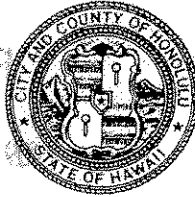


DEPARTMENT OF PLANNING AND PERMITTING  
**CITY AND COUNTY OF HONOLULU**

650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813  
PHONE: (808) 768-8000 • FAX: (808) 768-6041  
DEPT. WEB SITE: [www.honolulu.dpp.org](http://www.honolulu.dpp.org) • CITY WEB SITE: [www.honolulu.gov](http://www.honolulu.gov)

MUFI HANNEMANN  
MAYOR



NOV 23 2009

DAVID K. TANOUE  
DIRECTOR

ROBERT M. SUMITOMO  
DEPUTY DIRECTOR

2009/ED2  
2008/ELOG-2822 (HS)

October 27, 2009

Ms. Katherine P. Kealoha, Director  
Office of Environmental Quality Control  
235 South Beretania Street, #702  
Honolulu, Hawai'i 96813

Dear Ms. Kealoha:

Subject: Final Environmental Assessment (FEA) for the Mokulē'ia Zone Change  
Tax Map Key: 6-8-003:021, North Shore, O'ahu, Hawai'i

The Department of Planning and Permitting (DPP) has reviewed the comments received during the 30-day public comment period, which began on December 8, 2008, and the Final Environmental Assessment submitted September 24, 2009. The DPP has determined that this project will not have significant environmental impacts as per the Office of Environmental Quality Control (OEQC) guidelines and has issued a Finding of No Significant Impact. Please publish this notice in the November 8, 2009 issue of the OEQC Environmental Notice.

We have enclosed a completed OEQC Publication Form, one hard copy of the FEA, and a compact disc containing the FEA and Publication Form.

Should you have any questions, please contact Hal Senter of the DPP staff at 768-8055.

Very truly yours,

  
for David K. Tanoue, Director  
Department of Planning and Permitting

DKT:bkg

cc: Analytical Planning Consultants

Enclosures

08e12822OEQC

# **Final Environmental Assessment**

## **Zone Change From F-1 Military and Federal Preservation to Ag-2 Agricultural Mokuleia, Oahu, Hawaii**

**(Tax Map Key: (1) 6-8-003:021)**

Prepared For:

Ralph Gray  
3107 Oahu Avenue  
Honolulu, Hawaii 96822

June, 2009

Prepared By:

Kane Environmental, Inc.  
Seattle, WA 98103



OEQC BULLETIN PUBLICATION FORM  
(Follow instructions on other side)

1. Project Name: Mokuleia Zone Change – F-1 to AG-2

Type of Document (*circle one*): **Draft EA**, Final EA, EIS prep notice, draft EIS, final EIS, NEPA  
*check if applicable:* \_\_\_\_\_ revised document \_\_\_\_\_ supplemental document  
 Legal Authority: Chapter 343 HRS  
 Agency determination: Anticipated FONSI

Applicable sections:

- |  |   |
|--|---|
| <input type="checkbox"/> Use of state or county lands or funds | <input type="checkbox"/> Use of land in the Waikiki district  |
| <input type="checkbox"/> Use of conservation district lands    | <input type="checkbox"/> Amendment to county general plan   |
| <input type="checkbox"/> Use of shoreline area                 | <input type="checkbox"/> Reclassification of conservation lands   |
| <input type="checkbox"/> Use of historic site or district      | <input checked="" type="checkbox"/> North Shore Sustainable Communities<br>Plan Significant Zone Change |

2. Island: Oahu  
 Judicial District: Honolulu  
 Tax Map Key Number: (1) 6-8-003:021

3. Applicant or applicant agency:  
Mr. Ralph Gray  
 Address: 3107 Oahu Avenue  
Honolulu, HI 96822  
 Contact: Ralph Gray Phone: (808) 295-0704

4. Approving Agency (EAs) or Accepting Authority (EISs):  
City and County of Honolulu, Department of Planning and Permitting  
 Address: 650 South King Street  
Honolulu, Hawaii 96813  
 Contact: David Tanoue, Director Phone: 808-523-4432

5. Consultant: Analytical Planning Consultants, Inc.  
 Address: 928 Nuuanu Avenue Suite 502  
Honolulu, Hawaii 96817  
 Contact: Don Clegg, President Phone: 808-536-5695

6. Public Comment Deadline: \_\_\_\_\_

7. Permits required prior to implementation: None

8. Project Summary (name of file): Mokuleia Zone Change – F-1 to Ag-2

9. Public Library Copy: Waialua (not required for final EAs)

10. This form was prepared by: Lauri Clegg Phone: 808-536-5695

**Note for EAs:**  
 When the applicant is a state or county agency, the applicant agency and approving agency are the same.

**Mokuleia Zone Change – F-1 to Ag-2**

**Property – Farrington Highway, Mokuleia, Oahu**

**TMK(1) 6-8-003: 021**

**PROJECT SUMMARY**

The 40.59 acre property is located mauka and south of Farrington Highway at the base of the Waianae Mountains in the Waialua District of the City and County of Honolulu. Prior to 1944, the property was owned by Mokuleia Ranch and Land Company Ltd. within a larger parcel of agricultural land. In 1944, the Property was condemned for public use and used by the US Military. The applicant proposes to return the property to the original agricultural zoning, and is requesting a zone change from F-1 Military and Federal Preservation to Ag-2 Agricultural. There will be no further subdivision of the property. The applicant will maintain and develop the three existing lots of record for activities permitted in the AG-2 district by the Land Use Ordinance (LUO).

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**ATTACHMENTS**

- A – EDR NEPA Check
- B – Site Photographs
- C – Supporting Documents
- D – Project Master Plan
- E – Agricultural Feasibility Study (Dillingham Ranch Aina, LLC)
- F – Findings of Final Site Inspection Report Dillingham Air Force Base – Executive Summary

**ADDENDUM**

Final Site Inspection Report, Dillingham Air Force Base, Mokuleia, Hawaii  
Prepared for US Army Corps of Engineers July 2008  
Prepared by Parsons Infrastructure & Technology Group, Inc., Norcross, Georgia

## 1.0 INTRODUCTION

This Environmental Assessment (EA) is being prepared in conjunction with an Application for Zone Change for Tax Map Key (TMK) 6-8-003: 0021. The EA is prepared pursuant the requirements of Hawaii Revised Statutes Chapter 343. A Finding of No Significant Impact (FONSI) is requested.

### 1.1 General Information

The Applicant:	Ralph S. & Cathy M. Gray 3107 Oahu Avenue Honolulu, Hawaii 96822
Recorded Fee Owner:	Coastal View Properties, LLC 820 Mililani Street, Suite 711 Honolulu, Hawaii 96813 Contact: Mr. Greg Jones Ph. (714) 267-1207
	Ralph S. & Cathy M. Gray 3107 Oahu Avenue Honolulu, Hawaii 96822 Ph. (808) 295-0704
The Applicant's Agent:	Analytical Planning Consultants 928 Nuuanau Avenue, Suite 502 Honolulu, Hawaii 96813 Contact: Mr. Donald Clegg Ph. (808) 536-5695
EA Preparer:	Kane Environmental Inc. 3831 Stone Way North Seattle, Washington 98103 Contact: Mr. John Kane Ph. (206) 691-0476
TMK:	(1) 6-8-003:021
Lot Area:	40.59 Acres
State Land Use Designation	Agricultural
North Shore Sustainable Communities Plan Boundary	Outside Rural Community Boundary in an area identified for agricultural use
Current Property Zoning	F-1 Military and Federal Preservation District
Coastal Zone Management Area	Outside the Special Management Area



Agencies Consulted: Federal  
 Army Corps of Engineers, Planning Division  
 Department of the Army Directorate of Public Works  
 United States Department of the Interior  
 State of Hawaii  
 Department of Health  
 Department of Land and Natural Resources, State Historic Preservation Division  
 Department of Land and Natural Resources, Office of Conservation and Coastal Lands  
 Office of Environmental Quality Control  
 Office of Hawaiian Affairs  
 Public Utilities Commission  
 State Commission on Water Resource Management  
 Department of Agriculture  
 City and County of Honolulu  
 Department of Planning and Permitting  
 Board of Water Supply  
 Councilmember Dela Cruz  
 Others  
 Mokuleia Community Association  
 North Shore Neighborhood No. 2  
 Mountain Edge Environmental

Accepting Authority: City & County of Honolulu, Department of Planning and Permitting  
 Required Approvals: Zone Change Application  
 Anticipated Determination Finding of No Significant Impact

## 1.2 Background

The subject area to be re-zoned is a 40.59 acre parcel of land identified as Tax Map Key 6-8-003:021 and is composed of three lots of record. There will be no further subdivision of the property.

Parcel 2-A (MF-58)	Portion of Royal Patent Grant 231	0.70 acres
Parcel 2-C (MF-57)	Portion of Royal Patent Grant 270	19.21 acres
Lot 2-B (MF-31)	Map 3 Land Court Application 824	20.68 acres

In 2002, Coastal View Properties, LLC acquired TMK 6-8-003:021 (the Property) from Mokuleia Land Company, consisting of 40.59 acres of land at the base of the Waianae Mountains. In 2005, Ralph and Cathy Gray acquired half interest in the Property. Prior to 1944, the Property was owned by Mokuleia Ranch and Land Company Ltd. within a larger parcel of agricultural land. In 1944, the Property was condemned for public use and used by the US Military. The Declaration of Taking filed in 1946 by the United States Government states that the subject property was acquired for public use for the military and other war purposes. Specifically, the property was acquired to provide for an ordinance storage area and related military uses as a support to the Dillingham Airfield. There still exist on site a number

Kane Environmental, Inc. 3

of former storage bunkers distributed along a paved looping road system. The storage bunkers are formed by earth and rock berms on three sides, with an open side toward the road.

Prior to 1962, a road was constructed from the Property up the mountain to a Nike Missile Tracking Station located off the Property. In 1966, the General Services Administration for Disposal of Federal Property determined the Property to be surplus and sold it to the state of Hawaii for \$110,000. The Property was offered to the State "As Is". There was no reference to any **environmental** concerns regarding the condition of the Property in any of the documentation at the time. The deed document includes a road and cable easement in favor of the U.S. Government, the location of which may be changed with the permission of the U.S. Army. In 1989, the State entered into an agreement with the Mokuleia Land Company to exchange the Property for land to provide public access to the Mokuleia Forest Reserve (Peacock Flats). The Property is currently being used for ranching activities.

The Property is presently zoned F-1 Military and Federal Preservation due to its previous use by the military. Section 21-3.40 (d) of the Land Use Ordinance mandates that should lands be removed from either the state-designated conservation district or from federal jurisdiction, it shall be zoned F-1 and all uses, structures and development standards shall be as specified for the P-2 general preservation district. The purpose of designating land released from Federal use as P-2 is to put it into a limited use holding pattern until an appropriate use can be determined. The land under consideration has been in a holding pattern since 1966 when it was transferred to the State of Hawaii by the United States government.

The applicant proposes to return the Property to the original agricultural zoning, and is requesting a zone change from F-1 Military and Federal Preservation to Ag-2 Agricultural. There will be no further subdivision of the property. The applicant will maintain and develop the three existing lots of record for activities permitted in the AG-2 district by the Land Use Ordinance (LUO).

### **1.3 Project Location**

The Property is located mauka and south of Farrington Highway and is centered between Kaena Point to the West and Thomson Corner to the East, at the base of the Waianae Mountains in the Waiialua District of the City and County of Honolulu (Figure 1). The project site is at the end of a private paved access road that leads south from Farrington Highway. The Property is vegetated mainly with guiea grass, koa haole, and keawe and no structures are present (Figure 2).



Figure 1: General Project Location

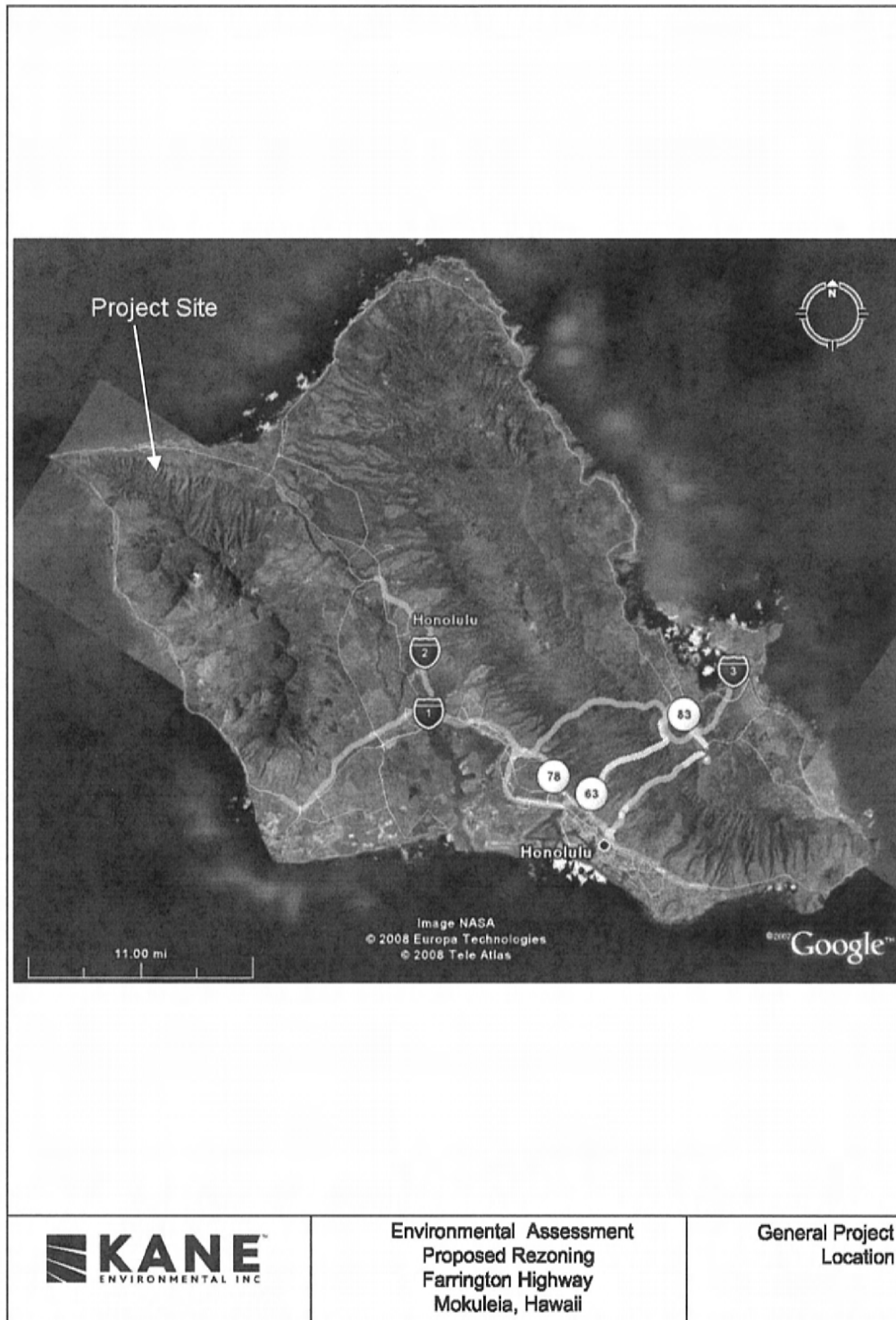


Figure 2: Project Site and Vicinity

(Project Boundaries are Approximate)

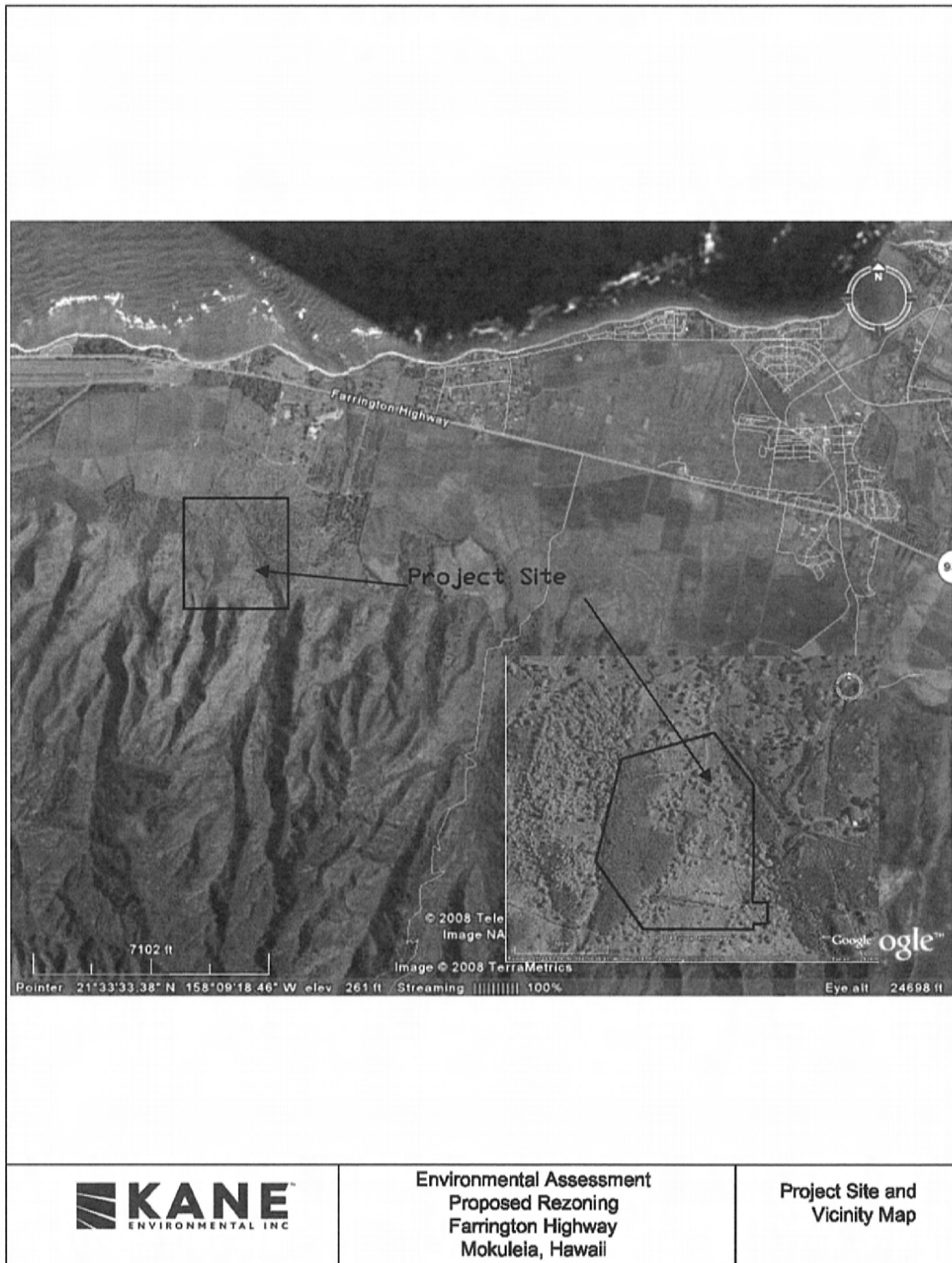


Figure 2A: Existing Lots

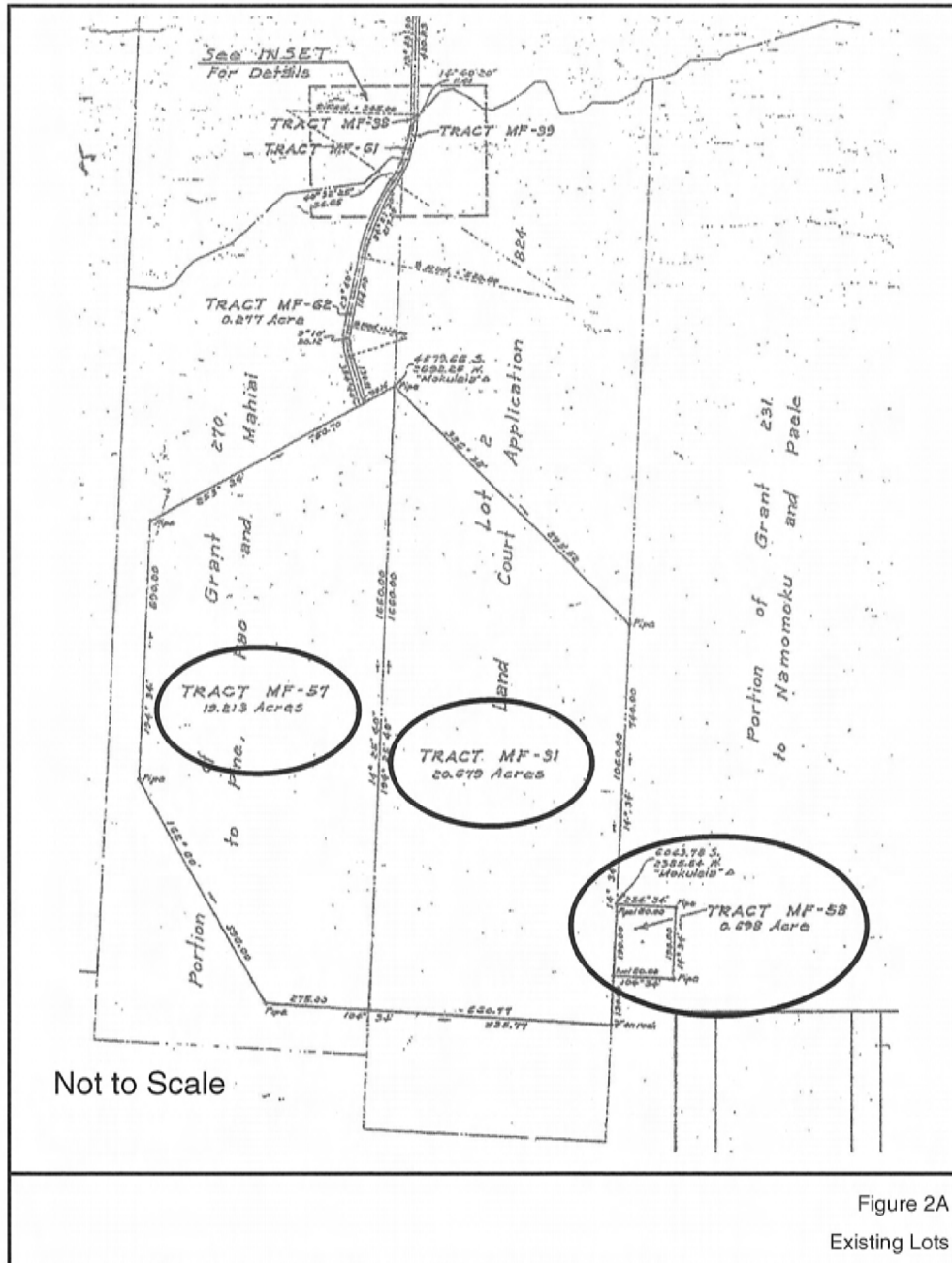
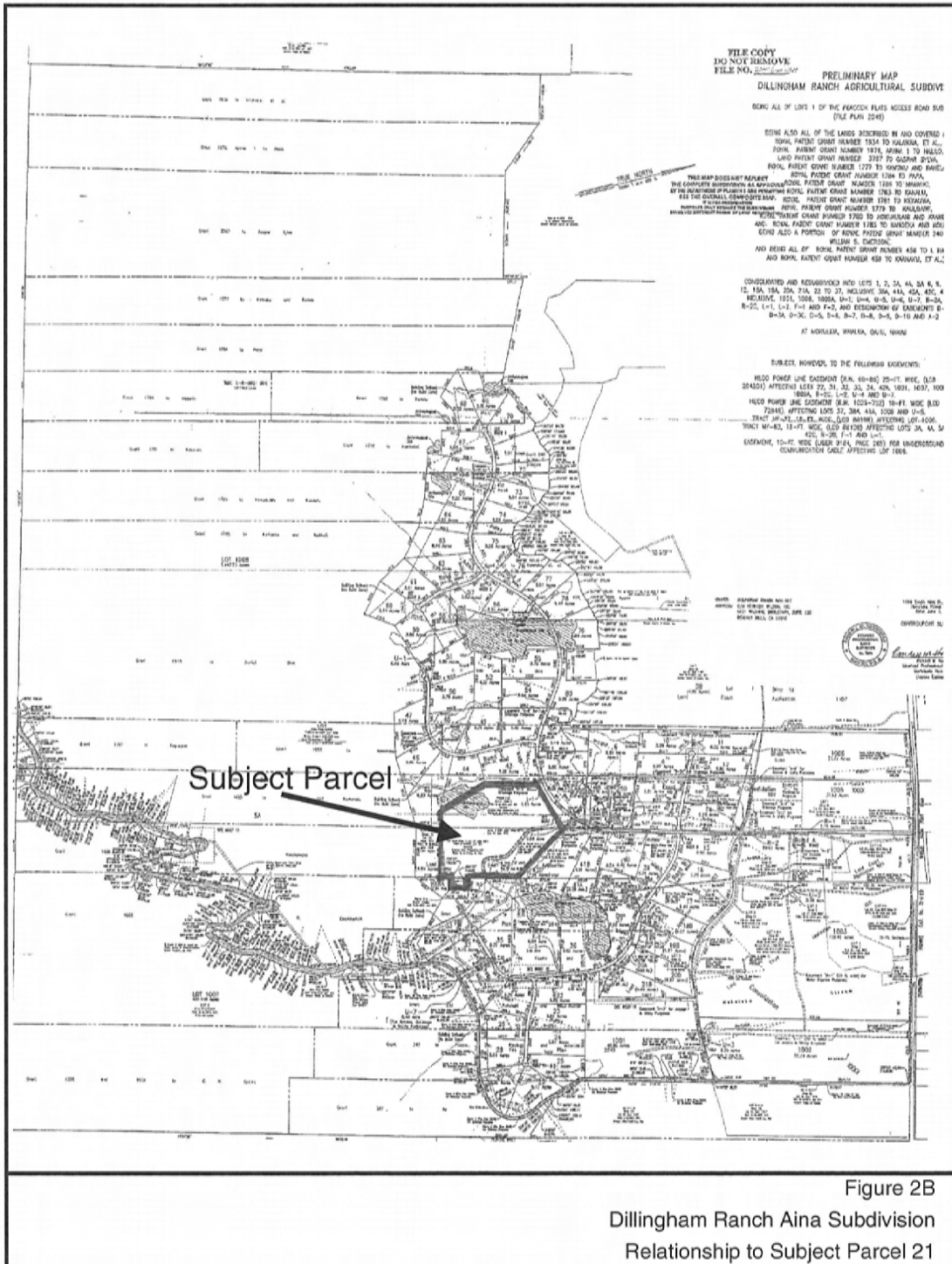


Figure 2A  
Existing Lots





## 2.0 DESCRIPTION OF THE ACTION

### 2.1 Project Setting

The Mokuleia area is located along Oahu's north shore, east of Dillingham Airfield. It is a rural area characterized by agricultural and ranching land use, with recreational and residential uses nearer the shore. The Mokuleia area is bound to the south and southwest by the Mokuleia Forest Reserve. The Property is located within a State agricultural district and the surrounding land use includes palm tree farming, cattle ranching, sugarcane fields, taro farming and a banana plantation. Several farm dwellings, formerly associated with the Dillingham Ranch, are scattered throughout the areas near the Property. The nearest residential development is approximately one-mile to the northeast, at Laau Paina Place. The Property is approximately 5-miles southwest of Haleiwa and 1.25-miles southeast of Dillingham Airfield.

The Department of Planning and Permitting of the City and County of Honolulu has recently granted temporary approval to subdivide a portion of the surrounding Dillingham Ranch land into 77 agricultural lots (2007/SUB-167). The subdivision has an average lot size of 5.97 acres and surrounds the Property on the east, north and west. As a condition of approval, the State Department of Transportation in their review of the project stipulated that access to the subject property not be denied.

### 2.2 General Description

The applicant is seeking to return the Property to the original agricultural zoning, and is requesting a zone change from F-1 Military and Federal Preservation to Ag-2 Agriculture to allow the Property to be used for agricultural uses, as it had historically been used, prior to its temporary use by the U.S. military. As permitted by the Land Use Ordinance, the Ag-2 zoning would allow construction of farm dwellings on the Property in conjunction with agricultural activities. The three existing lots have never been consolidated and are considered to be separate lots of record for development purposes. The existing lots of record are 19.21 acres, 20.68 acres and .7 acres and the minimum lot area for the requested Ag-2 Agricultural District is 2 acres. As per the Land Use Ordinance Section 21-8.30 (a), any zoning lot which has at least twice the minimum lot size for the underlying (agricultural) district may have two detached (farm) dwellings. The existing lot areas would permit 2 dwellings on the 19.21 acre lot, 2 dwellings on the 20.68 acre lot and one on the .7 acre lot for a total of 5 dwellings. No further subdivision of the Property is proposed. The present P-2 zoning allows for limited agricultural uses and does not allow farm dwellings which are vital for protection and management of crops and livestock. Loss of crops and equipment could be potentially devastating for the owner of a small privately owned farm than it would be for a large plantation type operation. The surrounding land parcels are already

zoned Ag-2 Agricultural, therefore this change would be consistent with land use in the area (Figure 3). The acreage under consideration is designated for Agricultural use under the State Land Use Laws and the proposed zoning change is consistent with this designation.

### **2.3 Relevant Features and Considerations**

The Property is currently undeveloped, heavily vegetated and being used for cattle grazing. Prior to the Property's use as a military reservation, it was used for agriculture as part of the Dillingham Ranch, primarily for sugarcane production and horse ranching (Mountain Edge, 2002). Only portions of the Property are visible from Farrington Highway. The majority of the soils on the Property (Ewa) are rated as Prime farmland if irrigated (Attachment B, Farmland Classification). Under the University of Hawaii Land Study Bureau (LSB) classification system, the Property is rated "D" for marginal, however land rated as "A", "B" and "C" is in the vicinity (Attachment C). The Property is not part of Agricultural Lands of Importance to the State of Hawaii (ALISH), however most of the land bordering the Property is classified in the ALISH system (Figure 3). The Property is most likely not classified in the ALISH system due its prior use by the military. Based on the type of soils found on the Property, its historical use and the surrounding land classifications, a significant portion of the Property is suitable for agricultural operations. Based on the ALISH classifications, the land in the vicinity of the Property is also important agricultural land. The Property is also relatively near Farrington Highway and other farm properties, which will provide easy access for farm equipment, a ready supply of any needed farm supplies and allow vehicles carrying agricultural products an easy route for distribution. The Agricultural Feasibility Report done in 2007 for the adjacent Dillingham Ranch Aina LLC agricultural subdivision is included as Attachment F. The Report is applicable to the subject Property as geography and climate, topography, soil types and productivity are similar; and, historically, the properties were all formerly included within the Dillingham Ranch agricultural holdings. While the Property is most suitable for ranching activities, the agricultural operations suggested in the Report would most likely be feasible for the Property.

#### **2.3.1 Technical Characteristics**

There are no technical characteristics involved in the zoning change request. A summary of potential development of the Property into 4-5 farms is contained in the Project Master Plan Attachment D.

#### **2.3.2 Economic and Social Considerations**

The Property zoning and use over the past 60 years has resulted in no net gain or loss of jobs or other measurable economic impacts in the project area. The residential population was also unaffected. The Property is located within an active agricultural district and remains viable for agricultural use. The return to original zoning would not alter the overall rural/agricultural character of the area. Agricultural

use would also provide a small number of farming jobs, helping employment in the local community. The value of TMK 6-8-003: 021 would be maintained or increased if the zoning change is granted because the Property would then be available for all uses allowed under the Ag-2 Agricultural designation.

#### Agricultural Feasibility

At this stage of the project, soil mapping and analysis have not yet been performed for the subject property, therefore detailed agricultural plans are not available. The Agricultural Feasibility Report done in 2007 for the adjacent Dillingham Ranch Aina LLC agricultural subdivision is included as Attachment F. The Report is applicable to the subject Property as geography, location, climate, topography, soil types and productivity are the same. Historically, the properties were included within the Dillingham Ranch agricultural holdings. The Report lists the following agricultural activities as compatible for the location and economically viable for the proposed Dillingham Ranch subdivision with an average size of 5.97 acres:

- Pasture Grazing – The area has traditionally been used for grazing of cattle and horses. Expected startup costs are limited to fencing and weed control. Costs in the first year may range from \$1,000 to \$5,000 /acre. Higher costs may be involved if the native guinea grass is replaced with more productive forage or if outside labor is required. On average, one acre of improved pasture would support one cow or horse. Fees earned from the grazing of horses in a managed paddock can range from \$130 to \$200 per month
- Natural Organic Farming - The largest organic farm on Oahu is 7 acres and there is a disproportionate need for more organic farms given Oahu's customer base. Small farms can usually manage organic farming concepts more effectively than large farms. Examples of products in demand are cucumber, tomato, peppers, melons, squash, broccoli, onions. In addition, seed production for natural crops commands a high price. Noni and Kawa are two crops that are easily cultivated and have had considerable interest as high-value Pacific specialty crops. The expected startup costs for an organic farms are not well documented.
- Specialty Orchards – Tropical fruits and specialty trees are perpetually suited to a wide range of landscapes in Hawaii. Citrus, mango, lychee and breadfruit have grown well in the area for many years with little or no maintenance. Cacao is currently being grown by Dole Foods in Waialua and is highly suited for the marginal soils found on the Property and can be processed on a small scale as a novelty business. There are no appreciable development costs unique to establishing specialty trees except for infrastructure and irrigation. Future crop production costs will be mostly labor.
- Landscape and Native – The landscape and native plant industries service growing markets and are commercially dynamic year-around. Significant start-up costs would be incurred for,

materials, staging, nursery infrastructure, garden hardware, potting operations, watering and fertilizing. Available water would limit the size of the activity. Projected revenue for successful landscape supply centers ranges from \$10 to \$100 per square foot per year depending on customer volume and the type of plants sold.

- Flower and Nursery - Flower and ornamental plant nurseries in Hawaii have enjoyed increasing sales for several years. Frangipani is highly recommended for this un-irrigated terrain and the flowers are in constant demand.

