genevieve Salmonson, OEQC
John Nakagawa, Hawaii CZM Program
Waimanalo Neighborhood Board members (with OHA letter)

Wilson K. Ho	Malcom Lee Jr.
Joseph A. Ryan	Kawika Eckart
Andrew Jamila	Nani P. Akeo
Solomon Spencer	Bob Kimo Lastimosa
Michael G. Buck	Priscilla Ho
Philip L. Ellsworth	Orrin Kupau
Mabel Ann Spencer	

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843

August 14, 2003

RECEIVED
AUG 19 2003
HAWAII PACIFIC
ENGINEERS INC.

Mr. Roy K. Abe
Hawaii Pacific Engineers, Inc.
1132 Bishop Street, Suite 1003
Honolulu, Hawaii 96813-2830

Dear Mr. Abe:

Subject: Your Letter of August 4, 2003 on the Draft Environmental Assessment for Temporary Research Modules Project USDA Hawaii Fruit Fly Production Facility at Waimanalo, Hawaii, TMK: 4-1-26: Portion 1

Thank you for the opportunity to review the subject document for the proposed production facility.

The existing water system is presently adequate to accommodate the proposed project.

The developer is required to obtain a water allocation from the State Department of Land and Natural Resources.

The availability of water will be determined when the building permit is approved. When water is made available, the applicant will be required to pay our Water System Facilities Charges for transmission and daily storage.

The proposed project is subject to Board of Water Supply Cross-Connection Control and Backflow Prevention requirements prior to issuance of the Building Permit Applications.

If you have any questions, please contact Joseph Kaakua at 748-5442.

Very truly yours,

K. Jamile

CLIFFORD S. JAMILE
Manager and Chief Engineer

Hawaii Pacific Engineers, Inc.
1132 BISHOP STREET, SUITE 1003
HONOLULU, HAWAII 96813-2830
Phone: (808) 524-3771 Fax: (808) 538-0445
E-mail: hpeinc@hawaiipacificengineers.com

September 19, 2003

Mr. Clifford S. Jamile, Manager and Chief Engineer
Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, Hawaii 96843

SUBJECT: Draft Environmental Assessment for Temporary Research Modules Project
USDA Hawaii Fruit Fly Production Facility
Waimanalo, Hawaii (TMK 4-1-26: Por. 1)

Dear Mr. Jamile:

On behalf of the University of Hawaii College of Tropical Agriculture and Human Resources and the U.S. Department of Agriculture, thank you very much for reviewing the subject document and for your correspondence of August 14, 2003.

We acknowledge your comments indicating that the existing water system is adequate to accommodate the project and that the project is subject to the BWS cross-connection and backflow prevention requirements. With regard to water allocation and facilities charge issues, we would like to note that the proposed project will not result in an increase in water demand or usage at the site due to permanent suspension of fruit fly production operations in the existing main production building. The existing production building will eventually be demolished. A separate environmental assessment for a future replacement production facility will address the cumulative potable water supply impacts of planned future projects. In the future, USDA intends to construct an onsite water reclamation facility to allow reuse of a large portion of its process wastewater.

A copy of your letter and this response will be included in the final environmental assessment. Please feel free to contact me at 522-7425 if there are any questions.

Sincerely,

R K Abe

Roy K. Abe
Vice President

cc: Dr. Kingsley Fisher, USDA
Walter Harada, UH CTAHR
Les Sugundo, OEQC
John Nakagawa, Hawaii CZM Program

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET • HONOLULU, HAWAII 96813
TELEPHONE: (808) 523-4414 • FAX (808) 527-6743 • INTERNET www.co.honolulu.hi.us

JEREMY HARRIS
MAYOR

ERIC G. CRISPIN, AIA
DIRECTOR

BARBARA KIM STANTON
DEPUTY DIRECTOR

2003/ELOG-2677 (RY)

September 9, 2003

Mr. Roy K. Abe, Vice President
Hawaii Pacific Engineers, Inc.
1132 Bishop Street, Suite 1003
Honolulu, Hawaii 96813-2830

Dear Mr. Abe:

Subject: Draft Environmental Assessment for Temporary Research Modules Project for USDA Hawaii Fruit Fly Production Facility, Waimanalo, Hawaii
Tax Map Key 4-1-26: Portion 1, Waimanalo, Hawaii

We have reviewed the subject document and have the following comments:

1. *Koolaupoko Sustainable Communities Plan*

   Section 3 on Page 3-14 should be expanded to include a discussion of how the proposal relates to the Koolaupoko Sustainable Communities Plan (SCP's).

   For your information, our August 23, 2002 letter regarding the Pre-Assessment Consultation for the Proposed HFFPF Expansion, we mentioned that the expansion is consistent with the SCP's Agricultural Use General Policy to provide support infrastructure, services and facilities to foster and sustain agricultural operations.

2. *Zoning*

   The proposed project is considered a "public use" under the City's zoning code and is a permitted use in the AG-1 Restricted Agricultural District.

3. Please include a list of required approvals/permits.

4. *Civil Engineering*
   With respect to page 4-1, erosion control plans are prepared as part of the grading permit process.

Thank you for the opportunity to comment. If you have any questions, please contact Raymond Young of our staff at 527-5839.

Sincerely yours,

for ERIC G. CRISPIN, AIA
Director of Planning and Permitting

EGC:lh
Doc 241749

Hawaii Pacific Engineers, Inc.
1132 BISHOP STREET, SUITE 1003
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Phone: (808) 524-3771 Fax: (808) 538-0445
E-mail: hpeinc@hawaiipacificengineers.com

September 19, 2003

Mr. Eric G. Crispin, AIA, Director
City and County of Honolulu
Department of Planning & Permitting
650 South King Street, 7th Floor
Honolulu, HI 96813

SUBJECT: Draft Environmental Assessment for Temporary Research Modules Project
USDA Hawaii Fruit Fly Production Facility
Waimanalo, Hawaii (TMK 4-1-26: Por. 1)

Dear Mr. Crispin:

On behalf of the University of Hawaii College of Tropical Agriculture and Human Resources and the U.S. Department of Agriculture, thank you very much for reviewing the subject document and for your correspondence of September 9, 2003. We offer the following responses to your comments:

1) Koolaupoko Sustainable Communities Plan (SCP). As suggested, an expanded discussion will be included to address the project with respect to the Koolaupoko SCP. DPP's previous pre-assessment comment will be noted in the discussion.

2) Zoning. We acknowledge DPP's determination that the project is considered a "public use" and therefore is a permitted use in the AG-1 Restricted Agricultural District.

3) Approvals and Permits: A list of required permits and approvals is included at the end of Chapter 1. Please note that the State Land Use Commission is currently reviewing the DEA and will be providing input on whether a Special Use Permit will be required.

4) Civil Engineering: The discussion on erosion control plans will be revised to indicate that the erosion control plans will be prepared as part of the grading permit process.

A copy of your letter and this response will be included in the final environmental assessment. Please feel free to contact me at 522-7425 if there are any questions.

Sincerely,

Roy K. Abe
Vice President

cc: Dr. Kingsley Fisher, USDA
Walter Harada, UH CTAHR
Les Sugundo, OEQC
John Nakagawa, Hawaii CZM Program

HOUSE OF REPRESENTATIVES

STATE OF HAWAII
STATE CAPITOL
HONOLULU, HAWAII 96813

RECEIVED
SEP 9 - 2003
HAWAII PACIFIC
ENGINEERS INC.

September 8, 2003

Mr. Roy Abe, Vice President
Hawaii Pacific Engineers, Inc.
1132 Bishop Street, #1003
Honolulu, Hawaii 96813-2830

SUBJECT: Draft Environmental Assessment for Temporary Research Modules Project
USDA Hawaii Fruit Fly Production Facility
Waimanalo, Hawaii (TMK 4-1-26:Por.1)

Dear Mr. Abe:

I write to express my concern regarding the adverse environmental impact of the Temporary Research Modules Project located at USDA's Hawaii Fruit Fly Production Facility in Waimanalo. As the elected State Representative of the Waimanalo area, I get the impression that area residents are opposed to the project.

Sincerely,

Thomas Waters
State Representative
51st District

Representative Thomas Waters, Room 426
State Capitol, 415 S. Beretania Street
Honolulu, Hawaii 96813
(808)586-9450

Hawaii Pacific Engineers, Inc.
1132 BISHOP STREET, SUITE 1003
HONOLULU, HAWAII 96813-2830
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E-mail: hpeinc@hawaiipacificengineers.com

October 6, 2003

Representative Tommy Waters, District 51
The House of Representatives
415 South Beretania Street
Honolulu, Hawaii 96813

SUBJECT: Draft Environmental Assessment for Temporary Research Modules Project
USDA Hawaii Fruit Fly Production Facility
Waimanalo, Hawaii (TMK 4-1-26: Por. 1)

Dear Representative Waters:

On behalf of the University of Hawaii College of Tropical Agriculture and Human Resources (CTAHR) and the U.S. Department of Agriculture (USDA), thank you very much for reviewing the subject document and for your correspondence of September 8, 2003. We appreciate your concerns with the project. We also share your concern that the area residents have expressed opposition to the project.

We have enclosed for your information copies of our letters of response to the Draft Environmental Assessment comment letters from the following: 1) Waimanalo Neighborhood Board, 2) Ms. Kimberly Kalama and Ohana, 3) Ms. Mabel Ann Spencer, and 4) Office of Hawaiian Affairs (OHA). All the response letters, with the exception of the OHA letter, include the full text of the comments. We have included a copy of the OHA comments for reference.

Based on the information provided, we hope that you will appreciate the benefits of the project to the Waimanalo community and Hawaii, and understand that there will be no significant adverse impacts on the community and environment. In making your decision to support or oppose the project, we hope that you will carefully review the information and consider the opinions of all the residents of Waimanalo, including those that would benefit economically from the project.

Please feel free to call me at 522-7425 to arrange for a meeting or to request additional information/clarifications to address any questions or concerns on the project. Thank you very much for taking time to review the DEA. We look forward to continuing to work with you and members of the Waimanalo community on this project.

Sincerely,

Roy K. Abe
Vice President

Enclosures

cc: Waimanalo Neighborhood Board members (cover only)
Wilson K. Ho
Joseph A. Ryan
Andrew Jamila
Solomon Spencer
Michael G. Buck
Philip L. Ellsworth
Mabel Ann Spencer
Malcom Lee Jr.
Kawika Eckart
Nani P. Akeo
Bob Kimo Lastimosa
Priscilla Ho
Orrin Kupau
Dr. Kingsley Fisher, USDA (cover only)
Walter Harada, UH CTAHR (cover only)
Genevieve Salmonson, OEQC (cover only)
John Nakagawa, Hawaii CZM Program (cover only)

Some websites that may be of interest for further information:

http://www.ehrs.upenn.edu/programs/radiation/guides/Irradiator.html
http://www.epa.gov/oppbppd1/PESP/member_pages/hawffpmp.htm
http://www.extento.hawaii.edu/fruitfly/
http://www.extento.hawaii.edu/fruitfly/programbackground.html
http://starbulletin.com/2002/10/06/news/story5.html
http://www.hawaiibusiness.cc/hb62003/default.cfm?articleid=9

AUG 2 9 2003

WAIMANALO NEIGHBORHOOD BOARD NO. 32
41-806 KALANIANAOLE HWY. • WAIMANALO, HAWAII 96795-1787
PHONE: (808) 827-5749 • FAX: (808) 827-8790 • INTERNET: www.co.honolulu.hi.us

August 11, 2003

COLLEGE OF TROPICAL AGRICULTURE AND HUMAN RESOURCES
Attn: Walter T. Harada
3050 Maile Way, Gilmore Hall #207
Honolulu, Hawai'i 96822

RE: Draft Environmental Assessment Comments Hawaii Plant Protection Laboratory Temporary Research Modules Project, Hawaii Fruit Fly Production Facility, Waimanalo, Hawaii

TO WHOM IT MAY CONCERN:

The Waimanalo Neighborhood Board finds that the proposed project has a significant detrimental impact on Hawaii, the economy, the environment, and its people.

The Waimanalo Neighborhood Board carefully considered several presentations by the USDA and the testimony from community residents. The Board's findings were:

1) Flies escape from the facility. The program requires the importation of new strains of fruit flies to Hawaii. There is no fruit fly eradication program in Hawaii. This facility was originally constructed with the agreement that flies would be contributed to Hawaii for an eradication program. A pilot program failed nearly 30 years ago.

2) The net result may be an increase in pesticide use on locally grown food products to reduce fruit fly damage and the transmission of disease—No study has been done. The damage to the economy is enormous. To control fruit fly infestations, farmers are encouraged to pick up all fruit and either bury it deep or seal it in plastic bags in addition to all their other activities.

3) There are already two fruit fly facilities in Waimanalo: USDA on Ahiki St. and the state of California on Waikupanaha St.

4) The existing facility pays only $1.00 per year in rent.

5) Wastewater will release nitrogen into an already impacted environment. High nitrogen wastewater will be used for irrigation and contribute to an adverse cumulative effect. There has been no cumulative impact study on nitrogen cycling in Waimanalo. Hawaii's longest white sand beach; Waimanalo Bay, is already impacted with an alga bloom. (Wastewater from the USDA factory was originally meant to go to Waimanalo Sewage Injection Plant. The wastewater is high in BOD (Biological Oxygen Deficiency) and is refused by the C&C of Honolulu.

6) Construction of this facility will contribute to flooding. Runoff from the facility is to be directed to an abandoned and clogged state Department of Agriculture irrigation ditch and Waimanalo Bay. The Tai Sing Ditch and other irrigation flumes in Waimanalo were not designed for drainage according to prior testimony of the state DOA.

In addition:

The proposed action will create, exacerbate or accentuate a significant impact on the environment in relation to each of the following OEQC numbered criteria:

(1) Involves an irrevocable commitment to loss or destruction of any natural or cultural resource:
The proposed action will cause the importation of additional strains of fruit flies to the State of Hawaii and their eventual unintentional release into the environment. It is a known fact that fruit flies cause damage to agriculture and the economy. Hawaii is already home to at least four strains of destructive fruit flies including the oriental, melon, and Mediterranean strains. Dr. Ronald Mau, Professor of Entomology, University of Hawaii, on the TV program "UH This Week" aired during July, 2003, claimed that fruit fly trapping in central Oahu caught 5000 flies. To reduce the damage to crops and produce Dr. Mau and UH Extension Agent Jari Sugano, counsel farmers to provide expensive labor to "pick up all infected fruit" and seal it plastic bags or bury it deep to lessen the fruit fly damage. This is an unnecessary and burdensome task for farmers.

(2) Curtails the range of beneficial uses of the environment:
The volume of fruit flies in the state is a detriment to agriculture. It places an unnecessary burden on agriculture growers. Agriculture is a beneficial use of the environment. The difficulties added to the already difficult circumstances for farming (high land costs, high water and labor costs, urbanization, etc.) make farming that much more unattractive and endanger agriculture.

(4) Substantially affects the economic or social welfare of the community or state:
Continued fruit fly infestation and the addition of new fruit fly strains are a detriment to agriculture. Less agriculture means an increase in urbanization, less open view, less ground water recharge areas, and less employment opportunity.

(6) Involves substantial secondary impacts, such as population changes or effects on public facilities, and (7) Involves a substantial degradation of environmental quality, and (8) Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions, and (10) Detrimentally affects air or water quality or ambient noise levels:
The continued production and probable increase in production of fruit flies in Waimanalo means the production and release of nitrogen in to the environment. High groundwater pollutants that migrate to the ocean cause or contribute to an algal bloom in the near shore waters of Waimanalo. These waters are class A and class AA recreational waters. Algal blooms detract from the desirability as a recreation destination and waste Hawaii's greatest natural resource: 4.5 miles of continuous white sand beach, the longest beach in the state while degrading the swimability and fishability of Waimanalo's near shore waters.

(9) Substantially affects a rare, threatened, or endangered species, or its habitat:
There is no discussion on the effect of continued and increased production of fruit flies and the accidental but inevitable release of new strains of fruit flies will have on endemic species of plants or animals.

Finally, the EA should discuss the project impacts in relation to each of these criteria in detail. It is not sufficient to simply state that a project does not have any significant impacts or to just restate each criteria in its negative form. The EA does not fully address the criteria and has placed the burden of assessing the impact of the project on the community. The community finds that there is no net or cumulative benefit from this project for Hawaii or its people.

Sincerely Yours

Wilson Kekoa Ho
Chair

Hawaii Pacific Engineers, Inc.
1132 BISHOP STREET, SUITE 1003
HONOLULU, HAWAII 96813-2830
Phone: (808) 524-3771 Fax: (808) 538-0445
E-mail: hpeinc@hawaiipacificengineers.com

September 5, 2003

Mr. Wilson Kekoa Ho, Chair
Waimanalo Neighborhood Board
41-696 Kalanianaole Highway
Waimanalo, Hawaii 96795

SUBJECT: Draft Environmental Assessment for Temporary Research Modules Project
USDA Hawaii Fruit Fly Production Facility
Waimanalo, Hawaii (TMK 4-1-26: Por. 1)

Dear Mr. Ho:

On behalf of the University of Hawaii College of Tropical Agriculture and Human Resources (CTAHR) and the U.S. Department of Agriculture (USDA), thank you very much for reviewing the subject document and for your correspondence of August 11, 2003. We would like to take this opportunity to respond to your comments and concerns. Your comments, which are shown below in italics, are addressed in the order presented in your letter. Where there are multiple points grouped under one comment, we have provided additional reference numbers to facilitate cross-referencing of the comments and our responses.

Responses to Overall Comments (on first page)

General Comment: *The Waimanalo Neighborhood Board (WNB) finds that the proposed project has a significant detrimental impact on Hawaii, the economy, the environment, and its people.*

Response: As mentioned in the Draft Environmental Assessment (DEA), the construction of the temporary research modules has economic benefits to Hawaii and Waimanalo with minimal adverse environmental impacts. The following responses to the WNB comments attempt to further explain the lack of adverse impacts and address the concerns of the WNB.

Comment No. 1: 1a) *Flies escape from the facility.* 1b) *The program requires the importation of new strains of fruit flies to Hawaii. There is no fruit fly eradication program in Hawaii.* 1c) *This facility was originally constructed with the agreement that flies would be contributed to Hawaii for an eradication program. A pilot program failed nearly 30 years ago.*

Response: 1a) The temporary research modules will be designed to minimize the escape of flies. Incidences of fly escapes should be infrequent, since they are housed in cages within the modules. As noted in the DEA, the buildings will have quarantine features that are in compliance with applicable State and Federal standards.

1b) The research to be conducted at the temporary research modules will predominantly involve a strain of Mediterranean fruit flies (*Ceratitis capitata* (W)) already being used at the fruit fly rearing facility operated by the California Department of Food and Agriculture (CDFA) in Waimanalo. The colony was imported under State and Federal permits, for which a scientific panel carefully considered the environmental risks prior to issue. This particular strain of

Mediterranean fruit fly is a temperature sensitive strain, which has three notable attributes: 1) it has a natural genome, 2) it is 50% sterile (due to a chromosomal linkage) even before it is exposed to sterilizing radiation, and 3) female flies of this stain are physiologically disadvantaged at temperatures over 84°F. This makes the strain an excellent candidate for the successful Sterile Insect Technique (SIT), but a poor candidate for breeding in the field.

A fruit fly eradication program for Hawaii involves the control/eradication of not only Mediterranean fruit flies, but also three other species (Oriental fruit fly, Melon fly and Solanaceous fruit fly). A unique field project being conducted in Hawaii by USDA, Hawaii Department of Agriculture (HDOA) and CTAHR aims to identify the correct suite of integrated strategies to control Hawaii's four pest fruit flies below economic levels. However, it is important that complimentary biological research be performed to carry the field study forward to the next level. The temporary research modules are instrumental in such research.

1c) The research modules are a new addition to support the Hawaii Fruit Fly Production Facility (HFFPF). As noted in the environmental assessment for the original HFFPF constructed 1989 (see Appendix B of DEA), the intent was to utilize some of the HFFPF production as one component of a comprehensive eradication program in Hawaii, if adequate funding could be secured. To date, funding for a comprehensive Hawaii eradication program has not been secured. In the light of the success of the abovementioned field project and the development of a suite of integrated control/eradication methods (including SIT), there is currently a joint Federal/State effort to establish such funding for a local eradication program. It might be speculated that thirty years ago, the failure of an SIT pilot study was perhaps due to a lack of integrated tools to fight this significant pest of fruit in Hawaii. The study pointed out that SIT alone could not do the job, without the integrated tool-set that has only recently become available.

Comment No. 2: *The net result may be an increase in pesticide use on locally grown food products to reduce fruit fly damage and the transmission of disease – No study has been done. The damage to the economy is enormous. To control fruit fly infestations, farmers are encouraged to pick up all fruit and either bury it deep or seal it in plastic bags in addition to all their other activities.*

Response: The number of Mediterranean fruit flies that might accidentally escape from the research modules in Waimanalo will not be significant, as explained above. It is important to consider that in all likelihood it is other economic fruit flies; Oriental fruit fly and Melon fly in particular, that are causing damage to local fruit growers. In 2000, an assessment of fruit fly species made by the USDA Agricultural Research Service (ARS) and University of Hawaii in Central Oahu demonstrated that prevalence of Melon fly in traps was 22 to 54 flies/trap/day and Oriental fruit fly prevalence in traps was 68 to 710 flies/trap/day, while Mediterranean fruit fly were found at the rate of 1.8 to 8.7 flies/trap/day. ARS noted that Mediterranean fruit fly populations in Waimanalo are so sparse that the area cannot be used as an experimental site for studying the pest in the field.

The USDA-CTAHR-HDOA partnership has recently instigated a study, known as the "Hawaii Area Wide Fruit Fly Integrated Pest Management Program," which has as one of its missions the task of identifying the distribution of the four fruit flies of economic importance. Results

indicate that the Mediterranean fruit fly is found mostly in upper elevations, and that this seemed to have occurred when the Oriental fruit fly arrived in 1945. It appears that the Melon fly (which attacks different fruits compared with the Mediterranean fruit fly) and Oriental fruit fly are the majority species of the lowland areas, occupying such a broad host range that they out-compete the Mediterranean fruit fly.

Indeed the Oriental fruit flies and the Melon flies cause significant damage to the economy (both these species can attack green fruits), which for the most part cannot be blamed on Mediterranean fruit fly. The recommended and age-old control of fruit fly infestations for over 50 years has been to pick up all fruit and either bury it deep or seal it in plastic bags.

For more information, a list of websites is presented at the end of this letter.

Comment No. 3: *There are already two fruit fly facilities in Waimanalo: USDA on Ahiki St. and the state of California on Waikupanaha St.*

Response: The proposed temporary research project does not propose to construct another fruit fly mass-rearing facility in Waimanalo. As explained in the DEA, the proposed temporary research modules will provide fruit fly research support for the proposed new HFFPF, which will be replacing the existing USDA Mediterranean fruit fly production facilities. The temporary research modules and irradiator facility will also provide support to the existing CDFA Mediterranean fruit fly production facility.

Comment No. 4: *The existing facility pays only $1.00 per year in rent.*

Response: While this is not an environmental issue, the USDA is a non-profit organization that on occasion forms partnerships with various state authorities, as a conduit to achieve various focused goals. Sometimes the rent is waived under a cooperative agreement, because of the benefits that flow indirectly from the agreement to the public.

Comment No. 5: 5a) *Wastewater will release nitrogen into an already impacted environment. High nitrogen wastewater will be used for irrigation and contribute to an adverse cumulative effect. There has been no cumulative impact study on nitrogen cycling in Waimanalo. Hawaii's longest white sand beach; Waimanalo Bay, is already impacted with an alga bloom.* 5b) *(Wastewater from the USDA factory was originally meant to go to Waimanalo Sewage Injection Plant. The wastewater is high in BOD (Biological Oxygen Deficiency) and is refused by the C&C of Honolulu.)*

Response: 5a) USDA is also concerned about the nutrient levels and algal bloom problems in Waimanalo Bay. As discussed in the DEA, the amount of nitrogen generated by the temporary research modules project is not significant compared with nutrient loads from other sources such as livestock wastes, agricultural fertilizers, decaying vegetation, onsite wastewater disposal systems, and wastewater injection wells at the Waimanalo Wastewater Treatment Plant. If algal blooms in Waimanalo Bay are to be eliminated, funds and effort need to be directed toward reducing the mass emissions from the major sources of nutrients in Waimanalo.

5b) The research modules' wastewater, which is comprised of highly biodegradable constituents such as wheat mill feed, corn cob grit, sugar and yeast, will exhibit relatively high biochemical

oxygen demand (BOD) concentrations. The process wastewater from the original HFFPF was initially discharged to the Waimanalo Wastewater Treatment Plant (WWTP). City and County of Honolulu operations personnel at the Waimanalo WWTP concluded that the HFFPF wastewater adversely impacted the performance of the treatment plant. This is not unexpected due to the limited capacity of the Waimanalo WWTP and the outdated treatment technology utilized at the plant. The Waimanalo WWTP utilizes the "Rapid Bloc" activated sludge process, which was widely used in the 1970s but is no longer used at other treatment plants in the State due to its inherently poor performance and limited capacity.

It is important to note that even after discharge of the HFFPF wastewater to the municipal sewer system was stopped, the Waimanalo WWTP continued to experience operational problems. The increase in wastewater flow due to additional households being connected to the sewer system is probably a significant factor. It should further be noted that the process wastewater from the HFFPF was successfully treated at the larger and more modern East Honolulu (Hawaii Kai) Wastewater Treatment Plant on a trial basis without any operational problems. The CDFA fruit fly rearing facility has had excellent success in treating its process wastewater using sequencing batch reactor (SBR) activated sludge treatment technology that is routinely used for wastewater treatment. It is at these two wastewater treatment plants that the research modules plan to transport the few hundred gallons of water generated each day for disposal.

Comment No. 6: *Construction of this facility will contribute to flooding. Runoff from the facility is to be directed to an abandoned and clogged state Department of Agriculture irrigation ditch and Waimanalo Bay. The Tai Sing Ditch and other irrigation flumes in Waimanalo were not designed for drainage according to prior testimony of the state of DOA.*

Response: The research modules project includes a stormwater detention basin to store excess stormwater runoff generated by the additional impermeable areas (such as building roofs and walkways), and thereby minimize increases in peak stormwater runoff. The detention basin will also help to minimize the discharge of sediments and debris to drainage channels that flow into Waimanalo Bay. Much of Waimanalo is subject to flooding problems and USDA seeks to avoid aggravating these problems by implementing appropriate flood control measures.

Although the Tai Lee Ditch may not have been designed to channel stormwater flows, the ditch does function as a stormwater diversion channel. This is typical of plantation irrigation channels throughout the State where irrigation ditches which once brought water to the sugar cane fields now function as stormwater channels that drain the fields during storm events. The clogged Tai Lee ditch along the northern boundary of the HFFPF site aggravates the flooding problems in the immediate vicinity of the ditch but should not increase downstream flooding problems. The clogged ditches may actually reduce downstream flooding impacts by backing up stormwater runoff on the USDA site for temporary storage rather than allowing the runoff to flow quickly downstream where it would aggravate flooding problems.

Responses to Comments on Office of Environmental Quality Control (OEQC) Numbered Criteria (on second page)

General Comment Applying to the OEQC Criteria: *The proposed action will create, exacerbate or accentuate a significant impact on the environment in relation to each of the following OEQC numbered criteria:*

Comment on Criteria (1): *Involves an irrevocable commitment to loss or destruction of any natural or cultural resource:*

> *The proposed action will cause the importation of additional strains of fruit flies to the State of Hawaii and their eventual unintentional release into the environment. It is a known fact that fruit flies cause damage to agriculture and the economy. Hawaii is already home to at least four strains of destructive fruit flies including the oriental, melon, and Mediterranean strains. Dr. Ronald Mau, Professor of Entomology, University of Hawaii, on the TV program "UH This Week" aired during July, 2003, claimed that fruit fly trapping in central Oahu caught 5,000 flies. To reduce the damage to crops and produce, Dr. Mau and UH Extension Agent Jari Sugano, counsel farmers to provide expensive labor to "pick up all infected fruit" and seal it in plastic bags or bury it deep to lessen the fruit fly damage. This is an unnecessary and burdensome task for farmers.*

Response on Criteria (1): It is important to understand that the research modules will not breed or maintain fruit fly species that are not already in Hawaii – this would simply not be acceptable to State and Federal lawmakers and permit issuers. Equally important is the realization that not all of the four fruit fly species live in the lowlands of Hawaii – the Mediterranean fruit fly lives in the high elevations. Typically, Oriental fruit fly and Melon fly are the significant economic burden in the lowland areas. There have been reports since the 1940's of high populations of Oriental fruit flies in Central Oahu – these dense populations are enhanced by shifts in agricultural crops (e.g. Papaya) and should not be blamed on Mediterranean fruit fly.

Until very recently, an integrated set of tools to fight all four species of economically important fruit flies has not been available. The unacceptability of pesticide bait/sprays, a lack of knowledge of parasitoid production, and sterile bisexual releases for example, have hindered the attainment of such a tool-set. During the past decade, non-pesticide baits, unique parasitoid rearing techniques and sterile male-only release technologies have become available, making a very complimentary tool-set.

See also the responses to Comments No. 1 and No. 2 above.