The Report concludes that the area has been historically grazed at minimal operating costs and with virtually no improvements and no agricultural development. The irregular, sloping, stony terrain does not support large scale agricultural ventures. Specialized, small-farm horticultural ventures are more likely to be suitable. Small-farm ventures are common in the surrounding Waialua-Mokuleia area, where a strong agricultural history began in the early years of sugarcane.

### **2.3.3 Cultural and Historic Considerations**

The applicant's pursuit of a zoning change involves no subsurface disturbance at this time. No cultural or archaeological resources were observed during the site inspection conducted for the Army Corp of Engineers December 17 and 18, 200. According to a letter dated, May 4, 2007, from Ms. Melanie Chinen, with the State Historic Preservation Division, it is the Department's understanding that no ground disturbing activities are proposed and therefore no historic properties will be affected. However, she states that if any subsurface excavation is planned some form of proactive archaeological mitigation (e.g., archaeological inventory survey, mitigation plan) may be required. The State of Hawaii Department of Land and Natural Resources has indicated that a 1992 archaeological survey of the former Dillingham Ranch (which included the Property) identified a total of 15 archeological sites. Four of these sites occur in the southwest portion of the Property as displayed in Figure 4. The applicant proposes to restrict groundbreaking activities to outside the area designated as containing archeological resources.

### **2.3.4 Environmental Considerations**

There are two historical environmental considerations. A small, historical landfill is reportedly adjacent to the Property along the eastern border (Figure 4). The subject Property was reportedly used as an Ordnance Storage Area during and after World War II. In 1974 the Property was returned to the State of Hawaii. Such storage would have likely involved some sub-grade structures. On January 18, 2008 Kane Environmental performed a magnetometer survey of the Property to determine if any subsurface structures or objects were present. A ferro-magnetic metal detector was used, sensitive to depths of approximately ten feet. The survey did not reveal any metallic subsurface objects, such as those expected to be found in sub-grade storage or in a landfill.



To confirm previous Department of Defense use and determine any possible environmental impacts to the Property and remedial actions required, Parsons Corporation (Parsons) conducted a Site Inspection and pre-assessment study of the Property during December 2007 on behalf of the Army Corp of Engineers. The Inspection consisted of qualitative visual reconnaissance and surface soil sampling for munitions constituents. 50 soil samples were collected, no groundwater samples were collected because there are no drinking water sources on the Property and no surface water samples were collected because no permanent surface water is present on the Property. The soil samples were collected at approximately equally spaced intervals over the entire Property. While a number of open storage areas were found to confirm the historical record, no munitions and explosives of concern or munitions debris were observed during the site inspection. Further, "No explosive compounds were detected in the surface soil samples". Soil analysis determined that munitions constituents copper, lead and zinc were present in the surface soil. The consultant also conducted a human health screening level risk assessment. The mean concentrations were below the Hawaii Department of Health Soil Action Levels; and Parsons and, "As a result, no unacceptable risk to human health is expected from exposure to lead or zinc in the surface soil at this munitions response site". The report concluded that storage revetments and a road system were found. The suspected presence of buried fuses was not disproved; however, no munitions nor munitions debris and explosives of concern were observed. A remedial investigation and feasibility study was recommended. (See Attachment H –Final Site Inspection Report, Dillingham Air Force Executive Summary

The pre-assessment study was prepared by Parsons for the U.S. Army Corp of Engineers under the Federal Government's CIRCLA Act for Formerly Used Defense Sites (FUDS). Such studies occur in three phases:

1. Pre-assessment of the site conditions;
2. Remedial Investigation to determine the character and extent of any contamination;
3. Feasibility Study for Clean-up.

The pre-assessment has been done; and, as stated in the report, "The views, opinions, an/or findings in this report are those of the authors and should not be construed as an official Department of the Army position, policy, or decision, unless so designated by other documentation. The Congress has placed very strict environmental quality requirements on land released by governmental agencies; however, the final evaluation and action will be undertaken by the Army. If the Army determines that a Remedial Investigation and Feasibility Study is required, they will either do the study, or as they have done with the present study, engage a consultant to do the work. This should have no bearing on returning the property to its original agricultural zoning.

The Property contains topographical drainages in the center, from south to north, and along the southwestern edge of the parcel. The Property is also adjacent to a stream to the east and northeast. The proposed zoning change would not adversely impact these areas; however future construction of farm dwellings would control or mitigate possible water quality impacts using best management practices (e.g., silt fencing, compost berms, straw bales and sedimentation traps). According to EDR NEPA Check Radius Maps (Attachment A) there are no wetlands, endangered animal habitat, flood plains or other environmentally sensitive areas on the Property. According to the Natural Areas map, a Hawaii Game Management Area is present approximately one mile to the east and a Hawaii Managed Area is present approximately one mile to the south. Based on the topography of the area, neither of these sites would be impacted by the proposed zoning change or future construction at the Property. A site inspection by Kane Environmental did not reveal any endangered species or endangered species' habitat on the Property. No long-term negative impacts are anticipated from the applicant's request for a zoning change or future construction of farm dwellings on the Property.

#### **2.3.5 Positive Impacts**

The current F-1 zoning of the subject Property does not provide any benefits to the North Shore community. A zoning change to Ag-2 would allow a diversity of agricultural uses on the Property, maintaining the North Shore's rural, farming character. Agricultural use would also provide a small number of farming jobs, helping employment in the local community. The construction of any farm dwellings and associated buildings would also provide employment to skilled laborers in the area. The construction of farm dwellings and use of the subject Property for agriculture would also increase the value of the Property, thereby providing additional tax revenue to the County of Honolulu.

Figure 3: Property Zoning in Vicinity

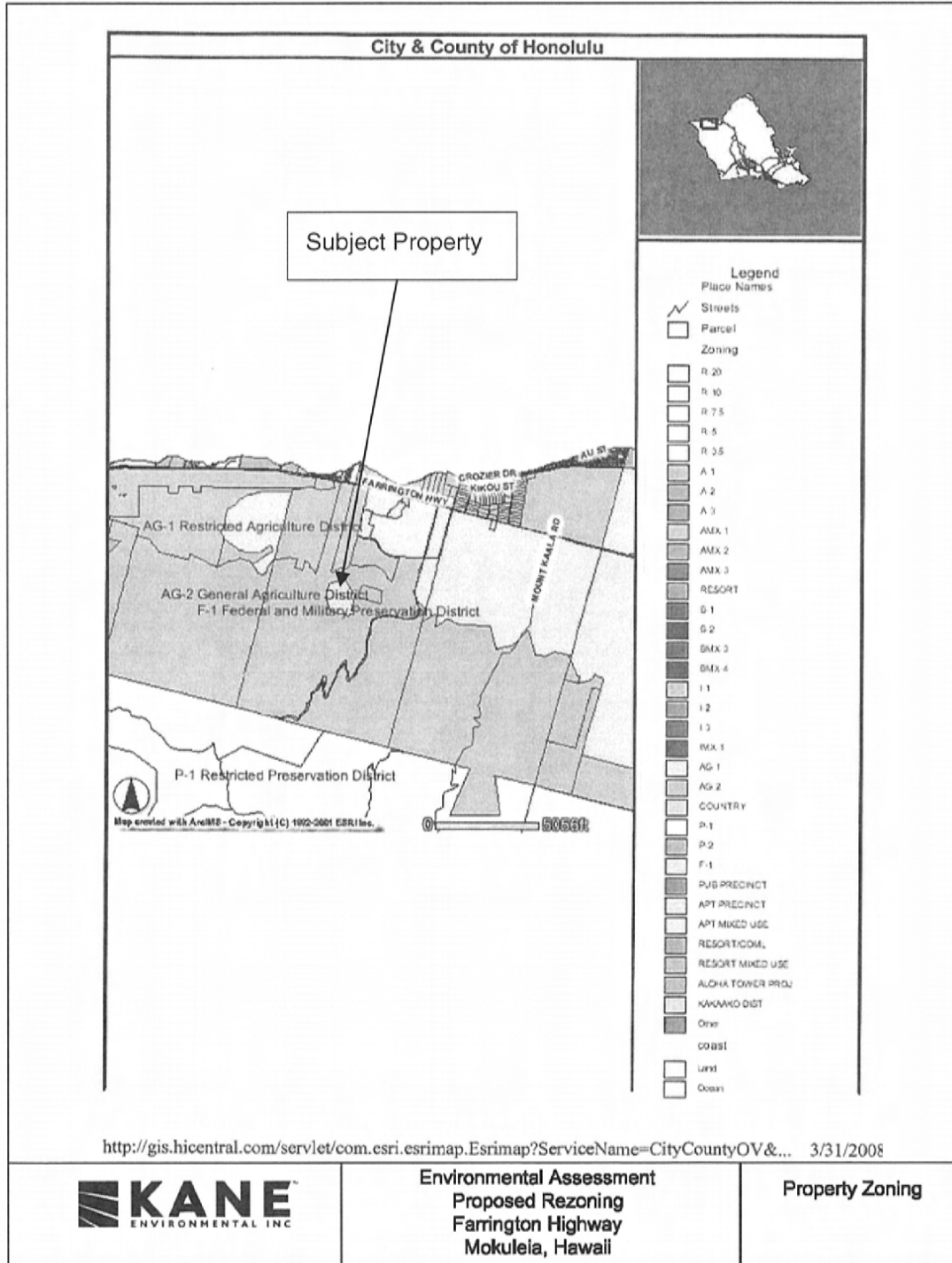


Figure 4: Location of Landfill and Archeological Site

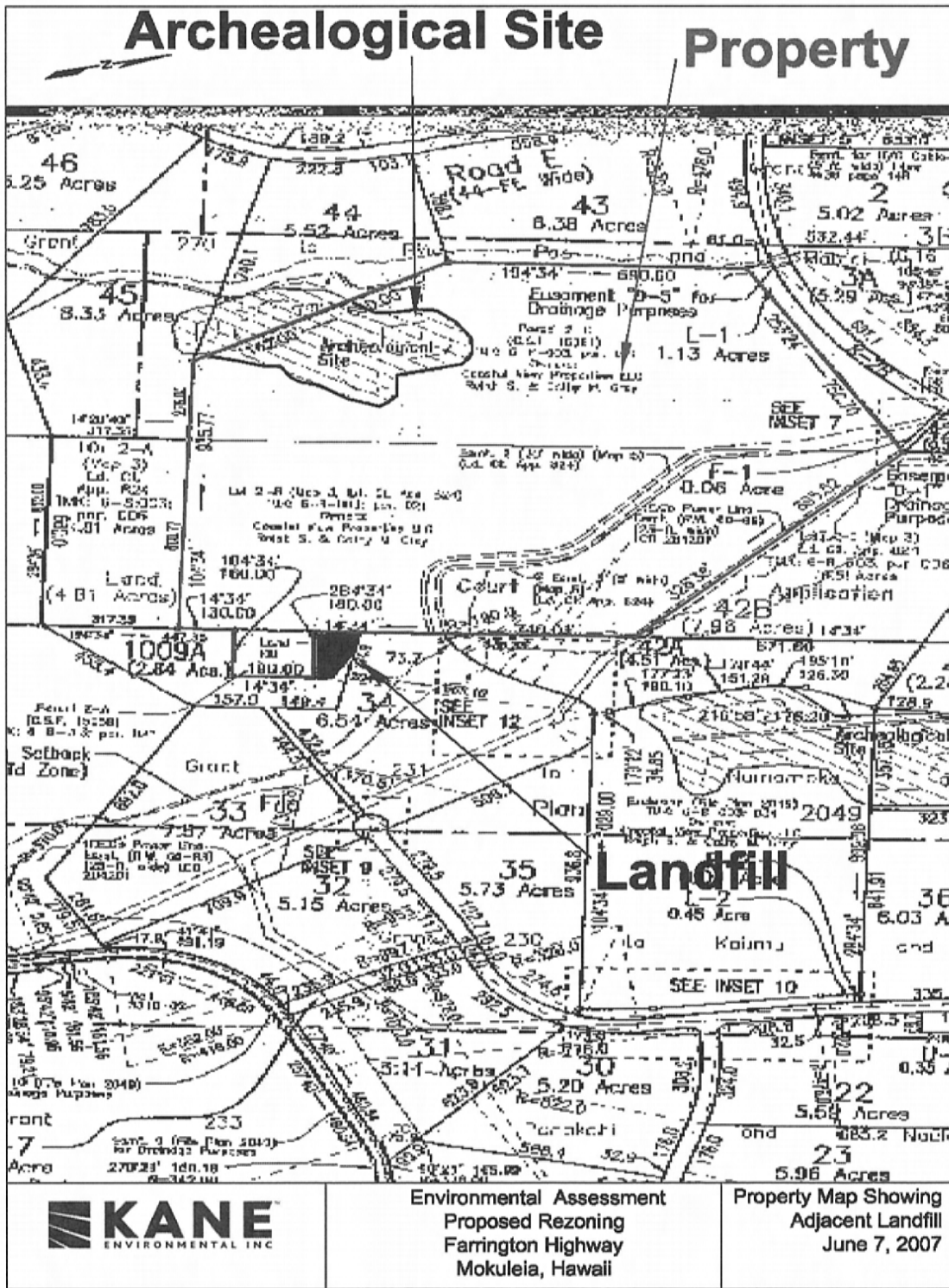
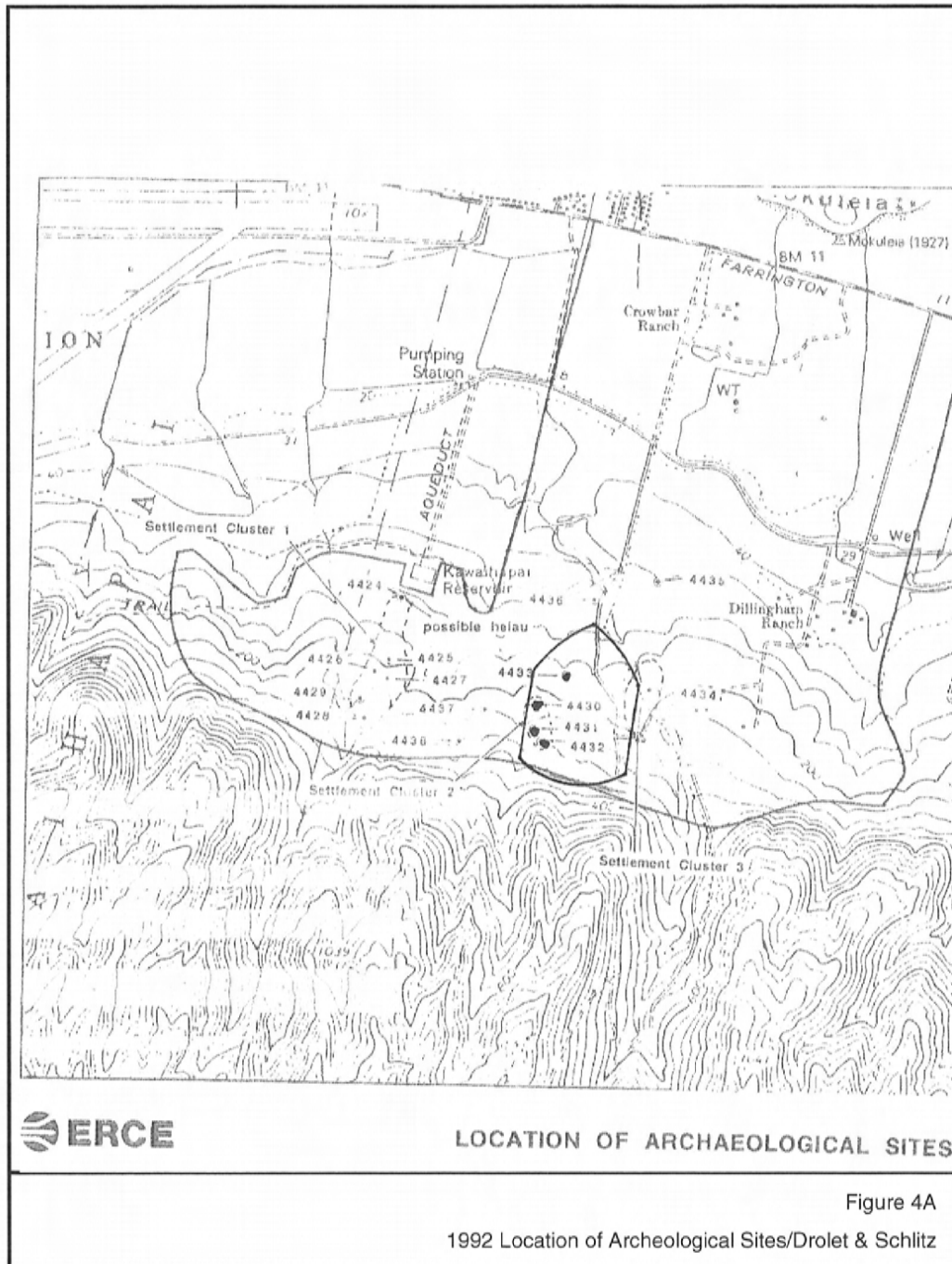




Figure 4A: Location of Archaeological Sites



### 3.0 AFFECTED ENVIRONMENT, IMPACTS AND MITIGATION

#### 3.1 Topography

The U.S. Geological Survey (USGS), Kaena, Hawaii 7.5-Minute Topographic Quadrangle Map indicates that the ground surface in the immediate vicinity of the Property is sloped to the north and northeast, towards the adjacent stream and the Pacific Ocean. The Property elevation ranges from approximately 120 to 320 feet above mean sea level. The applicant's request for a zoning change does not currently involve any construction activities; however, a maximum of 4-5 farm dwellings would be permitted on the existing lots, as well as accessory agricultural structures which would impact the topography in limited areas where foundations are required. Any upgrades to existing infrastructure including the access road and wastewater systems and any grading for agricultural purposes will require building permits and conformance with all regulations.

Approximately the upper third of the property (mauka) has an average slope of 19% with the remaining portion averaging 9% (Figure 5). Mauka of the parcel the off-site slope is steeper than the topography of the subject parcel (approximately 26%); however the area is well vegetated to the ridge crest and is zoned for Ag-2 agricultural use. The parcel is surrounded on both the east, west and north by agricultural land which was also previously contained within Dillingham Ranch operation and has been approved for subdivision into 77 5-7 acre agricultural lots.

A Rockfall Potential and Hillside Slope Evaluation by Geolabs, Inc. was conducted in 2007 for approximately 19 of the most mauka lots as part of the subdivision application. Ten of these lots surround the subject parcel on the east and west and share a similar topography; as such, the evaluation and recommendations of the report are relevant and are summarized below.

Evaluation - These lots may be exposed to relatively low and moderate levels of potential rockfall hazard.

Recommendation -Based on the evaluation of the existing project site conditions with respect to potential natural hazards such as rockfall, slope instability, and debris flow, the site is suitable for residential subdivision development and is feasible from a geotechnical point-of-view provided that the recommendations provided in this report are implemented.

#### Suggested Possible Mitigation

- Building location restrictions to keep buildings from being constructed in hazardous locations that are susceptible to potential rockfall encroachment. These restrictions

would utilize existing natural rockfall barriers such as drainage ravines and the broad gently sloping terrain at the upslope portion of the lots.

Rockfall catchment ditches and rockfall barriers were suggested for other mauka lots not immediately in the vicinity of the subject parcel.

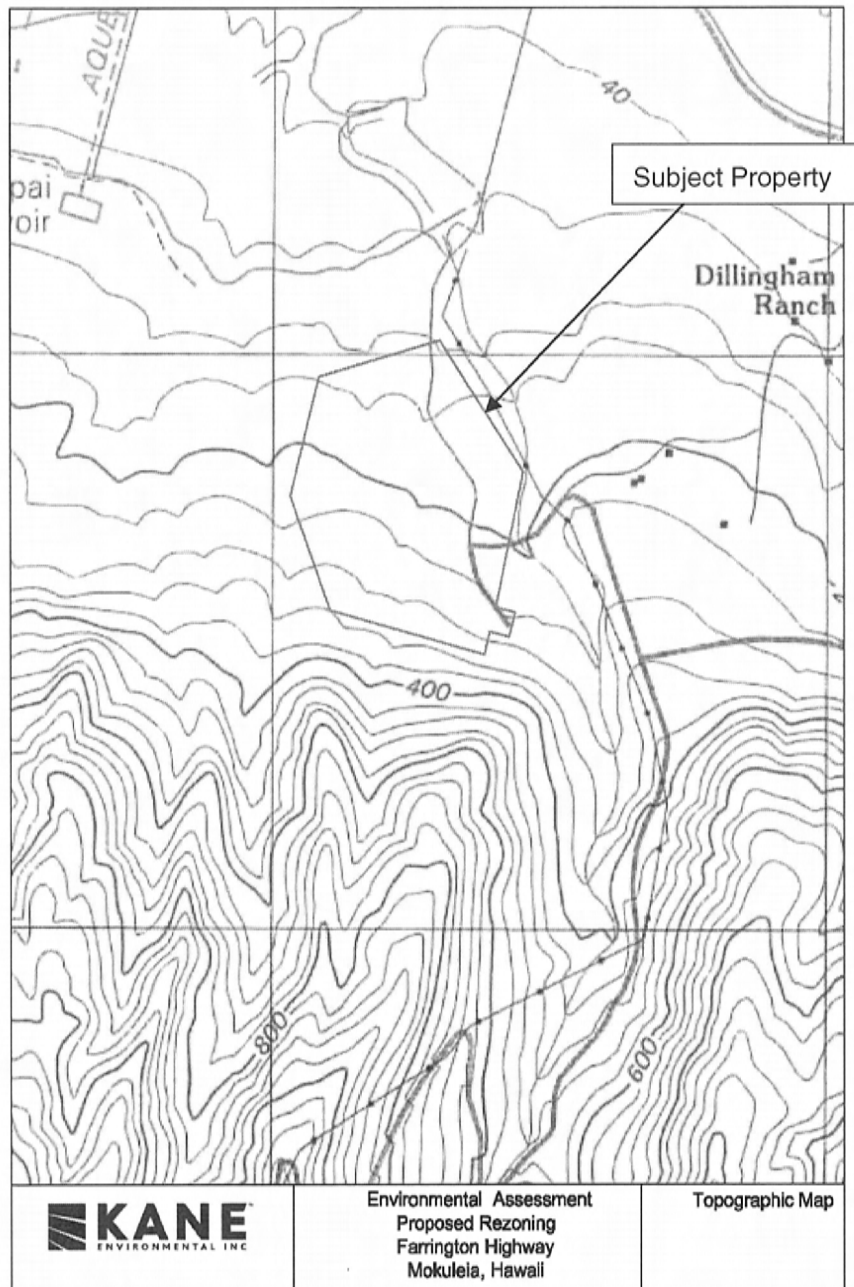
The subject parcel and the surrounding area was contained within the Dillingham Ranch holdings and previously used for agricultural purposes. The proposal to change back to agricultural use should have no impact on soil stability; however, the conclusions and recommendations of the study regarding future development are applicable. No farm dwellings will be constructed where rockfall hazards are present and prior to obtaining building permits, or if required for the zone change, the applicant will undertake a similar soil study and adopt any mitigative measures suggested.

### **3.2 Soils and Drainage**

Soils in the vicinity of the Property are depicted on the online United States Department of Agriculture (USDS) Web Soil Survey. The dominant soils in the area are Ewa silty clay loam (6 to 12 percent slopes), Kaena clay (2 to 6 percent slopes), Kaena stony clay (2 to 6 percent slopes) and Kaena very stony clay (10 to 35 percent slopes). Ewa soils are deep, well drained and typically have moderate infiltration rates. Kaena soils are deep and poorly drained and typically have slow infiltration rates (USDS, 2008). A detailed soil map and soil series descriptions are included as Attachment B. Drainage at the site is fair to good, with no evidence of runoff problems.

The zoning change request and any future construction of accessory farm structures would have minimal impact on soils and drainage at the project site. Drainage and soil would be affected in the vicinity of the structures due to compaction and use of fill, however these areas of impacts can be mitigated with standard construction practices such as footing drains. All uses on the parcel will conform to the drainage requirements of the Civil Engineering Branch of the Department of Planning and Permitting. If a retention basin is recommended it will be constructed or the use will be changed. Review of all building plans will occur at the appropriate time and no drainage mitigation is required at this time. Ewa and Kaena soils may be used for agricultural purposes, including pasture, irrigated sugar cane and truck crops such as tomatoes, melons, citrus and green vegetables (USDA 2003, 2006). Ewa soils are rated as Prime farmland if irrigated. Such use does not constitute a significant impact, therefore no mitigation is required.

Figure 5: Topographic Map of Property





### 3.3 Shoreline and Coastal Processes

The Property is located approximately one mile from the shoreline. The zoning change request and proposed construction of farm dwellings would have no impact on shoreline and coastal processes. No mitigation is required.

### 3.4 Marine Resources

The Property is located approximately one-mile from the shoreline and associated marine resources. The zoning change request and proposed construction of farm dwellings, built in compliance with all state and local requirements, would have no impact on marine resources. No mitigation is required.

### 3.5 Water Quality

A supplementary water source would be necessary for agricultural uses whether the land is zoned P-2 or Ag-2 and there are several options for obtaining potable and irrigation water. The Property is located adjacent to the west of a small stream and above an aquifer. According to the State Commission on Water Resource Management (SCWRM), the groundwater beneath the Property is part of the Mokuleia Aquifer System of the North Aquifer Sector. Water availability for the Mokuleia Aquifer is 12 million gallons per day with 3.975 mgd available. Prior to using the existing wells on the property, a State Application for a Water Use Permit must be approved by the Water Commission. For a new well, an Exploratory Well Drilling Permit is also required. For reference, the SCWRM calculates 13,000 gallons per day (gpd) per 5 acres of agricultural land and 500 gpd for a single family. Staff at the State Department of Agriculture indicated that catchment is not commonly used to meet agricultural needs for Oahu and that well water would likely be required for agricultural uses of the subject property.

There are no wells on the Property; however there are several wells in the vicinity that may be used: one on parcel 34 owned by the same owners and located approximately 200-400 feet from the subject property, a monitoring well located approximately 75 feet east of the Property, slightly uphill from the stream and two capped wells east of the property formerly used for agricultural and domestic uses. These wells are across the stream and a significant distance from the Property. Any farms will require sources for drinking water and onsite sewage disposal systems. It is not uncommon for a new well to be dug for a property which is to be used for active agricultural purposes. Another option is to purchase rights from the Dillingham Ranch

In addition, on September 12, 2008, Dillingham Ranch Aina, LLC applied for a certificate of Public Convenience and Necessity as the North Shore Water Company (Docket 2008-0180) to continue to

provide water for the area as a Public Utility. The final Decision and Order is expected to be made June 12, 2009. The subject property is included in the Service Area.

Any wells or septic systems to be constructed would be in compliance with all Department of Health guidelines to protect groundwater quality. All designs would be reviewed by the Department of Health before construction to ensure groundwater quality is maintained. Construction of farm dwellings would result in clearing and grading activity that could impact nearby surface water quality. However, the appropriate use of sediment control Best Management Practices (BMPs) such as silt fencing, compost berms, straw bales and sedimentation traps should be sufficient to mitigate potential water quality impacts. As part of the construction permit process, a plan will be filed with the Clean Water Branch of the Department of Health for review showing the BMPs Plan and pollutant control measures. These permits will be filed at the appropriate time for review and comment, no mitigation is required at this time.

### **3.6 Flood Considerations**

The Property lies within Zone X and Flood Zone D on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM). Zone X refers to areas determined to be outside the 100- and 500-year flood plain and Zone D refers to areas with undetermined flood hazards (FEMA, 2004). The zoning change request and future construction of accessory farm structures are not expected to affect the potential for flooding at the Property or at other nearby properties. No mitigation is required. If required for agricultural development within Flood Zone D, a flood survey will be completed by a licensed engineer.

### **3.7 Air Quality**

The Property contains no stationary sources of air pollution. Background ambient air quality is of high quality due to the lack of development on the Property and surrounding land. Due to the distance, motor vehicle emissions along Farrington Highway are not likely to impact the Property. Proposed construction of the farm dwellings may cause a slight increase in exhaust emissions and fugitive dust from clearing activity and the use of construction equipment. Any future construction activities, built in compliance with all state and local requirements, would require only short term use of construction equipment, therefore any impact on air quality on the Property would be minimal and temporary. No mitigation is required.

### **3.8 Noise**

Sources of low level background ambient noise in the vicinity of the Property are primarily attributed to motor vehicle traffic on Farrington Highway and agricultural activity on nearby properties. Noisy activities probably occurred during the Property's use by the U.S. military; however no noise impacts

are currently associated with the Property. Any future construction would generate some noise impacts from the use of construction equipment. However, such impacts would be short term and minimal due to the limited size of the project. No mitigation is required.

### **3.9 Flora and Fauna**

The Property is located in an agricultural area and down slope of general and protective conservation districts associated with the Mokuleia Forest Reserve. The Property is vegetated mainly with guinea grass, koa haole, and keawe. During the site inspection, Kane Environmental did not observe any terrestrial flora or faunal species that are protected under State or Federal environmental laws, including endemic bird and floral species. Agricultural use of the Property will cause additional impacts to the flora and fauna at the Property. Agricultural use of the Property would be consistent with other current and historical impacts to the flora and fauna of surrounding area and is not undesirable. No impacts to the Mokuleia Forest Reserve are expected. No mitigation is required.

### **3.10 Archaeological, Cultural and Historic Resources**

The State of Hawaii Department of Land and Natural Resources has stated that a 1992 archaeological survey, which included the Property, identified an archeological site on the Property. According to a letter dated, May 4, 2007, from Ms. Melanie Chinen, with the State Historic Preservation Division, it is the Department's understanding that no ground disturbing activities are proposed at this time and therefore no historic properties will be affected. However, she states that if any subsurface excavation is planned, some form of proactive archaeological mitigation (e.g. archaeological inventory survey, mitigation plan) may be required. A survey done in 2007 for Dillingham Ranch Aina LLC indicates the small area of potential historic and archaeological significance is in the southwest portion of the Property (Figure 4). This area appears to contain relics of stone walls. Based on the communication with Ms. Melanie Chinen, an archaeological inventory survey and mitigation plan may be required in the future. Such plans would be put into place before any subsurface excavation takes place. **The applicant proposes to restrict groundbreaking activities to outside the area designated as containing archeological resources. Any requirements of the State Historic Preservation Division will be complied with.**

#### Cultural Impact Assessment:

Mokuleia is one of the Hawaiian land divisions known as an *ahupuaa*. The land divisions run from the top of the mountains to the edge of the coral reef in the sea. The name Mokuleia came from the word *moku* which means Island and *leia* meaning encircled and is like a patterned map. The name probably

originated from the cultivation patterns on the flat lands that resembled a patterned mat (Sterling and Summers, 1979). Mokuleia has very few archaeological sites. The largest is a village at the base of the Waianae Range. Another is located on Dillingham ranch near the plantation reservoir. It is covered with dense growth and it is doubtful that it was ever a site of importance (Sterling & Summers, 1979). The Property is not presently utilized for cultural or religious practices and in light of its past military and agricultural use no further cultural assessment is suggested.

### **3.11 Public Recreation Resources and Beach Access Points**

The Property is north and downslope of the Mokuleia Forest Reserve. The Reserve's recreational uses are primarily hiking and biking. The Reserve is accessible in two places near the Property. The Mokuleia Forest Reserve Access Road is approximately ¼-mile to the east of the Property. The road is paved and approximately 4.2 miles long. While passing near the Property, the access road does not pass through or adjacent to the Property. Therefore, any agricultural use of the Property would not be expected to impact the Mokuleia Forest Reserve Access Road. Kealia Trail and Access Road is present more than two miles to the west of the Property. The road is partly paved and is approximately 2.5 miles long. Neither access road to the Mokuleia Forest Reserve is associated with the Property. The Property is located approximately a mile from the shoreline and associated beach access points. Therefore, no impacts to public recreation resources or beach access points are expected. No mitigation is required.

### **3.12 Public Services, Roads, Access and Utilities**

The requested zoning change and proposed agricultural uses, including 4-5 accessory farm dwellings, will have minimal effect on the demand or supply of public services such as police and fire protection. There will also be minimal increased demand placed on schools, medical services or recreational facilities in the area due to the zoning change. The Property is currently not serviced by any public utilities, including potable water, sewer, electric power and communication. No public roads serve the Property. According to a letter dated December 27, 2006, from Rodney K. Haraga of the State Department of Transportation, no significant impacts from the proposed zoning change are expected. When the Property is developed for agricultural purposes in the future then minimal effects on public services, roads and utilities may be expected. Wastewater disposal and drinking water will be supplied by onsite systems. These impacts will be studied and addressed as part of any development. No mitigation is required at this time.

According to the deed, there is no recorded access to the Property. Existing access is via a 50' wide, unpaved, privately owned roadway, which was used by Dillingham Ranch to service their agricultural properties, including the subject Property and is now owned by Dillingham Ranch Aina, LLC. The access roadway begins on the mauka side of Farrington Highway, across from the Mokuleia Polo Field



and follows along the property boundary between TMK: 6-8-003:015 and 19 and across parcels 6, 30 and 31. All parcels are owned by Dillingham Ranch Aina, LLC. An easement will provide access to the subject parcel. The Department of Planning and Permitting of the City and County of Honolulu has recently granted temporary approval to subdivide a portion of the surrounding Dillingham Ranch land into 77 agricultural lots (2007/SUB-167). As a condition of approval, the State Department of Transportation in their review of the project stipulated that access to the subject Property not be denied. A decision as to whether the access road will be paved will be up to Dillingham Ranch Aina. While it is not intended that the road be generally open to the public, the applicant fees that it is essential for the public good that the roadway be available as a public emergency access to higher ground during a Tsunami or flooding

In their letter dated March 13, 2009, the Army in their review of the project, commented that there is a planned road for Stryker vehicles traversing agricultural lands from Schofield Barracks to the Dillingham Military Reservation. The intent with this new road is to take Stryer vehicles off public highways and minimize impacts on civilian traffic. The proposed road ends in the vicinity of Dillingham Ranch and joins back with the public highway along the coastline for the short remaining distance to the Army training area. The new road will pass close to the parcel proposed for zone change but should have no impact on it.

### **3.13 Views and Aesthetic Considerations**

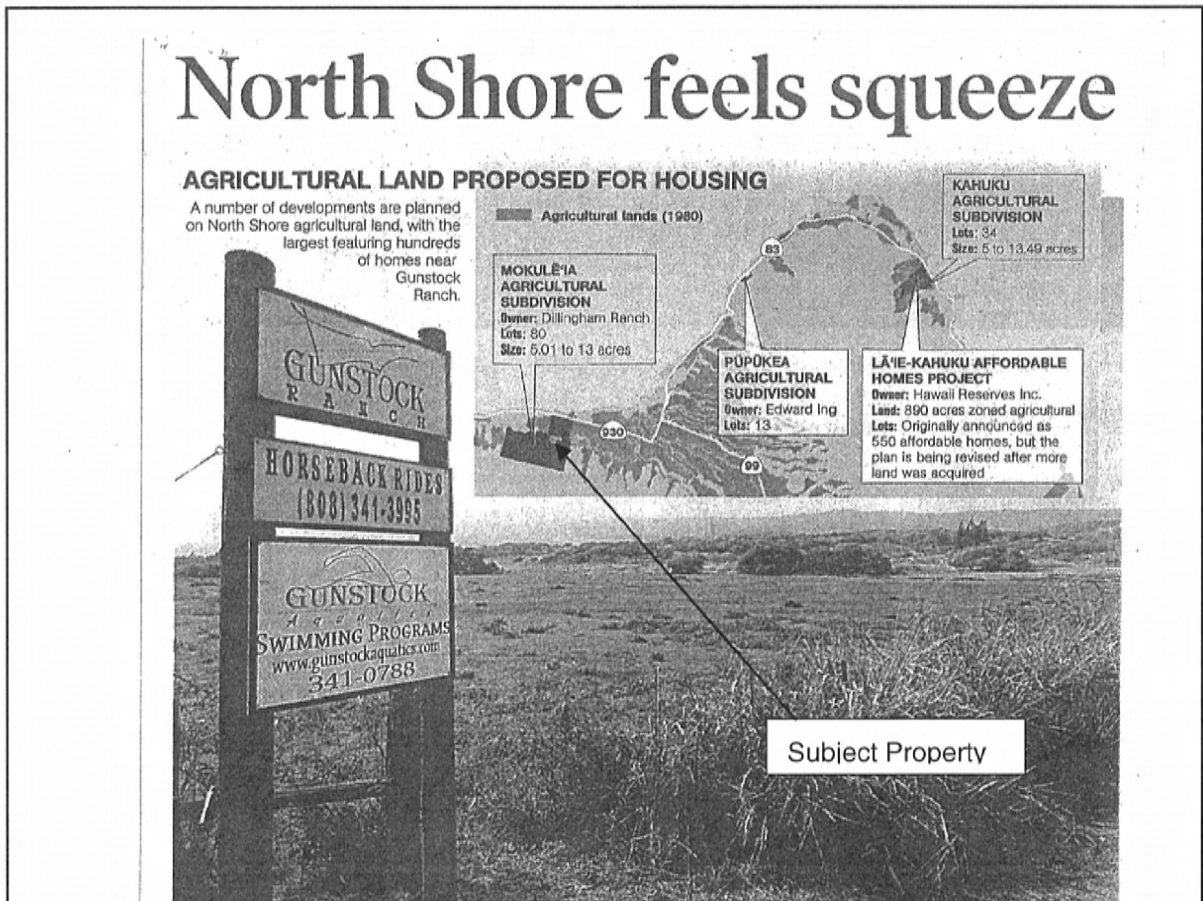
The Property lies at the base of the Waianae Mountains and is vegetated. Only small portions of the Property are visible from Farrington Highway. The requested zoning change and subsequent agricultural uses would not be expected to impact views of the Waianae Mountains. The zone change would make the Property's zoning consistent with surrounding properties and would not alter the overall aesthetic characteristics of the area. No mitigation is required.

### **3.14 Cumulative Impacts**

The proposed zoning change aims to restore the Property to its previous agricultural use with no further subdivision planned. A maximum of 4-5 farm dwellings with accessory agricultural structures would be permitted on the existing three (3) lots. The scope of the proposed development will not contribute to cumulative development impacts on the North Shore. Residents of the North Shore are concerned about potential expansion of the Turtle Bay Resort and effects from a number of proposed subdivision projects. Current proposed projects include: Kahuku Agricultural Subdivision (34 lots), Pupukea Agricultural Subdivision (13 lots), Laie-Kahuku Affordable Homes Project (550 homes) and Mokuleia Agricultural Subdivision (77 lots). (As of April 2008, Laie-Kahuku Affordable Homes Project has been withdrawn by the developers.) The only proposed project in the vicinity of the Property is the 77-lot Af-2

Mokuleia Agricultural Subdivision (Dillingham Ranch), which was recently given Tentative Approval. In comparison, the size and scope of the proposed project on the Property is very small. The proposed agricultural use of the 40-acre parcel, in compliance with all state and City development standards, would not contribute in any significant way to the potential cumulative impacts of these other, much larger subdivisions and resort expansions.

Figure 6: Map of Nearby Housing Projects



Source: City Department of Planning & Permitting

Photo by BRUCE ASATO | The Honolulu Advertiser

Nearby Projects	
Project Name	Distance from Property (Miles)
Kahuku Agricultural Subdivision	16
Laie-Kahuku Affordable Homes Project *	16
Mokuleia Agricultural Subdivision	Adjacent
Pūpūkea Agricultural Subdivision	10

\* As of April 2008, Laie-Kahuku Affordable Homes Project has been withdrawn by the developers.

	<p>Environmental Assessment          Proposed Rezoning          Farrington Highway          Mokuleia, Hawaii</p>	<p>Other Project Locations</p>
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### 3.15 Applicable Land Use Considerations

**State Land Use** law locates the property within the State Agricultural District. Chapter 205 describes the permitted uses which include various agricultural uses and farm dwellings where agricultural activity provides income to the occupant of the dwelling. Chapter 205-4.5(b) also permits construction of single-family dwellings on lots existing before June 4, 1976. The proposed zone change and subsequent agricultural use of the Property is in accordance with these statutes. **No comments were received on the Environmental Assessment from State of Hawaii Department of Agriculture.**

The **Land Use Ordinance** (LUO) of the City and County of Honolulu is used to “regulate land use in a manner that will encourage orderly development in accordance with adopted land use policies, including the Oahu general plan and development plans and to promote and protect the public health, safety and welfare”. The LUO does this by:

1. Minimizing adverse effects resulting from inappropriate location, use or design of sites and structures; and
2. Assisting the public in identifying and understanding regulations affecting the development and use of land.

According to Sec. 21-3.40 (a) of the LUO, preservation districts (Zoned P-1, P-2 or F-1) are to preserve and manage major open space and recreation lands and lands of scenic and other natural resource value. Specifically, the purpose of creating the F-1 military and federal preservation district is to identify areas in military or federal government use and to permit the full range of military or federal government activities. According to Sec. 21-3.40 (d) of the LUO “Should lands be removed from either the state-designated conservation district or from federal jurisdiction all uses, structures and development standards shall be as specified for the P-2 general preservation district.” This designation was intended to place the land in a “holding pattern” until an appropriate use could be determined. The Property is 40 acres of vegetated land surrounded by large tracts of agricultural zoned land. The Property is not a major open space or recreation area and has no scenic or natural resource value. The Property was zoned for agricultural use, prior to its use by the military.

According to Sec. 21-3.50 of the LUO, “the purpose of agricultural districts is to maintain a strong agricultural economic base, to prevent unnecessary conflicts among incompatible uses, to minimize the cost of providing public improvements and services and to manage the rate and location of physical development consistent with the city’s adopted land use policies.” The following guidelines are used to identify lands which may be considered for the Ag-2 general agricultural district:



1. Lands which are in the state-designated agricultural or urban district and designated agricultural by adopted city land used policies;
2. Lands which are predominantly classified as other under the agricultural lands of importance to the State of Hawaii system; and
3. Lands which are used or are suitable for agricultural purposes and where a substantial number of parcels are less than five acres in size.

The Land Use Ordinance permits a variety of uses in the AG-2 District that are not permitted in the P-2 Preservation District including but not limited to agribusiness activities and processing, roadside stands, storage of essential agricultural products, home occupations, farm dwellings, commercial kennels, neighborhood grocery stores, group living facilities, day care facilities, schools, and wind machines. The Ag-2 zoning permits one farm dwelling located on and used in connection with a farm where agricultural activity provides income to the family occupying the dwelling, for each two acres of lot area. Each farm dwelling and any accessory farm dwelling uses must be contained within an area on the lot not to exceed 5,000 square feet. Any zoning lot which has at least twice the required minimum lot size for the underlying agricultural district may have a maximum of two detached farm dwellings.

The Property is no longer used for military purposes and is not a major open space or recreation land. The Property is within the State Agricultural District and is suitable for agricultural purposes and has been used in that capacity in the past. F-1 zoning is inconsistent and not compatible with agricultural zoning and the proposed zoning change is consistent with current land use policy under Sec. 21-3.50.

The **City General Plan** contains a relevant area of concern relating to the Property. The Economic Activity section of the General Plan states an objective "To maintain the viability of agriculture on Oahu". The two policies that support this objective propose to:

1. Support agricultural diversification in all agricultural areas of Oahu; and
2. Maintain agricultural land along the Windward, North Shore, and Waianae coasts for truck farming, flower growing, aquaculture, livestock production, and other types of diversified agriculture.

The proposed zoning change would allow agricultural uses on the Property, including truck farming and livestock production, and support agricultural diversity in accordance with the General Plan.

The **North Shore Sustainable Communities Plan** (NSSCP) has several elements that pertain to the proposed zoning change. Those elements which pertain to the proposed zone change are discussed.

A. The Vision Statement for the North Shore Sustainable Communities Plan (2.2) and the Rural Community Boundary (2.2.1) include the following elements:

- *Rural Community, Agricultural and Preservation Boundaries*
- *Support for the diversified agriculture industry*
- *Enhancement of the region's recreational and educational potential*
- *Haleiwa and Waialu towns as "country towns"*
- *Additional new housing limited to areas contiguous to Haleiwa and Waialua towns and establishment of rural design guidelines*
- *Adequate public infrastructure, facilities and services*
- *Retention of cultural and historic resources*
- *Adaption of the Ahupua'a concept in land use and natural resource management*
- *Residential subdivision with no bona fide agricultural activities should not be permitted in areas outside the Rural Community boundary*

Three types of boundaries were established by the NSSCP to guide development and aid in the preservation of agricultural land and open spaces. They are the Rural Community Boundary (RCB), the Agriculture Boundary, and the Preservation Boundary. The subject parcel is located within the Agriculture Boundary. While not presently classified according to the ALISH system (Agricultural Lands of Importance to the State of Hawaii), most likely due to its previous military usage, the Property is contained within a large tract of land in agricultural use and these adjacent areas of land are designated as either Prime Agricultural Land or Other Important Agricultural Land.

In contrast, the subject Property does not meet the criteria for designation within the Preservation Boundary (i.e., lands necessary for protecting watersheds, water resources, lands necessary for the conservation of significant historic, scenic or ecological sites, lands with topography, soils or climate not adaptable to rural or agricultural use, lands with slopes of greater than 20%, lands susceptible to floods or soil erosion, lands used for parks or suitable for recreation uses).

With the demise of the large plantations on Oahu, smaller more diversified farms are providing niche markets with Hawaiian agricultural products, allowing open areas to be retained in agricultural uses and encouraging agriculturally productive lands to be viable. The proposed zone change to Ag-2 would not allow subdivision of the property for residential use. The proposed use of the subject Property for several small, niche farms with accessory farm dwellings is bona fide agricultural activity that allows for accessory residential uses outside the RCB. Any archaeological sites associated with the site will be

protected as prescribed by the State Historic Preservation Division. The applicant proposes to restrict groundbreaking activities to outside the area designated as containing archaeological resources.

The rezoning of the parcel from F-1 Military and Federal Preservation to Ag-2 Agriculture is in keeping with these elements of the NSSCP.

B. The following are general policies for the preservation of open space and the natural environment: (3.1.1)

- *Retain the North Shore's rural character*
- *Protect significant natural features*
- *Protect ecologically sensitive lands*
- *Preserve cultural and historic features*
- *Provide recreational resources*
- *Protect scenic views*
- *Define Community boundaries*

The proposed zone change is in no way contrary to any of these general policies. The return of the Property to an Agricultural designation supports the policy of retaining the North Shore's rural character.

C. Planning Principles: (3.1.2)

- *Ahupu'a Land Use and Resource Management*
- *Long-Range Protection of Agricultural Lands*
- *Preservation of Scenic Views*
- *Protection of Recreational Resources*
- *Accessibility of Recreational Open Space*
- *Protection of Ecologically Sensitive Lands*
- *Limit Impacts from Utility Installations*
- *Location of New Developments*

Mokuleia is one of the Hawaiian land divisions known as an *ahupuaa*. The land divisions run from the top of the mountains to the edge of the coral reef in the sea. Mokuleia has very few archaeological sites. The largest is a village at the base of the Waianae Range. Another is located on Dillingham ranch near the plantation reservoir. It is covered with dense growth and it is doubtful that it was ever a site of importance (Sterling & Summers, 1979). There are no sites associated with the property

registered on the National or State Registrar of Historic Places. The NSSCP recommends preservation of significant historic features and intact sites with cultural or religious significance.

The proposed zone change will return the use of the subject Property to an agricultural designation in accordance with the principle of protecting agricultural lands by the continuation of agricultural uses on agricultural lands. Due to the topography of the land mauka of Farrington Highway, the Property is not visible from Farrington Highway or Crozier Drive and no scenic views of the Waianae Mountain Range will be diminished by agricultural development or use of the Property.

To address concerns that chemical runoff from agricultural practices could adversely affect aquatic and marine habitats, agricultural best management practices (BMPs) will be used to protect nearby ecologically sensitive areas. These areas include the nearby stream and its one-hundred flood plain. A vegetated buffer zone would be established and maintained along the subject Property boundary to reduce sediment, nutrient and chemical runoff into the stream. The size and type of buffer would be determined by working closely with the appropriate local and state agencies, including the State Department of Land and Natural Resources. To reduce sediment and nutrient runoff, tillage will be kept to a minimum, with no till practiced wherever possible and vegetated cover kept on agricultural areas when not in use. Integrated pest management systems and nutrient management plans will be put into place to prevent over-application of pesticides, herbicides and fertilizer.

D. Policies and Guidelines Pertaining to Agricultural Area: (2.2.1, 2.2.2, 3.2)

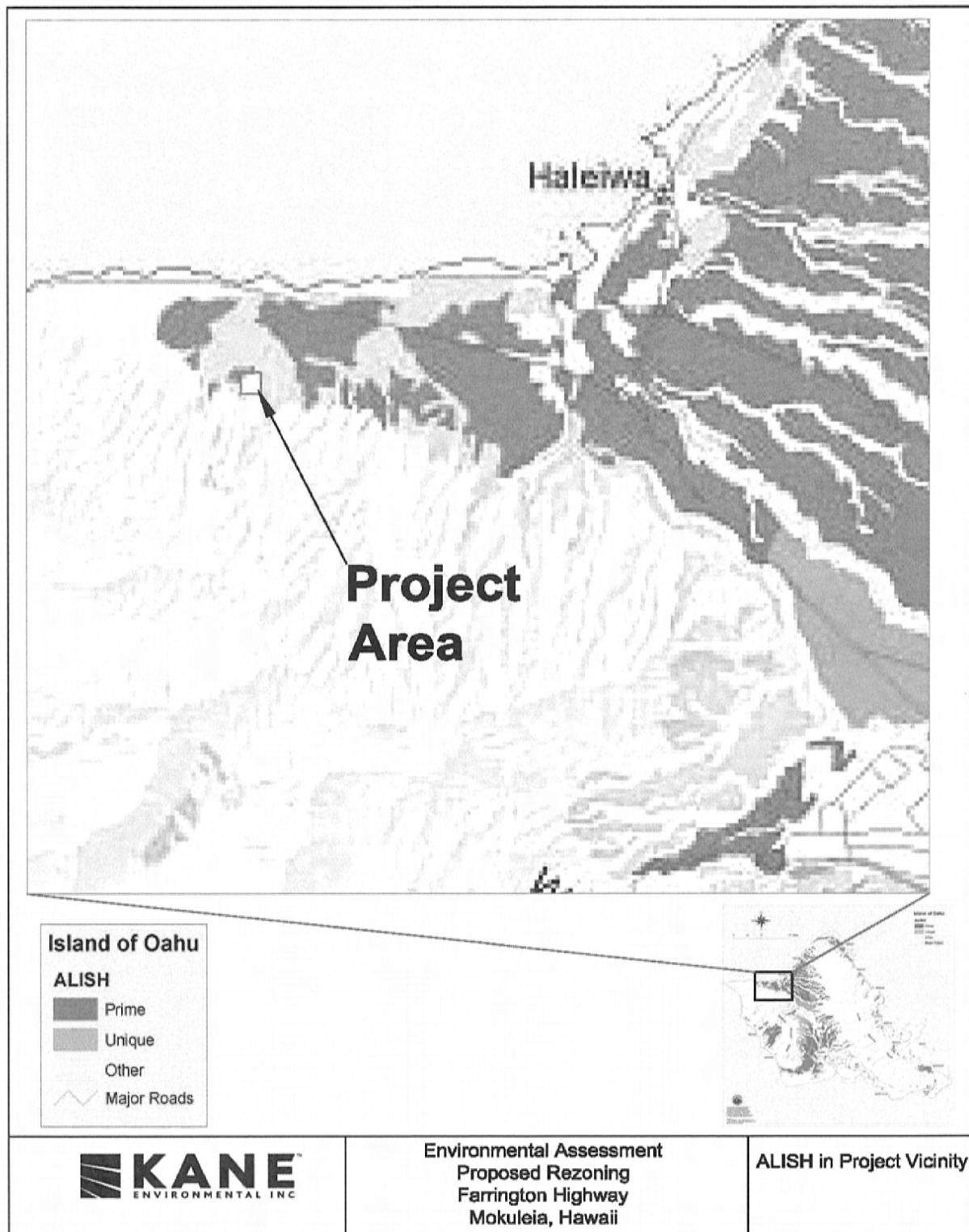
The protection of agricultural lands and agricultural uses is essential to protecting the rural character and scenic open space setting that are so valued by the North Shore residents and visitors. It is difficult to identify which lands and which crops or entrepreneurial efforts will be most successful and at what magnitude, but according to the NSSCP, it is important to maintain the availability of land and water for agriculture, protect agricultural lands from encroachment by incompatible uses and avoid uses that would undermine or otherwise irreversibly compromise their long-term agricultural potential. The NSSCP also states that conversion of agricultural lands to large-lot subdivisions with no agricultural activities is to be discouraged and that it is preferable that agricultural subdivisions be primarily based around agricultural activities with a preference for clustered housing. The applicant intends to develop the land for agricultural purposes with 4-5 farms and no further subdivision. The agricultural history of Hawaii has centered around large privately owned plantation enterprises and large leased areas of agricultural land with hired workers. This type of agriculture produced crops and products that were mainly exported out of the state. This phase of our agricultural history has almost been completely phased out leaving large tracts of agricultural land unused. Historical emphasis on large-scale



productions has overshadowed the existence and need for smaller farms and niche crops for local consumers and markets. Traditionally, for these kinds of smaller enterprises to be economically successful, the farmer lives on the farm to more efficiently service the farm and to protect the crops and facilities. Successful farming requires a dedication of time and effort that cannot be achieved if the farmer commutes to the land. The rezoning of the subject Property from F-1 to Ag-2 is consistent with these policies and will allow the owners to maintain the land in active agricultural use. Therefore, the rezoning and construction of 4-5 small farms is consistent with the policies of the NSSCP.



Figure 7: Map of Nearby Agricultural Land of Importance to the State of Hawaii



### **3.16 Required Permits, Variances, and Approvals**

Subsequent to issuance of a Finding of No Significant Impact, the applicant will submit a request for the zone change to Ag-2 to be reviewed by the Department of Planning and Permitting (DPP) City and County of Honolulu. The DPP will submit the zoning request, with comments and recommendations, to the Planning Commission for a Public Hearing. After the Public Hearing, the Planning Commission will submit the request, with their recommendation and comments, to the City Council for final action. The time frame for this process is six months to one year.

The proposed zone change does not require any permits, variances or approvals beyond the City and County of Honolulu Department of Planning and Permitting. Additional permits and approvals that would be required if further development and construction occurs on the Property, include: grading and building permits by the DPP, State Health Department approval of on-site sewage disposal systems and sediment control plan during construction, State Commission on Water Resource Management for a Water Use Permit or an Exploratory Well Drilling Permit. All permits and approvals will be sought as needed. No subdivision of the Property is proposed.

### **3.17 Summary of Short-Term and Long-Term Mitigation Measures**

No significant mitigation has been identified or proposed with respect to the applicant's request to change the zoning of the Property (TMK 6-8-003:021) from F-1 Military and Federal Preservation (P-2) to Ag-2 Agricultural. Potential future mitigation measures may include sediment control BMPs and an archeological survey and mitigation plan.

### **3.18 Summary of Unavoidable Adverse Environmental Impacts**

Prior use of the Property by the U.S. military and subsequent non-agricultural zoning has allowed the Property to return to a primarily natural state. There is a small, former landfill area adjacent to the Property, however according to a recent property survey it is not on the Property (Figure 4). There are no known environmental impacts to the area from the former landfill. The zoning change request is not expected to create any new significant adverse impacts on terrestrial and aquatic processes.

### **3.19 Irreversible and Irretrievable Commitments of Resources**

Construction of the roads and the clearing of the Property did require asphalt, other construction materials, human effort and heavy machinery. Federal funds paid for those resources. Changing the zoning from F-1 Military and Federal Preservation to Ag-2 Agricultural would require no additional resources, except for the human effort required to apply for, review and process the variance and permit applications.

## **4.0 EVALUATION OF ALTERNATIVES**

### **4.1 No Action**

This alternative is not viable because it maintains the status quo. The Property would remain zoned as F-1 Military with all the uses allowed under a P-2 Preservation designation. This alternative would not cause any environmental, cultural, historic or other adverse impacts. According to minutes from the June 20, 2006 meeting of the Mokuleia Community Association and the June 27, 2006 meeting of the North Shore Neighborhood Board, this is the alternative supported by a majority of nearby property owners. However, the Property is no longer used for military purposes and is within the State Agricultural District. The purpose of Sec. 21-3.50 of the LUO is to prevent unnecessary conflicts among incompatible uses and maintain a strong agricultural base in agricultural districts. Leaving the zoning as F-1 Military is inconsistent with this current land use policy and does not allow the property to be used for agricultural purposes.

### **4.2 Change Property Zoning to non Ag-2 Designation**

This alternative is not viable because before its use by the U.S. military the Property was used as agricultural land. The surrounding land is designated Ag-2 and any other designation for the Property would be inconsistent with the General Plan for the Island of Oahu. Objectives of this plan include; maintaining the viability of agriculture on Oahu and protecting and preserving the natural environment. Changing the zoning designation to a non-agricultural use would undercut both of these objectives. The NSSCP designates three types of boundaries; Rural Community Boundary, Agricultural Boundary and Preservation Boundary. The Property lies within the Agricultural Boundary. The Property is not classified according to the ALISH system (Agricultural Lands of Importance to the State of Hawaii), but it is within a large area of agricultural land designated as either Prime Agricultural Land or Other Important Agricultural Land. Due to the agricultural uses of adjacent lands it is not consistent to change the Property zoning to a non-agricultural designation.

### **4.3 Change Property Zoning to Ag-1 Designation**

The surrounding land is designated Ag-2 and a change of the subject Property zoning to Ag-2 is proposed to keep the zoning in the area consistent. A change in the zoning of the subject Property to Ag-1 is not a viable alternative. Ag-1 zoning is primarily for large tracts of land and prime agricultural land. The subject Property is a relatively small tract of land and is not considered prime agricultural land under the ALISH or LSB systems. See section 4.4 for discussion of the appropriateness of agricultural zoning for the subject Property.

#### **4.4 Change Property Zoning to Ag-2 Designation**

This alternative is the most viable. The Property was historically used for agriculture, remains viable for agriculture and is surrounded by land primarily used for agriculture. The surrounding agricultural land is zoned Ag-2. There are currently no military uses on the Property and the Property lies within the State Agriculture District. Sec. 21-3.50 of the LUO specifies that the purpose of agricultural districts is to prevent conflict among incompatible uses and to maintain a strong agricultural economic base. Residents of the area are understandably concerned about the cumulative impacts of development of the North Shore. The scope of the project will not contribute in any meaningful way to potential cumulative impacts to the North Shore or the more immediate area by more widespread development. Therefore, changing the zoning of the Property to Ag-2 Agricultural and the potential establishment of a maximum of 4-5 small farms, built in compliance with all state and local requirements, is consistent with the purpose of the Land Use Ordinance.

#### **5.0 FINDINGS AND ANTICIPATED DETERMINATIONS**

As demonstrated by the information presented in this document, the proposed zoning change of the Property (TMK 6-8-003:021) will not have a significant effect on the environment. There are no significant environmental impacts associated with the requested zone change to Ag-2 Agriculture or future construction of accessory farm dwellings; therefore, the preparation of an Environmental Impact Statement is not required and a Finding of No Significant Impact is anticipated.

The "Significance Criteria" in Section 12 of Hawaii Administrative Rules Title 11, Chapter 200, "Environmental Impact Statement Rules" were used as a basis for the above findings and conclusions:

**1. No irrevocable commitment to loss or destruction of any natural or cultural resources has or will result.**

The application is for a proposed zoning change from F-1 Military to Ag-2 Agricultural with construction of accessory agriculture structures. This action involves no irrevocable commitment, loss or destruction of natural and cultural resources.

**2. The proposed zoning change will not curtail the range of beneficial uses of the environment.**

Granting the proposed zoning change will not disturb or curtail access to recreational opportunities in the area or impact surface and groundwater quality.

**3. The proposed zoning change will not conflict with the State's long-term environmental policies or goals and guidelines as expressed in Chapter 343, HRS; and any revisions thereof and amendments thereto, court decisions, or executive orders.**



The proposed zoning change and subsequent agricultural activities does not conflict with the State's policies, goals or guidelines.

4. **The proposed zoning change will not substantially affect the economic or social welfare of the community or state.**

Granting the requested zoning change is not expected to have any impact on the economic or social welfare of the community or State.

5. **The proposed zoning change will not substantially affect public health.**

The requested zoning change involves no discharge activities and no impacts to public health. Any future construction will be built in compliance with all state and local requirements and will be designed according to Department of Health guidelines to protect the public health and minimize discharge activities.

6. **No substantial secondary impacts, such as population changes or effects on public facilities are expected.**

Granting the proposed zoning change involves no substantial changes to demographics or construction and use of infrastructure. The increase of population or effects on public facilities from the possible five small farms, built in compliance with all state and local requirements, would be minimal.

7. **No substantial degradation of environmental quality has occurred or is expected due to the proposed zoning change.**

The environmental quality of the Property has not been degraded from historical, agricultural or military use. Uses under the Ag-2 Agricultural designation would not be expected to significantly degrade environmental quality.

8. **No cumulative effects on the environment or commitment to larger actions have been or will be involved.**

The zoning change request does not involve commitment to larger actions. The proposed project is limited to the subject Property. The project scope will not contribute in any significant way to potential cumulative impacts to the North Shore or the more immediate area by more widespread development.

9. **No rare, threatened or endangered species or their habitats are affected.**

There are no known rare, threatened or endangered species or their habitats located at or near the Property.



**10. The proposed zoning change will not detrimentally affect air or water quality or ambient noise levels.**

The request for a zoning change involves no new construction. Therefore, there are no detrimental effects on air or water quality or ambient noise levels. Future construction may have temporary minimal impacts on air quality or noise levels in the immediate area of the Property. Potential water quality impacts from the construction would be mitigated by the use of Best Management Practices for sediment control.

**11. The proposed zoning change will not detrimentally affect environmentally sensitive areas, such as flood plains, tsunami zones, beaches, erosion-prone areas, geologically hazardous lands, estuaries, freshwaters, or coastal waters.**

The project is not located in an environmentally sensitive area and has been used previously for military and agricultural uses. A small, freshwater stream is nearby to the north and east, however any water quality impacts from construction can be mitigate with the use of BMPs. The requested zoning change or proposed future construction will have no significant effect on any environmentally sensitive areas.

**12. The proposed zoning change will not substantially affect scenic vistas and view planes identified in county or state plans or studies.**

The Property lies at the base of the Waianae Mountains and is vegetated. The proposed zoning change and proposed future construction will not significantly affect views of the mountains from Kam Highway.

**13. There will be no requirements for substantial energy consumption.**

Other than minimal use of electricity for farming activities, the proposed project requires no substantial energy consumption.

## 6.0 ZONE CHANGE JUSTIFICATION

The applicant requests the Department of Planning and Permitting recommend to the Planning Commission that the proposed rezoning of the 40.59 acre Property (TMK 6-8-003:021) from F-1 Military and Federal Preservation to Ag-2 Agriculture be submitted to the Planning Commission and Honolulu City Council for approval. The applicant expects a Finding of No Significant Impacts. The applicant's request is justified by the following considerations:

1. The Property is within the State Agriculture District and the proposed use is consistent with the State land use policies for the Agricultural district: *Activities or uses as characterized by the cultivation of crops and orchards, uses related to animal husbandry and uses that support the agricultural activities of the owner including farm dwellings.*
2. The proposal conforms with the planning objectives of the North Shore Sustainable Communities Plan for the Agricultural Boundary, including: *to promote diversified agriculture on the North Shore, support development which enables sustainable usage of agricultural resources and basing any subdivision of productive agricultural lands on viable economic units for agricultural production.*
3. The intent of the Ag-2 general agricultural district is to conserve and protect agricultural activities on smaller parcels of land. The proposed zone change allows for all agricultural activities permitted by the Ag-2 zoning, including, but not limited to, *agribusiness practices that help support small, diverse farming activities, crop production, livestock grazing and accessory farm dwellings.*
4. The proposed zone change will have minimal impact on existing public facilities.
5. The proposal is consistent with the surrounding zoning and land use.
6. The proposed rezoning of the Property is consistent with the agricultural and rural character of the North Shore community.

## 7.0 REFERENCES CITED

- Analytical Planning Consultants. 2007. (Zone Change Application F-1 Military to Ag-2 Agricultural, Farrington Highway, Mokuleia, Hawaii TMK: (1) 6-8-003:021) April.
- City and County of Honolulu Department of Planning and Permitting. *Land Use Ordinance*.
- City and County of Honolulu Department of Planning and Permitting. *Oahu General Plan*.
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- Chinen, Melanie. 2007. (Letter to Mr. Donald Clegg, President, Analytical Planning Consultants, Inc. from the State of Hawaii Department of Land and Natural Resources State Historic Preservation Division.) May 4.
- Drolet, Robert, and Allen Schliz. 1992. *Archaeological Inventory Survey and Evaluation, Mokuleia, Waialua District, Oahu*. Prepared for Mokuleia Land Company, Waialua, Hawaii. ERC Environmental and Energy Services Co. (ERCE), Honolulu, Hawaii.
- Federal Emergency Management Agency. 2004. (National Flood Insurance program, Flood Insurance Rate map, City and County of Honolulu, Hawaii, Panel 85 of 395, Map Number 15003C0085F.) September.
- GEOLABS, INC. 2007. (Geotechnical Engineering Consultation Services, Rockfall Potential and Hillside Slope Evaluation, Dillingham Ranch Mokuleia Development, TMK: 6-8-02: 06 and TMK: 6-8-03:,05, 06, 15, 19, 20, 30, 31, 33, 35, and 40, Mokuleia,Oahu, Hawaii) August 13.
- Mountain Edge Environmental, Inc. 2002. (Phase I Environmental Site Assessment, Mokuleia Land Company Property, Farrington Highway, Mokuleia, Oahu, Hawaii, TMK: (1) 6-8-2: Parcels 6, 9, 10, 11, 14 & 16; (1) 6-8-3: Parcels 5, 6, 11, 15, 16, 17, 19, 20, 21, 30, 31, 33, 34, 35, 38, 39 & 40; And (1) 6-8-8: Parcel 22) April 19.
- State of Hawaii, Department of Land and Natural Resources, Commission on Water Resource Management. 2000. (Island of Oahu, Hydrologic Units.) March.

State of Hawaii, Department of Land and Natural Resources, Office of Conservation and Coastal Lands. 2005. (State of Hawai'i Conservation District Subzones Map- Island of O'ahu.) November.

United States Army Corp of Engineers Final Site Inspection Report, Dillingham Air Force Base, Mokuleia, Hawaii, FUDS Project No. H09HI006501. July, 2008.

United States Department of Agriculture, Natural Resources Conservation Service. 2003. Ewa Series Description. <http://www2.ftw.nrcs.usda.gov/osd/dat/E/EWA.html>

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Kaena Series Description. <http://www2.ftw.nrcs.usda.gov/osd/dat/K/KAENA.html>

United States Department of Agriculture, Natural Resources Conservation Service. 2008. Web Soil Survey. <http://websoilsurvey.nrcs.usda.gov/app/>

## **8.0 INDIVIDUALS AND AGENCIES CONSULTED**

### INDIVIDUALS

Clegg, Donald, Analytical Planning Consultants, Inc.

Luke Martinkosky, Kane Environmental, Inc.

### AGENCIES

#### Federal

Army Corps of Engineers, Planning Division  
Department of the Army, Public Works  
Department of the Interior U.S. Geological Survey

#### State of Hawaii

Office of Hawaiian Affairs  
Department of Health  
Department of Land and Natural Resources, State Historic Preservation Division  
Department of Land and Natural Resources, Office of Conservation and Coastal Lands  
Office of Environmental Quality Control  
State Commission on Water Resource Management  
State Public Utility Commission  
Department of Agriculture

#### City and County of Honolulu

Department of Planning and Permitting  
Board of Water Supply  
Councilmember DelaCruz

#### Others

Mokuleia Community Association  
North Shore Neighborhood Board No. 2 – adjacent property owners notified  
Sierra Club Hawai'i Chapter, Oahu Group  
Mountain Edge Environmental

## **8.1 COMMENTS AND RESPONSES ON THE DRAFT ENVIRONMENTAL ASSESSMENT**





April 27, 2009

Mr. David K. Tanoue, Acting Director  
City and County of Honolulu  
Department of Planning and Permitting  
650 South King Street, 7<sup>th</sup> Floor  
Honolulu, Hawaii

Re: Draft Environmental Assessment (DEA)  
Zone Change from F-1 Military to AG-2 General Agricultural  
Mokuleia, Oahu, Hawaii: Tax Map Key 6-8-003.021

Kane Environmental, Inc. (Kane Environmental) is in receipt of your letter dated January 5, 2009 addressed to Mr. Donald Clegg, President of Analytical Planning Consultants, Inc. regarding the Mokuleia Community Association's review of the Draft Environmental Assessment (DEA) for the above referenced property. Thank you for taking the time to review the DEA and submit your comments. Our responses to your concerns are outlined below.