Comment on Criteria (2): *Curtails the range of beneficial uses of the environment:*

> *The volume of fruit flies in the state is a detriment to agriculture. It places an unnecessary burden on agriculture growers. Agriculture is a beneficial use of the environment. The difficulties added to the already difficult circumstances for farming (high land costs, high water and labor costs, urbanization, etc.) make farming that much more unattractive and endanger agriculture.*

Response on Criteria (2): The research modules are proposed on very old agricultural land that has been subject to various farming practices for many decades. The modules will not breed any species of fruit flies that are not already in Hawaii, and the low numbers of fruit flies being reared in the modules will not contribute in any significant way to the wild populations. Research published by the International Atomic Energy Agency has shown conclusively that Mediterranean fruit fly around the world share a similar genome. The importation of Mediterranean fruit fly temperature sensitive strains will not change this genome. See also the responses to Comments No. 1 and No. 2 above.

Comment on Criteria (4): *Substantially affects the economic or social welfare of the community or state:*

> *Continued fruit fly infestation and the addition of new fruit fly strains are a detriment to agriculture. Less agriculture means an increase in urbanization, less open view, less ground water recharge areas, and less employment opportunity.*

Response on Criteria (4): The economic losses caused by wild fruit flies is understood to be significant (this is true for many countries), and over the years has provoked significant USDA research funds being spent on the problem. The research modules are part of this research mission – to provide answers to a variety of problems. The development of technology, infrastructure and expertise in Hawaii to support eradication and preventative programs on the U.S. mainland is considered an important step in implementing an eradication and preventative program in Hawaii. Future elimination of fruit flies in Hawaii will benefit and increase agriculture in Hawaii. See also the responses to Comments No. 1 and No. 2 above.

Comment on Criteria (6), (7), (8) and (10): *(6) Involves substantial secondary impacts, such as population changes or effects on public facilities, (7) Involves a substantial degradation of environmental quality, and (8) Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions, and (10) Detrimentally affects air or water quality or ambient noise levels:*

> *The continued production and probable increase in production of fruit flies in Waimanalo means the production and release of nitrogen in to the environment. High groundwater pollutants that migrate to the ocean cause or contribute to an algal bloom in the near shore waters of Waimanalo. These waters are class A and class AA recreational waters. Algal blooms detract from the desirability as a recreation destination and waste Hawaii's greatest natural resource: 4.5 miles of continuous white sand beach, the longest beach in the state while degrading the swimability and fishability of Waimanalo's near shore waters.*

Response on Criteria (6), (7), (8) and (10): The research modules will produce a few hundred gallons of wastewater per day, which will be transported to State-permitted treatment plants. Runoff from the modules is being addressed by installing a stormwater detention basin. By constructing the modules to some quarantine standards, by removing nutrients from wastewater and by mitigating stormwater runoff and flooding problems, the USDA seeks to prevent secondary impacts, cumulative actions, and degradation of environmental quality due to the presence of the modules. See also the response to Comment No. 5.

Comment on Criteria (9): *Substantially affects a rare, threatened, or endangered species, or its habitat:*

> *There is no discussion on the effect of continued and increased production of fruit flies and the accidental but inevitable release of new strains of fruit flies will have on endemic species of plants or animals.*

Response on Criteria (9): The USDA conducts its research only after permits and approvals are obtained from Federal and State authorities. Such permits are given only after completion of reviews and risk assessment, and which predict no threat to native species of plants or animals. Mediterranean fruit fly has been a resident of Hawaii since 1910. Other economically important fruit flies are more recent but have still been in Hawaii for several decades. Under these circumstances, the shift in niche breadth for all affected species has already occurred. The research modules do not plan to conduct research on any species that is not already in Hawaii. See also the responses to Comments No. 1 and No. 2 above.

Concluding Comment: *Finally, the EA should discuss the project impacts in relation to each of these criteria in detail. It is not sufficient to simply state that a project does not have any significant impacts or to just restate each criteria in its negative form. The EA does not fully address the criteria and has placed the burden of assessing the impact of the project on the community. The community finds that there is no net or cumulative benefit from this project for Hawaii or its people.*

Response to Concluding Comment: A brief statement specific to the proposed research modules project is presented for each OEQC criterion in Chapter 6 of the DEA. Discussions supporting the lack of impacts with respect to the criteria are presented in earlier sections of the DEA document. Additional discussions related to concerns on introduction of new strains and accidental release of fruit flies based on the above responses will be incorporated into the DEA.

The research modules, in concert with the new HFFPF, will offer job opportunities and other indirect benefits to Waimanalo. The HFFPF, prior to its suspension of operations in September of 2002, provided the Waimanalo community with a source of jobs and income. Approximately 25 percent of the 45 former employees of the HFFPF were from Waimanalo. The HFFPF had an annual operating budget of $2.5 million per year for supplies and services. It is estimated that about 50 percent of the expenditures went to Waimanalo businesses. Furthermore, employees of the HFFPF patronize Waimanalo restaurants, gas stations, shops and other businesses. The research modules will have approximately 10 employees and buy provisions through local businesses.

For More Information

We would be happy to arrange for a meeting with appropriate USDA personnel to further discuss concerns that the WNB may have on the project. The above responses to the comments related to fruit flies in Hawaii and impacts to the environment were based on input from USDA entomologists with specialized expertise on fruit flies and the rearing process. Holding a special

meeting with members of the WNB, other interested community members and USDA technical personnel is suggested to allow for further exchange of information.

Please feel free to call me at 522-7425 to arrange for a meeting or to request additional information/clarifications to address any questions or concerns on the project. Thank you very much for taking time to comment on the DEA and forwarding us your concerns on this project. We look forward to continuing to work with the WNB members and the Waimanalo community on this project.

Sincerely,

Roy K. Abe
Vice President

cc: Waimanalo Neighborhood Board members

Joseph A. Ryan	Kawika Eckart
Andrew Jamila	Nani P. Akeo
Solomon Spencer	Bob Kimo Lastimosa
Michael G. Buck	Priscilla Ho
Philip L. Ellsworth	Orrin Kupau
Mabel Ann Spencer	Malcom Lee Jr.

Dr. Kingsley Fisher, USDA
Walter Harada, UH CTAHR
John Nakagawa, Hawaii CZM Program

Some websites that may be of interest for further information:

http://www.epa.gov/oppbppd1/PESP/member_pages/hawffpmp.htm
http://www.extento.hawaii.edu/fruitfly/
http://www.extento.hawaii.edu/fruitfly/programbackground.html
http://starbulletin.com/2002/10/06/news/story5.html
http://www.hawaiibusiness.cc/hb62003/default.cfm?articleid=9

Hawaii Pacific Engineers, Inc.
Re: Draft Environmental Assessment 9/8/03

I DO NOT SUPPORT THE EXPANSION OF THE FRUIT FLY FACILITY IN WAIMANALO. THE INITAL PROJECT BY PASS THE ENVIROMENTAL IMPACT STATEMENT PROCESS. WE THE WAIMANALO COMMUNITY IS APPAULLED THAT THE STATE GRANTED THEM THIS DECISION. IT IS A NORMAL ATTITUDE TO LET AND GRANT PROJECTS AFFILLIATED WITH THE STATE TO WAIVE THIS IMPORTANT PROCESS THAT PROTECTS AND ADDRESSES CONCERNS THAT ARE DETREIMENAL TO THIS COMMUNITY. WAIMANALO HAS A HAWAIIAN POPULATION THAT IS ALREADY AT RISK FOR THEIR HEALTH. WE HAVE TWO FACILITIES ALREADY IN OPERATION, AND THIS PROJECTS BENEFITS PEOPLE OUT OF HAWAII. THE METHOD USED IS RADIATION. IF IT IS SO SAFE THEN WHY WHEN YOU TAKE X RAYS THEY TAKE SPECIAL PRECAUTIONS. I DO NOT BELIEVE THAT IS 100% SAFE. THERE ARE OTHER METHODS THAT CAN BE USED, INSTEAD OF RADIATION. WE LIVE ON AN ISLAND AND SHOULD PROMOTE ALTERNATIVE SOLUTIONS. THIS MIGHT BE ONE OF THE REASONS THEY CHOOSE TO USE US AS GUINEA PIGS INCASE IT FAILS. I REFUSE TO BE USED AND SUPPORT ORGANIC ALTERNATIVES

IN WAIMANALO WE HAVE A STREAM THAT IS ON THE LIST OF THE MOST POLLUTED STREAMS IN THE NATION. OUR ENVIOMENT IS ALREADY SUFFERING WITH THE ALGAE BLOOM IN OUR OCEAN. WE NEED TO SUPPORT EVERY EFFORT TO PROTECT OUR PRECIOUS ENVIROMENT.

THESE CONCERNS SHOULD BE STUDIED AND ADDRESSED. AGAIN THIS IS WHAT EIS IS FOR, A PROCESS TO ENSURE AND PROTECT US AND OUR ENVIROMENT. THE MED-FLIES ARE COLLECTED IN CENTRAL OAHU, THEN BUILD THE FACILITY CLOSE TO WHERE THEY ARE, INSTEAD OF PUTTING OUR LOCAL FEW FARMERS AT RISK. I AM STRONGLY RECOMMENDING THAT AN EIS BE FULFILLED. I DO NOT BELIEVE THAT HOMELAND ~~SECURITY~~ security MONIES SHOULD BE USED TO FUND THIS PROJECT. WITH THE SAME BREATH THAT THIS KIND OF FUNDS ARE BEING USED THERE MUST BE A RISK WE ARE NOT AWARE OF. THE ONE RELENTING PROMISE IS THIS WILL CREATE JOBS. HOW CAN WE GUARENTEE THAT WAIMANALO PEOPLE GET HIRED? BY THE SAME TOKEN, IS IT SAFE FOR OUR FAMILY TO WORK THERE, KNOWING THAT RADIATION IS DANGEROUS AND CAN CAUSE SERIOUS COMPLICATIONS TO ONES ALREADY FRAGILE HEALTH.

THE NATIVE HAWAIIANS ARE AN ENDANGERED SPEICES AND SHOULD BE PROTECTED FROM ANY DETREMENTAL EFFORTS THAT PUT THEIR ALREADY SENSITIVE STATUS in jeopardy.

Mabel Ann Spencer
41-1378 Kuhimana St.
Waimanalo, Hi.
96795

Neighborhood Board
Member-At-Large

Hawaii Pacific Engineers, Inc.
1132 BISHOP STREET, SUITE 1003
HONOLULU, HAWAII 96813-2830
Phone: (808) 524-3771 Fax: (808) 538-0445
E-mail: hpeinc@hawaiipacificengineers.com

October 6, 2003

Ms. Mabel Ann Spencer
Neigborhood Board Member-at-Large
41-1378 Kuhinana Street
Waimanalo, Hawaii 96795

SUBJECT: Draft Environmental Assessment for Temporary Research Modules Project
USDA Hawaii Fruit Fly Production Facility
Waimanalo, Hawaii (TMK 4-1-26: Por. 1)

Dear Ms. Spencer:

On behalf of the University of Hawaii College of Tropical Agriculture and Human Resources (CTAHR) and the U.S. Department of Agriculture (USDA), thank you very much for reviewing the subject document and for your correspondence of September 9, 2003. We would like to take this opportunity to respond to your comments and concerns. Your comments, shown below in italics, are addressed in the order presented in your letter. We have grouped and assigned numbers to your comments to facilitate referencing of the comments.

1. Comment: *I do not support the expansion of the Fruit Fly Facility in Waimanalo.*

   Response: We appreciate your concerns regarding the future expansion project. We hope that our responses to your comments will address those concerns and provide you with helpful information to better understand the project. We feel that it is important for members of the Waimanalo community, particularly members of the Waimanalo Neighborhood Board, to fully understand the project prior to finalizing their decision to support or oppose the temporary research modules project and the new facility project.

2. Comment: *The initial project by pass the environmental impact statement process. We the Waimanalo community is appalled that the State granted them this decision. It is a normal attitude to let and grant projects affiliated with the State to waive this important process that protects and addresses concerns that are detrimental to this community.*

   Response: The USDA is required to comply with Hawaii's environmental review process as defined by Chapter 343, Hawaii Revised Statues (HRS), because the Hawaii Fruit Fly Production Facility (HFFPF) is located on State land. The initial (original) HFFPF project (formerly Sterile Fruit Fly Rearing Facility project) as well as the proposed future HFFPF projects do not qualify for any exemptions from the HRS 343 environmental review process.

   The HRS 343 environmental review process typically begins with the development of a Draft Environmental Assessment (DEA) where no significant impacts to the environment are anticipated. A DEA was completed for the initial project under the environmental review laws that were in place at the time (1983). The DEA, which is appended to the current DEA, did not identify significant impacts to the environment.

If the DEA identifies significant impacts to the environment, preparation of an Environmental Impact Statement (EIS) is required. The EIS process involves preparation of an EIS Preparation Notice, a Draft EIS and a Final EIS. In some cases where significant impacts to the environment are identified at the outset of the project, an EIS Preparation Notice is prepared and issued without a DEA.

For the proposed USDA temporary research modules project, a DEA was prepared since significant impacts to the environment are not anticipated. The preparation of an EIS is not anticipated to be required based on the findings of the DEA that indicate that there are no significant impacts associated with the project. Instead of an EIS, a Final Environmental Assessment/Finding of No Significant Impact (FONSI) is expected to be issued. Within 30 days of the filing of the FONSI, the public may challenge an agency's determination by filing suit in Circuit Court.

We realize that the Waimanalo community has many concerns with the currently proposed temporary research modules project and the future expansion of the Hawaii Fruit Fly Production Facility (HFFPF). USDA has carefully considered concerns raised by the community and has taken steps to implement the project in a manner that avoids significant impacts on the Waimanalo community and environment. USDA plans to continue its discussions with members of the community to address all concerns over the project. In particular, concerns and perceived impacts associated with the future expansion of the HFFPF will be addressed in detail in a second separate DEA.

3. Comment: *Waimanalo has a Hawaiian population that is already at risk for their health. We have two facilities already in operation, and these projects benefits people out of Hawaii. The method used is radiation. If it is so safe then why when you take x-rays they take special precautions. I do not believe that is 100% safe. There are other methods that can be used instead of radiation. We live on an island and should promote alternative solutions. This might be one of the reasons they choose to use us as guinea pigs in case it fails. I refuse to be used and support organic alternatives.*

   Response: The irradiators are centrally housed in the HFFPF and are used by both the HFFPF operations and the California Department of Food and Agriculture fruit fly rearing facility (there is only one irradiator center that is shared by the two facilities). Although the HFFPF irradiators utilize radiation to sterilize fruit fly pupae, the units are designed to not emit harmful levels of radiation and are not a health risk to the Waimanalo community or the HFFPF workers. Each irradiator contains a few ounces of Cesium 137, a common radionuclide used for sterilizing food products, including wheat, spices, flour, and potatoes.

   The Cesium 137 would be harmful if directly exposed to people or the environment, however the Cesium 137 in the HFFPF irradiators is heavily shielded with lead and steel that virtually eliminates the risk of radiation exposure. These are more substantial precautions than used for X-ray machines,. The irradiators contain a completely sealed static source of Cesium-137 that remains motionless and never contacts any samples or the environment. The Cesium-137 remains locked up in the irradiator at all times, shielded by several tons of lead and steel. The containers of fruit fly pupae are mechanically conveyed to a position in front of the encased irradiation source and exposed to gamma particles

during sterilization. This is actually safer than the X-ray machines because the irradiators cannot be moved, there is no exposed beam, and the sample positions are too small for humans to access.