1. The Subdivision Division of the Department of Planning and Permitting has confirmed the surveyor's report that the three existing lots (Lots 2-A, 2-B and 2-C), which compose parcel 21 (referenced for taxation purposes as TMK: 6-8-003.021), have never been consolidated; and, as such, are considered to be separate lots for development purposes. The existing lots of record are 19.21 acres, 20.68 acres and 0.7 acres and the minimum lot area for the requested AG-2 Agricultural District is 2 acres. As per the Land Use Ordinance Section 21-8-30 (a), any zoning lot which has at least twice the minimum lot size for the underlying (agricultural) district may have two detached (farm) dwellings. The existing lot areas would permit 2 dwellings on the 19.21 acre lot, 2 dwellings on the 20.68 acre lot and one on the .7 acre lot. The Final Environmental Assessment has been revised to clarify the status of the parcel in reference to the existing lots of record and to emphasize that there will be no further subdivision.

2. Figure 5 is the Topographic Map for the parcel. The following text has been added to the FEA:  
"Although the off-site slope to the south is steeper than the topography of the subject parcel, the area is well vegetated to the ridge crest and the slope begins to increase approximately 300 feet from the parcel. These conditions should provide sufficient slope stability and distance from the off-site area to prevent any rock fall from the off-site area impacting the subject parcel. If required, in order to obtain building permits, a soil stability study will be undertaken."

3. Table ES-3 has been included in the Final Site Inspection Report for Dillingham Air Force Base. While a number of open storage areas were found to confirm the historical record, no munitions and

3831 Stone Way North - Seattle, WA 98103 - tel: 206 691 0476 - fax: 206 675 0650  
www.kane-environmental.com

explosives of concern or munitions debris were observed during the site inspection. Further, "No explosive compounds were detected in the surface soil samples". The consultant also conducted a human health screening level risk assessment. "As a result, no unacceptable risk to human health is expected from exposure to lead or zinc in the surface soil at this munitions response site".

The pre-assessment study was prepared by Parsons for the U.S. Army Corp of Engineers under the Federal Government's CERCLA Act for Formerly Used Defense Sites (FUDS). Such studies occur in three phases:

1. Pre-assessment of the site conditions;
2. Remedial Investigation to determine the character and extent of any contamination;
3. Feasibility Study for Clean-up.

The pre-assessment has been done; and, as stated in the report, "The views, opinions, and/or findings in this report are those of the authors and should not be construed as an official Department of the Army position, policy, or decision, unless so designated by other documentation." The United States Congress has placed very strict environmental quality requirements on land released by governmental agencies; however, the final evaluation and action will be undertaken by the Army. If the Army determines that a Remedial Investigation and Feasibility Study is required, either they will do the study, or, as they have done with the present study, engage a consultant to do the work. This should have no bearing on returning the property to its original agricultural zoning. This information has been included in the FEA.

4. The determination that no endangered Hawaiian flora and fauna are associated with the site was made based on the educational background and expertise of Kane Environmental staff and available documentation concerning previous agricultural and military use of the property. These credentials are provided as an appendix to the FEA.

Thank you again for taking the time to review and comment on the DEA.

Very truly yours,

KANE ENVIRONMENTAL, INC.

John R. Kane  
President/Principal

DEPARTMENT OF PLANNING AND PERMITTING  
**CITY AND COUNTY OF HONOLULU**  
650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813  
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MUFI HANNEMANN  
MAYOR

DAVID K. TANOUÉ  
ACTING DIRECTOR  
ROBERT M. SUMITOMO  
DEPUTY DIRECTOR

2009/ED-2 (HS)

January 30, 2009

Mr. Donald Clegg, President  
Analytical Planning Consultants, Inc.  
928 Nuuanu Avenue, Suite 502  
Honolulu, Hawaii 96817

Dear Mr. Clegg:

Subject: Comments on Draft Environmental Assessment (DEA) for  
Zone Change from F-1 Military to AG-2 General Agricultural,  
Mokuleia, Oahu, Hawaii, Tax Map Key 6-8-003:021

Thank you for the opportunity to comment on the aforementioned project. We apologize for any delay in responding. The applicant is requesting a change in zoning from F-1 Military to Ag-2 General Agricultural District for the above referenced parcel. Our comments follow below:

- Section 2.2 General Description - The DEA dated September 2008, states that the eventual intent of the F-1 to AG-2 zone change is to engage in agricultural activities which will also include four (4) to five (5) accessory farm dwellings clustered on the parcel's three (3) "lots of record". (Although there is only one (1) un-subdivided parcel, Figure 2A: Existing Lots, Page 8, indicates three (3) "Tracts" referred to as Tract MF-57 of 19.213 acres, Tract MF-31 of 20.679 acres, and Tract MF-58 of 0.598 acres. These are also referred to as "lots of record".) The DEA also states in paragraph 2.2 (Page 11) that: "No further subdivision of the Property is proposed." The Final Environmental Assessment (FEA) should clarify how these three (3) "lots" would relate to the stated proposal to build four (4) or five (5) farm dwellings in a clustered configuration.

Section 3.1 Topography - The DEA indicates that due to the parcel's general slope of less than 13 percent (13%), "only minimal rockfall hazards are present on the Property". However, Figure 4A indicates that topography of the mauka slope adjacent to the parcel (south side) is quite steep. The report should, therefore, also note the existence of any offsite conditions of instability that could pose potential rockfall hazards for the parcel and how these would be mitigated.

Mr. Donald Clegg, President  
Analytical Planning Consultants, Inc.  
January 30, 2009  
Page 2

3. Attachment F, Page ES-3 - The Final Site Inspection Report Dillingham Air Force Base Mokuleia, Hawaii, dated July 2008, recommends in Section ES.9 on Page ES-3 states that the "--- Ordinance Storage Area munitions response site proceed to a Remedial Investigation and Feasibility Study using geophysical investigation to locate potential munitions burial sites. This recommendation is based on finding evidence of Department of Defense activity at this site with a suspected potential for discarded military munitions. The recommendation is summarized in Table ES-3." Table ES-3 is not included in the DEA and should be provided. The FEA should also clearly state how this recommendation will be addressed.

4. Applicant's consultant should provide credentials establishing expertise in identification of endangered Hawaiian flora and fauna to support their conclusion that there is no threat to such species from proposed actions allowed under the Ag-2 zoning.

If you have any questions, please contact Hal Senter, Planning Division, at 768-8055.

Very truly yours,

David K. Tanoué,  
Acting Director  
Department of Planning and Permitting

DKT:lh  
P:\DIV\FUNCTION\EA-ES\2009\Comments on DEA Mokuleia F-1 to AG-2.doc



April 27, 2009

Mr. Michael Dalley, President  
Mokuleia Community Association  
68-703 Crozier Drive  
Waialua, HI

Re: Draft Environmental Assessment (DEA)  
Zone Change from F-1 Military to AG-2 General Agricultural  
Mokuleia, Oahu, Hawaii. Tax Map Key 6-8-003-021

Kane Environmental, Inc. (Kane Environmental) is in receipt of your letter dated January 5, 2009 addressed to Mr. Donald Clegg, President, of Analytical Planning Consultants, Inc. regarding the Mokuleia Community Association's review of the Draft Environmental Assessment (DEA) for the above referenced property. Thank you for taking the time to review the DEA and submit your comments. Our responses to your concerns are outlined below.

1. A supplementary water source would be necessary for agricultural uses whether the land is zoned P-2 or Ag-2 and there are several options for obtaining potable and irrigation water. On September 12, 2008, Dillingham Ranch Aina, LLC applied for a certificate of Public Convenience and Necessity as the North Shore Water Company (Docket 2008-0180) to continue to provide water for the area as a Public Utility. The final Decision and Order is expected to be made June 12, 2009. The subject property is included in the Service Area.  
As stated in the DEA, another option is to drill a new well. The groundwater beneath the Property is part of the Mokuleia Aquifer System of the North Aquifer Sector with water availability of 12 million gallons per day with 3.975 mgd available. For a new well, an Exploratory Well Drilling Permit is required and a State Application for a Water Use Permit approved by the Water Commission. For reference, the State Commission on Water Resource Management (SCWRM) calculates 13,000 gallons per day per 5 acres of agricultural land and 500 gpd for a single family. It is not uncommon for a new well to be dug for a property which is to be used for active agricultural purposes. Another option is to purchase rights from the Dillingham Ranch.
2. The parcel is located within the State Agricultural District and the applicant is simply requesting to return the land to the previous county agricultural designation. The DEA was forwarded to the Department of Agriculture for review with no comments received. No approval of a proposed agricultural plan is required for the proposed action nor is it necessary that the property support a "viable" activity i.e.

- a profitable activity. In addition, there are other permitted agricultural uses, such as grazing, which do not include the growing of crops.
3. The wording in the FEA has been corrected to read:  
"As a condition of approval, the State Department of Transportation in their review of the project stipulated that access to the subject Property not be denied".
  4. Section 3.10 has been revised to state: The applicant proposes to restrict groundbreaking activities to outside the area designated as containing archeological resources. Any requirements of the State Historic Preservation regarding conducting an archeological inventory and mitigation plan will be complied with.
  5. The parcel is located within the State Agricultural District and the applicant is simply requesting to return the land to the previous county agricultural designation with no proposed subdivision. Contrary to the comment of the Mokuleia Community Association, the rezoning is not contrary to the North Shore Sustainable Communities Plan. An agricultural designation of the property is in keeping with preservation of open spaces, view planes and maintaining the area's rural quality of life as described in the North Shore Sustainable Communities Plan.

Thank you again for taking the time to review and comment on the DEA.

Very truly yours,

KANE ENVIRONMENTAL, INC.

John R. Kane  
President/Principal

**MOKULE'IA COMMUNITY ASSOCIATION**  
68-703 Crozier Drive  
Wailua, HI 96791

January 5, 2009

Analytical Planning Consultants, Inc.  
928 Nuuanu Avenue, Suite 502  
Honolulu, Hawaii 96817

Contact: Lauri Clegg

Aloha Analytical Planning Consultants, Inc.,

This letter is in response to the November 18, 2008 letter concerning the requested zone change of property located in Mokuleia (Tax Map Key (1) 6-8-003:021) from F-1 Military and Federal Preservation to AG-2 Agricultural.

At its June 17, 2006 meeting, the Mokuleia Community Association (MCA), with about forty residents in attendance, voted without dissent to oppose the requested rezoning and, on June 23, 2006, sent a letter reporting the MCA's decision to Mayor Hanamanuihinui, copies to the Director of the Department of Planning and Permitting, the Chair of the Honolulu City Council and North Shore Neighborhood Board No. 27.

At its June 26, 2006 meeting, North Shore Neighborhood Board No. 27 (NSNB) voted without dissent to support the MCA's position to oppose the requested rezoning and, on July 24, 2006, sent a letter reporting the NSNB's decision to the Director of the Department of Planning and Permitting.

The five principal reasons why the rezoning is opposed are the following: First, the property in question has no water of its own. There are no usable wells on the property and nearby wells are owned by Dillingham Ranch.

Second, lack of any water, raises questions about the property's capability to support viable agriculture because if no onsite water is available, the property could not be used for the agricultural purposes required by AG-2. Moreover, the Agricultural Feasibility Report done by Avalon Development on June 4, 2007, which is referred to in the Draft Environmental Assessment sent to the MCA by Analytical Planning Consultants, Inc. was not accepted by the Department of Agriculture and should not be used in support of the rezoning request. Therefore, the requested zone change should not be addressed unless the Department of Agriculture has approved an acceptable agricultural plan for the property.


Third, there appear to be questions about access to the property from Farrington Highway. The Draft Environmental Assessment claims that, as a condition of the Department of Planning and Permitting's tentative approval of Dillingham Ranch's subdivision request, the State Department of Transportation stipulated that access be provided to the subject property. But that is incorrect. The State Department of Transportation stipulated that access "not be denied".

Fourth, there are four archaeological sites located within the property, yet the Draft Environmental Assessment (in section 3.10) avoids providing definitive assurances that an archeological inventory survey and mitigation plan will be conducted at those sites.

Fifth and finally, the requested rezoning is contrary to the vision and stipulations of the North Shore Sustainable Communities Plan which calls for the preservation of open spaces, view planes and maintaining the areas rural quality of life.

For all the foregoing reasons, the Mokuleia Community Association opposes the requested rezoning from F-1 Military and Federal Preservation to AG-2 Agricultural.

Sincerely,



Michael Dealey  
President

Copy to: Director, Department of Planning and Permitting  
Councilmember Donovan Deia Cruz  
North Shore Neighborhood Board No. 27





**CITY COUNCIL**  
CITY AND COUNTY OF HONOLULU  
HONOLULU, HAWAII 96813-3065

**DONOVAN M. DELA CRUZ**  
COUNCILMEMBER, DISTRICT 2  
CHAIR, COMMITTEE ON PUBLIC  
SAFETY AND SERVICE  
TELEPHONE: (808) 768-5002  
FAX: (808) 768-5005  
EMAIL: [dmdeacruz@honolulu.gov](mailto:dmdeacruz@honolulu.gov)

**Ms. Lauri Clegg**  
Analytical Planning Consultants, Inc.  
928 Nuuanu Avenue, Suite 502  
Honolulu, Hawaii 96817

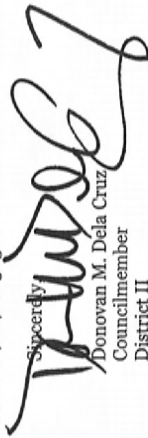
January 5, 2009

RE: Draft Environmental Assessment – Zone change from F-1 Military and Federal preservation to AG-2 Agricultural (1) 6-8-003:021

After going through the draft environmental assessment there were several different concerns:

- ❖ Since no map of the planned development (breakdown of lots) was included in the DEA, how many lots will there actually be if the AG-2 zoning is approved?
- ❖ Since most of the lots (77) located next to this property are all greater than 5 acres in size, how would this 2 acre subdivision be consistent with the other lots in the area? Also, other 2 acre lot subdivisions in the area have not increased the number of sustainable agricultural operations.
- ❖ Will the future Stryker development of a training site at Dillingham Airfield affect this area?
- ❖ Does the lot alignment take into consideration of the drainage pattern of the land? Will there be a retention basin to deter sediment and agricultural chemical runoff?
- ❖ Where will these lots get their potable and irrigation water?
- ❖ Will the access roadway be paved? If so, will the owners consider having this roadway as a public emergency access to higher grounds during a Tsunami or flooding?
- ❖ What assurances does the community have that the AG-2 lands remain in active agriculture and that any structures built will be strictly for agricultural "accessory use"?

I look forward to your response. Should you need additional information of have questions, please call me or my Legislative Aide, Reed Matsuura, at 768-5038.

Sincerely,  
  
Donovan M. Dela Cruz  
Councilmember  
District II

DMD: rhm  
(Mokuieia DEA comments)



April 27, 2009

Mr. Donovan M. Dela Cruz, Councilmember, District 2  
Chair, Committee on Public Safety and Service  
City and County of Honolulu  
Honolulu, Hawaii

Re: Draft Environmental Assessment (DEA)  
Zone Change from F-1 Military to AG-2 General Agricultural  
Mokuieia, Oahu, Hawaii: Tax Map Key 6-8-003:021

Kane Environmental, Inc. (Kane Environmental) is in receipt of your letter dated January 5, 2009 addressed to Ms. Lauri Clegg, of Analytical Planning Consultants, Inc. regarding the Mokuieia Community Association's review of the Draft Environmental Assessment (DEA) for the above referenced property. Thank you for taking the time to review the DEA and submit your comments. Our responses to your concerns are outlined below.

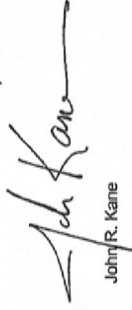
1. The parcel contains three existing lots of record which will not be further subdivided.
2. The existing lots of record are 19.21 acres, 20.68 acres and 0.7 acres.
3. In their letter dated March 13, 2009, the Army in their review of the project, commented that there is a planned road for Stryker vehicles traversing agricultural lands from Schofield Barracks to the Dillingham Military Reservation. The intent with this new road is to take Stryker vehicles off public highways and minimize impacts on civilian traffic. The proposed road ends in the vicinity of Dillingham Ranch and joins back with the public highway along the coastline for the short remaining distance to the Army training area. The new road will pass close to the parcel proposed for zone change but should have no impact on it. (Letter enclosed for your review).
4. The existing lot lines were made in the 1944 when the property was condemned for public use. All uses on the parcel will conform to the drainage requirements of the Civil Engineering Branch of the Department of Planning and Permitting. If a retention basin is recommended it will be constructed or the use will be changed.
5. There are several options for potable and irrigation water. On September 12, 2008, Dillingham Ranch Aina, LLC applied for a certificate of Public Convenience and Necessity as the North Shore Water Company (Docket 2008-0180) to continue to provide water for the area as a Public Utility. The final Decision and Order is expected to be made June 12, 2009. The subject property is included in the Service Area.



Thank you again for taking the time to review and comment on the DEA.

Very truly yours,

KANE ENVIRONMENTAL, INC.



John R. Kane

President/Principal

In addition, the groundwater beneath the Property is part of the Mokuleia Aquifer System of the North Aquifer Sector with water availability of 12 million gallons per day with 3,975 mgd available. For a new well, an Exploratory Well Drilling Permit is required and a State Application for a Water Use Permit approved by the Water Commission. It is not uncommon for a new well to be dug for a property which has no other source of water. Another option is to purchase rights from the Dillingham Ranch.

6. Currently, the access roadway, which is owned by Dillingham Ranch Aina, LLC, begins on the mauka side of Farrington Highway, across from the Mokuleia Polo Field and follows along the property boundary between TMK: 6-0-003:015 and 19 and across parcels 6, 30 and 31, all owned by Dillingham Ranch Aina, LLC. An easement will provide access to the subject parcel. A decision as to whether the access road will be paved is up to Dillingham Ranch Aina. While it is not intended that the road be generally open to the public, the applicant feels that it is essential for the public good that the roadway be available as a public emergency access to higher ground during a tsunami or flooding.

7. The applicant understands the community's concern that lands designated as agricultural be used for agricultural purposes and offers the following perspective.

The agricultural history of Hawaii has centered around large privately owned plantation enterprises and large leased areas of agricultural land with hired workers. This type of agriculture produced crops and products that were mainly exported out of the state. As we all know, this phase of our agricultural history has almost been completely phased out leaving large tracts of agricultural land unused. Our historical emphasis on large-scale productions has overshadowed the existence and need for smaller farms and niche crops for local consumers and markets. Traditionally, for these kinds of smaller enterprises to be economically successful, the farmer lives on the farm to more efficiently service the farm and to protect the crops and facilities. Successful farming requires a dedication of time and effort that cannot be achieved if the farmer commutes to the land. According to the Land Use Ordinance for the City and County of Honolulu, a farm dwelling is a dwelling located on and used in connection with a farm where agricultural activity provides income to the family occupying the dwelling. There is a growing appreciation of the value of this lifestyle and there is an economic incentive to pursue the growing of small-scale crops for local consumption and marketing. Additionally, the agricultural lands of Mokuleia have been historically used for ranching activities, again with property owners and workers living on-site. In addition, as a Public Utility, the North Shore Water Company proposes to regulate agricultural use of water by requiring proof of agricultural revenues.



April 27, 2009

Mr. Clyde W. Nāmūʻo, Administrator  
State of Hawaiʻi

Office of Hawaiian Affairs

711 Kapiʻolani Boulevard, Suite 500  
Honolulu, Hawaiʻi

Re: Draft Environmental Assessment (DEA)  
Zone Change from F-1 Military to AG-2 General Agricultural  
Mokuleia, Oahu, Hawaii: Tax Map Key 6-8-003:021

Kane Environmental, Inc. (Kane Environmental) is in receipt of your letter dated January 8, 2009 addressed to Ms. Lauri Clegg, of Analytical Planning Consultants, Inc. regarding the Mokuleia Community Association's review of the Draft Environmental Assessment (DEA) for the above referenced property. Thank you for taking the time to review the DEA and submit your comments. Our responses to your concerns are outlined below.

The applicant understands the Office of Hawaiian Affairs' concern that a strong agricultural base is important for those lands currently within the State Agricultural District, as is the subject property, and offers the following comments:

The agricultural history of Hawaii has centered around large privately owned plantation enterprises and large leased areas of agricultural land with hired workers. This type of agriculture produced crops and products that were mainly exported out of the state. As we all know, this phase of agricultural history has almost been completely phased out leaving large tracts of agricultural land unused. Our historical emphasis on large-scale productions has overshadowed the existence and need for smaller farms and niche crops for local consumers and markets. Traditionally, for these kinds of smaller enterprises to be economically successful, the farmer lives on the farm to more efficiently service the farm and to protect the crops and facilities. Successful farming requires a dedication of time and effort that cannot be achieved if the farmer commutes to the land. According to the Land Use Ordinance for the City and County of Honolulu, a farm dwelling is a dwelling located on and used in connection with a farm where agricultural activity provides income to the family occupying the dwelling. There is a growing appreciation of the value of this lifestyle and there is an economic incentive to pursue the growing of small-scale crops for local consumption and marketing. Additionally, the agricultural lands of Mokuleia have been historically used for ranching activities, again with property owners and workers living on-site.

The DEA does not state that there is insufficient water to grow native plants on the property; but, rather, that available water would limit the size of any agricultural activity. There are several options for potable

3831 Stone Way North • Seattle, WA 98103 • tel: 206 691 0476 • fax: 206 675 0650  
www.kane-environmental.com

and irrigation water. On September 12, 2008, Dillingham Ranch Aina, LLC applied for a certificate of Public Convenience and Necessity as the North Shore Water Company (Docket 2008-0180) to continue to provide water for the area as a Public Utility. The final Decision and Order is expected to be made June 12, 2009. The subject property is included in the Service Area. As a Public Utility, the application proposes to regulate agricultural use of water by requiring proof of agricultural revenues.

In addition, the groundwater beneath the Property is part of the Mokuleia Aquifer System of the North Aquifer Sector with water availability of 12 million gallons per day with 3.975 mgd available. For a new well, an Exploratory Well Drilling Permit is required and a State Application for a Water Use Permit approved by the Water Commission. It is not uncommon for a new well to be dug for a property which has no other source of water. Another option is to purchase rights from the Dillingham Ranch. A supplementary water source would be necessary for agricultural uses whether the land is zoned P-2 or Ag-2.

The 40 acre parcel lies in the middle of thousands of acres of State and County agricultural land and does not meet the criteria for land to be designated Preservation, i.e. a major open space, recreational land, or lands of scenic and other natural resource value. While it is true that the existing P-2 designation allows for "crop production", such production could not be done with the farmer living on a farm because the P-2 zoning does not permit farm dwellings. The parcel is located within the State Agricultural District and the applicant is simply requesting to return the land to the previous county agricultural designation with no proposed subdivision.

Thank you again for taking the time to review and comment on the DEA.

Very truly yours,

KANE ENVIRONMENTAL, INC.

John R. Kane

President/Principal



STATE OF HAWAII  
OFFICE OF HAWAIIAN AFFAIRS  
711 KAPITOLANI BOULEVARD, SUITE 500  
HONOLULU, HAWAII 96813

HRD08/4075

January 8, 2009

Lauri Clegg  
Analytical Planning Consultants, Inc.  
928 Nu'uuanu Avenue, Suite 502  
Honolulu Hawaii 96817

**RE: Request for comments on the proposed zone change and draft environmental assessment (DEA), Mokulē'ia, O'ahu, TMK: 6-8-003:021.**

Aloha e Lauri Clegg,

The Office of Hawaiian Affairs (OHA) is in receipt of the above-mentioned letter dated November 18, 2008. OHA has reviewed the project and offers the following comments.

According to Table 21-3 of Revised Ordinances of Honolulu (ROH) currently permitted uses include crop production and forestry as well as grazing. Therefore, all of the advantages that the applicant offers as benefits for the zone change already exist. Literally all of the applicable land use considerations in section 3.15 of the applicant's DEA currently exist under the existing zoning- with the notable exception of houses. They are not just taken advantage of. If the applicant wishes to farm or ranch, they can.

It seems as though the singular use that this proposal will allow, and which the applicant notes, is the ability for homes to be built on the property. OHA is aware that accessory agrusiness endeavors will also be allowed with the proposed zone change; however, we doubt that the applicant is proposing to sell produce along the remote and not-well travelled road adjacent to the property. (As literally mentioned on page 28 of the DEA as a reason for the zoning change along with "kennels" and "wind machines") As such, OHA is skeptical of this proposal's truly agricultural intent. The focus of this proposal is to allow houses on this property, not agriculture, which is currently allowed anyway.

We are not supportive of a proposal which seeks to re-zone agricultural lands into what amounts to gentleman farms. We do not agree with the "proposed use of this subject Property

Lauri Clegg  
January 8, 2009  
Page 2

for several small, niche farms with accessory farm dwellings" as "a bona fide agricultural activity" (DEA, page 29). OHA is concerned that if this area should not be re-zoned, and if it is re-zoned, this area be used for truly agricultural uses only. The fact that accessory farm dwellings are allowed and some have taken advantage of it to develop mansions on ag land is unfortunate and needs to be remedied. Simply because it is allowed does not make it right.

Our concerns are echoed by the myriad of laws and legislation supporting a strong agricultural economic base and retention of those lands primarily in agricultural pursuits in the specific project area. (see Hawaii Revised Statutes, Section 205, O'ahu General Plan and Sustainable Communities Plan, Section 1-115 of the City Subdivision Rules and Regulations; and the State Coastal Zone Management Act, among many other citations)

OHA also points out that water is limited in the area. Even the applicant's own DEA on page 13 states that there is insufficient water to grow native plants on the property. We stress that 13,000 gallons of water per day for five acres for a single family residence is not enough water for most crops. (DEA, page 21). OHA realizes that water use permits are granted based on reasonable usage and in consideration of maximum-beneficial use. OHA stresses that waters of the State used in Agricultural zoned parcels must be used in order to support agriculture. If the applicant truly intends an agricultural endeavor, more details need to be provided such as how much of each crop will be grown in terms of an acreage plan as well as a water use proposal based on these estimates.

Currently, there is no water for the proposal and with it being as vague as it is, the criteria for designation of a water permit cannot even be assessed. We point out again that the applicant is free to pursue all of their stated agricultural goals and propositions in P-2 zoning; no zone change is needed. However, if they wish to change or increase use in the area (such as residences), the burden is on the applicant to demonstrate that their use will not significantly harm the resource, or if it will harm it, that the proposed use is consistent with the purposes of the public trust.

The applicant does state on page 11 of the DEA one reason why the P-2 zoning should be removed and placed in agriculture:

The present P-2 zoning allows for limited crops and livestock. Loss of crops and equipment could be potentially devastating for the owner of a small privately owned farm than it would be for a large plantation type operation.

OHA is unsure as to how P-2 zoning limits crops and livestock; however, we are sure that potential theft of what are now un-proposed crops (what if they are growing trees or hay- not very likely to be stolen) is not a standard sufficient enough to warrant rezoning of this entire area.



DEPARTMENT OF THE ARMY  
HEADQUARTERS, UNITED STATES ARMY GARRISON, HAWAII  
DIRECTORATE OF PUBLIC WORKS  
947 WRIGHT AVENUE, WHEELER ARMY AIRFIELD  
SCHOFIELD BARRACKS, HAWAII 96857-5013

March 13, 2009

REPLY TO  
ATTENTION OF:

Directorate of Public Works

We do not agree that the placement of this land in preservation was done as a "holding pattern" until a better use could be designated. This is a pristine area with very little development surrounded by state managed game areas, recreational areas, and with the presence of many unique cultural and environmental resources. P-2 zoning is accurate for this area, and perhaps even P-1 is warranted. Furthermore, P-2 zoning is a hybrid use zoning in the sense that while preservation is the goal, agriculture is still allowed and so the applicant will suffer no loss to their agricultural aspirations by maintaining the current zoning. P-2 zoning is also the zoning favored by a majority of the residents in the area. (DEA, page 34)

Thank you for the opportunity to comment. If you have further questions, please contact Grant Arnold by phone at (808) 594-0263 or e-mail him at grantia@oha.org.

'O wau iho nō me ka 'ōia i'ō,

Clyde W. Nāmu'ō  
Administrator

Mr. Don Clegg, President  
Analytical Planning Consultants, Inc.  
928 Nuuanu Avenue, Suite 502  
Honolulu, Hawaii 96817

Dear Mr. Clegg:

These comments are being submitted in response to the Draft Environmental Assessment for Zone Change From F-1 Military and Federal Preservation to Ag-2 Agricultural, Mokuleia, Oahu, Hawaii (TMK: (1) 6-8-003:021).

We have reviewed the Draft EA and have no comments to offer. The proposed zone change will have no impact on Army training activities at nearby Dillingham Military Reservation.

There is a planned road for Stryker vehicles traversing primarily agricultural lands from Schofield Barracks to the Army training area at Dillingham Military Reservation. The intent with this new road is to take Stryker vehicles off public highways and minimize impacts on civilian traffic. But the proposed road ends in the vicinity of Dillingham Ranch and joins back with the public highway along the coastline for the short remaining distance to the Army training area. Therefore, the new road will pass close to the parcel proposed for zone change but should have no impact on it.

For additional information, please contact Alvin Char, Chief, Environmental Division at 656-5790.

Sincerely,

Robert Eastwood  
Director of Public Works







LINDA LINGLE  
GOVERNOR OF HAWAII



CHRISTINE L. FUKINO, M.D.  
DIRECTOR OF HEALTH

STATE OF HAWAII  
DEPARTMENT OF HEALTH  
P.O. Box 3378  
HONOLULU, HAWAII 96861-3378

In reply, please refer to:  
EPO-08-162

December 17, 2008

Ms. Lauri Clegg  
Analytical Planning Consultants, Inc.  
928 Nuuanu Avenue, Suite 502  
Honolulu, Hawaii 96817

Dear Ms Clegg:

**SUBJECT:** Draft Environmental Assessment for Zone Change from F-1 Military and Federal Preservation to AG-2 Agricultural Mokuleia, Waialua, Oahu, Hawaii  
TMK: (1) 6-8-003: 021

Thank you for allowing us to review and comment on the subject document. The document was routed to the various branches of the Environmental Health Administration. We have no comments at this time. We strongly recommend that you review all of the Standard Comments on our website: [www.hawaii.gov/health/environmental/env-planning/landuse/landuse.html](http://www.hawaii.gov/health/environmental/env-planning/landuse/landuse.html). Any comments specifically applicable to this project should be adhered to.

If there are any questions about these comments please contact Jiakai Liu with the Environmental Planning Office at 586-4346.

Sincerely,

KELVIN H. SUNADA, MANAGER  
Environmental Planning Office

c: EPO

**BOARD OF WATER SUPPLY**

CITY AND COUNTY OF HONOLULU  
630 SOUTH BERETANIA STREET  
HONOLULU, HI 96843



December 17, 2008

MUFI HANNEMANN, Mayor  
RANDALL Y. S. CHUNG, Chairman  
SAMUEL T. HATA  
ALLY J. PARK  
MARC C. CANDIFF  
MARC C. TILNER  
CRAIG I. NISHIMURA, Ex-Officio  
BRENNON T. MORIDKA, Ex-Officio  
CLIFFORD P. LUM  
Manager and Chief Engineer  
DEAN A. NAKANO  
Deputy Manager and Chief Engineer

Ms. Lauri Clegg  
Analytical Planning Consultants, Inc.  
928 Nuuanu Avenue., Suite 502  
Honolulu, Hawaii 96817

Dear Ms. Clegg:

**Subject:** Your Letter Dated November 18, 2008 on the Draft Environmental Assessment Pre-Assessment Consultation for the Proposed Zone Change in Mokuleia  
TMK: 6-8-003:021

Thank you for the opportunity to comment on the proposed zone change.

We do not have a water system able to serve this parcel. The parcel should be served by the private water system in this area

If you have any questions, please contact Robert Chun at 748-5443.

Very truly yours,

KEITH S. SHIDA  
Program Administrator  
Customer Care Division

cc: Mr. Robert Reed, Department of Planning and Permitting



## United States Department of the Interior

U.S. GEOLOGICAL SURVEY  
Pacific Islands Water Science Center  
677 Ala Moana Blvd., Suite 415  
Honolulu, HI 96813  
Phone: (808) 587-2400/Fax: (808) 587-2401

November 21, 2008

Ms. Lauri Clegg  
Analytical Planning Consultants, Inc.  
928 Nuuanu Avenue, Suite 502  
Honolulu, Hawaii 96817

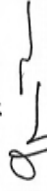
Dear Ms. Clegg:

Subject: Draft Environmental Assessment (DEA), Zone Change from F-1 Military and Federal Preservation to AG-2 Agricultural, Mokuleia, Waialua, Oahu, Hawaii, Tax Map Key  
(1) 6-8-003:021

Thank you for forwarding the subject DEA for review and comment by the staff of the U.S. Geological Survey Pacific Islands Water Science Center. We regret however, that due to prior commitments and lack of available staff, we are unable to review this document.

We appreciate the opportunity to participate in the review process.

Sincerely,



Gordon Tribble  
Center Director

cc: Mr. Henry Eng, Director  
City and County of Honolulu  
Department of Planning and Permitting  
650 South King Street, 7<sup>th</sup> Floor  
Honolulu, Hawaii 96813

**ATTACHMENT A**  
**EDR NEPACHECK**

**EDR NEPACheck®**



**EDR® Environmental  
Data Resources Inc**

**40 Acres  
Farrington Highway  
Mokuleia, HI 96791**

**Inquiry Number: 2123049.8s**

**January 17, 2008**

**The Standard in  
Environmental Risk  
Information**

440 Wheelers Farms Road  
Milford, Connecticut 06461

**Nationwide Customer Service**

Telephone: 1-800-352-0050  
Fax: 1-800-231-6802  
Internet: [www.edrnet.com](http://www.edrnet.com)

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Wetlands.....	12
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Key Contacts and Government Records Searched.....	34

***Thank you for your business.***  
Please contact EDR at 1-800-352-0050  
with any questions or comments.

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## EDR NEPACheck® DESCRIPTION

The National Environmental Policy Act of 1969 (NEPA) requires that Federal agencies include in their decision-making processes appropriate and careful consideration of all environmental effects and actions, analyze potential environmental effects of proposed actions and their alternatives for public understanding and scrutiny, avoid or minimize adverse effects of proposed actions, and restore and enhance environmental quality as much as possible.

The EDR NEPACheck provides information which may be used, in conjunction with additional research, to determine whether a proposed site or action will have significant environmental effect.

The report provides maps and data for the following items (where available). Search results are provided in the Map Findings Summary on page 2 of this report.

<b>Section</b>	<b>Regulation</b>
<b>Natural Areas Map</b>	
• Federal Lands Data:	
- Officially designated wilderness areas	47 CFR 1.1307(1)
- Officially designated wildlife preserves, sanctuaries and refuges	47 CFR 1.1307(2)
- Wild and scenic rivers	40 CFR 6.302(e)
- Fish and Wildlife	40 CFR 6.302
• Threatened or Endangered Species, Fish and Wildlife, Critical Habitat Data (where available)	47 CFR 1.1307(3); 40 CFR 6.302
<b>Historic Sites Map</b>	
• National Register of Historic Places	47 CFR 1.1307(4); 40 CFR 6.302
• State Historic Places (where available)	
• Indian Reservations	
<b>Flood Plain Map</b>	
• National Flood Plain Data (where available)	47 CFR 1.1307(6); 40 CFR 6.302
<b>Wetlands Map</b>	
• National Wetlands Inventory Data (where available)	47 CFR 1.1307(7); 40 CFR 6.302
<b>FCC &amp; FAA Map</b>	
• FCC antenna/tower sites, AM Radio Towers, FAA Markings and Obstructions, AM Radio Interference Zones, Airports, Topographic gradient	47 CFR 1.1307(8)
<b>Key Contacts and Government Records Searched</b>	

# MAP FINDINGS SUMMARY

The databases searched in this report are listed below. Database descriptions and other agency contact information is contained in the Key Contacts and Government Records Searched section on page 34 of this report.

## TARGET PROPERTY ADDRESS

40 ACRES  
FARRINGTON HIGHWAY  
MOKULEIA, HI 96791

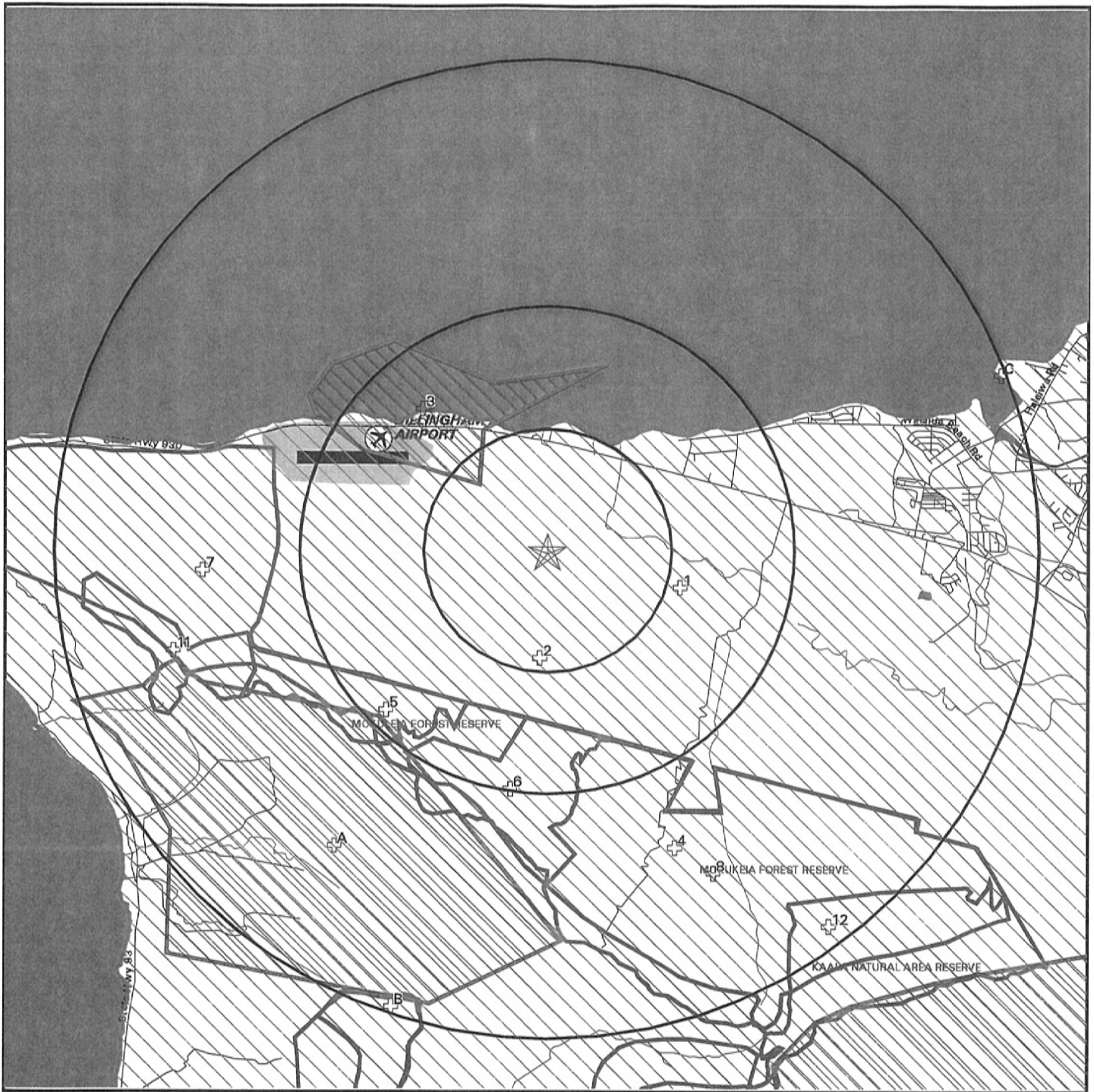
Inquiry #: 2123049.8s  
Date: 1/17/8

## TARGET PROPERTY COORDINATES

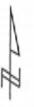
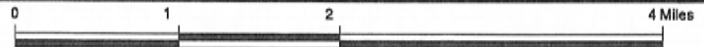
Latitude (North): 21.566130 - 21° 33' 58.1"  
Longitude (West): 158.176025 - 158° 10' 33.7"  
Universal Transverse Mercator: Zone 4  
UTM X (Meters): 585310.7  
UTM Y (Meters): 2384890.2

Applicable Regulation from 47 CFR/FCC Checklist	Database	Search Distance (Miles)	Within Search	Within 1/8 Mile
<b><u>NATURAL AREAS MAP</u></b>				
1.1307a (1) Officially Designated Wilderness Area	US Federal Lands	4.00	YES	NO
1.1307a (2) Officially Designated Wildlife Preserve	US Federal Lands	4.00	YES	NO
1.1307a (2) Officially Designated Wildlife Preserve	HI Managed Areas	4.00	YES	YES
1.1307a (2) Officially Designated Wildlife Preserve	HI Game Management	4.00	YES	YES
1.1307a (3) Threatened or Endangered Species or Critical Habitat	County Endangered Species	County	YES	N/A
<b><u>HISTORIC SITES MAP</u></b>				
1.1307a (4) Listed or eligible for National Register	National Register Hist. Places	4.00	YES	NO
	Indian Reservation	4.00	NO	NO
<b><u>FLOODPLAIN MAP</u></b>				
1.1307 (6) Located in a Flood Plain	FLOODPLAIN	4.00	YES	YES
<b><u>WETLANDS MAP</u></b>				
1.1307 (7) Change in surface features (wetland fill)	NWI	4.00	YES	NO
	HI COASTAL ZONE	20.00	YES	YES
<b><u>FCC &amp; FAA SITES MAP</u></b>				
	FCC Cellular	4.00	YES	NO
	FCC Antenna	4.00	YES	NO
	FCC Tower	4.00	YES	NO
	FCC AM Tower	4.00	NO	NO
	FAA DOF	4.00	YES	NO
	Airports	4.00	YES	YES
	Power Lines	4.00	NO	NO

# Natural Areas Map



- |                   |                           |
|-------------------|---------------------------|
| ★ Target Property | ⊕ Locations               |
| ↘ Roads           | ▨ Federal Areas           |
| ↘ County Boundary | ▨ Federal Linear Features |
| ↘ Waterways       | ▨ State Areas             |
| ■ Water           | ▨ State Linear Features   |
| ✈ Airports        |                           |



**SITE NAME:** 40 Acres  
**ADDRESS:** Farrington Highway  
 Mokuleia HI 96791  
**LAT/LONG:** 21.5661 / 158.1760

**CLIENT:** Kane Environmental Inc.  
**CONTACT:** John Kane  
**INQUIRY #:** 2123049.8s  
**DATE:** January 17, 2008

# NATURAL AREAS MAP FINDINGS

**Endangered Species Listed for: HONOLULU County, HI.**

Source: EPA Endangered Species Protection Program Database

REPTILE: TURTLE, GREEN SEA

REPTILE: TURTLE, HAWKSBILL SEA

Map ID	Direction	Distance	Distance (ft.)	EDR ID Database
1	North	0-1/8 mi	0	HI10000022 HI Game Management
	Unit:	Not reported		
2	North	0-1/8 mi	0	HI20000030 HI Managed Areas
	Reserve Type:	Undefined (code 1)		
	Reserve Name:	Not reported		
	Managed Area:	0		
	Reserve Sub-section:	Not reported		
3	NW	1/2-1 mi	4101	CUSA147725 US Federal Lands
	Feature1:	Air Force DOD		
	Feature2:	Not Reported		
	Feature3:	Not Reported		
	Agbur:	Department of Defense.		
	Uri:	Not Reported		
	Name1:	Dillingham Air Force Base		
	Name2:	Not Reported		
	Name3:	Not Reported		
	State:	HI		
	State fips:	15		
4	SSW	1-2 mi	7222	HI10000028 HI Game Management
	Unit:	Unknown		
5	SSW	1-2 mi	7249	HI20000046 HI Managed Areas
	Reserve Type:	State Forest Reserve		
	Reserve Name:	MOKULEIA FOREST RESERVE		
	Managed Area:	557		
	Reserve Sub-section:	Not reported		
6	South	1-2 mi	7314	HI20000047 HI Managed Areas
	Reserve Type:	Natural Area Reserve		
	Reserve Name:	PAHOLE NATURAL AREA RESERVE		
	Managed Area:	656		
	Reserve Sub-section:	Not reported		





## NATURAL AREAS MAP FINDINGS

C15  
ENE  
2-4 mi  
20606

Unit:

Not reported

HI10000022  
HI Game Management

---

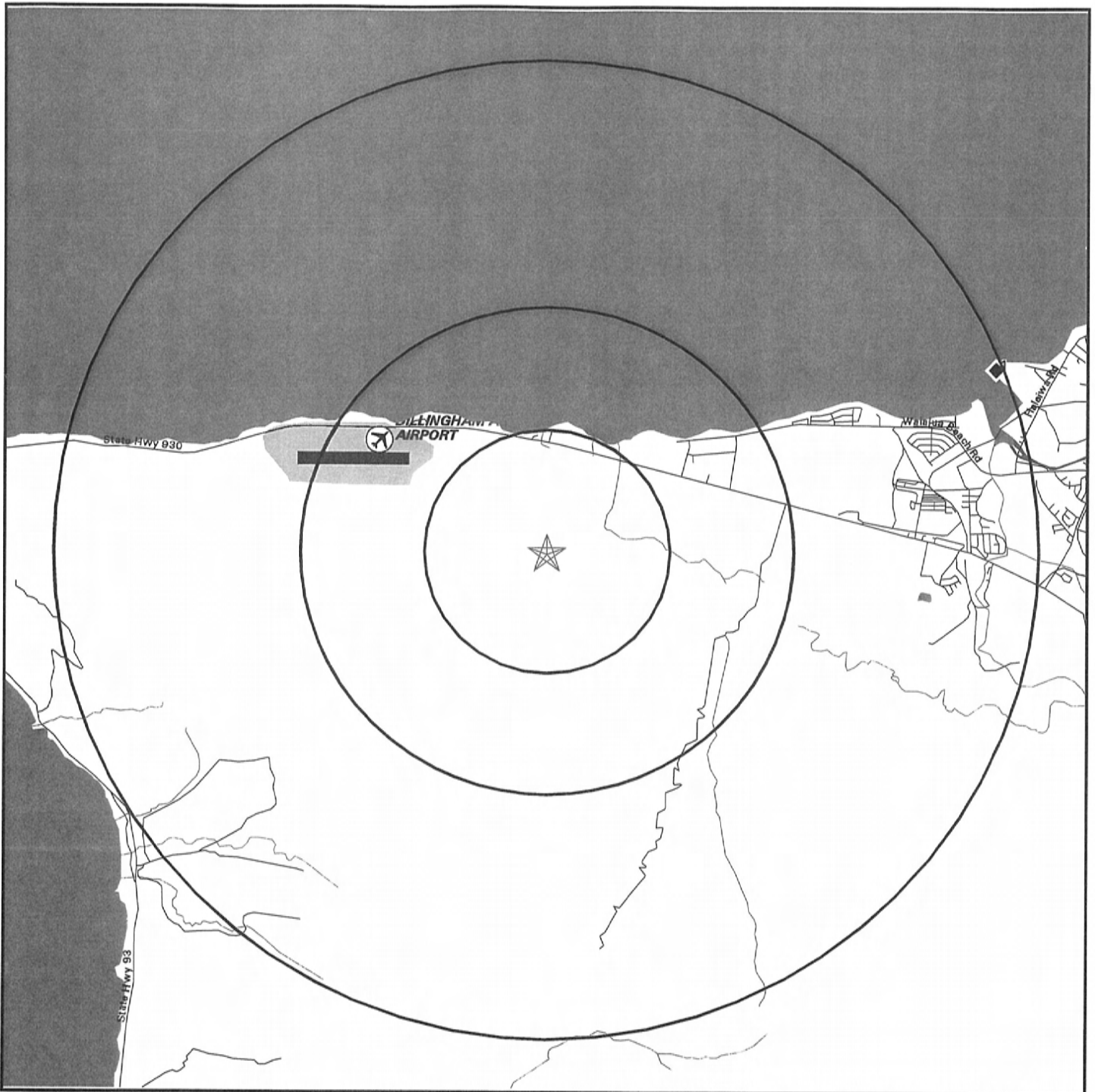
C16  
ENE  
2-4 mi  
20606

Reserve Type:  
Reserve Name:  
Managed Area:  
Reserve Sub-section:

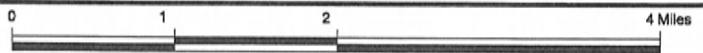
Undefined (code 1)  
Not reported  
0  
Not reported

HI20000030  
HI Managed Areas

# Historic Sites Map



- |                   |                          |
|-------------------|--------------------------|
| ★ Target Property | ◆ Historic Sites         |
| ∩ Streets         | ▨ Federal Historic Areas |
| ∩ County Boundary | ▨ State Historic Areas   |
| ∩ Waterways       | ▨ US Indian Reservations |
| ■ Water           | ∩ Scenic Trail           |
| ✈ Airports        |                          |



**SITE NAME:** 40 Acres  
**ADDRESS:** Farrington Highway  
 Mokuleia HI 96791  
**LAT/LONG:** 21.5661 / 158.1760

**CLIENT:** Kane Environmental Inc.  
**CONTACT:** John Kane  
**INQUIRY #:** 2123049.8s  
**DATE:** January 17, 2008

TC2123049.8s Page 7 of 39

# HISTORIC SITES MAP FINDINGS

Map ID  
 Direction  
 Distance  
 Distance (ft.)

EDR ID  
 Database

1 ENE 2-4 mi 20814	Resource Name: Waialua School Alternate Name: Not Reported Resource Address: 66--505 Haleiwa Rd. Resource Type: Building Location: Haleiwa, HI County: Honolulu, HI Primary Certification: Listed in the national register Certification Date: 19800811      Acreage: 10 Number of Buildings: 1      Number of Objects: 0 Number of Sites: 0      Num. of Structures: 0 Number of non-contributing Buildings: 0 Number of non-contributing Objects: 0 Number of non-contributing Sites: 0 Num. of non-contributing Structures: 0 Applicable Criteria: Event, Person, Architecture/Engineering Areas of Significance: Education, Architecture, Social history Current Function: Vacant/not in use Building Material: Stucco, None listed, Wood Other Names: Haleiwa Elementary School	80001271 National Register Hist. Places
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## UNMAPPABLE HISTORIC SITES

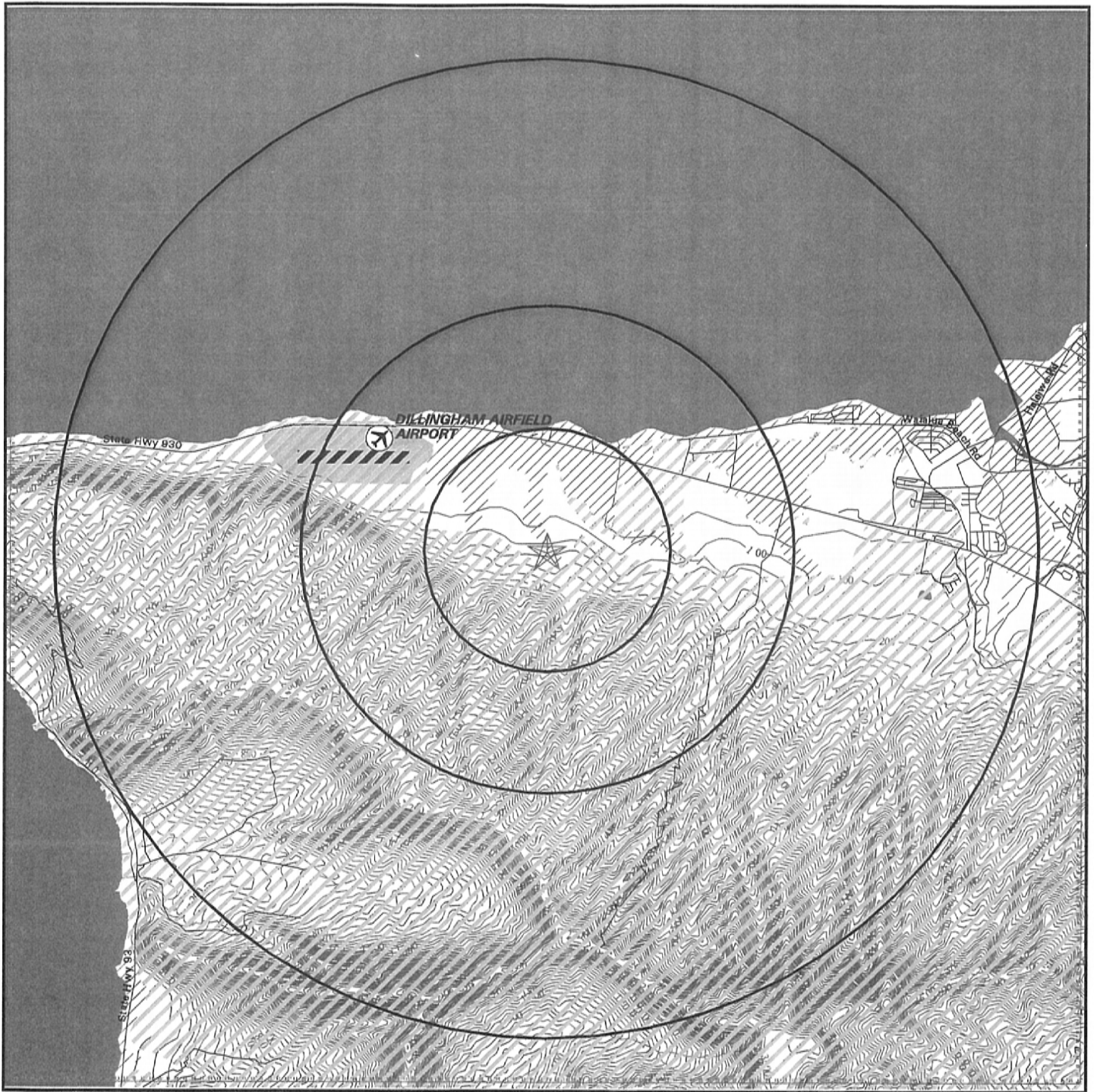
Due to poor or inadequate address information, the following sites were not mapped:

Status  
EDR ID  
Database

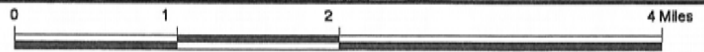
---

No unmapped sites were found in EDR's search of available government records.

# Flood Plain Map



- |                 |             |                                    |
|-----------------|-------------|------------------------------------|
| Major Roads     | Power Lines | Water                              |
| Contour Lines   | Pipe Lines  | 100-year flood zone                |
| Waterways       | Fault Lines | 500-year flood zone                |
| County Boundary |             | Electronic FEMA data available     |
| Airports        |             | Electronic FEMA data not available |



<p><b>SITE NAME:</b> 40 Acres  <b>ADDRESS:</b> Farrington Highway          Mokuleia HI 96791  <b>LAT/LONG:</b> 21.5661 / 158.1760</p>	<p><b>CLIENT:</b> Kane Environmental Inc.  <b>CONTACT:</b> John Kane  <b>INQUIRY #:</b> 2123049.8s  <b>DATE:</b> January 17, 2008</p> <p style="text-align: right;">TC2123049.8s Page 10 of 39</p>
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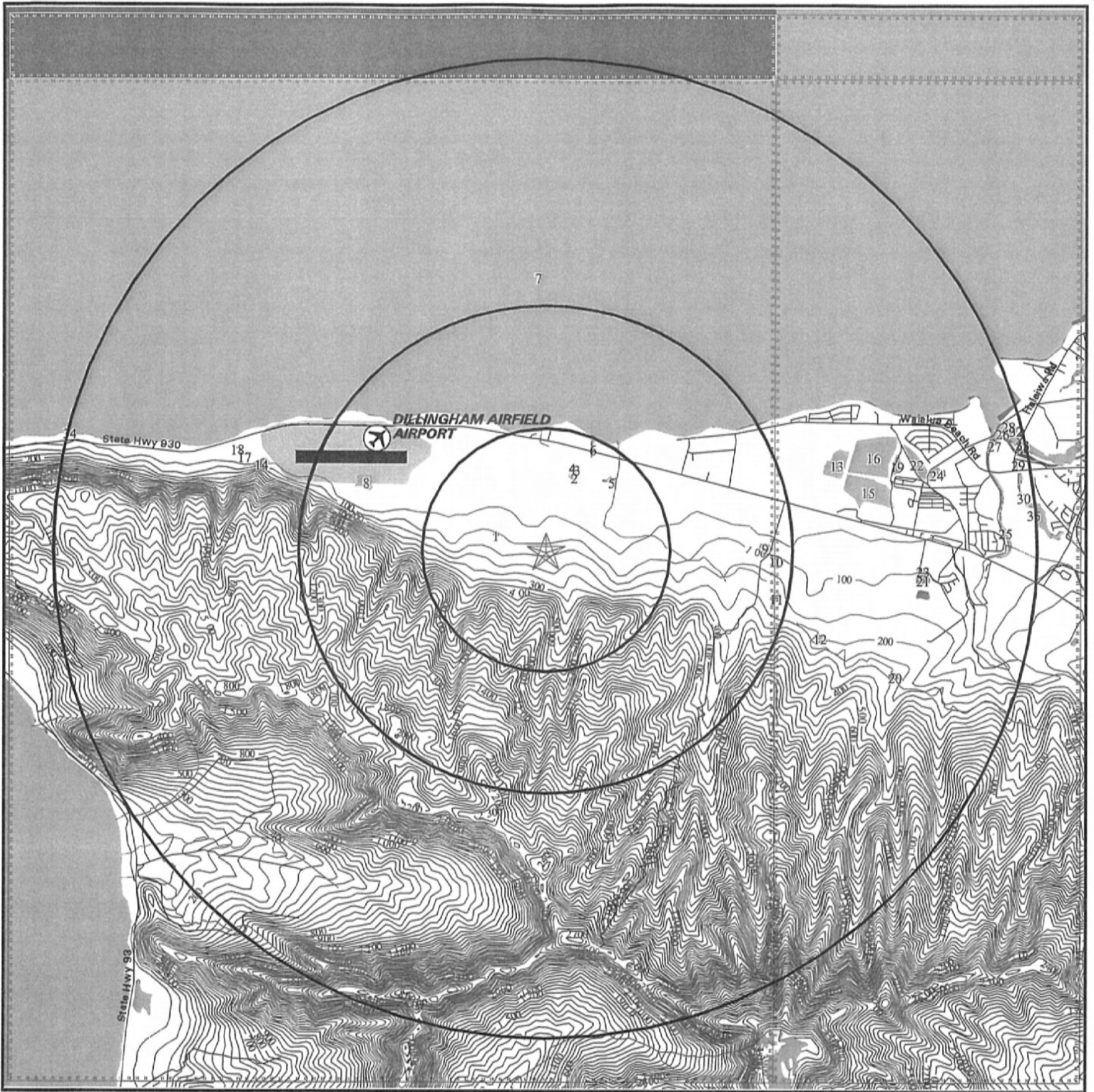


# FLOOD PLAIN MAP FINDINGS

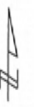
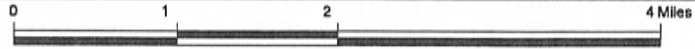
Source: FEMA Q3 Flood Data

County	FEMA flood data electronic coverage
HONOLULU, HI	YES
Flood Plain panel at target property: Additional Flood Plain panel(s) in search area:	1500010035B
1500010020B	
1500010040B	
1500010065C	
1500010070A	

# National Wetlands Inventory Map



- |                 |             |                                   |
|-----------------|-------------|-----------------------------------|
| Major Roads     | Power Lines | Water                             |
| Contour Lines   | Pipe Lines  | National Wetland Inventory        |
| Waterways       | Fault Lines | Electronic NWI data available     |
| County Boundary |             | Electronic NWI data not available |
| Airports        |             |                                   |



<p><b>SITE NAME:</b> 40 Acres  <b>ADDRESS:</b> Farrington Highway          Mokuleia HI 96791  <b>LAT/LONG:</b> 21.5661 / 158.1760</p>	<p><b>CLIENT:</b> Kane Environmental Inc.  <b>CONTACT:</b> John Kane  <b>INQUIRY #:</b> 2123049.8s  <b>DATE:</b> January 17, 2008</p> <p style="text-align: right;">TC2123049.8s Page 12 of 39</p>
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## WETLANDS MAP FINDINGS

Source: Fish and Wildlife Service NWI data

NWI hardcopy map at target property: West Kaena (OE)

Additional NWI hardcopy map(s) in search area:  
Haleiwa

Map ID	Direction	Distance	Distance (ft.)	Code and Description*	Database
1	WNW	1/4-1/2 mi	2108	POWHh [P] Palustrine, [OW] Open Water/Unknown Bottom (obs), [H] Permanently Flooded, [h] Diked/Impounded	NWI
2	NNE	1/2-1 mi	3296	POWHx [P] Palustrine, [OW] Open Water/Unknown Bottom (obs), [H] Permanently Flooded, [x] Excavated	NWI
3	NNE	1/2-1 mi	3733	POWHx [P] Palustrine, [OW] Open Water/Unknown Bottom (obs), [H] Permanently Flooded, [x] Excavated	NWI
4	NNE	1/2-1 mi	3735	POWHx [P] Palustrine, [OW] Open Water/Unknown Bottom (obs), [H] Permanently Flooded, [x] Excavated	NWI
5	NE	1/2-1 mi	3844	POWHx [P] Palustrine, [OW] Open Water/Unknown Bottom (obs), [H] Permanently Flooded, [x] Excavated	NWI
6	NNE	1/2-1 mi	4464	E2US2P [E] Estuarine, [2] Intertidal, [US] Unconsolidated Shore, [2] Sand, [P] Irregularly Flooded	NWI
7	North	1/2-1 mi	5144	M1OWL [M] Marine, [1] Subtidal, [OW] Open Water/Unknown Bottom (obs), [L] Subtidal	NWI
8	WNW	1-2 mi	7786	PEM1C [P] Palustrine, [EM] Emergent, [1] Persistent, [C] Seasonally Flooded	NWI
9	East	1-2 mi	9131	POWHh [P] Palustrine, [OW] Open Water/Unknown Bottom (obs), [H] Permanently Flooded, [h] Diked/Impounded	NWI

\*See Wetland Classification System for additional information.

## WETLANDS MAP FINDINGS

Map ID Direction Distance Distance (ft.)	Code and Description*	Database
10 East 1-2 mi 9700	POWHh [P] Palustrine, [OW] Open Water/Unknown Bottom (obs), [H] Permanently Flooded, [h] Diked/Impounded	NWI
11 ESE 1-2 mi 9890	POWHh [P] Palustrine, [OW] Open Water/Unknown Bottom (obs), [H] Permanently Flooded, [h] Diked/Impounded	NWI
12 ESE 2-4 mi 12176	POWHh [P] Palustrine, [OW] Open Water/Unknown Bottom (obs), [H] Permanently Flooded, [h] Diked/Impounded	NWI
13 ENE 2-4 mi 12315	PEM1KFh [P] Palustrine, [EM] Emergent, [1] Persistent, [K] Artificially Flooded, [F] Semipermanently Flooded, [h] Diked/Impounded	NWI
14 WNW 2-4 mi 12422	L1OWHx [L] Lacustrine, [1] Limnetic, [OW] Open Water/Unknown Bottom (obs), [H] Permanently Flooded, [x] Excavated	NWI
15 ENE 2-4 mi 13013	PEM1KFh [P] Palustrine, [EM] Emergent, [1] Persistent, [K] Artificially Flooded, [F] Semipermanently Flooded, [h] Diked/Impounded	NWI
16 ENE 2-4 mi 13367	PEM1KFh [P] Palustrine, [EM] Emergent, [1] Persistent, [K] Artificially Flooded, [F] Semipermanently Flooded, [h] Diked/Impounded	NWI
17 WNW 2-4 mi 13475	POWHx [P] Palustrine, [OW] Open Water/Unknown Bottom (obs), [H] Permanently Flooded, [x] Excavated	NWI
18 WNW 2-4 mi 13876	POWHx [P] Palustrine, [OW] Open Water/Unknown Bottom (obs), [H] Permanently Flooded, [x] Excavated	NWI
19 ENE 2-4 mi 15216	PEM1KFh [P] Palustrine, [EM] Emergent, [1] Persistent, [K] Artificially Flooded, [F] Semipermanently Flooded, [h] Diked/Impounded	NWI

\*See Wetland Classification System for additional information.

## WETLANDS MAP FINDINGS

Map ID Direction Distance Distance (ft.)	Code and Description*	Database
20 ESE 2-4 mi 15745	POWHh [P] Palustrine, [OW] Open Water/Unknown Bottom (obs), [H] Permanently Flooded, [h] Diked/Impounded	NWI
21 East 2-4 mi 15937	POWHh [P] Palustrine, [OW] Open Water/Unknown Bottom (obs), [H] Permanently Flooded, [h] Diked/Impounded	NWI
22 ENE 2-4 mi 16000	PEM1KFh [P] Palustrine, [EM] Emergent, [1] Persistent, [K] Artificially Flooded, [F] Semipermanently Flooded, [h] Diked/Impounded	NWI
23 East 2-4 mi 16044	POWHh [P] Palustrine, [OW] Open Water/Unknown Bottom (obs), [H] Permanently Flooded, [h] Diked/Impounded	NWI
24 East 2-4 mi 16689	PEM1KFh [P] Palustrine, [EM] Emergent, [1] Persistent, [K] Artificially Flooded, [F] Semipermanently Flooded, [h] Diked/Impounded	NWI
25 East 2-4 mi 18990	R2OWHx [R] Riverine, [2] Lower Perennial, [OW] Open Water/Unknown Bottom (obs), [H] Permanently Flooded, [x] Excavated	NWI
26 East 2-4 mi 19271	E1OWLx [E] Estuarine, [1] Subtidal, [OW] Open Water/Unknown Bottom (obs), [L] Subtidal, [x] Excavated	NWI
27 ENE 2-4 mi 19738	POWH [P] Palustrine, [OW] Open Water/Unknown Bottom (obs), [H] Permanently Flooded	NWI
28 ENE 2-4 mi 20311	PEM1C [P] Palustrine, [EM] Emergent, [1] Persistent, [C] Seasonally Flooded	NWI
29 East 2-4 mi 20450	PSS3A [P] Palustrine, [SS] Scrub-Shrub, [3] Broad-Leaved Evergreen, [A] Temporarily Flooded	NWI

\*See Wetland Classification System for additional information.



## WETLANDS MAP FINDINGS

Map ID Direction Distance Distance (ft.)	Code and Description*	Database
30 East 2-4 mi 20458	PEM1KFh [P] Palustrine, [EM] Emergent, [1] Persistent, [K] Artificially Flooded, [F] Semipermanently Flooded, [h] Diked/Impounded	NWI
31 ENE 2-4 mi 20720	R2OWHx [R] Riverine, [2] Lower Perennial, [OW] Open Water/Unknown Bottom (obs), [H] Permanently Flooded, [x] Excavated	NWI
32 ENE 2-4 mi 20796	POWH [P] Palustrine, [OW] Open Water/Unknown Bottom (obs), [H] Permanently Flooded	NWI
33 ENE 2-4 mi 20963	PEM1F [P] Palustrine, [EM] Emergent, [1] Persistent, [F] Semipermanently Flooded	NWI
34 WNW 2-4 mi 21006	M1RF1L [M] Marine, [1] Subtidal, [RF] Reef, [1] Coral, [L] Subtidal	NWI
35 East 2-4 mi 21020	PEM1KFh [P] Palustrine, [EM] Emergent, [1] Persistent, [K] Artificially Flooded, [F] Semipermanently Flooded, [h] Diked/Impounded	NWI

\*See Wetland Classification System for additional information.