The design and construction of the irradiators are subject to the highest engineering and radiation standards. Trained personnel operate the irradiators, and warning signs are required by International law to inform people of the presence of the machines. The warning signs do not indicate danger of exposure; they simply tell people that a safe machine is in the area. A security guard is provided at the HFFPF 24 hours per day, 7 days a week, to guard against vandals and terrorists. Even if vandals or terrorists were able to enter the irradiator room, gaining access to the Cesium 137 would be very difficult due to the sealed design of the unit and various interlocks and safeguards that prevent entry to the unit's irradiation chamber. The irradiator unit cannot be moved without heavy lifting equipment and therefore theft of the unit is not a concern.

The sealed design of each irradiator results in exceedingly low radiation similar to environmental background levels, monitored by established scientific and administrative protocols. USDA trained personnel wear personal radiation monitors (in accordance with Federal law) when working close to the units, which typically averages 10 minutes each day. The personal radiation monitors record accumulated dosages (over the lifetime of the wearer) and are analyzed regularly. If analyses show any positive exposure, the staff is notified immediately. In the history of operations at the HFFPF, there have been no distinguishable exposures. Since radiation decreases exponentially as one moves away from the source, it is reasonable to conclude that the community is not in harm's way.

The same two irradiators that are currently at the site will continue to be used in the future. The HFFPF was located in Waimanalo on the site of the UH Research Station as a positive collaborative effort to establish a state-of-the-art sterile fruit research and production facility. USDA has taken all the necessary steps to alleviate any health, safety and environmental concerns surrounding the irradiators. The facility applies stringent safety rules, and its closed and tightly controlled operations are designed to keep fertile flies from escaping. The millions of sterile fruit flies shipped to California each week are healthy (although sterile) and free of radiation. The HFFPF sterile insect release program has been an effective means of controlling Mediterranean fruit flies. It is an environmentally friendly means of pest control because it significantly reduces the use of pesticides.

Other methods of sterilizing fruit fly pupae are considered dangerous to the environment because they involve chemicals. Irradiation is considered efficient, accurate and safe.

The production of the flies in Hawaii provides Hawaii with direct economic benefits. Placement of a facility in California is not permitted under the U.S. quarantine laws. In time, Hawaii agriculture can also benefit from the presence of the facility.

4. Comment: *In Waimanalo we have a stream that is on the list of the most polluted streams in the nation. Our environment is already suffering with the algae bloom in our ocean. We need to support every effort to protect our precious environment. These concerns should be studied and addressed. Again this is what this is for, a process to ensure and protect us and our environment.*

Response: USDA is also concerned about excessive nutrients and other water quality issues in Waimanalo's streams and Waimanalo Bay. As discussed in the DEA, however, the amount of nutrients generated by the temporary research modules project is not significant compared to nutrient loads from other sources. These sources include livestock wastes, agricultural fertilizers, decaying vegetation, onsite wastewater disposal systems, and wastewater injection wells at the Waimanalo Wastewater Treatment Plant. If algal blooms in Waimanalo Bay and excessive nutrient levels in streams are to be eliminated, funds and effort need to be directed toward reducing the mass emissions from the major sources of nutrients in Waimanalo.

The temporary research modules will generate a few hundred gallons of wastewater daily, which will be properly treated at State-permitted wastewater treatment plants. A stormwater detention basin will serve to enhance stormwater runoff quality by removing debris and sediments.

USDA is also committed to ensuring that process wastewater from the new HFFPF will not contribute to water quality problems in Waimanalo. The masterplan for the new facility calls for a small wastewater treatment plant dedicated to the proper treatment of wastewater from both the research modules and the new HFFPF. As part of the planning effort for the new HFFPF, USDA's consultants have retained the services of Dr. Roger Babcock of the University of Hawaii (UH) Department of Civil and Environmental Engineering and Dr. Adam Reinhart, a former UH soil scientist. Dr. Babcock has been involved in bench scale testing of the fruit fly rearing process wastewater utilizing state-of-the-art membrane bioreactor (MBR) technology to verify that a high level of treatment, including substantial removal of nutrients, can be achieved. Dr. Reinhart has conducted soil testing and nutrient modeling to determine appropriate irrigation rates for excess treated (low nutrient) effluent that can be employed to virtually eliminate discharge of nutrients to ground and surface waters in Waimanalo.

USDA anticipates that its efforts in managing nutrients and stormwater runoff will serve as an excellent role model for others involved in dealing with waste management and water quality issues in Waimanalo.

5. Comment: *The med flies are collected in central Oahu, then build the facility close to where they are instead of putting our local few farmers at risk.*

Response: The HFFPF was constructed on CTAHR's Waimanalo Research Station land as a result of a cooperative agreement with the University of Hawaii. The economic viability of the HFFPF program in Hawaii is significantly enhanced by this cooperative agreement.

The temporary research modules will be designed to minimize the escape of flies. Incidences of fly escapes should be infrequent, since they are housed in cages within the modules. As noted in the DEA, the buildings will have quarantine features that are in compliance with applicable State and Federal standards.

The research to be conducted at the temporary research modules will predominantly involve a strain of Mediterranean fruit flies (*Ceratitis capitata* (W)) already being reared in

Waimanalo. The colony was imported under State and Federal permits, for which a scientific panel carefully considered the environmental risks prior to issue.

The new strain of Mediterranean fruit fly is a temperature sensitive strain, which has three notable attributes: 1) it has a naturally occurring genetic composition, 2) it is 50% sterile (due to a chromosomal linkage) even before it is exposed to sterilizing radiation, and 3) female flies of this strain are physiologically disadvantaged at temperatures over 84°F. This makes the strain an excellent candidate for the successful Sterile Insect Technique (SIT), but a poor candidate for breeding in the field.

It is important to consider that in all likelihood it is other economic fruit flies, Oriental fruit fly and Melon fly in particular, that are causing damage to local fruit growers. In 2000, an assessment of fruit fly species, made by the USDA Agricultural Research Service (ARS) and University of Hawaii, demonstrated in Central Oahu that the prevalence of Melon fly in traps was 22 to 54 flies/trap/day and Oriental fruit fly prevalence in traps was 68 to 710 flies/trap/day, while Mediterranean fruit flies were found at the rate of 1.8 to 8.7 flies/trap/day. ARS noted that Mediterranean fruit fly populations in Waimanalo are so sparse that the area cannot easily be used as an experimental site for studying the pest in the field.

Although Hawaii does not currently have a sterile fruit fly release program, parasitic wasps have been introduced and established in Hawaii for fruit fly control. They are fairly specific to certain fruit fly species or genera. The important fruit fly parasitoids currently established in Hawaii are *Fopius arisanus, F. vandenboschi, Diachasmimorpha longicaudata and D.tryoni* (hosts are Oriental and/or Mediterranean fruit fly) and *Psyttalia fletcheri* (host is melon fly). Exploration for effective, new parasitoid species is ongoing at UH and the Hawaii Department of Agriculture (HDOA). Some work is being conducted by the Biological Control division of the HDOA under a grant provided by the USDA Agricultural Research Service.

In summary, the rearing of fruit flies in Waimanalo by USDA will be have no significant impact on the environment because of: 1) the quarantine features of its facilities, 2) the use of a fly strain that is already present in Hawaii, 3) the poor viability of the temperature sensitive female flies in the wild, 4) the low concentration of Mediterranean fruit flies in Waimanalo, caused by the presence of other fruit flies of economic importance, and 5) parasitoids (parasitic wasps) already serving as beneficial organisms.

6. Comment: *I am strongly recommending that an EIS be fulfilled.*

   Response: See response to Comment No. 2.

7. Comment: *I do not believe that Homeland Security monies should be used to fund this project. With the same breath, that kind of funds are being used there must be a risk we are not aware of.*

   Response: USDA is using a small amount of USDA Homeland Security Branch monies because relocating the irradiators falls under their security portfolio. The Homeland Security Branch, due to the critical role of the sterile fruit fly production facilities in

safeguarding the nation's food supply, will continue to add security precautions to the HFFPF site in the future, such as new security fencing and electronic surveillance

8. Comment: *The one relenting promise is this will create jobs. How can we guarantee that Waimanalo people get hired? By the same token, is it safe for our family to work there, knowing that radiation is dangerous and can cause serious complications to ones already fragile health?*

   Response: The research modules, in concert with the new HFFPF, will offer job opportunities and other indirect benefits to Waimanalo. The HFFPF, prior to its suspension of operations in September of 2002, provided the Waimanalo community with a source of jobs and income. Approximately 25 percent of the 45 former employees of the HFFPF were from Waimanalo. The HFFPF had an annual operating budget of $2.5 million per year for supplies and services. It is estimated that about 50 percent of the expenditures went to Waimanalo businesses. Furthermore, employees of the HFFPF and their guests patronize Waimanalo restaurants, gas stations, shops, plant nurseries and other businesses. The research modules will have approximately 10 employees and will buy provisions through local businesses. These interactions contribute to the economic viability of Waimanalo by leaving dollars in Waimanalo and adhering to environmental justice objectives without adverse effects on human health or the environment. On a larger scale, controlling Mediterranean fruit fly outbreaks in California and Florida helps to minimize food production costs, which in turn benefits everyone.

   As noted in the previous responses, the irradiators as well as other elements of the proposed project do not present a health risk to the HFFPF workers or Waimanalo residents.

9. Comment: *The native Hawaiians are an endangered species and should be protected from any detrimental efforts that put their already sensitive status in jeopardy.*

   Response: As noted in the above responses, the proposed project is not anticipated to have significant adverse impacts on Hawaii's environment, Hawaiians, HFFPF workers or other members of the Waimanalo community.

For More Information

We would be happy to arrange for a meeting with appropriate USDA personnel to further discuss your concerns on the project. Please feel free to call me at 522-7425 to arrange for a meeting or to request additional information/clarifications to address any questions or concerns on the project. A list of website that may be of interest is included at the bottom of this page.

Thank you very much for taking time to comment on the DEA and forwarding us your concerns on this project. We look forward to continuing to work with you and the Waimanalo community on this project.

Sincerely,

Roy K. Abe

Roy K. Abe
Vice President

cc: Waimanalo Neighborhood Board members
Wilson K. Ho
Andrew Jamila
Solomon Spencer
Michael G. Buck
Philip L. Ellsworth
Malcom Lee Jr.
Joseph A. Ryan
Nani P. Akeo
Bob Kimo Lastimosa
Priscilla Ho
Orrin Kupau
Kawika Eckart
Dr. Kingsley Fisher, USDA
Walter Harada, UH CTAHR
Genevieve Salmonson, OEQC
John Nakagawa, Hawaii CZM Program

Some websites that may be of interest for further information:

http://www.ehrs.upenn.edu/programs/radiation/guides/Irradiator.html
http://www.epa.gov/oppbppd1/PESP/member_pages/hawffpmp.htm
http://www.extento.hawaii.edu/fruitfly/
http://www.extento.hawaii.edu/fruitfly/programbackground.html
http://starbulletin.com/2002/10/06/news/story5.html
http://www.hawaiibusiness.cc/hb62003/default.cfm?articleid=9

Aloha, Mr. Roy K. Abe, Project Manager, Hawaii Pacific Engineers, Inc.

This letter is in comment to the Draft Environmental Assessment for the Hawaii Fruit Fly Production Facility, Waimanalo, Hawaii.

As you are well aware my family and myself are very much not in favor of this facility here in Waimanalo. We have a number of questions and would appreciate answers.

- The DEA for this project is fragmented in such a way as to mislead us to a clear picture of the future expansion to this project. We need to know what we are facing here as residents.
- The information in this DEA is convoluted and too technical. We are not equiped to understand all that has been given to us.
- How much more greater are you talking about on wastewater?
- How many more people are you talking about as far as job opportunities go for Waimanalo residents?
- We are concerned that added wastewater not only will affect Waimanalo, but you are also distributing wastewater to Hawaii Kai as well. And it is being processed and dumped through an ocean outfall at the East Honolulu WWTP.
- The facility sits on Ceded Lands, Crown Lands, and 20% of all revenues generated by that Facility should go to OHA, irregardless that UH is exempt. The State of Hawaii is compensating by raising higher taxes on their people for outside interests to get them richer at our expense. This kind of business we need to change.
- The facility is also located on Ag-1 Restricted Agricultural Land. The words "necessary agricultural practice" is written in as allowed by the State to do this type of research for experiments upon the less fortunate, being us here in Waimanalo. This type of filling in your own land use standards as we go has got to stop. We must abide by laws, rules and regulations. We cannot write in our own standards. Is this the type of business management we will have to deal with and fight everytime just to protect our health, safety and welfare.
- Was a DEA done for the CDFA and what kind of treatment for wastewater do they use?
- How many more irradiators are needed for this future expansion?
- In the DEA it states "risks associated with radiation from the irradiators are insignificant". In the case of Hinkley vs. PG&E, they told the community that chromium was good for them, when knowingly they were using chromium 6 which is significantly bad. In this case you are telling us that cesium 137 is not a risk to us. Yet you need the (NRC) Nuclear Regulatory

Commission to post required stamps on the buildings for your protection. As noted Cesium 137 is significantly bad for our environment. It is a contaminant and is known for it's strong radioactivity.

- I have to question your air quality testing. The test for air quality was done upwind of the facility. You don't know if workers or our community is in any harm, as far as air quality goes Because you have not tested in the right locations.

- There are standards set for workers in a facility using cesium. Do you have a meter on site and what are the numbers for the following?
  a) beta particles and photon?
  b) cesium hydroxide oer cubic meter of air?
  c) occupational air intake for job exposure?

- As you know Waimanalo has a water quality problem, because of nutrient loading. The wastewater generated will be high in organic content is that not a contaminant to our environment and ground water? This facility will be a significant added source of nutrient loading by the time of expansion.

- How can you say that there will be no adverse impact on our wastewater facility when you intend to increase production and use to that particular facility.

- What kind of impact will these new strain of fruit flies and parasitoids pose for Waimanalo, since we are O'ahu's most productive agricultural center? What are the parasitoids?

- Under Executive Order 12898 Socio-Economic Impacts. How can you say it will promote economic viability, and for whom? Not our community. You cannot justify buying a musubi from 7-11 is helping our economy. Nor is that facility helping our State. Everything that facility makes dollar wise is not staying here. How do you justify that?

Waimanalo does not need a Nuclear Reactor. Not only one but two and how many more will we face? Approximately 300 million sterile fruit flies are sent to California a week, from what is considered a safe and closed facility. Then why not take your facility to California and save on the shipping costs. Because we do not want it here. I am a concerned resident and more so concerned with the health, safety and welfare of every citizen here or just visiting in our State.Do what is right. Who really benefits from that project and where does it really belong. Send it to California.