## WETLANDS CLASSIFICATION SYSTEM

National Wetland Inventory Maps are produced by the U.S. Fish and Wildlife Service, a sub-department of the U.S. Department of the Interior. In 1974, the U.S. Fish and Wildlife Service developed a criteria for wetland classification with four long range objectives:

- to describe ecological units that have certain homogeneous natural attributes,
- to arrange these units in a system that will aid decisions about resource management,
- to furnish units for inventory and mapping, and
- to provide uniformity in concepts and terminology throughout the U.S.

High altitude infrared photographs, soil maps, topographic maps and site visits are the methods used to gather data for the productions of these maps. In the infrared photos, wetlands appear as different colors and these wetlands are then classified by type. Using a hierarchical classification, the maps identify wetland and deepwater habitats according to:

- system
- subsystem
- class
- subclass
- modifiers

(as defined by Cowardin, et al. U.S. Fish and Wildlife Service FWS/OBS 79/31. 1979.)

The classification system consists of five systems:

1. marine
2. estuarine
3. riverine
4. lacustrine
5. palustrine

The marine system consists of deep water tidal habitats and adjacent tidal wetlands. The riverine system consists of all wetlands contained within a channel. The lacustrine systems includes all nontidal wetlands related to swamps, bogs & marshes. The estuarine system consists of deepwater tidal habitats and where ocean water is diluted by fresh water. The palustrine system includes nontidal wetlands dominated by trees and shrubs and where salinity is below .5% in tidal areas. All of these systems are divided in subsystems and then further divided into class.

National Wetland Inventory Maps are produced by transferring gathered data on a standard 7.5 minute U.S.G.S. topographic map. Approximately 52 square miles are covered on a National Wetland Inventory map at a scale of 1:24,000. Electronic data is compiled by digitizing these National Wetland Inventory Maps.

**SYSTEM**

**MARINE**

**SUBSYSTEM**

**1 - SUBTIDAL**

**2 - INTERTIDAL**

**CLASS**

RB-ROCK BOTTOM	UB-UNCONSOLIDATED BOTTOM	AB-AQUATIC BED	RF-REEF	OW-OPEN WATER / Unknown Bottom	AB-AQUATIC BED	RF-REEF	RS-ROCKY SHORE	US-UNCONSOLIDATED SHORE
----------------	--------------------------	----------------	---------	--------------------------------	----------------	---------	----------------	-------------------------

**Subclass**

1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Algal 3 Rooted Vascular 5 Unknown Submergent	1 Coral 3 Worm		1 Algal 3 Rooted Vascular 5 Unknown Submergent	1 Coral 3 Worm	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic
-----------------------	---	--	-------------------	--	--	-------------------	-----------------------	---

**SYSTEM**

**E - ESTUARINE**

**SUBSYSTEM**

**1 - SUBTIDAL**

**CLASS**

RB-ROCK BOTTOM	UB-UNCONSOLIDATED BOTTOM	AB-AQUATIC BED	RF-REEF	OW-OPEN WATER / Unknown Bottom
----------------	--------------------------	----------------	---------	--------------------------------

**Subclass**

1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Algal 3 Rooted Vascular 4 Floating Vascular 5 Unknown Submergent 6 Unknown Surface	2 Mollusk 3 Worm	
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**SUBSYSTEM**

**2 - INTERTIDAL**

**CLASS**

AB-AQUATIC BED	RF-REEF	SB - STREAMBED	RS-ROCKY SHORE	US-UNCONSOLIDATED SHORE	EM-EMERGENT	SS-SCRUB SHRUB	FO-FORESTED
----------------	---------	----------------	----------------	-------------------------	-------------	----------------	-------------

**Subclass**

1 Algal 3 Rooted Vascular 4 Floating Vascular 5 Unknown Submergent 6 Unknown Surface	2 Mollusk 3 Worm	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Persistent 2 Nonpersistent	1 Broad-Leaved Deciduous 2 Needle-Leaved Deciduous 3 Broad-Leaved Evergreen 4 Needle-Leaved Evergreen 5 Dead 6 Deciduous 7 Evergreen	1 Broad-Leaved Deciduous 2 Needle-Leaved Deciduous 3 Broad-Leaved Evergreen 4 Needle-Leaved Evergreen 5 Dead 6 Deciduous 7 Evergreen
--	---------------------	---	-----------------------	---	---------------------------------	--	--

**SYSTEM**

**R - RIVERINE**

**SUBSYSTEM**

	<b>1 - TIDAL</b>	<b>2 - LOWER PERENNIAL</b>	<b>3 - UPPER PERENNIAL</b>	<b>4 - INTERMITTENT</b>	<b>5 - UNKNOWN PERENNIAL</b>			
<b>CLASS</b>	<b>RB-ROCK BOTTOM</b>	<b>UB-UNCONSOLIDATED BOTTOM</b>	<b>*SB-STREAMBED</b>	<b>AB-AQUATIC BED</b>	<b>RS-ROCKY SHORE</b>	<b>US-UNCONSOLIDATED SHORE</b>	<b>**EM-EMERGENT</b>	<b>OW-OPEN WATER/ Unknown Bottom</b>
<b>Subclass</b>	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Bedrock 2 Rubble 3 Cobble-Gravel 4 Sand 5 Mud 6 Organic 7 Vegetated	1 Algal 2 Aquatic Moss 3 Rooted Vascular 4 Floating Vascular 5 Unknown Submergent 6 Unknown Surface	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic 5 Vegetated	2 Nonpersistent	

\* STREAMBED is limited to TIDAL and INTERMITTENT SUBSYSTEMS, and comprises the only CLASS in the INTERMITTENT SUBSYSTEM.  
 \*\*EMERGENT is limited to TIDAL and LOWER PERENNIAL SUBSYSTEMS.

**SYSTEM**

**L - LACUSTRINE**

**SUBSYSTEM**

**1 - LIMNETIC**

	<b>RB-ROCK BOTTOM</b>	<b>UB-UNCONSOLIDATED BOTTOM</b>	<b>AB-AQUATIC BED</b>	<b>OW-OPEN WATER/ Unknown Bottom</b>
<b>Subclass</b>	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Algal 2 Aquatic Moss 3 Rooted Vascular 4 Floating Vascular 5 Unknown Submergent 6 Unknown Surface	

**SUBSYSTEM**

**2 - LITTORAL**

	<b>RB-ROCK BOTTOM</b>	<b>UB-UNCONSOLIDATED BOTTOM</b>	<b>AB-AQUATIC BED</b>	<b>RS-ROCKY SHORE</b>	<b>US-UNCONSOLIDATED SHORE</b>	<b>EM-EMERGENT</b>	<b>OW-OPEN WATER/ Unknown Bottom</b>
<b>Subclass</b>	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Algal 2 Aquatic Moss 3 Rooted Vascular 4 Floating Vascular 5 Unknown Submergent 6 Unknown Surface	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic 5 Vegetated	2 Nonpersistent	

**SUBSYSTEM**

**P - PALUSTRINE**

CLASS	RB--ROCK BOTTOM	UB--UNCONSOLIDATED BOTTOM	AB-AQUATIC BED	US--UNCONSOLIDATED SHORE	ML--MOSS- LICHEN	EM--EMERGENT	SS--SCRUB-SHRUB	FO--FORESTED	OW-OPEN WATER/ Unknown
Bottom									
Subclass	1 Bedrock 2 Rubble 3 Mud 4 Organic	1 Cobble-Gravel 2 Sand	1 Algal 2 Aquatic Moss 3 Rooted Vascular 4 Floating Vascular 5 Unknown 6 Unknown Surface	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic 5 Vegetated	1 Moss 2 Lichen	1 Persistent 2 Nonpersistent	1 Broad-Leaved Deciduous 2 Needle-Leaved Deciduous 3 Broad-Leaved Evergreen 4 Needle-Leaved Evergreen 5 Dead 6 Deciduous 7 Evergreen	1 Broad-Leaved Deciduous 2 Needle-Leaved Deciduous 3 Broad-Leaved Evergreen 4 Needle-Leaved Evergreen 5 Dead 6 Deciduous 7 Evergreen	

**MODIFIERS**

In order to more adequately describe wetland and deepwater habitats one or more of the water regime, water chemistry, soil, or special modifiers may be applied at the class or lower level in the hierarchy. The farmed modifier may also be applied to the ecological system.

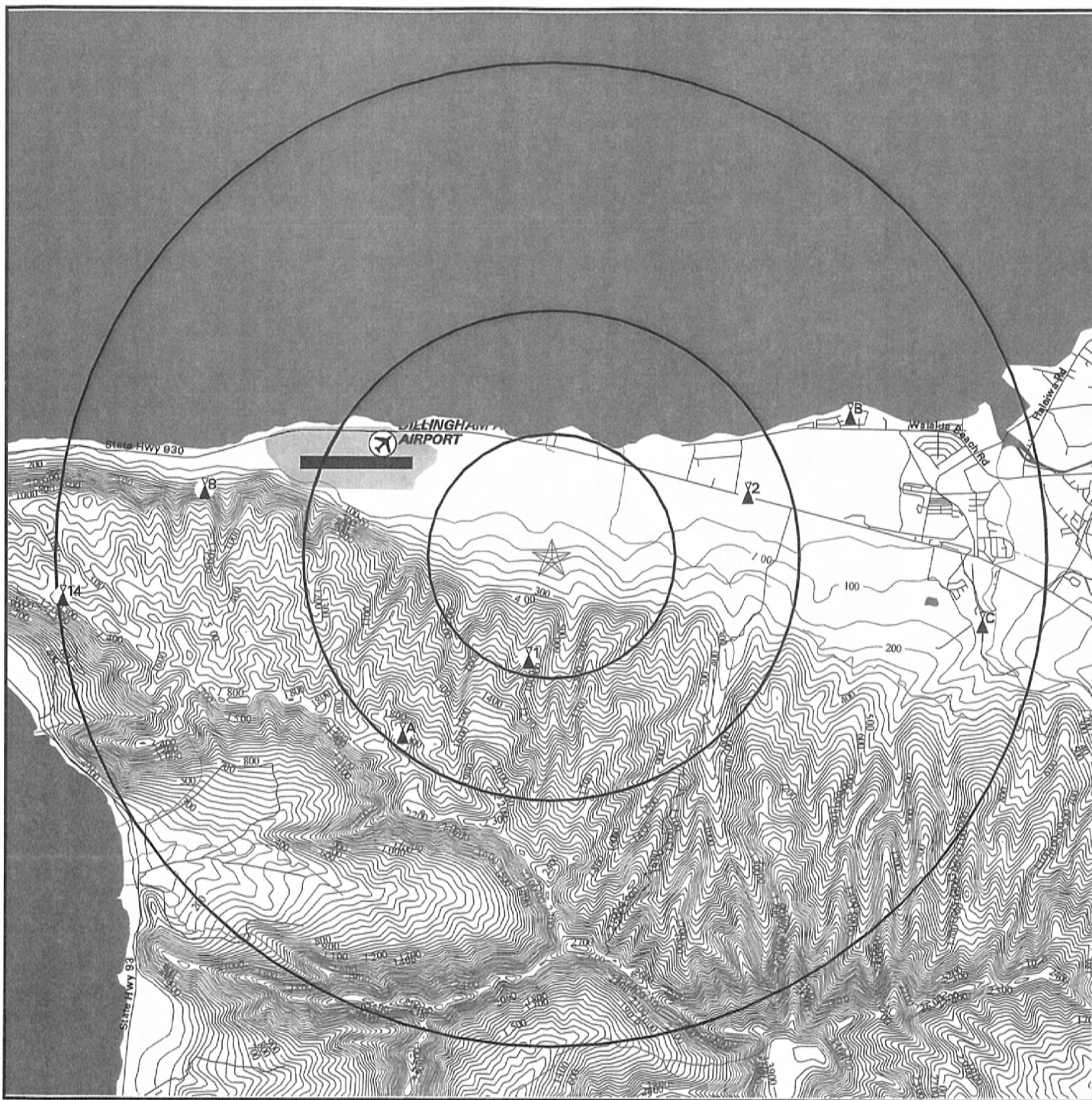
WATER REGIME				WATER CHEMISTRY			SOIL	SPECIAL MODIFIERS
Non-Tidal	Tidal	Coastal	Inland	Salinity	pH	Modifiers for		
A Temporarily Flooded	H Permanently Flooded	K Artificially Flooded	*S Temporary-Tidal	1 Hyperhaline	7 Hypersaline	all Fresh Water	g Organic	b Beaver
B Saturated	J Intermittently Flooded	L Subtidal	*R Seasonal-Tidal	2 Euhaline	8 Eusaline	a Acid	n Mineral	d Partially Drained/Ditched
C Seasonally Flooded	K Artificially Flooded	M Irregularly Exposed	*T Semipermanent -Tidal	3 Mixohaline (Brackish)	9 Mixosaline	t Circumneutral		f Farmed
D Seasonally Flooded/ Well Drained	W Intermittently Flooded/Temporary	N Regularly Flooded	V Permanent -Tidal	4 Polyhaline	0 Fresh	i Alkaline		h Diked/Impounded
E Seasonally Flooded/ Saturated	Y Saturated/Semipermanent/ Seasonal	P Irregularly Flooded	U Unknown	5 Mesohaline				r Artificial Substrate
F Semipermanently Flooded	Z Intermittently Exposed/Permanent			6 Oligohaline				s Spoil
G Intermittently Exposed	U Unknown			0 Fresh				x Excavated
				*These water regimes are only used in tidally influenced, freshwater systems.				

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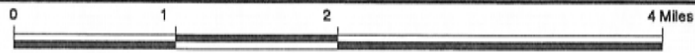
Source: U.S. Department of the Interior  
Fish and Wildlife Service  
National Wetlands Inventory



# FCC & FAA Sites Map



- |  |                 |  |                                  |
|--|-----------------|--|----------------------------------|
|  | Streets         |  | Sites                            |
|  | Contour Lines   |  | Omni Directional AM Interference |
|  | County Boundary |  | Directional AM Interference      |
|  | Waterways       |  |                                  |
|  | Power Lines     |  |                                  |
|  | Water           |  |                                  |
|  | Airports        |  |                                  |



<p><b>SITE NAME:</b> 40 Acres  <b>ADDRESS:</b> Farrington Highway          Mokuleia HI 96791  <b>LAT/LONG:</b> 21.5661 / 158.1760</p>	<p><b>CLIENT:</b> Kane Environmental Inc.  <b>CONTACT:</b> John Kane  <b>INQUIRY #:</b> 2123049.8s  <b>DATE:</b> January 17, 2008</p> <p style="text-align: right;">TC2123049.8s Page 21 of 39</p>
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# FCC & FAA SITES MAP FINDINGS TOWERS

Map ID Direction Distance Distance (ft.)	EDR ID Database																																												
1 SSW 1/2-1 mi 4493	TOW10000076226 TOWER																																												
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Tower ID: 71029</td> <td style="width: 50%;">Latitude (in seconds): 77606</td> </tr> <tr> <td>Tower Owner Name: TEL-PAGE CORPORATION 1.5 MILES NORTH OF, DILLINGHAM, HI</td> <td>Longitude (in seconds): 569454</td> </tr> <tr> <td>Latitude: 21 33' 77606"</td> <td>Transmitter Longitude: 1581054</td> </tr> <tr> <td>Longitude: 158 10' 54"</td> <td>Activation Date: Aug 1 1986</td> </tr> <tr> <td>Transmitter Latitude: 213326</td> <td>FCC Date: Sep 24 1985</td> </tr> <tr> <td>Construction Date: 99/99/1999</td> <td>FAA ID: 86-AWP-636-OE</td> </tr> <tr> <td>FAA Date: Jun 20 1986</td> <td>Antenna Height (M): 0.0000</td> </tr> <tr> <td>File Number: 24788-CD-P/L-4-85</td> <td>Beacon Height (M): 0.0000</td> </tr> <tr> <td>Antenna Height: 0.0000</td> <td>Elevation FAA: 1075.0000</td> </tr> <tr> <td>Beacon Height: 0.0000</td> <td>Elevation (M): 327.7000</td> </tr> <tr> <td>Elevation: 1075.0000</td> <td>Structure Height (M): 9.1000</td> </tr> <tr> <td>Elevation FAA (M): 327.7000</td> <td>Structure Height FAA (M): 9.1000</td> </tr> <tr> <td>Structure Height: 30.0000</td> <td>Supporting Struct Hgt (M): 0.0000</td> </tr> <tr> <td>Structure Height FAA: 30.0000</td> <td>Tower Height (M): 0.0000</td> </tr> <tr> <td>Supporting Struct Hgt: 0.0000</td> <td>Tower Type: E</td> </tr> <tr> <td>Tower Height: 0.0000</td> <td>Date:</td> </tr> <tr> <td>Structure Type: TOW</td> <td>Record Action: ADD</td> </tr> <tr> <td>Key Remarks:</td> <td>ID_ASB_ACC: C</td> </tr> <tr> <td>Key Site: 710</td> <td></td> </tr> <tr> <td>ID Exam:</td> <td></td> </tr> <tr> <td>Paint and Lighting Specs:</td> <td></td> </tr> <tr> <td>Special Conditions/Remarks:</td> <td></td> </tr> </table>		Tower ID: 71029	Latitude (in seconds): 77606	Tower Owner Name: TEL-PAGE CORPORATION 1.5 MILES NORTH OF, DILLINGHAM, HI	Longitude (in seconds): 569454	Latitude: 21 33' 77606"	Transmitter Longitude: 1581054	Longitude: 158 10' 54"	Activation Date: Aug 1 1986	Transmitter Latitude: 213326	FCC Date: Sep 24 1985	Construction Date: 99/99/1999	FAA ID: 86-AWP-636-OE	FAA Date: Jun 20 1986	Antenna Height (M): 0.0000	File Number: 24788-CD-P/L-4-85	Beacon Height (M): 0.0000	Antenna Height: 0.0000	Elevation FAA: 1075.0000	Beacon Height: 0.0000	Elevation (M): 327.7000	Elevation: 1075.0000	Structure Height (M): 9.1000	Elevation FAA (M): 327.7000	Structure Height FAA (M): 9.1000	Structure Height: 30.0000	Supporting Struct Hgt (M): 0.0000	Structure Height FAA: 30.0000	Tower Height (M): 0.0000	Supporting Struct Hgt: 0.0000	Tower Type: E	Tower Height: 0.0000	Date:	Structure Type: TOW	Record Action: ADD	Key Remarks:	ID_ASB_ACC: C	Key Site: 710		ID Exam:		Paint and Lighting Specs:		Special Conditions/Remarks:	
Tower ID: 71029	Latitude (in seconds): 77606																																												
Tower Owner Name: TEL-PAGE CORPORATION 1.5 MILES NORTH OF, DILLINGHAM, HI	Longitude (in seconds): 569454																																												
Latitude: 21 33' 77606"	Transmitter Longitude: 1581054																																												
Longitude: 158 10' 54"	Activation Date: Aug 1 1986																																												
Transmitter Latitude: 213326	FCC Date: Sep 24 1985																																												
Construction Date: 99/99/1999	FAA ID: 86-AWP-636-OE																																												
FAA Date: Jun 20 1986	Antenna Height (M): 0.0000																																												
File Number: 24788-CD-P/L-4-85	Beacon Height (M): 0.0000																																												
Antenna Height: 0.0000	Elevation FAA: 1075.0000																																												
Beacon Height: 0.0000	Elevation (M): 327.7000																																												
Elevation: 1075.0000	Structure Height (M): 9.1000																																												
Elevation FAA (M): 327.7000	Structure Height FAA (M): 9.1000																																												
Structure Height: 30.0000	Supporting Struct Hgt (M): 0.0000																																												
Structure Height FAA: 30.0000	Tower Height (M): 0.0000																																												
Supporting Struct Hgt: 0.0000	Tower Type: E																																												
Tower Height: 0.0000	Date:																																												
Structure Type: TOW	Record Action: ADD																																												
Key Remarks:	ID_ASB_ACC: C																																												
Key Site: 710																																													
ID Exam:																																													
Paint and Lighting Specs:																																													
Special Conditions/Remarks:																																													

This record is for a license, and it may or may not indicate a site which has been built.

## FCC & FAA SITES MAP FINDINGS TOWERS

Map ID Direction Distance Distance (ft.)			EDR ID Database
2 ENE 1-2 mi 8810			ANT100000021898 ANTREG
Tower ID:	1022327		
Address:	MOKULEIA 1300 FT E JCT CROZIER DR & FARRINGTON, WAIALUA, HI		
Lat (NAD 27):	213437	Lon (NAD 27):	1580915
Lat (NAD 83):	213426	Lon (NAD 83):	1580905
Construction Date:		Dismantled Date:	
Nepa Flag:	N	FAA ID:	97-ASW-1500-OE
Structure Type:	POLE	Elevation (M):	4.87
Structure Hgt (M):	30.50	Hgt Above Ground:	30.48
Hgt Above Ground (M):	30.4799995	Hgt Above Mean Sea Level (M):	35.3499984
Date Activated:	Jul 11 1997	License Issue Date:	Jul 11 1997
Date Keyed:	May 29 1997	Date Printed:	Jul 14 1997
Date Processed:	Jun 5 1997	Date Received:	May 27 1997
Licensee Signature	THOMAS J JEZIERNY		
Nature of Modification:		Purpose:	N
Company (DBA) Name:			
Owner Name:	HAWAIIAN ELECTRIC CO		
Attention:	DEBBY SHIN		
Owner Address:	820 WARD AVE, HONOLULU, HI 96814		
Owner PO Box:		Phone Number:	8085417991
E-Mail Address:	DSHIN@HEI.COM		
Internet Domain:	HEI.COM		
Painting & Lighting Specs:		Date of Last Remarks:	
Special Conditions #1:			
Special Conditions #2:			
Key Remarks:			

This record is for a license, and it may or may not indicate a site which has been built.

# FCC & FAA SITES MAP FINDINGS TOWERS

Map ID  
Direction  
Distance  
Distance (ft.)

EDR ID  
Database

A3  
SW  
1-2 mi  
9764

ANT10000005533  
ANTREG

Tower ID:	100578		
Address:	MOKULEIA RIDGE 8.05 KM WS, MOKULEIA, HI		
Lat (NAD 27):	213256	Lon (NAD 27):	1581151
Lat (NAD 83):		Lon (NAD 83):	
Construction Date:	99/99/1999	Dismantled Date:	
Nepa Flag:		FAA ID:	95-AWP-2185-OE
Structure Type:	BTW	Elevation (M):	642.2000
Structure Hgt (M):	24.4000	Hgt Above Ground:	
Hgt Above Ground (M):		Hgt Above Mean Sea Level (M):	
Date Activated:	Feb 7 1996	License Issue Date:	
Date Keyed:		Date Printed:	
Date Processed:		Date Received:	
Licensee Signature		Purpose:	
Nature of Modification:			
Company (DBA) Name:			
Owner Name:	HONOLULU, CITY AND COUNTY OF		
Attention:			
Owner Address:		Phone Number:	
Owner PO Box:			
E-Mail Address:			
Internet Domain:			
Painting & Lighting Specs:		Date of Last Remarks:	
Special Conditions #1:			
Special Conditions #2:			
Key Remarks:			

This record is for a license, and it may or may not indicate a site which has been built.

# FCC & FAA SITES MAP FINDINGS TOWERS

Map ID Direction Distance Distance (ft.)			EDR ID Database
A4 SW 1-2 mi 9764			TOW10000000289 TOWER
Tower ID:	100578		
Tower Owner Name:	HONOLULU, CITY AND COUNTY OF MOKULEIA RIDGE 8.05 KM WS, MOKULEIA, HI		
Latitude:	21 32' 77576"	Latitude (in seconds):	77576
Longitude:	158 11' 51"	Longitude (in seconds):	569511
Transmitter Latitude:	213256	Transmitter Longitude	1581151
Construction Date:	99/99/1999	Activation Date:	Feb 7 1996
FAA Date:	Jan 12 1996	FCC Date:	Jan 10 1996
File Number:	D012998-F	FAA ID:	95-AWP-2185-OE
Antenna Height:	10.0000	Antenna Height (M):	3.0000
Beacon Height:	0.0000	Beacon Height (M):	0.0000
Elevation:	2107.0000	Elevation FAA:	2107.0000
Elevation FAA (M):	642.2000	Elevation (M):	642.2000
Structure Height:	80.0000	Structure Height (M):	24.4000
Structure Height FAA:	80.0000	Structure Height FAA (M):	24.4000
Supporting Struct Hgt:	0.0000	Supporting Struct Hgt (M):	0.0000
Tower Height:	70.0000	Tower Height (M):	21.3000
Structure Type:	BTW	Tower Type:	E
Key Remarks:		Date:	
Key Site:	709	Record Action:	MOD
ID Exam:	PRB0	ID_ASB_ACC:	C
Paint and Lighting Specs:			
Special Conditions/Remarks:			

This record is for a license, and it may or may not indicate a site which has been built.



# FCC & FAA SITES MAP FINDINGS TOWERS

Map ID Direction Distance Distance (ft.)			EDR ID Database
A5 SW 1-2 mi 10254			TOW10000068426 TOWER
Tower ID:	569		
Tower Owner Name:			
	, MOKULEIA, HI		
Latitude:	21 32' 77569"	Latitude (in seconds):	77569
Longitude:	158 11' 50"	Longitude (in seconds):	569510
Transmitter Latitude:	213249	Transmitter Longitude:	1581150
Construction Date:	99/99/1999	Activation Date:	Jul 14 1972
FAA Date:	Jun 19 1972	FCC Date:	
File Number:	355-PL-73	FAA ID:	72-PC-29-OE
Antenna Height:	0.0000	Antenna Height (M):	0.0000
Beacon Height:	0.0000	Beacon Height (M):	0.0000
Elevation:	2180.0000	Elevation FAA:	2180.0000
Elevation FAA (M):	664.5000	Elevation (M):	664.5000
Structure Height:	80.0000	Structure Height (M):	24.4000
Structure Height FAA:	80.0000	Structure Height FAA (M):	24.4000
Supporting Struct Hgt:	0.0000	Supporting Struct Hgt (M):	0.0000
Tower Height:	0.0000	Tower Height (M):	0.0000
Structure Type:	TOW	Tower Type:	E
Key Remarks:		Date:	
Key Site:	708	Record Action:	OLD
ID Exam:		ID_ASB_ACC:	C
Paint and Lighting Specs:			
Special Conditions/Remarks:			

This record is for a license, and it may or may not indicate a site which has been built.

# FCC & FAA SITES MAP FINDINGS TOWERS

Map ID Direction Distance Distance (ft.)			EDR ID Database
B6 ENE 2-4 mi 14137			CEL10000033498 CELLULAR
Low Frequency:	870.03000000	High Frequency:	879.99000000
Callsign:	KNKA373	Radio Code:	CL
DBA Name:	HONOLULU CELLULAR TELEPHONE COMPANY		
Contact:	Not Reported		
Licensee:	HONOLULU CELLULAR TELEPHONE COMPANY		
	Not Reported		
Transmitter Address:	MILILANI, HI 967893938 68-055 AKULE STREET MOKULEIA, HI		
County:	HONOLULU		
Latitude:	213511	Longitude:	1580829
Elevation:	00000	Height:	00000
Height Average:	00000	Effective Height:	00010
Structure Height:	00000	Class Code:	FB
ERP:	00000000	Database ID:	Y
License Date:	940922	Emissions:	40K0F3E 40K0F1D
Issue Date:	940831	Expiration Date:	951001
Mobile Vehicles:	Not Reported	Total Units:	Not Reported
Control Point Auth:	00	Authorization Type:	L

This record is for a license, and it may or may not indicate a site which has been built.

B7 ENE 2-4 mi 14137			CEL10000005536 CELLULAR
Low Frequency:	825.03000000	High Frequency:	834.99000000
Callsign:	KNKA373	Radio Code:	CL
DBA Name:	HONOLULU CELLULAR TELEPHONE COMPANY		
Contact:	Not Reported		
Licensee:	HONOLULU CELLULAR TELEPHONE COMPANY		
	Not Reported		
Transmitter Address:	MILILANI, HI 967893938 68-055 AKULE STREET MOKULEIA, HI		
County:	HONOLULU		
Latitude:	213511	Longitude:	1580829
Elevation:	00000	Height:	00000
Height Average:	00000	Effective Height:	00010
Structure Height:	00000	Class Code:	MO
ERP:	00000000	Database ID:	Y
License Date:	940922	Emissions:	40K0F3E 40K0F1D
Issue Date:	940831	Expiration Date:	951001
Mobile Vehicles:	Not Reported	Total Units:	Not Reported
Control Point Auth:	00	Authorization Type:	L

This record is for a license, and it may or may not indicate a site which has been built.

# FCC & FAA SITES MAP FINDINGS TOWERS

Map ID Direction Distance Distance (ft.)			EDR ID Database
8 West 2-4 mi 15032			DOF000000023839 FAA DOF
Unique ID:	120010	Obstruction #:	0010
City:	KAENA POINT	State:	Hawaii
Verification Status:	verified	Obstruction Type:	TOWER
Latitude:	21 34 38N	Longitude:	158 13 20W
Frequency:	Not Reported	Type of Lighting:	Not Reported
Above Ground Level Height (Ft.):		0125	
Above Mean Sea Level Height (Ft.):		00175	
Horizontal Accuracy:	Not Reported	Vertical Accuracy:	Not Reported
Painted/Marked:	Not Reported	FAA Study #:	Not Reported
<hr/>			
C9 East 2-4 mi 18355			ANT100000001116 ANTREG
Tower ID:	1001143		
Address:	STATE HWY 930 & 803, WAIALUA, HI		
Lat (NAD 27):	213344	Lon (NAD 27):	1580731
Lat (NAD 83):	213333	Lon (NAD 83):	1580721
Construction Date:	Jan 1 1996	Dismantled Date:	
Nepa Flag:	N	FAA ID:	96-AWP-1114-OE
Structure Type:	MAST	Elevation (M):	28.60
Structure Hgt (M):	57.90	Hgt Above Ground:	60.90
Hgt Above Ground (M):	60.9607391	Hgt Above Mean Sea Level (M):	89.6122894
Date Activated:	Feb 22 1999	License Issue Date:	Feb 22 1999
Date Keyed:	Feb 11 1999	Date Printed:	Feb 23 1999
Date Processed:	Feb 11 1999	Date Received:	Feb 11 1999
Licensee Signature	JOAN ROBBINS		
Nature of Modification:	H	Purpose:	M
Company (DBA) Name:			
Owner Name:	GTE WIRELESS OF THE PACIFIC INCORPORATED		
Attention:	REGULATORY DEPT. GA3B1REG		
Owner Address:	245 PERIMETER CENTER PARKWAY, ATLANTA,, GA 30346		
Owner PO Box:		Phone Number:	6783394273
E-Mail Address:	JRROBBINS@MOBILNET.GTE.COM		
Internet Domain:	MOBILNET.GTE.COM		
Painting & Lighting Specs:		Date of Last Remarks:	
Special Conditions #1:			
Special Conditions #2:			
Key Remarks:			

This record is for a license, and it may or may not indicate a site which has been built.

## FCC & FAA SITES MAP FINDINGS TOWERS

Map ID Direction Distance Distance (ft.)			EDR ID Database
C10 East 2-4 mi 18355			CEL10000043045 CELLULAR
Low Frequency:	880.02000000	High Frequency:	889.98000000
Callsign:	KNKA250	Radio Code:	CL
DBA Name:	GTE MOBILNET OF HAWAII INCORPORATED		
Contact:	Not Reported		
Licensee:	GTE MOBILNET OF HAWAII INCORPORATED		
	Not Reported		
	ATLANTA, GA 30346		
Transmitter Address:	0.65 MI. WEST-SOUTHWEST OF INTERSECTION WAIALUA, HI		
County:	HONOLULU		
Latitude:	213344	Longitude:	1580731
Elevation:	00000	Height:	00000
Height Average:	00000	Effective Height:	00540
Structure Height:	00000	Class Code:	FB
ERP:	00000000	Database ID:	Y
License Date:	940922	Emissions:	40K0F3E 40K0F1D
Issue Date:	940725	Expiration Date:	951001
Mobile Vehicles:	Not Reported	Total Units:	Not Reported
Control Point Auth:	00	Authorization Type:	L

This record is for a license, and it may or may not indicate a site which has been built.

C11 East 2-4 mi 18355			CEL10000018218 CELLULAR
Low Frequency:	835.02000000	High Frequency:	844.98000000
Callsign:	KNKA250	Radio Code:	CL
DBA Name:	GTE MOBILNET OF HAWAII INCORPORATED		
Contact:	Not Reported		
Licensee:	GTE MOBILNET OF HAWAII INCORPORATED		
	Not Reported		
	ATLANTA, GA 30346		
Transmitter Address:	0.65 MI. WEST-SOUTHWEST OF INTERSECTION WAIALUA, HI		
County:	HONOLULU		
Latitude:	213344	Longitude:	1580731
Elevation:	00000	Height:	00000
Height Average:	00000	Effective Height:	00540
Structure Height:	00000	Class Code:	MO
ERP:	00000000	Database ID:	Y
License Date:	940922	Emissions:	40K0F3E 40K0F1D
Issue Date:	940725	Expiration Date:	951001
Mobile Vehicles:	Not Reported	Total Units:	Not Reported
Control Point Auth:	00	Authorization Type:	L

This record is for a license, and it may or may not indicate a site which has been built.

## FCC & FAA SITES MAP FINDINGS TOWERS

Map ID  
Direction  
Distance  
Distance (ft.)

EDR ID  
Database

C12  
East  
2-4 mi  
18355

TOW100000080431  
TOWER

Tower ID:	77815	Latitude (in seconds):	77624
Tower Owner Name:	GTE MOBILNET OF HAWAII INC .65 MI W, WAIALUA, HI	Longitude (in seconds):	569251
Latitude:	21 33' 77624"	Transmitter Longitude	1580731
Longitude:	158 7' 31"	Activation Date:	May 15 1996
Transmitter Latitude:	213344	FCC Date:	May 13 1996
Construction Date:	99/99/1999	FAA ID:	96-AWP-1114-OE
FAA Date:	Apr 30 1996	Antenna Height (M):	0.0000
File Number:	854-2474	Beacon Height (M):	0.0000
Antenna Height:	0.0000	Elevation FAA:	294.0000
Beacon Height:	0.0000	Elevation (M):	89.6000
Elevation:	294.0000	Structure Height (M):	61.0000
Elevation FAA (M):	89.6000	Structure Height FAA (M):	61.0000
Structure Height:	200.0000	Supporting Struct Hgt (M):	0.0000
Structure Height FAA:	200.0000	Tower Height (M):	0.0000
Supporting Struct Hgt:	0.0000	Tower Type:	E
Tower Height:	0.0000	Date:	
Structure Type:	TOW	Record Action:	MOD
Key Remarks:		ID_ASB_ACC:	C
Key Site:	711		
ID Exam:	PRB4		
Paint and Lighting Specs:			
Special Conditions/Remarks:			

This record is for a license, and it may or may not indicate a site which has been built.

C13  
East  
2-4 mi  
19470

DOF000000005057  
FAA DOF

Unique ID:	120341	Obstruction #:	0341
City:	WAIALU	State:	Hawaii
Verification Status:	verified	Obstruction Type:	TOWER
Latitude:	21 33 33N	Longitude:	158 07 21W
Frequency:	Not Reported	Type of Lighting: No Lights	
Above Ground Level Height (Ft.):		0200	
Above Mean Sea Level Height (Ft.):		00305	
Horizontal Accuracy:	+/-500'	Vertical Accuracy:	+/-125'
Painted/Marked:	No	FAA Study #:	96WP1114



# FCC & FAA SITES MAP FINDINGS TOWERS

Map ID  
Direction  
Distance  
Distance (ft.)

EDR ID  
Database

14  
West  
2-4 mi  
20868

TOW10000068477  
TOWER

Tower ID:	570		
Tower Owner Name:			
	, WAIANAE, HI		
Latitude:	21 33' 77632"	Latitude (in seconds):	77632
Longitude:	158 14' 24"	Longitude (in seconds):	569664
Transmitter Latitude:	213352	Transmitter Longitude:	1581424
Construction Date:	99/99/1999	Activation Date:	Jun 10 1981
FAA Date:	Apr 29 1981	FCC Date:	Mar 9 1981
File Number:	273-M-L-31	FAA ID:	81-APC-26-OE
Antenna Height:	0.0000	Antenna Height (M):	0.0000
Beacon Height:	0.0000	Beacon Height (M):	0.0000
Elevation:	1373.0000	Elevation FAA:	1373.0000
Elevation FAA (M):	418.5000	Elevation (M):	418.5000
Structure Height:	31.0000	Structure Height (M):	9.4000
Structure Height FAA:	31.0000	Structure Height FAA (M):	9.4000
Supporting Struct Hgt:	0.0000	Supporting Struct Hgt (M):	0.0000
Tower Height:	0.0000	Tower Height (M):	0.0000
Structure Type:	TOW	Tower Type:	E
Key Remarks:		Date:	
Key Site:	713	Record Action:	OLD
ID Exam:		ID_ASB_ACC:	C
Paint and Lighting Specs:			
Special Conditions/Remarks:			

This record is for a license, and it may or may not indicate a site which has been built.

# FCC & FAA SITES MAP FINDINGS AIRPORTS

EDR ID  
Database

AIR04435  
AIRPORTS

Site Number: 52430.\*A  
 Airport Type: AIRPORT  
 County: HONOLULU  
 Facility Name: DILLINGHAM AIRFIELD  
 Use: PU  
 Owner Address: USARPAC  
 Phone: 808-656-1027  
 Mgmt Address: 300 RODGERS BLVD NR 12  
 Mgmt Phone: 808-836-6533  
 Longitude: 158-11-50.213W  
 Elev (ft): 14  
 Aero chart: HAWAIIAN ISLANDS  
 Dir from Business: W  
 Certified Date: Not Reported  
 Is Int'l Airport?: N  
 Inspection Method: F  
 Last inspected: 03032000  
 Lighting: Not Reported  
 Beacon Color: Not Reported  
 Single engine: 025  
 Jet engines: Not Reported  
 Gliders: 015  
 Ultralights: 004  
 Air taxis: Not Reported

State: HAWAII  
 City: MOKULEIA  
 Owner type: MR  
 Owner: US ARMY  
 City/State: HONOLULU, HAWAII 96819  
 Mgmt Name: STANFORD MIYAMOTO  
 Mgmt City/St: HONOLULU, HI 96819-1897  
 Latitude: 21-34-46.105N  
 Lat Method: E  
 Elev method: S  
 Dist from Business: 02  
 Date Active: Not Reported  
 Fed agreements: NGY  
 Is Customs Airport?: N  
 Inspected by: S  
 Attendance: ALL/MON-FRI/0900-1700,ALL/SAT-SUN/0800-  
 Has ATC Tower: N  
 Landing fee: N  
 Multi engine: 002  
 Helicopters: 002  
 Military: Not Reported  
 Commercial: Not Reported  
 Local ops: 059514

Runway id: 08/26  
 Width: 75  
 Lights Intensity: Not Reported  
 Markings: BSC  
 Longitude: 158-12-37.925W  
 Approach lights: Not Reported  
 Centerline Lights: N  
 Recip End ID: 26  
 Recip Lat: 21-34-45.650N  
 Recip Elev: 10.2  
 Recip End Lgts: N

Length: 9007  
 Surface: ASPH-G  
 Base End Id: 08  
 Latitude: 21-34-46.557N  
 Elevation: 14.2  
 End Lights: N  
 Touchdown Lights: N  
 Recip markings: BSC  
 Recip Long: 158-11-02.501W  
 Recip App Lgts: Not Reported  
 Recip Ctr Lgts: N

**FCC & FAA SITES MAP FINDINGS  
POWERLINES**

EDR ID  
Database

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No Sites Reported.

## KEY CONTACTS & GOVERNMENT RECORDS SEARCHED

Various Federal laws and executive orders address specific environmental concerns. NEPA requires the responsible offices to integrate to the greatest practical extent the applicable procedures required by these laws and executive orders. EDR provides key contacts at agencies charged with implementing these laws and executive orders to supplement the information contained in this report.

### **NATURAL AREAS**

#### **Officially designated wilderness areas**

##### Government Records Searched in This Report

###### FED\_LAND: Federal Lands

Source: USGS

Telephone: 703-648-5094

Federal data from Bureau of Land Management, National Park Service, Forest Service, and Fish and Wildlife Service.

- National Parks
- Forests
- Monuments
- Wildlife Sanctuaries, Preserves, Refuges
- Federal Wilderness Areas.

Date of Government Version: 12/31/2005

##### Federal Contacts for Additional Information

National Park Service, Pacific West Region

600 Harrison Street, Suite 600

San Francisco, CA 94107

415-427-1300

USDA Forest Service, Pacific Southwest

630 Sansome Street

San Francisco, CA 94111

415-705-2557

Fish & Wildlife Service, Region 1

Eastside Federal Complex 911 NE 11th Avenue

Portland, OR 97232-4181

503-231-6188

#### **Officially designated wildlife preserves, sanctuaries and refuges**

##### Government Records Searched in This Report

###### FED\_LAND: Federal Lands

Source: USGS

Telephone: 703-648-5094

Federal data from Bureau of Land Management, National Park Service, Forest Service, and Fish and Wildlife Service.

- National Parks
- Forests
- Monuments
- Wildlife Sanctuaries, Preserves, Refuges
- Federal Wilderness Areas.

Date of Government Version: 12/31/2005

## KEY CONTACTS & GOVERNMENT RECORDS SEARCHED

HI Game Management: Game Management Areas  
State Game Management areas for islands of Kauai, Oahu, Molokai, Lanai, Maui and Hawaii  
Source: Dept. of Land and Natural Resources.  
Telephone: 808-587-0166

HI Managed Areas: Managed Areas  
Managed areas (e.g. refuges, preserves, etc.) for islands Kauai, Oahu, Maui, Molokai, Lanai and Hawaii. Such areas include, but are not limited to, private and public wildlife refuges, preserves, sanctuaries and reserves. Also includes state forest reserves and some state parks  
Source: Dept. of Land and Natural Resources.  
Telephone: 808-587-0166

### Federal Contacts for Additional Information

Fish & Wildlife Service, Region 1  
Eastside Federal Complex 911 NE 11th Avenue  
Portland, OR 97232-4181  
503-231-6188

### State Contacts for Additional Information

Dept. of Land & Natural Resources 808-587-0100

### **Wild and scenic rivers**

#### Government Records Searched in This Report

FED\_LAND: Federal Lands

Source: USGS

Telephone: 703-648-5094

Federal data from Bureau of Land Management, National Park Service, Forest Service, and Fish and Wildlife Service.

- National Parks
- Forests
- Monuments
- Wildlife Sanctuaries, Preserves, Refuges
- Federal Wilderness Areas.

Date of Government Version: 12/31/2005

### Federal Contacts for Additional Information

Fish & Wildlife Service, Region 1  
Eastside Federal Complex 911 NE 11th Avenue  
Portland, OR 97232-4181  
503-231-6188

### **Endangered Species**

#### Government Records Searched in This Report

Endangered Species Protection Program Database

A listing of endangered species by county.

Source: Environmental Protection Agency

Telephone: 703-305-5239

### Federal Contacts for Additional Information

Fish & Wildlife Service, Region 1  
Eastside Federal Complex 911 NE 11th Avenue  
Portland, OR 97232-4181  
503-231-6188

### State Contacts for Additional Information

Natural Heritage Program, The Nature Conservancy of Hawaii 808-537-4508



## KEY CONTACTS & GOVERNMENT RECORDS SEARCHED

### LANDMARKS, HISTORICAL, AND ARCHEOLOGICAL SITES

#### Historic Places

##### Government Records Searched in This Report

##### National Register of Historic Places:

The National Register of Historic Places is the official federal list of districts, sites, buildings, structures, and objects significant in American history, architecture, archeology, engineering, and culture. These contribute to an understanding of the historical and cultural foundations of the nation.

The National Register includes:

- All prehistoric and historic units of the National Park System;
- National Historic Landmarks, which are properties recognized by the Secretary of the Interior as possessing national significance; and
- Properties significant in American, state, or local prehistory and history that have been nominated by State Historic Preservation Officers, federal agencies, and others, and have been approved for listing by the National Park Service.

Date of Government Version: 03/23/2006

##### Federal Contacts for Additional Information

Park Service; Advisory Council on Historic Preservation  
1849 C Street NW  
Washington, DC 20240  
Phone: (202) 208-6843

##### State Contacts for Additional Information

Dept. of Land & Natural Resources 808-587-0401

### Indian Religious Sites

#### Government Records Searched in This Report

##### Indian Reservations:

This map layer portrays Indian administrated lands of the United States that have any area equal to or greater than 640 acres.

Source: USGS

Phone: 888-275-8747

Date of Government Version: 12/31/2005

##### Federal Contacts for Additional Information

Department of the Interior- Bureau of Indian Affairs  
Office of Public Affairs  
1849 C Street, NW  
Washington, DC 20240-0001  
Office: 202-208-3711  
Fax: 202-501-1516

##### National Association of Tribal Historic Preservation Officers

1411 K Street NW, Suite 700

Washington, DC 20005

Phone: 202-628-8476

Fax: 202-628-2241

## KEY CONTACTS & GOVERNMENT RECORDS SEARCHED

### State Contacts for Additional Information

A listing of local Tribal Leaders and Bureau of Indian Affairs Representatives can be found at:  
<http://www.doi.gov/bia/areas/agency.html>

### **FLOOD PLAIN, WETLANDS AND COASTAL ZONE**

#### **Flood Plain Management**

##### Government Records Searched in This Report

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

##### Federal Contacts for Additional Information

Federal Emergency Management Agency 877-3362-627

##### State Contacts for Additional Information

Department of Defense, Emergency Mgmt. 808-733-4300

#### **Wetlands Protection**

##### Government Records Searched in This Report

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2004 from the U.S. Fish and Wildlife Service.

##### Federal Contacts for Additional Information

Fish & Wildlife Service 813-570-5412

##### State Contacts for Additional Information

Dept. of Land & Natural Resources 808-587-0100

#### **Coastal Zone Management**

##### Government Records Searched in This Report

##### CAMA Management Areas

Dept. of Env., Health & Natural Resources  
919-733-2293

##### Federal Contacts for Additional Information

Office of Ocean and Coastal Resource Management

N/ORM, SSMC4

1305 East-West Highway

Silver Spring, Maryland 20910

301-713-3102

##### State Contacts for Additional Information

Office of Planning, Coastal Zone Management Program 808-587-2875

## KEY CONTACTS & GOVERNMENT RECORDS SEARCHED

### FCC & FAA SITES MAP

For NEPA actions that come under the authority of the FCC, the FCC requires evaluation of Antenna towers and/or supporting structures that are to be equipped with high intensity white lights which are to be located in residential neighborhoods, as defined by the applicable zoning law.

#### Government Records Searched in This Report

##### **Cellular**

Federal Communications Commission

Mass Media Bureau

2nd Floor - 445 12th Street SW

Washington DC 20554 USA

Telephone (202) 418-2700

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##### **Tower**

Federal Communications Commission

Mass Media Bureau

2nd Floor - 445 12th Street SW

Washington DC 20554 USA

Telephone (202) 418-2700

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##### **Antenna Registration**

Federal Communications Commission

Mass Media Bureau

2nd Floor - 445 12th Street SW

Washington DC 20554 USA

Telephone (202) 418-2700

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##### **AM Tower**

Federal Communications Commission

Mass Media Bureau

2nd Floor - 445 12th Street SW

Washington DC 20554 USA

Telephone (202) 418-2700

##### **FAA Digital Obstacle File**

National Oceanic and Atmospheric Administration

Telephone: 301-436-8301

Describes known obstacles of interest to aviation users in the US. Used by the Federal Aviation Administration (FAA) and the National Oceanic and Atmospheric Administration to manage the National Airspace System.

##### **Airport Landing Facilities**

Federal Aviation Administration

Telephone (800) 457-6656

Private and public use landing facilities.

##### **Electric Power Transmission Line Data**

PennWell Corporation

Telephone: (800) 823-6277

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## KEY CONTACTS & GOVERNMENT RECORDS SEARCHED

### **Excessive Radio Frequency Emission**

For NEPA actions that come under the authority of the FCC, Commission actions granting construction permits, licenses to transmit or renewals thereof, equipment authorizations or modifications in existing facilities, require the determination of whether the particular facility, operation or transmitter would cause human exposure to levels of radio frequency in excess of certain limits.

### Federal Contacts for Additional Information

Office of Engineering and Technology  
Federal Communications Commission  
445 12th Street SW  
Washington, DC 20554  
Phone: 202-418-2470

### **OTHER CONTACT SOURCES**

### **STREET AND ADDRESS INFORMATION**

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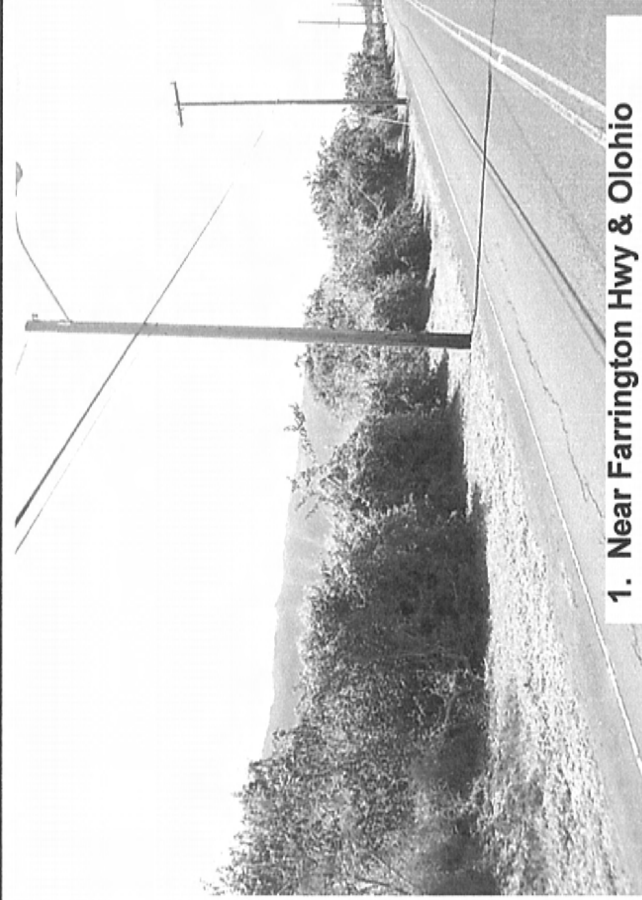
Zone Change Environmental Assessment  
Farrington Highway  
Mokuleia, Oahu, Hawaii  
April 1, 2008



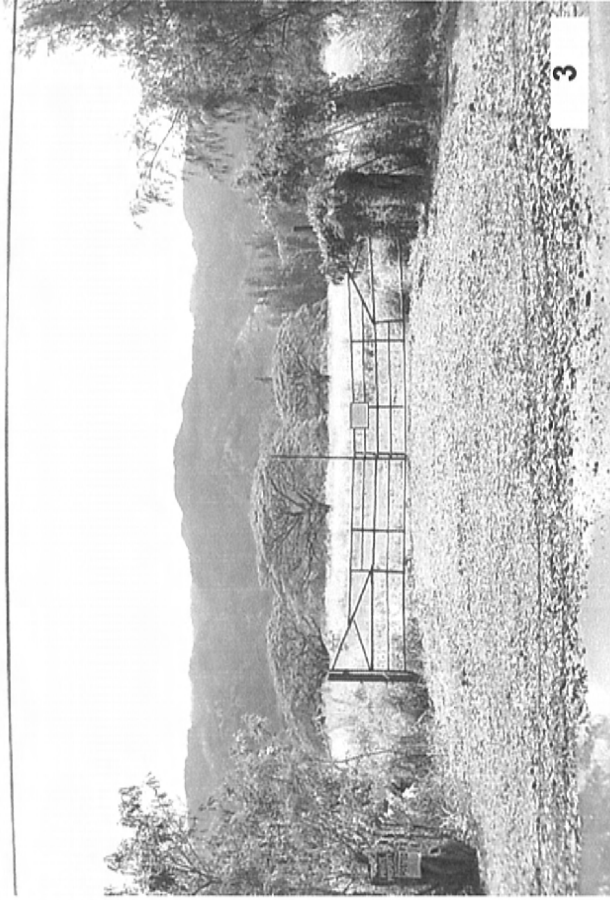


Zone Change Environmental Assessment  
Farrington Highway  
Mokuleia, Oahu, Hawaii  
April 1, 2008

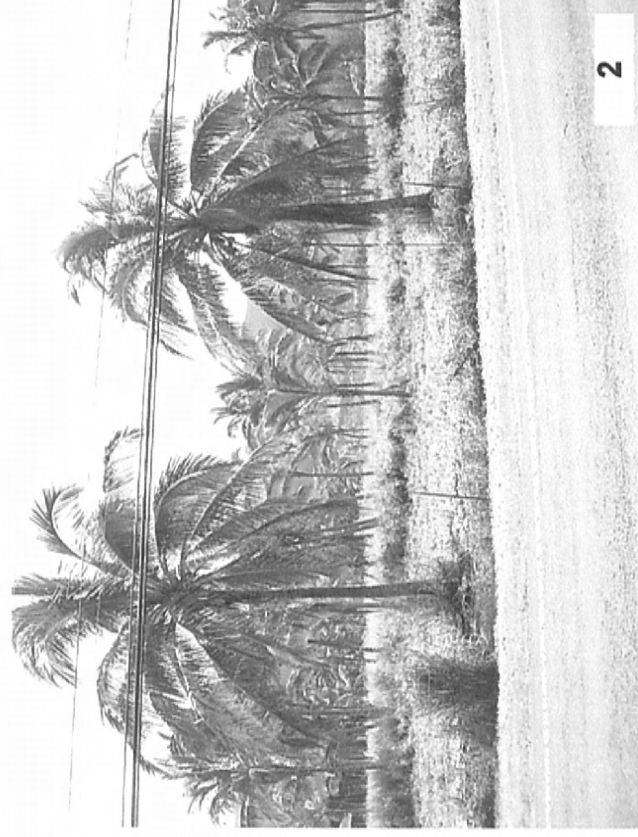




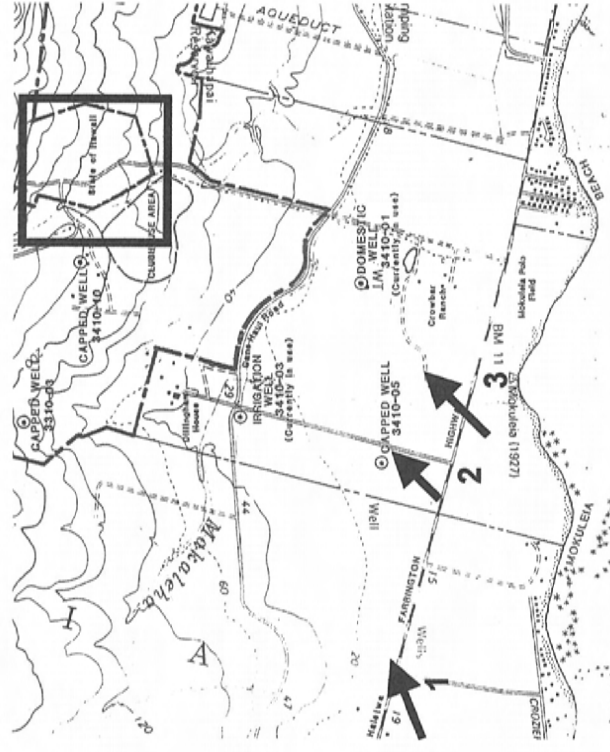
1. Near Farrington Hwy & Oloho



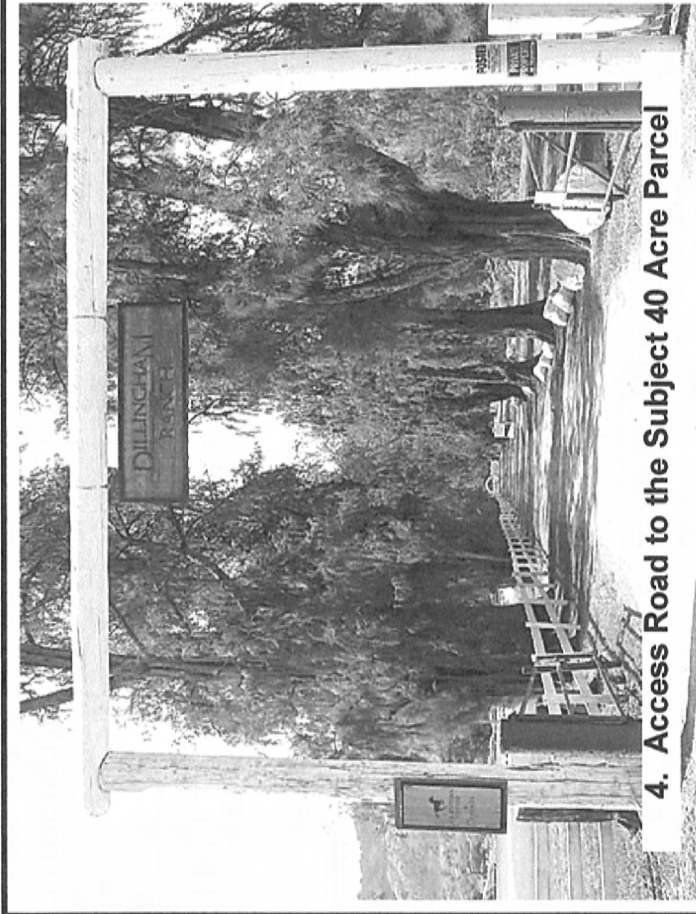
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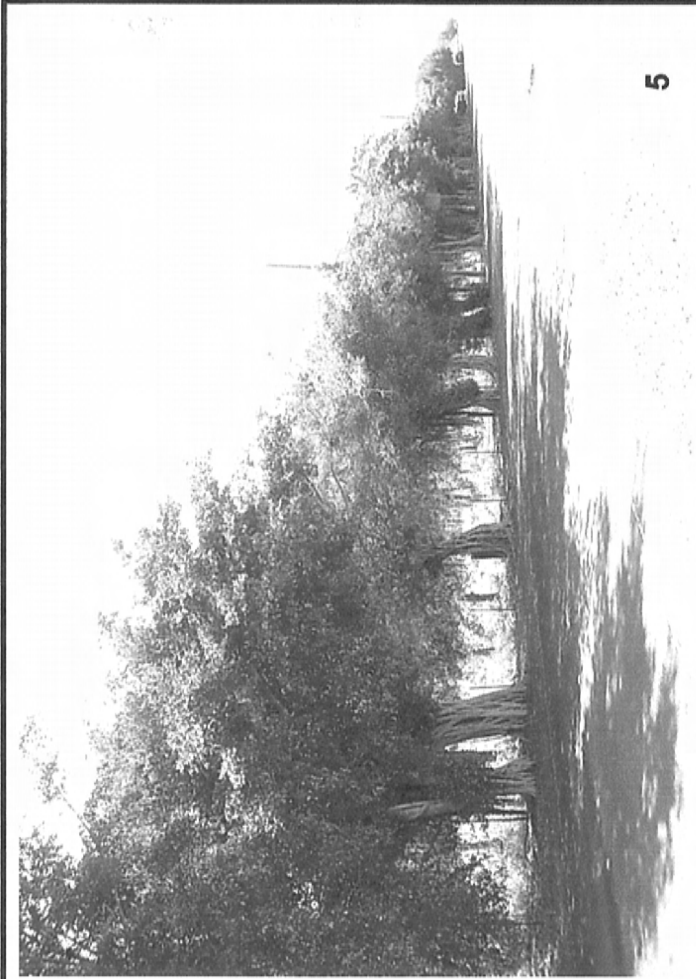
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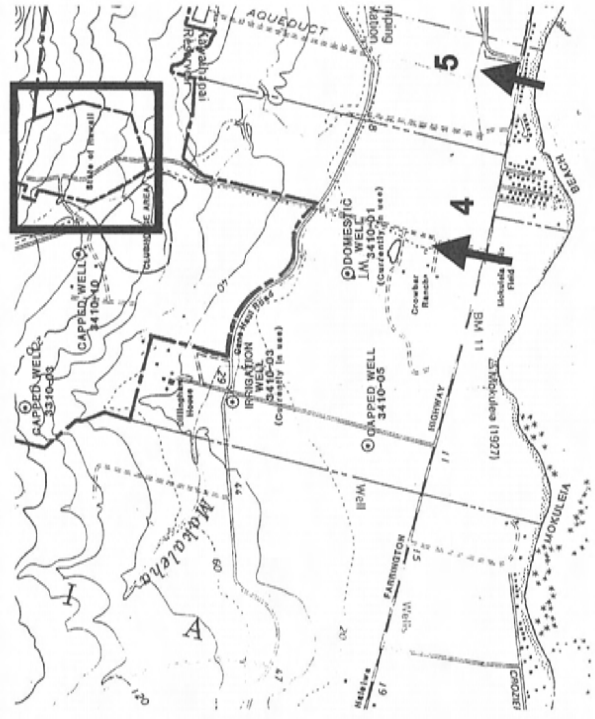
Mokuleia Zone Change  
Photographs from Farrington Highway



4. Access Road to the Subject 40 Acre Parcel



5



**ATTACHMENT C**

**SUPPORTING DOCUMENTS**



LINDA LINGLE  
GOVERNOR



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

RODNEY K. HARAGA  
DIRECTOR

Deputy Directors  
FRANCIS PAUL KEENO  
BARRY FUKUNAGA  
BRENNON T. MORIOKA  
BRIAN H. SEKIGUCHI

IN REPLY REFER TO:

STP 8.2366

December 27, 2006

Mr. Donald Clegg  
Analytical Planning Consultants, Inc.  
928 Nuuanu Avenue, Suite 502  
Honolulu, Hawaii 96817

Dear Mr. Clegg:

Subject: Proposed Zone Change, 40.59 acre parcel, Mokuleia, Oahu  
F-1 (Military) to Ag-2 (Agriculture)  
TMK: 6-8-003: 021

We have the following preliminary comments on the subject change of zoning for a proposed agricultural subdivision:

1. The desired access route and connection to Farrington Highway needs to be identified, mapped, and submitted to our Highways Division, through the Highways Planning Branch, for necessary reviews and approvals by the appropriate highway offices. The highways staff will specify the requirements, conditions and documentation steps to formalize a permitted access, including driveway standards, for the affected parcel.
2. As part of the submittal to our Highways Division, the proposed subdivision of the affected parcel into eight (8) agricultural lots needs to be described, including any development and construction of agricultural businesses or residential uses on the lots. A traffic assessment needs to accompany the subdivision description so that the additional traffic to and from Farrington Highway as a result of the development can be accounted for and reviewed by our highways staff.
3. No additional storm water runoff from the proposed development of the affected parcel will be allowed onto the highway right-of-way.
4. Construction plans for the proposed subdivision, particularly for drainage and for work at and around the desired access at Farrington Highway, will need to be submitted to our Highways Division, through the Highways Planning Branch, for necessary reviews and approvals



Mr. Donald Clegg  
Page 2  
December 27, 2006

STP 8.2366

5. The affected parcel is in close proximity to Dillingham Airfield/Military Reservation. Various civilian aviation and military activities occur at Dillingham. The landowner should provide the necessary disclosures to prospective tenants and occupants of the subdivision on the possible overflights and noise due to powered aircraft, glider and parachute operations, as well as daytime and night training exercises by military units.
6. The landowner should be made aware that Dillingham Airfield/Military Reservation was designated as one of the possible training locations in the Army's environmental impact statement (EIS) for the Stryker Brigade. The Army's EIS described a proposal for the military to construct a road for military vehicle use, identified as Dillingham Trail, that would run from a mauka location of Dillingham Airfield/Military Reservation, eastward and relatively parallel with Farrington Highway towards Waialua. If and when such a road is constructed, the road may intersect with the desired access for the proposed agricultural subdivision development, as well as possibly create a path where noise may come from when used by military vehicles.

We reserve the right to offer additional comments and prescribe conditions for impacts to our transportation facilities when further submissions on the proposed zone change and subdivision are transmitted to our Department.

We appreciate the advance notification about the proposed action and for the opportunity to provide our initial comments.

Very truly yours,

*Francis Paul Keenan*

*for* RODNEY K. HARAGA  
Director of Transportation

LINDA LINGLE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION  
601 KAMOKILA BOULEVARD, ROOM 555  
KAPOLEI, HAWAII 96707

PETER T. YOUNG  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA  
DEPUTY DIRECTOR

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

May 4, 2007

Donald Clegg, President  
Analytical Planning Consultants, Inc.  
928 Nu'uuanu Avenue, Suite 502  
Honolulu, Hawai'i 96707

LOG NO: 2006.4139  
DOC NO: 0702aj14  
Archaeology

Dear Mr. Clegg:

**SUBJECT: Chapter 6E-42 Historic Preservation Review –  
Proposed Zone Change from F-1 Military to AG-2 for a 40.59 Acre Parcel  
Mokulē'ia Ahupua'a, Waialua District, Island of O'ahu  
TMK: (1) 6-8-003:021**

Thank you for the opportunity to comment on the aforementioned project, which we received on December 1, 2006. We apologize for the delay in responding. The applicant is requesting a change in zoning from F-1 Military to Ag-2 Agriculture for the above referenced parcel.

We determine that **no historic properties will be affected** by this undertaking because:


- Intensive cultivation has altered the land
- Residential development/urbanization has altered the land
- Previous grubbing/grading has altered the land
- An accepted archaeological inventory survey (AIS) found no historic properties
- SHPD previously reviewed this project and mitigation has been completed
- Other: *It is our understanding that this is a paper transaction and thus, no ground disturbing activities are proposed at this time.*

However, a review of our records indicates that an archaeological inventory survey which included the subject property identified 15 archaeological sites, including a probable *heiau* (SIHP No. 50-80-03-4772) (Drolet and Schilz. 1992. *Archaeological Inventory Survey and Evaluation, Mokulē'ia, Waialua District, O'ahu*. Rpt No. O-850). Therefore, if any subsurface excavation whatsoever is planned for the development of the subject parcel, some form of proactive archaeological mitigation (e.g. archaeological inventory survey, mitigation plan) may be required.

Page 2  
Mr. Clegg

Please contact me at 692-8015 if you have any questions or concerns regarding this letter.

Aloha,



Melanie Chinen, Administrator  
State Historic Preservation Division

aj:

**MOKULE'IA COMMUNITY ASSOCIATION**  
68-411 Farrington Highway  
Waialua, HI 96791

June 23, 2006

The Honorable Mufi Hannemann  
Mayor of the City & County of Honolulu  
Honolulu Hale, Honolulu, HI 96813

Dear Mayor Hannemann

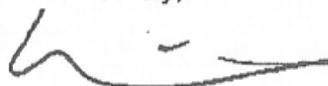
At the Mokule'ia Community Association's June 17, 2006 meeting, the forty+ attendees were presented a request to upzone 40.59 acres of land from P-2 to AG-2.

During the meeting, attending residents reported that the land in question had been the site of the U.S. Army's ammunition storage during World War II and the site for Nike missile storage during the Cold War and they expressed concern about the chemicals that might be present in the earth. They also noted that since the property was completely within the Dillingham Ranch, but not owned by the ranch's owners, there was no separate access to or egress from the property. Further, the residents noted that the requested upzoning was not in accordance with the vision and stipulations of the North Shore Sustainable Communities Plan which called for the preservation of open spaces, view planes and a rural quality of life for the area.

A resident also pointed out that there was no legal right to upzone the property, but once rezoned to AG-2, there was a legal right to subdivide the property.

For all the foregoing reasons, the Mokule'ia Community Association voted without dissent to oppose the request to rezone the land from P-2 to AG-2.