Mahalo,
Kimberly Kalama and Ohana
41-1016 Waikupanaha St.
Waimanalo, Hawaii 96795 September 4, 2003

Hawaii Pacific Engineers, Inc.
1132 BISHOP STREET, SUITE 1003
HONOLULU, HAWAII 96813-2830
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E-mail: hpeinc@hawaiipacificengineers.com

October 6, 2003

Ms. Kimberly Kalama and Ohana
41-1016 Waikupanaha Street
Waimanalo, Hawaii 96795

SUBJECT: Draft Environmental Assessment for Temporary Research Modules Project
USDA Hawaii Fruit Fly Production Facility
Waimanalo, Hawaii (TMK 4-1-26: Por. 1)

Dear Ms. Kalama:

On behalf of the University of Hawaii College of Tropical Agriculture and Human Resources (CTAHR) and the U.S. Department of Agriculture (USDA), thank you very much for reviewing the subject document and for your correspondence of September 4, 2003. We would like to take this opportunity to respond to your comments and concerns. Your comments, shown below in italics, are addressed in the order presented in your letter. We have assigned numbers to your comments to facilitate referencing of the comments.

1. Comment: *The DEA for this project is fragmented in such a way as to mislead us to a clear picture of the future expansion to this project. We need to know what we are facing here as residents*

   Response: The Draft Environmental Assessment (DEA) is not intended to address the future expansion project. The DEA addresses the installation of temporary research modules and irradiator/storage building. USDA would also have liked the environmental assessment for the temporary research modules project to have been incorporated into an environmental assessment for the entire Hawaii Fruit Fly Production Facility (HFFPF) redevelopment/expansion project. However, as noted in Chapter 1 of the DEA, this was not possible for several reasons: a) the research modules project is funded separately and the project funds will expire if not used in a timely manner, b) there is an urgent need for the research modules project to conduct important fruit fly research, and c) the future HFFPF project is currently not adequately defined to perform an environmental assessment. USDA has decided to abandon its original plans to expand and renovate the existing HFFPF main production building and instead prepare a detailed master plan for a new HFFPF. New facilities are necessary to accommodate new technologies in fruit fly biology and to improve energy efficiency and waste handling. The development of a master plan for the new facilities was only recently initiated. The second environmental assessment for the future project will address the various issues of concern associated with that project in detail. USDA intends to continue to work closely with the community and consider any input that Waimanalo residents may have.

2. Comment: *The information in this DEA is convoluted and too technical. We are not equipped to understand all that has been given to us.*

Response: We attempted to present the information in the DEA using non-technical language to the extent possible. Earlier draft versions of the DEA document were extensively reviewed by local and mainland USDA personnel as well as various entities of the University of Hawaii (College of Tropical Agriculture and Human Resources, Environmental Center, Facilities Planning and Management Office, and Environmental Health and Safety Office). Technical discussions and information are included where appropriate for readers interested in the technical aspects of the project and environmental assessment. We would be happy to explain any of the technical discussions to you through either a phone call or a meeting.

3. Comment: *How much more greater are you talking about on wastewater?*

Response: The temporary research module operations are expected to typically generate approximately 700 to 800 hundred gallons of process wastewater per day. This wastewater will be hauled offsite for treatment and disposal. Domestic (sanitary) wastewater from sinks and toilets that are discharged to the municipal sewer system is expected to be approximately 400 gallons per day. For comparison purposes, a typical single-family home with four occupants discharges about 300 to 400 gallons of domestic wastewater per day.

At the time the HFFPF was in full production, the facility produced about 16,000 gallons of process wastewater per day, which was hauled offsite. For its new HFFPF, USDA considers wastewater haulage to be impractical and environmentally unsound because the new HFFPF may produce as much as 30,000 to 40,000 gallons of process wastewater per day. USDA plans to use an onsite state-of-the-art reclamation facility to remove organic material and nutrients and allow recycling of a large percentage of the water back into the facility. When completed, the wastewater reclamation facility will also serve the temporary research modules.

4. Comment: *How many more people are you talking about as far as job opportunities go for Waimanalo residents?*

Response: Approximately 10 employees are expected to work in the temporary research facilities. In addition, excellent job opportunities for Waimanalo residents will result from the future expansion project. Prior to suspension of HFFPF operations in September of 2002, approximately 25 percent of the 45 former employees of the HFFPF were from Waimanalo. The HFFPF may have as many as 50-60 employees in the future. The HFFPF will offer a wide range of job opportunities, including managerial, maintenance engineering, supervisory, technical and production worker positions.

5. Comment: *We are concerned that added wastewater not only will affect Waimanalo, but you are also distributing wastewater to Hawaii Kai as well. And it is being processed and dumped through an ocean outfall at the East Honolulu WWTP.*

Response: Wastewater at East Honolulu WWTP is treated to meet secondary treatment standards and the treated effluent is discharged through an ocean outfall. The discharged effluent, as well as the ocean waters in the vicinity of the outfall, are routinely monitored in accordance with DOH NPDES permit requirements. The East Honolulu WWTP treats

approximately 3.8 million gallons of wastewater per day and has the necessary surplus capacity to handle the small amount of process wastewater from the temporary research modules (700 to 800 gallons per day).

Much of the nutrient in the wastewater is removed in the Hawaii Kai treatment process. The small amount of remaining nutrients in the effluent discharged from the Hawaii Kai outfall is dispersed into marine waters and assimilated into the environment without causing algal blooms and other water quality problems. It is important to note that nutrients are constantly being recycled in our environment and a properly designed ocean outfall is one means to recycle nutrients back into the food chain and the environment with minimal environmental impacts.

6. Comment: *The facility sits on Ceded Lands, Crown Lands, and 20% of all revenues generated by that Facility should go to OHA, irregardless that UH is exempt. The State of Hawaii is compensating by raising higher taxes on their people for outside interests to get them richer at our expense. This kind of business we need to change.*

Response: USDA acknowledges that the HFFPF is located on land classified as ceded lands. We understand that negotiations are ongoing between the State of Hawaii and Office of Hawaiian Affairs regarding the future status of the ceded lands.

The USDA is a non-profit organization that on occasion forms partnerships with various State authorities, as a conduit to achieve various focused goals. Sometimes the rent is waived under a cooperative agreement because of the indirect benefits that flow from the agreement to the public. The economic viability of the HFFPF program in Hawaii is significantly enhanced by the low land cost that results from the cooperative agreement.

The temporary research modules project is an important step in ensuring that Hawaii remains a world leader in the science of fruit fly eradication and management and that Hawaii's unique needs for fruit fly management and control techniques are met in the future. Through cooperative USDA and CTAHR programs, an influx of funds and knowledge into the State through grants, contracts, research visitors, and cooperative agreements is anticipated. Mutually beneficial interaction between leading USDA scientists and CTAHR faculty and students will directly benefit the University of Hawaii and indirectly benefit the local economy and residents. Joint facilities and programs with USDA are within the CTAHR vision for an Agribusiness Incubation and Outreach Center at Waimanalo.

Federal dollars from the HFFPF program directly benefits the State, through $2 million to $3 million in local wages and procurement of services and supplies. On a wider scale, controlling Mediterranean fruit fly outbreaks in California helps to minimize food production costs, which in turn benefits everyone.

Regarding the ceded land revenues, the following statements were provided to us by the UH Office of University General Counsel through CTAHR:

> "The University of Hawaii Board of Regents and Administration have and will continue to support Native Hawaiian Programs and provide financial aid for needy Native Hawaiian students."

"The support of public education is one of five enumerated purposes of the ceded lands public trust. Thus, to the extent that revenues generated from ceded lands under the control of the UH are used to fulfill the University's mandate to support public education, the trust obligations are satisfied. This is and has been the University's position from the start. The University realizes that the issue of what constitutes "revenues" and how the trust obligations, including the betterment of the conditions of Native Hawaiians, will be fulfilled is a matter that will be taken up by the legislature, especially in light of the Hawaii Supreme Court decision in *Office of Hawaiian Affairs v. State of Hawaii.* The University also understands that it will be the legislature which will ultimately define how the ceded lands public trust obligations are to be fulfilled. Until the matter is settled by the legislature, the University will continue to use the revenues generated from ceded lands under its control to fulfill the University's mandate to support public education."

Based on a review of the project, Mr. Walter Kirimitsu, UH Vice President for Legal Affairs and University General Counsel, concluded that the property and project fall within the exemption from any revenues owed to OHA.

7. Comment: *The facility is also located on AG-1 Restricted Agricultural Land. The words "necessary agricultural practice" is written in as allowed by the State to do this type of research for experiments upon the less fortunate, being us here in Waimanalo. This type of filling in your own land use standards as we go has got to stop. We must abide by laws, rules and regulations. We cannot write in our own standards. Is this the type of business management we will have to deal with and fight every time just to protect our health, safety and welfare?*

   Response: The City and County of Honolulu Department of Planning and Permitting has determined that the proposed project is a "public use" under the City's zoning code and is a permitted use in the AG-1 Restricted Agricultural District. Under Chapter 205, Paragraph 205-4.5 of the Hawaii Revised Statutes, items (3) and (5) state that permissible uses within agricultural districts include:

   "(3) Raising of livestock, including but not limited to poultry, bees, fish, or other animal or aquatic life that are propagated for economic or personal use;

   (5) Public institutions and buildings which are necessary for agricultural practices;"

   The HFFPF meets the above two criteria for permitted uses within State agricultural districts.

   Based on a request for further clarification on permitted uses on State Land Use Agricultural District, the State Land Use Commission provided the following comments:

   "We note that relevant permissible uses within the State Land Use Agricultural District (§205-4.5(a)(5) HRS) include public institutions and buildings, which are necessary for agricultural practices. This same section also notes that buildings and uses, including but not limited to mills, storage, and *processing* facilities, maintenance facilities, and vehicle and equipment storage areas that are normally considered directly accessory to the

abovementioned uses and are permitted under section 205-2(d) are permissible within the agricultural district."

"Both your description and that received from the State Department of Agriculture would seem to indicate that your program qualifies as both necessary for agricultural practice and/or an agricultural processing facility."

The discussion in the DEA will be revised to incorporate discussions similar to the above response to clearly indicate that the HFFPF is a permitted use on the agricultural land. As noted throughout the DEA, the design and operation of the facilities will ensure that the health, safety and welfare of the Waimanalo residents will not be jeopardized.

8. Comment: *Was a DEA done for CDFA and what kind of treatment for wastewater do they use?*

   Response: The State Office of Environmental Quality Control records do not indicate that an environmental assessment was prepared specifically for the CDFA facility. The circumstances under which the project was implemented may have exempted the project from an environmental assessment.

   The CDFA facility employs a sequencing batch reactor (SBR) activated sludge process similar to that used for domestic wastewater treatment. The SBR process incorporates an anoxic stage that promotes the removal of nitrogen. The treated effluent is used to irrigate a grove of palm trees. Residual solids (sludge) are dried on a sludge drying bed and disposed at the landfill. The design and operation of the treatment facility has received State Department of Health approval.

9. Comment: *How many more irradiators are needed for this future expansion?*

   Response: The same two irradiators currently being used at the HFFPF will be used for the future HFFPF. No additional irradiators will be installed.

10. Comment: *In the DEA it states "risks associated with radiation from the irradiators are insignificant." In the case of Hinkley vs. PG&E, they told the community that chromium was good for them, when knowingly they were using chromium 6 which is significantly bad. In this case you are telling us that cesium 137 is not a risk to us. Yet you need the (NRC) Nuclear Regulatory Commission to post required stamps on the buildings for your protection. As noted, Cesium 137 is significantly bad for our environment. It is a contaminant and is known for it's strong radioactivity.*

    Response: First and foremost, it must be understood that the USDA does not use a nuclear reactor at its Waimanalo site. USDA uses two irradiators, which employ a totally different concept from nuclear reactors. Irradiators are conceptually similar to x-ray machines.

    Each irradiator contains a few ounces of Cesium 137, a common radionuclide used for sterilizing food products, including wheat, spices, flour, and potatoes. Its strength of radioactive decay depends on the amount of Cesium 137, which in the case of the HFFPF irradiators, is relatively small. The Cesium 137 would be harmful if directly exposed to people or the environment, but the Cesium 137 in the HFFPF irradiators is heavily shielded

with lead and steel that virtually eliminates the risk of radiation exposure. The irradiators contain a completely sealed static source of Cesium-137 that remains motionless and never contacts any samples or the environment. The Cesium-137 remains locked up in the irradiators at all times, shielded by several tons of lead and steel. The containers of fruit fly pupae are mechanically conveyed to a position in front of the encased irradiation source and exposed to gamma particles during sterilization. There is no need for liquid coolants. This is very different from the "Hinkley/PGE scenario" of chromium-6 in outdoor unlined pools mentioned in your comments.

The design and construction of the irradiators are subject to the highest engineering and radiation standards. Trained personnel operate the irradiators, and warning signs are required by International law to inform people of the presence of the machines. A security guard is provided 24 hours per day, 7 days a week, to guard against vandals and terrorists. Even if vandals or terrorists were able to enter the irradiator room, gaining access to the Cesium 137 would be very difficult due to the sealed design of the unit and various interlocks and safeguards that prevent entry to the unit's irradiation chamber. The irradiator unit cannot be moved without heavy lifting equipment and therefore theft of the unit is not a concern.

11. Comment: *I have to question your air quality testing. The test for air quality was done upwind of the facility. You don't know if workers or our community is in any harm, as far as air quality goes because you have not tested in the right locations.*

    Response: The discussion on air quality testing was intended to only provide a general overview of air quality in the Waimanalo region. There has not been a need to test the air in the vicinity of the HFFPF since there have been no odor complaints and there are no known harmful emissions from the facility.

    The sealed design of each irradiator results in exceedingly low radiation, similar to environmental background levels, monitored by established scientific and administrative protocols. USDA trained personnel wear personal radiation monitors (in accordance with Federal law) when working close to the units, which typically averages 10 minutes each day. The personal radiation monitors record accumulated dosages (over the lifetime of the wearer) and are analyzed regularly. If analyses show any positive exposure, the staff is notified immediately. In the history of operations at the HFFPF, there have been no distinguishable exposures. Since radiation decreases exponentially as one moves away from the source, it is reasonable to conclude that the community is not in harm's way.

12. Comment: *There are standards set for workers in a facility using cesium. Do you have a meter o site and what are the numbers for the following:*
    a) *beta particles and photon?*
    b) *Cesium hydroxide per cubic meter of air?*
    c) *occupational air intake for job exposure?*

    Response: Your questions relate to nuclear reactors, which the HFFPF does not use. The design of the sealed irradiation units in the HFFPF effectively reduces radiation to nearly background levels. There are no beta or photon particles escaping since both beta and

photon particles cannot penetrate steel or lead. There is no cesium hydroxide used in any part of the HFFPF operations. Cesium hydroxide is used in nuclear power plants – HFFPF is not a nuclear power plant. Occupational air intake design is based on light commercial/laboratory standards. The HFFPF requires no countermeasures for radioactive particles because there are no radioactive substances exposed to the air.

13. Comment: *As you know, Waimanalo has a water quality problem because of nutrient loading. The wastewater generated will be high in organic content is that not a contaminant to our environment and ground water? This facility will be a significant added source of nutrient loading by the time of expansion.*

    Response: The research modules will produce only a few hundred gallons of process wastewater each day, which will be transported to a permitted wastewater treatment facility. A proposed future onsite treatment facility associated with the new HFFPF will be described in a separate EA, and will be designed to remove a large portion of the nitrogen and phosphorus in the process wastewater. Much of the nutrients will be removed by the growth of bacteria and other microorganisms that use the organic matter in the wastewater as food. The microorganisms, which incorporate the nutrient into their cell mass, will be removed from the treatment system as sludge. The sludge will be dewatered and then taken to a landfill or possibly composted for beneficial reuse. Nitrogen in the form of nitrates will also be removed from the wastewater through biological conversion to nitrogen gas in an anoxic stage in the treatment process. Excess effluent that is not reused in the facility will be used for irrigation of landscaping, trees and other vegetation. Through proper control of irrigation rates, most of the nutrients will be taken up by the irrigated plants and effectively recycled back into the environment without causing degradation of water quality. USDA anticipates that its efforts in managing nutrients will serve as an excellent role model for others involved in dealing with waste and nutrient management issues in Waimanalo.

14. Comment: *How can you say that there will be no adverse impact on our wastewater facility when you intend to increase production and use to that particular facility?*

    Response: The temporary modules project will have no adverse impact on the Waimanalo Wastewater Treatment Plant because the process wastewater will not be discharged to the municipal sewer system. Only a small amount of domestic wastewater from sinks and toilets will be discharged to the municipal sewers. The quantity of domestic wastewater will be substantially lower than the amount of wastewater that was produced when the HFFPF was previously in full operation.

15. Comment: *What kind of impact will these new strain of fruit flies and parasitoids pose for Waimanalo since we are O'ahu's most productive agricultural center? What are the parasitoids?*

    Response: The temporary research modules will be designed to minimize the escape of flies. Incidences of fly escapes should be infrequent, since they are housed in cages within the modules. As noted in the DEA, the buildings will have quarantine features that are in compliance with applicable State and Federal standards.

The research to be conducted at the temporary research modules will predominantly involve a strain of Mediterranean fruit flies (*Ceratitis capitata* (W)) already being reared in Waimanalo. The colony was imported under State and Federal permits, for which a scientific panel carefully considered the environmental risks prior to issue.

The new strain of Mediterranean fruit fly is a temperature sensitive strain, which has three notable attributes: 1) it has a naturally occurring genetic composition, 2) it is 50% sterile (due to a chromosomal linkage) even before it is exposed to sterilizing radiation, and 3) female flies of this strain are physiologically disadvantaged at temperatures over 84°F. This makes the strain an excellent candidate for the successful Sterile Insect Technique (SIT), but a poor candidate for breeding in the field.

It is important to consider that in all likelihood it is other economic fruit flies, Oriental fruit fly and Melon fly in particular, that are causing damage to local fruit growers. In 2000, an assessment of fruit fly species, made by the USDA Agricultural Research Service (ARS) and University of Hawaii, demonstrated in Central Oahu that the prevalence of Melon fly in traps was 22 to 54 flies/trap/day and Oriental fruit fly prevalence in traps was 68 to 710 flies/trap/day, while Mediterranean fruit flies were found at the rate of 1.8 to 8.7 flies/trap/day. ARS noted that Mediterranean fruit fly populations in Waimanalo are so sparse that the area cannot easily be used as an experimental site for studying the pest in the field.

A parasitoid is typically a very small insect which has a free-living adult stage, and during its parasitic stage, it lays eggs in a host such as fruit fly eggs or larvae. The host is killed as the parasitoid larvae eat the host.

Parasitic wasps have been introduced and established in Hawaii for fruit fly control. They are fairly specific to certain fruit fly species or genera. The important fruit fly parasitoids currently established in Hawaii are *Fopius arisanus, F. vandenboschi, Diachasmimorpha longicaudata and D.tryoni* (hosts are Oriental and/or Mediterranean fruit fly) and *Psyttalia fletcheri* (host is melon fly). Exploration for effective, new parasitoid species is ongoing at UH and the Hawaii Department of Agriculture (HDOA). Some work is being conducted by the Biological Control division of the HDOA under a grant provided by the USDA Agricultural Research Service.

Parasitoids help reduce the overall population of fruit flies by insuring that a proportion of the fly progeny will be killed and ultimately develop into parasitic wasps instead of flies. For example, when these wasps were introduced to Hawaii, scientists documented that the Mediterranean fruit fly population was reduced to less than half of what existed before the releases. Parasitoids do not eat or sting fruit. Therefore, parasitoids have no damaging effect on the fruit that has not already been infested with fruit fly eggs or larvae.

In summary, the rearing of fruit flies in Waimanalo by USDA will have no significant effect due to: 1) the quarantine features of its facilities, 2) the use of a fly strain that is already present in Hawaii, 3) the poor viability of the temperature sensitive strain in the wild, 4) the low concentration of Mediterranean fruit flies in Waimanalo compared to other fruit flies of economic importance, and 5) parasitoids serving as beneficial organisms.

16. Comment: *Under Executive Order 12898 Socio-Economic Impacts, how can you say it will promote economic viability, and for whom? Not our community. You cannot justify burying a musubi from 7-11 is helping our economy. Nor is that facility helping our State. Everything that facility makes dollar wise is not staying here. How do you justify that?*

Response: The research modules, in concert with the new HFFPF, will offer job opportunities and other indirect benefits to Waimanalo. The HFFPF, prior to its suspension of operations in September of 2002, provided the Waimanalo community with a source of jobs and income. Approximately 25 percent of the 45 former employees of the HFFPF were from Waimanalo. The HFFPF had an annual operating budget of $2.5 million per year for supplies and services. It is estimated that about 50 percent of the expenditures went to Waimanalo businesses. Furthermore, employees of the HFFPF patronize Waimanalo restaurants, gas stations, shops, plant nurseries and other businesses. The research modules will have approximately 10 employees and will buy provisions through local businesses. These interactions contribute to the economic viability of Waimanalo by leaving dollars in Waimanalo and adhering to environmental justice objectives without adverse effects on human health or environment.

USDA is essentially a non-profit organization and the HFFPF generates no net income. Federal dollars assigned to the HFFPF program directly benefits the State and local community. The research modules will attract many notable scientists and visitors to Hawaii. The APHIS Center for Plant Health Science and Technology (the parent division for the research modules) aims to conduct research that will benefit Hawaii, as well as the U.S. As previously mentioned, controlling Mediterranean fruit fly outbreaks in California and Florida helps to minimize food production costs, which in turn benefits everyone.

17. Comment: *Waimanalo does not need a Nuclear Reactor. Not only one but two and how many more will we face? Approximately 300 million sterile fruit flies are sent to California a week from what is considered a safe and closed facility. Then why not take your facility to California and save on the shipping costs because we do not want it here. I am a concerned resident and more so concerned with the health, safety and welfare of every citizen here or just visiting in our State. Do what is right. Who really benefits from that project and where does it really belong? Send it to California.*

Response: It is extremely important to understand that the irradiators are not nuclear reactors. There is a substantial difference between them. A nuclear reactor is an apparatus in which nuclear fission chain reactions are initiated, controlled, and sustained at a contained rate. Nuclear reactors are used for providing heat for electricity generation, domestic and industrial heating, desalination, and naval propulsion. Typically, they heat the water and turn it to steam. The steam drives a steam turbine, which spins a generator to produce power.

Irradiators on the other hand, are self-contained, self shielded machines yielding gamma radiation behind the shields, with reproducible dose rate and dose uniformity. They are used extensively in agriculture (e.g. in Hilo), medicine and research. Gamma radiation is produced from common radionuclides such as Cesium-137, which is not undergoing nuclear fission. Radiation cannot be detected a few feet from the irradiators.

The same two irradiators that are currently at the site will continue to be used in the future. The HFFPF was located in Waimanalo on the site of the UH Research Station as a positive collaborative effort to establish a state-of-the-art sterile fruit fly research and production facility. USDA has taken the necessary steps to alleviate any health, safety and environmental concerns surrounding the irradiators. The facility applies stringent safety rules, and its closed and tightly controlled operations are designed to keep fertile flies from escaping. Human visitors are none-the-less welcome. The millions of sterile fruit fly pupae shipped to California each week are healthy (although sterile) and free of radiation. The production of the flies in Hawaii provides Hawaii with direct economic benefits. Placement of a facility in California is not permitted under the U.S. quarantine laws. In time, Hawaii agriculture can also benefit from the presence of the facility.

For More Information

We would be happy to arrange for a meeting with appropriate USDA personnel to further discuss your concerns on the project. Please feel free to call me at 522-7425 to arrange for a meeting or to request additional information/clarifications to address any questions or concerns on the project. A list of website that may be of interest is included at the bottom of this page.

Thank you very much for taking time to comment on the DEA and forwarding us your concerns on this project. We look forward to continuing to work with you and the Waimanalo community on this project.

Sincerely,

Roy K. Abe
Vice President

cc: Wilson K. Ho and other Waimanalo Neighborhood Board members

Joseph A. Ryan	Kawika Eckart	Malcom Lee Jr.
Andrew Jamila	Nani P. Akeo	Mabel Ann Spencer
Solomon Spencer	Bob Kimo Lastimosa	Philip L. Ellsworth
Michael G. Buck	Priscilla Ho	Orrin Kupau

Steve Tayama, Puuhonua O Waimanalo Village
Dr. Kingsley Fisher, USDA
Walter Harada, UH CTAHR
Genevieve Salmonson, OEQC
John Nakagawa, Hawaii CZM Program

Some websites that may be of interest for further information:

http://www.ehrs.upenn.edu/programs/radiation/guides/Irradiator.html
http://www.epa.gov/oppbppd1/PESP/member_pages/hawffpmp.htm
http://www.extento.hawaii.edu/fruitfly/
http://www.extento.hawaii.edu/fruitfly/programbackground.html
http://starbulletin.com/2002/10/06/news/story5.html
http://www.hawaiibusiness.cc/hb62003/default.cfm?articleid=9

Notes Friday, September 5, 2003

Title: Comment: DEA-Hawaii Fruit Fly Production Facility
Date Created: Friday, September 5, 2003 1:47 PM

Aloha Mr. Roy K. Abe, This note is to let you know that Puuhonua O Waimanalo Village shares the concerns expressed by Mrs. Kimberly Kalama and ohana. These concerns need to be addressed before proceeding. Mahalo,
Steve Tayama Pu'uhonua O Waimanalo Village,
41-1300 Waikupanaha St. Waimanalo HI 96795
Ph. 259 9018

1

Hawaii Pacific Engineers, Inc.
1132 BISHOP STREET, SUITE 1003
HONOLULU, HAWAII 96813-2830
Phone: (808) 524-3771 Fax: (808) 538-0445
E-mail: hpeinc@hawaiipacificengineers.com

October 6, 2003

Mr. Steve Tayama
Puuhonua O Waimanalo Village
41-1300 Waikupanaha Street
Waimanalo, Hawaii 96795

SUBJECT: Draft Environmental Assessment for Temporary Research Modules Project
USDA Hawaii Fruit Fly Production Facility
Waimanalo, Hawaii (TMK 4-1-26: Por. 1)

Dear Mr. Tayama and Puuhonua O Waimanalo:

On behalf of the University of Hawaii College of Tropical Agriculture and Human Resources (CTAHR) and the U.S. Department of Agriculture (USDA), thank you very much for reviewing the subject document and for your correspondence of September 5, 2003. We appreciate your concerns with the project that you share with Ms. Kimberly Kalama and Ohana.

We have enclosed a copy of our response letter to Ms. Kalama that addresses the various concerns with the project in detail. The letter includes the full text of Ms. Kalama's comments. Based on the information provided, we hope that you will appreciate the benefits of the project to the Waimanalo community and Hawaii, and understand that there will be no significant adverse impacts on the community and environment.

Please feel free to call me at 522-7425 to arrange for a meeting or to request additional information/clarifications to address any questions or concerns on the project. Thank you very much for taking time to review the DEA. We look forward to continuing to work with you and members of the Waimanalo community on this project.

Sincerely,

Roy K. Abe
Vice President

Enclosures

cc: Waimanalo Neighborhood Board members (cover only)
Wilson K. Ho
Joseph A. Ryan
Andrew Jamila
Solomon Spencer
Michael G. Buck
Philip L. Ellsworth
Mabel Ann Spencer
Malcom Lee Jr.
Kawika Eckart
Nani P. Akeo
Bob Kimo Lastimosa
Priscilla Ho
Orrin Kupau
Dr. Kingsley Fisher, USDA (cover only)
Walter Harada, UH CTAHR (cover only)
Genevieve Salmonson, OEQC (cover only)

Some websites that may be of interest for further information:

http://www.ehrs.upenn.edu/programs/radiation/guides/Irradiator.html
http://www.epa.gov/oppbppd1/PESP/member_pages/hawffpmp.htm
http://www.extento.hawaii.edu/fruitfly/
http://www.extento.hawaii.edu/fruitfly/programbackground.html
http://starbulletin.com/2002/10/06/news/story5.html
http://www.hawaiibusiness.cc/hb62003/default.cfm?articleid=9

WAIMANALO NEIGHBORHOOD BOARD NO. 32

41-495 KALANIANAOLE HWY. • WAIMANALO, HAWAII 96795-1747
PHONE: (808) 527-5749 • FAX: (808) 527-5760 • INTERNET: www.co.honolulu.hi.us

MINUTES OF REGULAR MEETING
MONDAY, AUGUST 11, 2003
WAIMANALO PUBLIC AND SCHOOL LIBRARY

CALL TO ORDER: Chair Wilson Kekoa Ho called the meeting to order at 7:31 p.m. with a quorum present.

MEMBERS PRESENT: Wilson Kekoa Ho, Mabel Ann Spencer, Michael Buck, Phillip Ellsworth, Andrew Jamila, Jr., Bob Kimo Lastimosa, Solomon Spencer, Priscilla Ho, Joseph Ryan, Jr.

MEMBERS ABSENT: Kawika Eckart, Orrin Kupau, Nani Akeo and Malcolm Lee.

GUESTS: Lieutenant John Cheong and Officer Ken Nakamura (Honolulu Police Department), Captain Daniel Papuniai (Honolulu Fire Department), Benjamin Kama (Mayor's Representative), Councilmember Barbara Marshall, Ikaika Anderson (Councilmember Barbara Marshall's Office staff), Representative Tommy Waters, Kimo Troche (Marine Corps Base Hawaii), Captain Nathan Chine (Bellows Air Force Station), Kevin Andrews (Waimanalo Chamber of Commerce), Joe Ka'akua (Board of Water Supply), Chuck Braden (Waimanalo Health Center), Dennis Bumpy Kanahele and John Kirkley (Aloha First), Shannon Wood (Ko'olau News), Larry Lau (Clean Water Branch, State Department of Health), Micah Kane (Governor's Representative), Paul Richards (President, Waimanalo Hawaiian Homesteads Association), Stuart Stein and Vernon Harrington (United States Department of Agriculture), Roy Abe (Hawaii Pacific Engineers), Clifford Migita and Shannon Yee (Waimanalo Agricultural Association), Rocky Like (New Hope Fellowship Church), Carroll Cox (EnvironWatch), Nazarene Anderson (Waimanalo Canoe Club), Kim Kalama, James Hall, Jr., Kimberly Clark, Ray Lum, Lucy Akau, Turk Cazimero, Marie Richardson and Jamal Siddiqui (Neighborhood Commission Office staff).

PULE: Solomon Spencer offered the pule.

RESIDENTS' CONCERNS REGARDING POLICE AND FIRE

Speeding on Nakini Street: Turk Cazimero reported that motorists are speeding approximately 75 to 80 miles per hour. Chair W. Ho suggested that the police should increase their patrols on Nakini Street. Governor's representative Micah Kane added that his office, the Department of Hawaiian Homelands, which he is its Director, is working with the police to rectify the situation.

Request to install speed bumps on Kumuhau Street: A resident stated that for many years, requests have been made to install speed bumps on Kumuhau Street where motorists go 50 miles per hour in an area where the speed limit is 25 miles per hour. In addition, the resident asked for stop signs to be placed on the corner of Kumuhau Street and Kalanianaole Highway where Hawaiian Electric Company recently installed new telephone poles. It was further mentioned that during weekends, motorcycles went over 80 miles per hour heading towards Azevedo Gym. Another resident reported similar situations occurring on Oluolu Street where residents are also requesting installation of speed bumps. Ellsworth suggested that citizens should approach speeding motorists without being confrontational. Chair W. Ho replied that the police, not citizens, should approach motorists telling them not to speed.

Cleaning up Mekia Street of abandoned cars: Jamila acknowledged HPD Officer Ken Nakamura for successfully coordinating efforts in removing abandoned and stolen cars from Mekia Street.

Bon fire fronting a residence: Chair Ho reported that he called HFD and HPD last Saturday night to report a beach bonfire fronting 41-706 Kalanianaole Highway, but they did not show up.

Proposed Waimanalo Beach Sweep: Jamila reported that every month on the Waianae Coast, the community does beach sweeps with the help of Councilmember Mike Gabbard's office, to remove the junk and litter there. These beach sweeps have helped reduce crime in the Waianae/Nanakuli area. Social service agencies do a follow up by helping the homeless move to transitional housing at Kalaeloa. Jamila asked Councilmember Marshall if her office could coordinate a similar effort in Waimanalo. Councilmember Marshall will follow up on it.

EMERGENCY PUBLIC INPUT (PART I)

HONOLULU POLICE DEPARTMENT (HPD): Lieutenant John Cheong reported the following:

(1) Property crimes statistics for July 2003: 9 burglaries, 1 shoplifting, 24 thefts from automobiles, 1 auto accessory, 1 bicycle theft, 16 other thefts and 6 auto thefts.
(2) Regarding speeding, Lieutenant Cheong mentioned that despite numerous efforts in educating and warning the community about the dangers of speeding; traffic fatalities are up in 2003 as compared to 2002. HPD plans to conduct CTAP – Community Traffic Awareness Program to get the community aware of this problem. Lieutenant Cheong pointed out that most of the officers who patrol Waimanalo are Waimanalo residents.

Discussion followed: Jamila inquired to how many officers patrol Waimanalo. Lieutenant Cheong replied that there are 18 officers patrolling District 4 – Windward Oahu with 3 stationed in Waimanalo. However if additional manpower is needed, HPD can dispatch additional officers from other districts islandwide.

HONOLULU FIRE DEPARTMENT (HFD): Captain Daniel Papuniai reported the following:

(1) The following statistics for July 2003: Fires – 7 brush, 7 rubbish and 2 vehicle. Emergencies – 25 medical, 3 search/rescue and 4 miscellaneous.
(2) Safety Tip of the Month: Important documents, such as legal, financial, and personal history/records should be kept in a bank's safety-deposit box or in a fireproof vault/container for safekeeping. In the event of a fire, your records would expedite the processing of insurance claims.
(3) As for the need to install speed bumps, it is under the jurisdiction of Department of Transportation Services.

Discussion followed: Mabel Spencer asked if any of the medical emergencies required CPR – Cardio Pulmonary Resuscitation. Captain Papuniai replied yes. Captain Papuniai pointed out that HFD offers free CPR classes where everyone should learn this lifesaving skill. The minimum number of students attending one CPR class is ten per class. Ellsworth noted that CPR classes were taught at the Waimanalo Health Center and St. George's Church. Dennis Bumpy Kanahele pointed out that four years ago, he applied CPR to save someone's life. Every year, his organization Aloha First/Nation of Hawaii offers CPR classes.

APPROVAL OF THE JULY 14, 2003 REGULAR MEETING MINUTES: The following corrections were made:

- Page 2, paragraph 14, under Honolulu Police Department, should read: "(3) Mabel Spencer reported that in 2002, the Waimanalo Clean Up Coalition, the City and County of Honolulu and various community organizations worked together to clean up the Waimanalo community including removing abandoned vehicles. She agreed that it takes time to get the paperwork done prior to towing abandoned/stolen vehicles."
- Page 8, paragraph 7, under Fruit Fly Expansion Update, delete "existing", "and temporary research module", and "be torn down". Insert "remain for storage"
- Page 8, paragraph 12, item 4, second sentence should read: "Stuart Stein, from UDSA (United States Department of Agriculture) replied that during operations, 25% of the facility's employees were from Waimanalo and that 50% of the supplies were purchased from Waimanalo-based vendors."
- Page 8, paragraph 13, item 5, delete "Serium" and insert "Cesium-137". At the end of the sentence, add "for relocating irradiators."
- Page 8, paragraph 14, item 6, at the end of the sentence, add "with its new facility, making it possible to use some sterile medflies locally."
- Page 8, paragraph 15, item 7 insert "not" between "is" and "paying"

Mabel Spencer moved and Ellsworth seconded that the Board approve the July 14, 2003 minutes as amended. The motion was adopted by a unanimous vote of 9-0-0.

RESIDENTS CONCERNS IN THE COMMUNITY

The State of water being pumped out of Oceanic Institute: Larry Lau, from the Clean Water Branch, State Department of Health (DOH), reported that there are two concerns regarding the water conditions at Oceanic Institute: first, water coming out of Oceanic Institute poses a bacterial problem and second, chemicals used to treat the water pose a health hazard. Based on tests done by DOH on water quality samples coming out of Oceanic, he does not see a problem. As for

by 10%. BWS is asking all water users to voluntarily reduce consumption. Cutting back on overall water demand will allow their wells to recover and return to healthier levels. If water is not significantly reduced, BWS may impose mandatory conservation measures.

(b) Meanwhile, water use on Oahu is at an all-time high. Our water use report for the week of July 17 through July 23 shows an average consumption of more than 178 million gallons per day. That exceeds our five-year average fore July of 165 million gallons per day and is very closer to the record 180 million gallons per day that we experienced in the first week of June 2003.

STATE DEPARTMENT OF TRANSPORTATION (DOT): A representative was not present to provide a report.

KAILUA BAY ADVISORY COUNCIL (KBAC) UPDATE: A representative was not present to provide a report.

UNFINISHED BUSINESS

Fruit Fly Farm Expansion: Vernon Harrington, from the United States Department of Agriculture (USDA), stated that they have signed a loan to construct the research modules building. USDA plans to give copies of their Environmental Assessment (EA) where public comments are due by September 8, 2003.

Discussion followed:

(1) Mabel Spencer stated that the fruit fly facility is a classic example of the State waiving Environmental Assessment (EA) where specifically, the State Department of Health (DOH) does not address nuclear radiation in the facility. Harrington replied that the facility has an x-ray irradiator that is heavily regulated.
(2) Spencer asks who monitors this facility. Stuart Stein, from the USDA replied that inspections in this facility are done every six months.
(3) Spencer inquired about the fruit flies' wastes has high organic contents.
(4) Buck commented that this project would not be possible if the facility were not expanded. Buck noted that the first building of the fruit fly facility was done without an Environmental Impact Statement (EIS).
(5) Spencer stated that bypassing the EIS is wrong. Monies are need instead to improve the Waimanalo Wastewater Treatment Plant. Roy Abe, from Hawaii Pacific Engineers, replied that there is a two-step process, Environmental Assessment and then the Environmental Impact Statement must be prepared before use of expansion of the proposed/existing facility proceeds. Chair Ho commented that would take another three years before the fruit fly facility is expanded. Chair Ho further mentioned that some of the fruit flies might escape thus making life worse for Waimanalo residents. Stein replied that the fruit flies are screened prior to arriving to Hawaii.
(6) Ryan asked how large is the fruit fly trap. Stein replied that 5,000 fruit flies can be trapped per hour.
(7) Kimberly Clark asked what tests are being done at the facility and asked how sterile are the fruit flies. Clark suggested that monies should be used instead to fund alternate programs like organic farming. Clark noted that California and Florida Fruit Growers have powerful lobbies protecting their interests in both houses of the United States Congress.
(8) Chair Ho commented that the fruit fly facility is not an agricultural enterprise.
(9) Abe distributed a brochure regarding sewage spills.
(10) Spencer that that it is very depressing that monies are being allocated to expand the fruit fly facility where instead it should be used to upgrade the Waimanalo Wastewater Treatment Plant as well as other sewage improvements.

NEW BUSINESS: None.

ADJOURNMENT: There being no further Board business, the meeting adjourned at 10:03 p.m.

Submitted by,

Jamal Siddiqui
Neighborhood Assistant

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MINUTES OF REGULAR MEETING
MONDAY, SEPTEMBER 8, 2003
WAIMANALO PUBLIC AND SCHOOL LIBRARY

CALL TO ORDER: With a quorum established, Chair Wilson Kekoa Ho called the meeting to order at 7:31 p.m. with 10 members present.

MEMBERS PRESENT: Wilson Kekoa Ho, Mabel Ann Spencer, Michael Buck, Phillip Ellsworth, Andrew Jamila, Jr., Bob Kimo Lastimosa, Solomon Spencer, Kawika Eckart, Nani Akeo, Priscilla Ho and Joseph Ryan, Jr.

MEMBERS ABSENT: Orrin Kupau and Malcolm Lee.

GUESTS: Lieutenant Kennard Finn and Officer Ken Nakamura (Honolulu Police Department), Captain Job Harris (Honolulu Fire Department), Councilmember Barbara Marshall, Ikaika Anderson (Councilmember Barbara Marshall's Office staff), Senator Fred Hemmings, Representative Tommy Waters, Kimo Troche (Marine Corps Base Hawaii), Kevin Andrews (Waimanalo Chamber of Commerce), Joe Ka'akua (Board of Water Supply), Chuck Braden and Greig Gaspar (Waimanalo Health Center), Dennis Bumpy Kanahele and John Kirkley (Aloha First), Shannon Wood (Ko'olau News), Julie Dugan (Hawaii Job Corps), Micah Kane (Governor's Representative), Stuart Stein (United States Department of Agriculture), Roy Abe (Hawaii Pacific Engineers), Clifford Migita (Waimanalo Agricultural Association), John Kelly and Charles Rosa-Coleman (Hawaii Bicycling League), Rene Igami and Carla Kaneshiro (Waimanalo Elementary and Intermediate School Parents and Teachers Association) Mr. Rudolph (Kailua Bay Advisory Council), Gary O'Donnell, Valerie Curtis, Kim Kalama, Marilyn Abejon, Jim Andrews, Dave Larsen, Ray Lum, Lucy Akau, Nickie Hines, Moses Kaplola, Nicole Clements, Beverly Addington and Jamal Siddiqui (Neighborhood Commission Office staff).

PULE: Ellsworth offered the pule.

EMERGENCY PUBLIC INPUT (PART I)

HONOLULU FIRE DEPARTMENT (HFD): Captain Job Harris reported the following:

(1) The following statistics for August 2003: Fires – 1 structure, 6 brush, 12 rubbish and 3 vehicle. Emergencies – 28 medical, 1 search/rescue and 2 miscellaneous.
(2) Safety Tip of the Month: If you should awake in a smoke-filled room, roll out of bed, stay low and crawl to the door. Smoke fills a room from the top to bottom. Feel the door with the back of your hand.
    - If it is cool, open the door and check if the exit is safe. Close the door (to compartmentalize the fire), stay low, get out, and meet at the safe place selected by your family.
    - If it is hot, use the other previously designated escape route.
    - If both escape routes are blocked by fire and heat, stay where you are and call 911. While waiting for help to arrive:
        - Wet Towels or rags and stuff them in the cracks of doors to prevent smoke from entering.
        - If you are in a high rise and can get to a window, alert others of your location.
        - Wait for help to arrive.
(3) During the month of September, the Fire Fighter Safety and Health Guides will be distributed to various elementary schools. Parent and teacher participation with the student is greatly encouraged.
(4) Events to mark Fire Prevention Week, October 5 to 11, 2003, have been scheduled at the following locations:
    - Saturday, October 4, 2003, 11:00 a.m. to 1:00 p.m., Pearl Ridge Shopping Center.
    - Tuesday, October 7, 2003, 6:30 to 8:30 p.m., Royal Hawaiian Shopping Center.
    - Friday, October 10, 2003, 6:00 to 7:00 p.m., Ala Moana Shopping Center.
    - Saturday, October 11, 2003, 11:00 a.m. to 2:00 p.m., Windward Mall Shopping Center.

Discussion followed:

(1) It was noted that the fire that occurred last week started at Bellows Air Force Station and the winds moved it to Keolu Hills in Kailua. Both HFD and the U.S. Military combated the fire together.
(2) Jamila reported that every two weeks, he sees abandoned/derelict cars set on fire on Mekia Street.

(4) The Board of Education (BOE) Committee is working to make surfing, a major part of Hawaiian culture, to be sanctioned by the Department of Education (DOE) as part of their high school sports program.

Discussion followed: Ellsworth inquired about budgeting for Human Services programs. Senator Hemmings replied that there should be a change in State law where general funds would be used to fund Human Services programs.

MAYOR'S REPRESENTATIVE: A representative was not present to provide a report.

MARINE CORPS BASE HAWAII (MCBH): Kimo Troche reported the following:

(1) The two melon headed whales were rescued on August 19, 2003 at Hau'ula. One is in stable condition at the Marine Mammal Research Laboratory at MCBH –Kaneohe Bay while the other whale passed away.
(2) The commemorative event marking the second anniversary of the terrorist attacks on 9/11 takes place on Thursday, September 11, 2003, the Pacific War Memorial, MCBH – Kaneohe Bay, 6:00 p.m.
(3) MCBH's stage band will be performing at the Downtown Ho'olaulea on Saturday, September 13, 2003, 6:30 p.m.
(4) MCBH's marching band will be participating in the Aloha Festival Floral Parade on Sunday, September 14, 2003, 9:00 a.m. from Ala Moana Beach Park to Kapiolani Park.
(5) The next Military and Civilian Meeting takes place on Tuesday, September 16, 2003.

Discussion followed:

(1) Jamila asked if the fire on Keolu Hills Range might have been caused by a military training accident that occurred at Bellows Air Force Station. Jamila noted that more than 40 acres were burned. Jamila asked if MCBH has an emergency plan if a fire occurs while training takes place. Troche replied yes.
(2) Citing the recent fires that occurred at Bellows and in Makua Valley; M. Spencer stated that it is very hard to believe that the military was not prepared to deal with training accidents. If true, the military should withdraw from both sites. She further mentioned that the people are saving water while Bellows has increased its usage by 82%, therefore the military must also be subject to water restrictions like everyone else. Troche replied that he would convey these concerns to the MCBH command.
(3) M. Spencer noted that the agreement was for the military to do amphibious exercises instead there are helicopters flying over residences. Troche stated that the pilots were not briefed about the flight plans.
(4) Ryan requested that Troche provide information on water consumption at Bellows Air Force Base for the past two years at the next Board meeting.

APPROVAL OF THE AUGUST 11, 2003 REGULAR MEETING MINUTES: The following corrections were made:

- Page 1, under Guests, delete "Shannon Yee" and insert "Warren Yee"
- Page 5, under Governor's Representative, paragraph 15, should read: "M. Spencer pointed out that Waimanalo has a Medically Underserved Community (MUC) federal designation."
- Page 7, under Fruit Fly Farm Expansion, item 5, second sentence should read: "Roy Abe, from Hawaii Pacific Engineers, replied that there is a two-step process. Environmental Assessment is prepared first; an Environmental Impact Statement is prepared if the Environmental Assessment shows significant impacts."

Ryan moved and Jamila seconded that the Board approve the August 11, 2003 Regular Meeting Minutes as amended. The motion was adopted by a unanimous vote of 11-0-0.

HAWAII JOB CORPS: Julie Dugan reported that at last year's make a Difference Day, Hawaii Job Corps cleaned up Hihimanu Street. This year, they are looking for projects where they could make use of surplus equipment, including older computers. M. Spencer suggested that these surplus computers should be distributed to area parks.

NATION OF HAWAII: Dennis Bumpy Kanahele reported the following:

(1) Bank of America is in its fifth year of default of its commitment to provide $150 million for Native Hawaiians including $4.5 million as seed money to establish a Native Hawaiian-owned bank. Having Native Hawaiians united as business partners will more than anything else give Native Hawaiians economic independence. In addition, he is compiling documents that could be used to press criminal charges against Bank of America.
(2) Wal-Mart is moving Iwi Kupunas (ancestral bones) at their Ala Moana site.

Makai Range – Contaminated Water: Mentioned earlier in the meeting.

Fruit Fly Farm Expansion: Stuart Stein, from the United States Department of Agriculture (USDA) and Roy Abe, from Hawaii Pacific Engineers (HPE), reported the following:

(1) Thanked both the Board and community for their comments regarding the USDA's Fruit Fly Farm Expansion Project. In addition, both USDA and HPE distributed a response form to the Board's letter stating their opposition to the fruit fly farm expansion project.
(2) The Environmental Impact Statement (EIS) is a two-step process beginning with an Environmental Assessment (EA). If further studies are needed, the next step would be the EIS.

Discussion followed:

(1) Kim Kalama asked the Board to send a letter opposing the fruit fly farm expansion project, specifically with irradiation. Chair W. Ho noted that the Board did just that last month.
(2) Stuart Stein pointed out that there is a seven-ton steel and lead container that makes the facility safe. Abe added that wastewaters runs through the fruit fly farm facility. In a related note, the facility is guarded 24/7 to prevent a possible terrorist raid.
(3) Representative Tommy Waters asked why Waimanalo was chosen to have the fruit fly facility placed there in the first place. Ryan replied that Waimanalo was chosen due to opposition from California fruit farmers who do not want a fruit fly facility in their state. Ryan added that this plant adversely affects agricultural activity in Waimanalo.

NEW BUSINESS

Century Bike Ride Through Waimanalo: John Kelly and Charles Rosa-Coleman, representing the Hawaii Bicycling League, reported that the Century Bike Ride has taken place in Waimanalo for the past 23 years. This year's event takes place on Sunday, September 28, 2003. There will be six police officers who will be monitoring the following intersections: Oluolu Street/Kalanianaole Highway, Kumuhau Street/Kalanianaole Highway, Hihimanu Street/Kalanianaole Highway and Ahiki Street/Waikupanaha Street. Most of the bike riders would be in Waimanalo between 7:00 to 9:00 a.m.

Discussion followed:

(1) Eckart pointed out that last year, there were supposed to be three police officers present with only one showing up. No HPD officer monitored the intersections of Oluolu Street/Kalanianaole Highway and Kumuhau Street/Kalanianaole Highway. Kelly replied that he could not guarantee that the six HPD officers being assigned this task would not be present, however volunteers would be brought in to help monitor area traffic.
(2) Ryan suggested that the Hawaii Bicycling League participate in Hawaii Job Corps' Make a Difference Day.
(3) M. Spencer commented that if the Hawaii Bicycling League cannot fulfill their promise, this event should not take place in Waimanalo.

Eckart moved and Jamila seconded that the Waimanalo Neighborhood Board No. 32 support the Century Bike Ride in Waimanalo on Sunday, September 28, 2003. The motion was adopted by a vote of 10-1-0. Nay: S. Spencer.

ADJOURNMENT: There being no further Board business, the meeting adjourned at 10:12 p.m.

Submitted by,

Jamal Siddiqui
Neighborhood Assistant

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MINUTES OF REGULAR MEETING
MONDAY, OCTOBER 13, 2003
WAIMANALO PUBLIC AND SCHOOL LIBRARY

CALL TO ORDER: With a quorum established, Chair Wilson Kekoa Ho called the meeting to order at 7:30 p.m. with 8 members present.

MEMBERS PRESENT: Wilson Kekoa Ho, Mabel Ann Spencer, Michael Buck, Phillip Ellsworth, Andrew Jamila, Jr., Solomon Spencer, Nani Akeo and Priscilla Ho.

MEMBERS ABSENT: Bob Kimo Lastimosa, Kawika Eckart, Joseph Ryan, Jr. and Malcolm Lee.

GUESTS: Lieutenant John Cheong (Honolulu Police Department), Captain Daniel Kapunai (Honolulu Fire Department), Ikaika Anderson (Councilmember Barbara Marshall's Office staff), Ben Kama (Mayor's Representative), Representative Tommy Waters, Kevin Andrews (Waimanalo Chamber of Commerce), Joe Ka'akua (Board of Water Supply), Chuck Braden (Waimanalo Health Center), Dennis Bumpy Kanahele (Aloha First), Shannon and Jim Wood (Ko'olau News), Julie Dugan (Hawaii Job Corps), Micah Kane (Governor's Representative), Captain Nathan Chine (Commanders Bellows Air Force Station), Stuart Stein (United States Department of Agriculture), Roy Abe (Hawaii Pacific Engineers); Clifford Migita, Ellen Yee, Annette Yee, Ed Miyashita, Fred and Debbie Humphery (Waimanalo Agricultural Association), George Escher (Deacon, First Baptist Church of Waimanalo), Robert Nagamine (Pastor, First Baptist Church of Waimanalo), Liz Martinez (Olomana Gardens), Gordon Mattos (Friends of Waimanalo), Kirsten Baumgart Turner and Dawn Chang (Mano Wai Corporation), James Hall, Marilyn Abejon, Ray Lum, Beverly Addington, John Kekawa, Jr., Harry Akagi, Turk Cazimero, Audrey Keesing, Deborah Smith, Derrick Kiyabu, Kimberly Clark, John and Kalei McCoy, Moana DeMello, Sui Lan Kepa, Aukahi Austin, Jamie Kano, Malia Garvey, Kim Tasaka, Fred Welch, Gwen Kailihiwa and Jamal Siddiqui (Neighborhood Commission Office staff).

PULE: M. Spencer offered the pule.

At this time, a moment of silence was observed in memory of Justin Liko Flores, the 14-year old resident who was killed a recent car accident. The funeral was held today.

EMERGENCY PUBLIC INPUT (PART I)

HONOLULU FIRE DEPARTMENT (HFD): Captain Job Harris reported the following:

(1) The following statistics for September 2003: Fires – 4 structure, 4 brush, 1 rubbish and 2 vehicle. Emergencies – 24 medical.
(2) Safety Tip of the Month: When there is a fire in a high-rise building, always use the stairs to exit the building. Should there be a power outage, the elevators will trap the occupants or possibly open the doors on the floor on the floor with the fire.
(3) During the month of September, the Fire Fighter Safety and Health Guides were distributed to various elementary schools to coincide with Fire Prevention Week. This year' theme is "When Fire Strikes: Get Out! Stay Out!
(4) Fire Prevention Week was October 5 to 11, 2003. Activities have been scheduled at the following locations:
    - Wednesday, October 15, 2003, 9:00 to 10:30 a.m., Kipapa Elementary School.
    - Wednesday, October 22, 2003, 9:00 to 10:30 a.m., Kaimiloa Elementary School.

HONOLULU POLICE DEPARTMENT (HPD): Lieutenant John Cheong reported the following statistics for September 2003: 6 burglaries, 10 thefts, 8 unauthorized entry into motor vehicles, 1 auto theft and 5 unauthorized control patrol vehicle (UCPV). If anyone has information of individuals who committed crimes, call Crimestoppers at 955-8300. In additions, parents should teach their children to call 911 in case of an emergency.

Kupau arrived at 7:36 p.m. (9 members present)

BOARD OF WATER SUPPLY (BWS): Joe Ka'akua reported the following:

(1) There were no water main breaks in September 2003.
(2) The three area BWS projects are continuing.
(3) General Water Announcements: (a) Two full months of voluntary restrictions on irrigation and other conservation measures have resulted in lower water consumption by Oahu residents. BWS' latest water use report for the week ending October 8, 2003 shows a consumption rate of 156.20 million gallons a day. That's below the five-year average of 165 million gallons a day. While BWS' conservation practices have resulted in a marked decrease in water use, ground water levels continue to be lower that they were a year ago. We need to continue to aggressively conserve all water use so out ground water resource can be replenished. (b) Government water users are trying to decrease potable water use for irrigation purposes. The City uses recycled water wastewater to irrigate common areas in West Loch Villages, West Loch Fairways and Ewa Villages as well as Shoreline, Ewa Mahiko and Asing Parks. The City also sells recycled water to Ewa area golf courses. The State uses non-potable water on landscaping in the Fort Weaver medial strip as well as the highway corridor from Lagoon Drive to Halawa. Non-potable water users are not required to adhere to the voluntary irrigation schedule because their sources do not affect the ground water supply.
(4) Regarding water consumption at Bellows Air Force Station, it has been dramatically reduced.

KAILUA BAY ADVISORY COUNCIL (KBAC) UPDATE: A representative was not present to provide a report.

UNFINISHED BUSINESS

Economic Development In Waimanalo: Kirsten Baumgart Turner, Executive Vice President for Development at Mano Wai (Hawaiian for source of water and life) Corporation, a not-for-profit infrastructure development company whose primary mission is to plan, design and build technologically advanced facilities to address critical issues facing Hawaii's rural communities. Mano Wai's priorities include developing, constructing and operating facilities that support community enhancement by coordinating with various federal, state and local agencies as well as the private sector working to match funds to improve rural communities. Specifically, improving the Waimanalo Wastewater Treatment Plant Facility where Mano Wai could as a non-profit utility company, would operate the facility by doing the following: to provide for the financing, development and management of utilities necessary for the development of much-needed housing and economic opportunities particularly in underserved rural communities; and provide long-term, training and on-site employment for the residents of these communities.

Discussion followed:

(1) Various Board members expressed their support of the concept presented by Mano Wai. Turner suggested that the Board write a letter of support of this project.
(2) Plans include investigating the sources of effluent.
(3) The project costs $30 million with majority coming from federal funds.

M. Spencer moved and Akeo seconded that the Waimanalo Neighborhood Board No. 32 support the concept of improving the Waimanalo Wastewater Treatment Plant as presented by Mano Wai Corporation. The motion was adopted by a vote of 8-1-0. Ayes: W. Ho, M. Spencer, Buck, Ellsworth, Jamila, S. Spencer, Kupau, Akeo. Nay: P. Ho.

Buck moved and S. Spencer moved that the Waimanalo Neighborhood Board No. 32 add to the agenda <u>Fruit Fly Expansion Facility Update.</u> The motion was adopted by a unanimous vote of 9-0-0.

Fruit Fly Facility Expansion Project: Roy Abe, from Hawaii Pacific Engineering, stated that he and Stuart Stein, from the United States Department of Agriculture (USDA), are present to answer questions regarding the Final Environmental Assessment that would be released in November 2003.

NEW BUSINESS

Partnership for Olelo Studio: The presenter was not present.

Appendix H

Hawaii Coastal Zone Management Program
Certification and Assessment Forms

HAWAII CZM PROGRAM
FEDERAL CONSISTENCY CERTIFICATION FORM

Project/Activity Title or Description: Hawaii Plant Protection Laboratory Temporary Research Modules, Hawaii Fruit Fly Production Facility, Waimanalo, Hawaii

Island: Oahu Tax Map Key: 4-1-26: Por. 1 Estimated Start Date: Oct. 2003

APPLICANT AND AGENT INFORMATION

1. Stuart H. Stein, U.S. Dept. of Agriculture, APHIS
Name of Applicant

41-650 Ahiki Street
Address

Waimanalo, Hawaii 96795
City/State of Hawaii Zip Code

259-8822
Daytime Phone

259-9017 stuart.h.stein@aphis.usda.gov
Fax Number E-mail Address

2. Roy K. Abe, Hawaii Pacific Engineers, Inc
Agent

1132 Bishop Street, Suite 1003
Address

Honolulu, Hawaii 96813
City/State of Hawaii Zip Code

522-7425
Daytime Phone

538-0445 rabe@hawaiipacificengineers.com
Fax Number E-mail Address

TYPE OF APPLICATION (Check one (1) only)

[X] I. Federal Activity

"The proposed activity is consistent with and will be conducted in an manner consistent to the maximum extent practicable with the Hawaii Coastal Zone Management Program."

Signature Stuart H. Stein (Applicant or responsible party) Date Apr. 5, 2003

[ ] II. Permit or License – Please sign below.

[ ] III. OCS Plan/Permit – Please sign below.

[ ] IV. Grants & Assistance – Please sign below.

"The proposed activity complies with the Hawaii's Coastal Zone Management Program and will be conducted in a manner consistent with such a program."

Signature _____ Date _____
(Applicant or responsible party)