Sincerely,



Michael Dailey  
President

Copy to: Director, Department of Planning and Permitting  
Chair, City Council of the City & County of Honolulu  
North Shore Neighborhood Board No. 27

**ATTACHMENT D**  
**PROJECT MASTER PLAN**



# **Environmental Assessment**

## **Project Master Plan**

**For a Zone Change From F-1 Military and  
Federal Preservation to Ag-2 Agricultural**

**Mokuleia, Oahu, Hawaii**

**(Tax Map Key: (1) 6-8-003:021)**

Prepared For:

**Ralph Gray  
3107 Oahu Avenue  
Honolulu, Hawaii 96822**

**September, 2008**

Prepared By:

**Analytical Planning Consultants, Inc.  
928 Nuuanu Avenue, Suite 502  
Honolulu, Hawaii 96817**

## PROJECT SUMMARY INFORMATION

The Applicant:	Ralph S. & Cathy M. Gray 3107 Oahu Avenue Honolulu, Hawaii 96822
Recorded Fee Owner:	Coastal View Properties, LLC 820 Mililani Street, Suite 711 Honolulu, Hawaii 96813 Contact: Mr. Greg Jones Ph. (714) 267-1207
	Ralph S. & Cathy M. Gray 3107 Oahu Avenue Honolulu, Hawaii 96822 Ph. (808) 295-0704
The Applicant's Agent:	Analytical Planning Consultants 928 Nuuanau Avenue, Suite 502 Honolulu, Hawaii 96813 Contact: Mr. Donald Clegg Ph. (808) 536-5695
EA Preparer:	Kane Environmental Inc. 3831 Stone Way North Seattle, Washington 98103 Contact: Mr. John Kane Ph. (206) 691-0476
TMK:	(1) 6-8-003:021
Lot Area:	40.59 Acres
State Land Use Designation	Agricultural
North Shore Sustainable Communities Plan Boundary	Outside Rural Community Boundary in an area identified for agricultural use
Current Property Zoning	F-1 Military and Federal Preservation District
Coastal Zone Management Area	Outside the Special Management Area

## **INTRODUCTION TO THE PROJECT MASTER PLAN**

The North Shore Sustainable Communities Plan (NSSCP) requires that a Project Master Plan be included as part of an EA for a significant zone change involving 10 acres or more of land. A "significant zone change" is defined as development which could have a major social, environmental, or policy impact or major cumulative impact due to a series of applications in the same area. The Project Master Plan is reviewed to determine whether the project supports the vision, policies, principles and guidelines of the Sustainable Communities plan for the area.

## **PROJECT OVERVIEW**

The applicant is requesting the City and County of Honolulu Department of Planning and Permitting to recommend a change in zoning from F-1 Military and Federal Preservation to Ag-2 Agriculture for a 40.59 acre parcel of land identified as Tax Map Key 6-8-003:021 and located in Mokuleia, Oahu, Hawaii. The subject property is composed of three lots of record. Parcel 2-A is 0.70 acres, Parcel 2-C is 19.21 acres, and Lot 2-B is 20.68 acres.

The Property is presently zoned F-1 Military and Federal Preservation due to its previous use by the military. Section 21-3.40 (d) of the Land Use Ordinance mandates that should lands be removed from either the state-designated conservation district or from federal jurisdiction, it shall be zoned F-1 and all uses, structures and development standards shall be as specified for the P-2 general preservation district. The purpose of designating land released from Federal use as P-2 is to put it into a limited use holding pattern until an appropriate use can be determined. The land under consideration has been in a holding pattern since 1966 when it was transferred to the State of Hawaii by the United States government.

The applicant is seeking to return the Property to the original agricultural zoning, to allow the Property to be used for agricultural uses, as it had historically been used, prior to its temporary use by the U.S. military. As permitted by the Land Use Ordinance, the Ag-2 zoning would allow construction of farm dwellings on the Property in conjunction with agricultural activities. The three existing lots would allow for 4-5 farm dwellings. No further subdivision of the Property is proposed. The present P-2 zoning allows for limited agricultural uses and does not allow farm dwellings which are vital for protection and management of crops and livestock. Loss of crops and equipment could be potentially devastating for the owner of a small privately owned farm than it would be for a large plantation type operation. The surrounding land parcels are already zoned Ag-2 Agricultural and the proposed use is consistent with State land use laws, the NSSCP, the City and County of Honolulu General Plan, and the Land Use Ordinance.

Initially the property will be kept as open space. In the future, 4-5 farm dwellings may be constructed, in accordance with the applicable zoning regulations, and all state and local regulations. Each farm dwelling and any accessory uses must be contained within an area not to exceed 5,000 square feet

Existing access is via a 50' wide, unpaved, privately owned roadway, which was used by Dillingham Ranch to service their agricultural properties, including the subject Property. Subdivision documents for of Dillingham Ranch Aina stipulate that access to the subject property be provided. Existing off-site wells and/or a new well on-site will provide potable and non-potable water. No additional utilities are required at this time. As this phase of the project concerns the proposed zone change to AG-2 and does not include any additional development, no design theme or additional details are available at this time.

## KEY ELEMENTS

### **Consistency with the North Shore Sustainable Communities Plan**

The project supports the vision, policies, principles, and guidelines of the North Shore Sustainable Communities Plan. Those key elements which pertain to the proposed zone change are discussed as follows:

A. The Vision Statement for the North Shore Sustainable Communities Plan (2.2) and the Rural Community Boundary (2.2.1) include the following pertinent elements:

- *Rural Community, Agricultural and Preservation Boundaries*
- *Support for the diversified agriculture industry*
- *Retention of cultural and historic resources*
- *Residential subdivision with no bona fide agricultural activities should not be permitted in areas outside the Rural Community boundary*

Three types of boundaries were established by the NSSCP to guide development and aid in the preservation of agricultural land and open spaces. They are the Rural Community Boundary (RCB), the Agriculture Boundary, and the Preservation Boundary. The subject parcel is located within the Agriculture Boundary. While not presently classified according to the ALISH system (Agricultural Lands of Importance to the State of Hawaii), most likely due to its previous military usage, the Property is contained within a large tract of land in agricultural use and these adjacent areas of land are designated as either Prime Agricultural Land or Other Important Agricultural Land.

In contrast, the subject Property does not meet the criteria for designation within the Preservation Boundary (i.e., lands necessary for protecting watersheds, water resources, lands necessary for the conservation of significant historic, scenic or ecological sites, lands with topography, soils or climate not adaptable to



rural or agricultural use, lands with slopes of greater than 20%, lands susceptible to floods or soil erosion, lands used for parks or suitable for recreation uses).

With the demise of the large plantations on Oahu, smaller more diversified farms are providing niche markets with Hawaiian agricultural products, allowing open areas to be retained in agricultural uses and encouraging agriculturally productive lands to be viable. The proposed zone change to Ag-2 would not allow subdivision of the property for residential use. The proposed use of the subject Property for several small, niche farms with accessory farm dwellings is bona fide agricultural activity that allows for accessory residential uses outside the RCB. Any archeological sites associated with the site will be protected as prescribed by the State Historic Preservation Division. The applicant proposes to restrict groundbreaking activities to outside the area designated as containing archeological resources.

B. The following are general policies for the preservation of open space and the natural environment: (3.1.1)

- *Retain the North Shore's rural character*
- *Protect significant natural features*
- *Protect ecologically sensitive lands*
- *Preserve cultural and historic features*
- *Provide recreational resources*
- *Protect scenic views*
- *Define Community boundaries*

The proposed zone change is supportive of these general policies regarding preservation of open space. The return of the Property to an Agricultural designation supports the policy of retaining the North Shore's rural character. There are no significant natural features, ecologically sensitive lands, or recreational resources associated with the subject property, and no public views

along Kamehameha Highway will be impacted. Any ground breaking activities shall be limited to outside identified archeological sites.

C. Planning Principles: (3.1.2)

- *Ahupu'a Land Use and Resource Management*
- *Long-Range Protection of Agricultural Lands*
- *Preservation of Scenic Views*
- *Protection of Recreational Resources*
- *Accessibility of Recreational Open Space*
- *Protection of Ecologically Sensitive Lands*
- *Limit Impacts from Utility Installations*
- *Location of New Developments*

The proposed zone change will return the use of the subject Property to an agricultural designation in accordance with the principle of protecting agricultural lands by the continuation of agricultural uses on agricultural lands. Due to the topography of the land mauka of Farrington Highway, the Property is not visible from Farrington Highway or Crozier Drive and no scenic views of the Waianae Mountain Range will be diminished by agricultural development or use of the Property.

To address concerns that chemical runoff from agricultural practices could adversely affect aquatic and marine habitats agricultural best management practices (BMPs) will be used to protect nearby ecologically sensitive areas. These areas include the nearby stream and it's one-hundred flood plain. A vegetated buffer zone would be established and maintained along the subject Property boundary to reduce sediment, nutrient and chemical runoff into the stream. The size and type of buffer would be determined by working closely with the appropriate local and state agencies, including the State Department of Land and Natural Resources. To reduce sediment and nutrient runoff, tillage will be kept to a minimum, with no till practiced wherever possible and vegetated cover kept on agricultural areas when not in use. Integrated pest management

systems and nutrient management plans will be put into place to prevent over-application of pesticides, herbicides and fertilizer.

D. Policies and Guidelines Pertaining to Agricultural Area: (2.2.1, 2.2.2, 3.2)

The protection of agricultural lands and agricultural uses is essential to protecting the rural character and scenic open space setting that are so valued by the North Shore residents and visitors. It is difficult to identify which lands and which crops or entrepreneurial efforts will be most successful and at what magnitude, but according to the NSSCP, it is important to maintain the availability of land and water for agriculture, protect agricultural lands from encroachment by incompatible uses and avoid uses that would undermine or otherwise irreversibly compromise their long-term agricultural potential. The NSSCP also states that conversion of agricultural lands to large lot subdivisions with no agricultural activities is to be discouraged and that it is preferable that agricultural subdivisions be primarily based around agricultural activities with a preference for clustered housing. The rezoning of the subject Property from F-1 to Ag-2 is consistent with these policies. The rezoning will allow the construction of 4-5 farm dwellings, clustered in an area of soils that are less suitable for agriculture with no subdivision of the property proposed. Property of this size will allow small-scale agriculture to be the primary use of the site and will protect the land for future generations to utilize. Good farm management practices will maintain or improve the agricultural potential of the land. Therefore, the rezoning and construction of a small cluster of farm dwellings on the Property is consistent with the policies of the NSSCP.

## **Site Analysis**

### Site Features

Site features including topography, soil conditions and existing drainage are described in the Environmental Assessment.

### View Analysis

The NSSCP lists scenic resources as including the Waianae and Koolau Mountain Ranges, coastal pali, the coastline, and the Pacific Ocean. The project site is not visible from Kamehameha Highway and any construction of any accessory agricultural structures including farm dwellings will not impact these scenic resources.

### Surrounding Urban Areas

There are no surrounding urban areas associated with the project site.

### **Land Use**

The project proposes to change the zoning of the Property from F-1 Military to Ag-2 in order to use the property for those uses permitted in the Ag-2 Agricultural zoning designation by the Land Use Ordinance. Specifically the applicant is proposing to establish 4-5 small farms on the existing 3 lots with no further subdivision. This land use is in keeping with the land use in the area.

### **Open Space**

Construction of 4-5 farm dwellings would result in a total building area of 20,000 to 25,000 square-feet of land area out of a total lot area of 40.59 acres with the remainder of the area in open space or developed with agricultural structures (greenhouses, barns, etc.) in accordance with the NSSCP open space vision.

### **Circulation**

Existing access is via a 50' wide, unpaved, privately owned roadway, which was used by Dillingham Ranch to service their agricultural properties, including the subject Property and is owned by Dillingham Ranch Aina, LLC.. The access roadway begins on the mauka side of Farrington Highway, across from



the Mokuleia Polo Field. The Department of Planning and Permitting of the City and County of Honolulu has recently granted temporary approval to subdivide a portion of the surrounding Dillingham Ranch land into 77 agricultural lots (2007/SUB-167). As a condition of approval, the State Department of Transportation in their review of the project stipulated that access be provided to the subject Property as a condition of approval. The proposed action does not involve any development which requires circulation patterns, pedestrian or bicycle routes.

### **Design Theme**

No urban design is proposed. Any proposed development will be designed to support the agricultural use of the property.

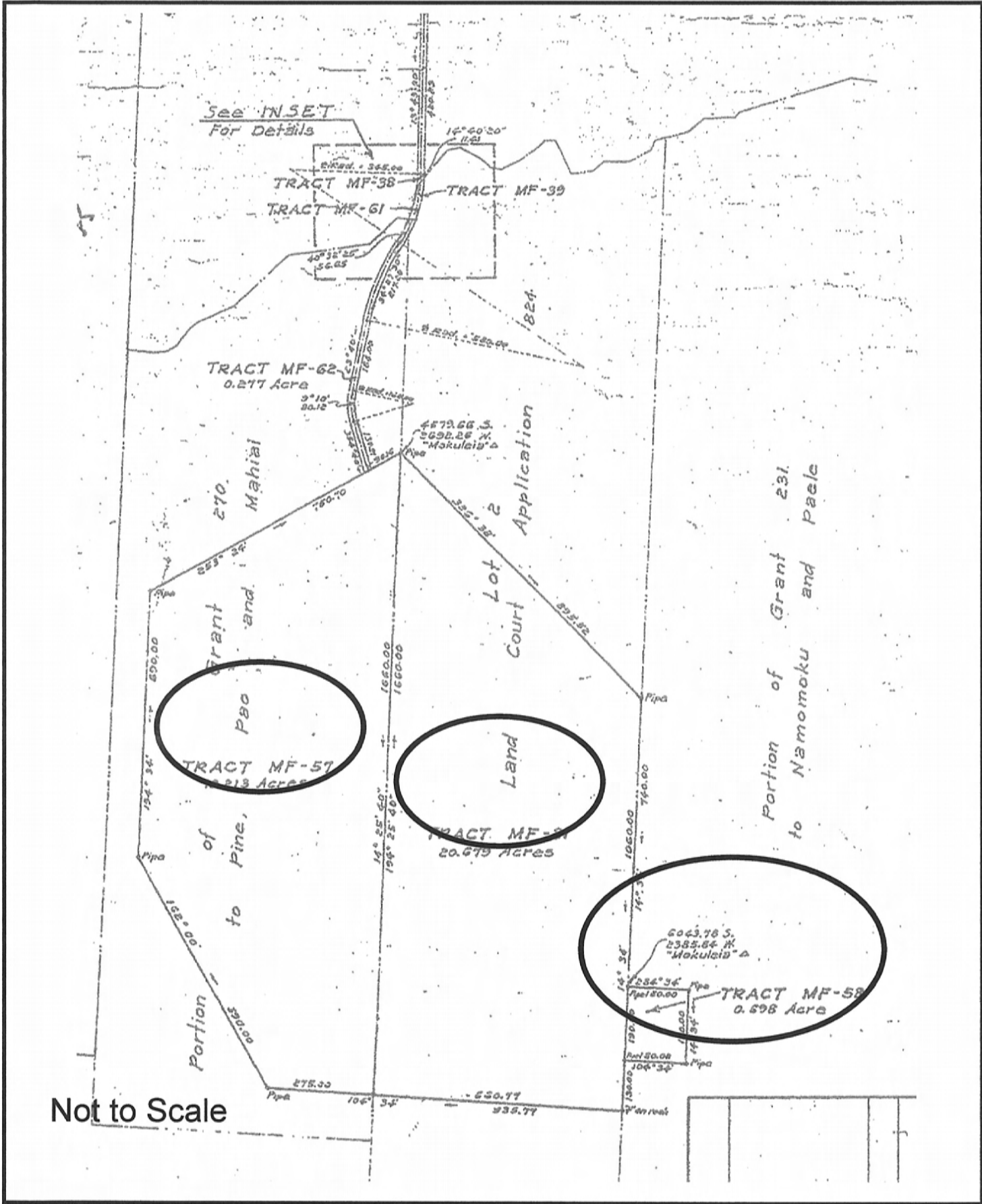
### **Telecommunications**

No telecommunication infrastructure needs are anticipated.

### **CONCLUSION**

The proposal to re-zone the 40.59 acre property from F-1 Military and Federal Preservation to AG-2 Agricultural will return the property to its original agricultural use. The Project Master Plan has described the scope of the project and how it supports the vision, policies, principles and guidelines of the North Shore Sustainable Communities Plan. The surrounding land parcels are already zoned Ag-2 Agricultural and the proposed use is consistent with State land use laws, the NSSCP, the City and County of Honolulu General Plan, and the Land Use Ordinance.





Not to Scale

Existing Lots

**ATTACHMENT E**

**AGRICULTURAL FEASIBILITY STUDY**

**DILLINGHAM RANCH AINA, LLC**

AGRICULTURAL FEASIBILITY REPORT

DILLINGHAM RANCH SUBDIVISION

MOKULEIA, OAHU, HAWAII

**DRAFT 09 – prepared 4 June 2007**

Prepared for:

Dillingham Ranch Aina, LLC  
c/o Kennedy Wilson  
Attn: Mary Ricks  
9601 Wilshire Blvd Ste 220  
Beverly Hills CA 90210

Prepared by:

Avalon Development Co., LLC  
Davies Pacific Center  
841 Bishop St Ste 1601  
Honolulu HI 96813

Agronomics by:

Tropical Crops Services  
94-350 Punono St  
Mililani HI 96789

DEPT. OF PLANNING  
AND ESTIMATING  
DIVISION OF LAND AND NATURAL RESOURCES  
07 JUN -8 AM 10:31

## INTRODUCTION

Dillingham Ranch Aina, LLC is the fee owner ("Owner") of ten contiguous parcels of land comprising 2,288.84 acres and one detached parcel comprising 433.41 acres, for a total land area of 2,722.25 acres of land that span the North-West Oahu ahupua'a of Kealia, Kawaihapai, and Mokuleia on the mauka (toward the mountain) side of Farrington Highway. The eleven parcels ("Property") are located in the State Land Use Agriculture District; they bear the City & County of Honolulu Zoning designations AG-1 Restricted Agriculture, and AG-2 General Agriculture; and they are identified on Hawaii Tax Maps by the Tax Map Keys shown in Table 1.

The Owner proposes to consolidate the Property (Table 1) and then re-subdivide the consolidated parcel into a new Agricultural Subdivision comprising 100 entities, including the existing Dillingham Ranch Palm Tree Farm, the existing Dillingham Ranch Stables and Equestrian Center, the existing Cattle Grazing operation, several Historic Preservation sites, new subdivision roadways, and the proposed new "80 Five-Acre Lots" (the term "80 Five-Acre Lots" refers to that portion of the Subdivision formed by 80 lots whose sizes range from 5.01 acres to 12.29 acres, and whose average lot size is approximately 5.97-acres).

Subdivision of agricultural land on Oahu is regulated by Section 1-115 of the Subdivision Rules & Regulations (Chapter 22, Revised Ordinances of Honolulu) and Section 205-4.5, Hawaii Revised Statutes. Among the provisions of Sections 1-115 is the requirement for the submission of an Agricultural Feasibility Report (present "Report") to demonstrate the Subdivided Lots can be used for viable agricultural activities.

This Report describes how the proposed Agricultural Subdivision will improve the Property's feasibility by including a contiguous planned 477-acre portion consisting of "80 Five-Acre Lots." Four of the present parcels that are to be consolidated will form a 477-acre geographic intersection with the 80 Five-Acre Lots as follows:

PARCEL	CURRENT AREA OF PARCEL FROM TABLE 1 (ACRES)	EIGHTY (80) FIVE-ACRE LOTS FROM TABLE 1 (ACRES)	PARCEL AREA REMAINING AFTER SUBDIVISION (ACRES)
(1) 6-8-002:006	1,023.66	83.03	940.63
(1) 6-8-003:006	927.75	308.82	650.65
(1) 6-8-003:015	72.98	31.87	44.38
(1) 6-8-003:031	57.40	53.28	4.12
TOTAL	2,081.79	477.0	1639.78

This Report describes the Property, its existing agricultural activities, and how the 80 Five-Acre Lots will increase the productive pasturage of cattle and horses and allow a diversification of agricultural ventures that enhance the overall agricultural usage of the Property. The 80 Five-Acre Lots are specifically planned to enable new (additional) owners to pasture horses and cattle and to begin suitable diversified ventures that are not presently cost effective on a large farm under single ownership. The 80 Five-Acre Lots will also allow greater access to the Property's interior and generally improve the infrastructure for the greater Property to the advantage of its existing horticulture, stable and pasture operations.

## THE PROPERTY

### Description of the Property

**Location:** The Property is located mauka (mountain side) and South of Farrington Highway and is centered between Kaena Point to the West (3.5 miles from the West side of Property) and Thomson Corner to the East (3.5 miles from the East side of the Property). Farrington Highway forms the Property's boundary to the far North in the Northeast "Leg." The Property's South-East boundary is one mile from Mt. Kaala Rd. and four miles from the Mt. Kaala summit (Figure 1).

**Configuration:** The layout of the Property and the 80 contiguous Five-Acre Lots is shown in Figure 2.

The entire Property is "L"-shaped. The Eastern and Southern boundaries of the Property are perpendicular to each other, and define the short and long legs of the "L" respectively. The Southern boundary is 2.69 miles long, lies 2.23 miles to the south of Farrington Highway and is parallel to Farrington Highway; it separates the Property from the Mokuleia Forest Reserve. The Peacock Flats Access Road (owned by the State of Hawaii DLNR) forms the straight, Eastern boundary of the Property for a distance of approximately 0.83 miles from Farrington Highway. At that point, the Peacock Flats Access Road winds uphill on an irregular path that describes the boundary between TMK:6-8-003:005, a 433 acre, landlocked parcel of land that forms the southeast corner of the Property, and TMK:6-8-003: 006. It provides vehicular access from Farrington Highway to Peacock Flats in the Mokuleia Forest Reserve. The entire Northern boundary of the short leg is a 0.9 mile segment of Farrington Highway. The Western boundary of the short leg is about 0.87 mile long, and separates the Property from its neighbor, Castle & Cooke, Inc. The Northern edge of the long leg is described by an irregularly shaped boundary between the Property and the adjacent Dillingham Military Reservation. The Western boundary of the long leg is about 1.29 miles long and separates the Property from its western neighbor, the State of Hawaii.

The Property surrounds and does not include two separate parcels (TMK:6-8-003:021 and -003:034) totaling 56 acres located to the West of Dillingham Ranch House and owned by Others (Coastal View Properties).

**Area:** The Property comprises 2,722.25 acres (Table 1). The portion known as the "80 Five-Acre Lots" is located at the geographic middle of the Property, south and west of the Dillingham Ranch House. The 80 Five-Acre Lots surround each of the excluded parcels (TMK:6-8-003:021 and -003:034) and the Kawaihapai Reservoir (Figure 2).



Uses:

The short Leg of the Property, starting from the Northern boundary (formed by Farrington Highway) includes all the lands on the Property that are zoned AG-1 Restricted Agricultural. This important Leg of the Property contains the soils that are designated by the Land Study Bureau as most favorable for agriculture and constitute prime agricultural land. This short Leg is designated on Hawaii Tax Maps as TMK parcels 6-8-003:019, :020, :030, :033, :035, and :040 and comprises about 207 acres. This prime agricultural land, plus an additional 64 acres of land (portions of the existing TMK parcels 6-8-003:006 and :015) comprise the existing 271 acre Dillingham Ranch Palm Tree Farm, and the existing Dillingham Ranch Stables and Equestrian Center. These two operations are intended to be preserved and enhanced in the future.

Immediately south of the Prime Agricultural Lands, along the Eastern edge of the Property is a 30 acre parcel of land, a portion of TMK 6-8-003:006 that comprise the grounds of the Dillingham Ranch House, the antique dwelling with spacious common rooms and sleeping quarters. The Dillingham Ranch House is currently hired out for special events. It is proposed to restore this House and its grounds, and maintain them as a link to the Property's history and past.

The 80 Five-Acre Lots lie West and South of the Ranch House, extending to an irregular East-to-West line that occurs about 1.14 miles south of Farrington Highway. This portion contains mostly irregular terrain and stony soils that are marginally suitable for agriculture. Although the Land Study Bureau deemed this land suitable for agriculture, the area has never been considered prime agricultural land. The area is zoned *AG-2 General Agricultural*.

The balance of the property, approximately 1,976 acres of land is also zoned *AG-2 General Agricultural*, and designated on the USDA Soil Survey maps as very stony or very steep or rock land. They are further described by the Land Study Bureau as most unfavorable for agriculture. A portion of this remaining property is proposed for use as part of the existing and ongoing cattle grazing operation; the grazing also helps to control the fire hazard posed by the uncontrolled growth of Guinea Grass.

Topography:

The Northeast Leg of the Property, within 4,000 ft of Farrington Highway, is generally flat. Elevations in the NE Leg range from about 10 ft along Farrington Highway to about 40 ft at the Dillingham House.

Because the ridge line to Mt. Kaala is to the South, the property becomes increasingly sloping and the terrain increasingly irregular from North to South (Figure 2). Slopes to the South of the 80-foot contour range from 5 to 25% until about 200 feet elevation. Continuing South from the 200-ft contour, slope increases dramatically over very rocky and irregular terrain. The southern most half of the Property has slopes that frequently exceed 100%.

The 80 Five-Acre Lots lie in the transition from flat (nearest Farrington Highway) to steep (in the Southern interior). The maximum elevation along the South perimeter of the 80 Five-Acre Lots is about 400 feet.

**Flood Hazard:** All four Flood Insurance Rate Map (FIRM) zones are found on the Property and in the contiguous collection of 80 Five-Acre Lots (Figure 3). All elevations above 160 feet are in FIRM Zone D, an area of undetermined but possible flood hazards. The lowest elevations, beginning from Farrington Highway and the nearby ocean, are in FIRM Zone A, due to the exposure of the area to inundation from storm surges. FIRM Zone A has a 1% chance of flooding annually.

FIRM Zones X500 (0.2% annual chance of flooding) and X (outside the 0.2% and 1% chance) are both found along the lower elevations of the Planned 80 Five-Acre Lots Subdivision.

**Existing Condition:** The condition of the Property varies from the extensively utilized equestrian areas near Farrington Highway, to the cattle grazing areas above Dillingham House, and to the difficult rocky or steep terrain. Difficult terrain dominates the mauka portion of the Property, much of which is forested. The dominant vegetation in the Subdivision includes guinea grass, koa haole, and keawe.

Cattle and horses have been the core of the agriculture at Dillingham Ranch for many years. Native guinea grass is the predominant pasture forage.

**Adjacent Parcels:** The Property is bounded on the North by Farrington Highway, and lands owned by Castle & Cooke, Inc., the State of Hawaii, the United States of America, U.S. Military Reservation, and the Dillingham Airfield. The property known as Kaena North, a City and County of Honolulu Parks & Recreation property, and the Mokuleia Polo Field are located across Farrington Highway from the entrance to the Property. Kaena North is a 36 acre agriculture subdivision zoned AG-1. Kaena North has been historically pasture and is presently overgrown and idle.

The Property is bounded on the East by lands owned by Castle & Cooke Inc., and the J.P. Mendonca Trust Est. A portion of this neighboring property, with access to Farrington Highway is zoned AG-1, is flat and is identified as prime agricultural land. It is presently leased to Pioneer Seed Company, who grows corn for seed production. They currently have \_\_\_ acres of land in production.

The Southern boundary divides the Property from the State of Hawaii Mokuleia Forest Reserve.

The Western boundary and a portion of the Northern boundary divide the Property from lands owned by Castle & Cooke, Inc. Much of this land was historically sugarcane but has since been used intermittently for agriculture. Larry Jeffs, who leases land from Castle & Cooke, Inc., farms some flat

portions at the lower elevations for the production of tomatoes, broccoli, and other cash crops.

### Existing Entitlements

**State Land Use:** The Property is in the State Land Use Agricultural District (Figure 4). The provisions of Section 205-4.5, HRS, will require the recordation of covenants restricting use of the Property and the Subdivided Lots to agricultural activities.

**Zoning:** The Property includes parcels zoned *AG-1 Restricted Agriculture* and *AG-2 General Agriculture* (Table 1; Figure 5).

The entire area planned for the 80 Five-Acre Lots is zoned *AG-2 General Agriculture* (Figure 5), which is intended to conserve and protect agricultural uses on smaller parcels of land. AG-2 zoning permits a minimum lot size of 2 acres.

**Community Plan:** Under the North Shore Sustainable Communities Plan, the Property is located outside of the Rural Community Boundary.

### Agricultural Considerations

The present status of the Property will continue into the future with its principal usage in pasture for the grazing of horses and cattle. The 80 Five-Acre Lots will improve the overall productivity of the pasture areas and also create incentives for other diversified agricultural ventures. The following agricultural considerations are relevant to the four parcels that intersect with the 80 Five-Acre Lots.

**Soil Capability:** The four parcels intersect twelve unique soil series named in the Soil Survey of Islands Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii (1972. USDA Soil Conservation Service). Table 2 summarizes the distribution of soil conditions among the parcels and the relative difficulty (qualitative scale from 0 to 5) to manage these soils. The range of suitability is extreme, from prime agricultural soil highly suitable for cultivation to steep rock land unsuitable for cultivation (Table 3 and Figure 6).

Eight soil series (Ewa, Halawa, Helemano, Kaena, Kawaihapai, Kemoo, Pearl Harbor, and Pulehu) are prominent among the 80 Five-Acre Lots. Chief considerations for cultivation are slope and stoniness (Figure 6), which vary considerably. However, all the soils are generally fertile for plant growth and have generally desirable combinations of clay, silt and loam.

The productive potential of pasture among the 80 Five-Acre Lots can also be inferred from the Soil Survey, which grouped soil series into Capability Classes (I to VIII) and Capability Subclasses (e, w, s, and c) to show the general suitability of the each soil series for agricultural production. The increasing Roman numerals I through VIII (Table 4) designate progressively

greater limitations (decreasing productivity) and narrower choices for practical use. The subclass letters designate the following soil limitations:

- e- denotes the risk of erosion unless a conservation plan is implemented and maintained. The Ewa soil series on the Property has this Subclass designation.
- w- denotes wetness from poor drainage that may interfere with plant growth and may warrant drainage management. The clay content imparts this limitation to the Kaena soil series, which dominates many of the Five-Acre Lots.
- s- denotes stoniness and other properties that are commonly associated with stoniness, such as shallowness and low water holding capacity.
- c- denotes limitations mainly due to climate, such as drought.

Table 4 summarizes the distribution of key soil series among all 80 Lots to form an index of their expected Capability, with the emphasis on the productive potential for *unirrigated* pasture on the dominant soil map unit. The predominant Capability Classifications among the Lots are IVe, IVw and VIs, belonging primarily to the marginally difficult or stony soils. Hence, uneven terrain and stones limit the productive potential of most Lots.

The vegetation on the 80 Five-Acre Lots is typically koa haole, native guineagrass, and keawe, which generally agrees with the Soil Survey. An examination of the site (and the last column of Table 4) indicates that Pasture Group 3 fairly represents the current condition and future potential of the soils among the 80 Lots. Unimproved, the soils of Pasture Group 3 are expected to produce 1,000 to 2,000 lbs air dry forage/acre/year – a fair estimate of the present productivity of the pasture within the 80 Five-Acre Lots. According to the Soil Survey (p144; Pasture Group 3), “Well-managed improved pasture produces 2,000 to 4,800 pounds of air-dry forage per acre per year.”

Productivity Rating: The Land Study Bureau of the University of Hawaii prepared an inventory and evaluation of the State’s land resources during the 1960’s and early 1970’s. A five-tier productivity rating system using the letters “A”, “B”, “C”, “D” and “E” was based on climate, topography, local histories of crop production, and especially on soil properties such as texture, structure, depth, drainage, parent material, and stoniness. “A” represents the soils with the highest productivity rating and “E” lowest.

All five ratings are found within the Property (Figure 8). However, the dominant portion of the 80 Five-Acre Lots is rated “D” and “E.” Hence, according to these LSB ratings, most of the area proposed for the Subdivision has been deemed poorly suited for profitable agriculture and requires considerable management effort. The uneven, stony, steep terrain contributes significantly to the “D” and “E” ratings.



The productive potential of pasture among the 80 Five-Acre Lots can be inferred from the Soil Survey for the respective soils. Hence, the above discussion of Soil Capability correlates strongly with the LSB productivity ratings.

ALISH Classes:

As the Soil Survey (1972. USDA Soil Conservation Service) was completed, the Hawaii State Department of Agriculture produced a complementary classification entitled The Agricultural Lands of Importance to the State of Hawaii. That classification used the following scale:

Class 1: Prime Agricultural Lands are those best suited for the production of food, feed, forage and fiber crops. The land has the soil quality, growing season and moisture supply necessary to economically produce sustained high crop yields when treated and managed in accordance with modern farming methods. Only a portion of the Property, near Farrington Highway, is classified as Prime Agricultural Land (Figure 9), due largely to the flat, stone-free soil.

Class 2: Unique Agricultural Lands are lands other than Prime Lands used for the production of specific high-value crops. Unique Lands have special qualities that make them ideal for the production of a specific crop of high quality and/or high yields when treated and managed using modern farming methods. In Hawaii, examples of such crops are coffee, taro, rice, watercress and non-irrigated pineapple. No part of the Property is Class 2.

Class 3: Other Important Agricultural Lands are lands, other than Prime or Unique Lands, of statewide or local importance for the production of food, feed fiber and forage corps. Lands in this classification are important to agriculture in Hawaii, but they are prone to limitations, such as seasonal wetness, potential for erosion, limited rooting zone, slope, flooding or impact from drought conditions that exclude them from the Prime or Unique classifications. These lands can be farmed through application of greater inputs of fertilizer and other soil amendments, drainage improvements, flood protection, erosion control, terracing and modern irrigation systems. About 200 acres of the 80 Five-Acre Lots and small areas near the Property's Southeast boundary and toward Peacock Flat are Class 3 (Figure 9).

Climate:

Average annual rainfall for the Mokuleia-Kawaihapai area ranges from 30 to 40 inches per year, about 30 to 40 inches/year short of the irrigation requirement for most year-around cultivated crops. Average maximum temperatures range from the mid-70s (Fahrenheit) to the mid-80-s with annual average maximum temperatures near 80 Fahrenheit. Average minimum temperatures range from the low- to mid-60s. Temperatures vary slightly between the extreme (low and high) elevations on the Property.

The climate details above are found in Juvik (Atlas of Hawaii, 3rd Edition). In addition, Figure 10 presents the average annual temperature and rainfall



data for Kawaihapai as found at <<<http://hikawa.htohanenet.com/climate-oahu/grids/waialua.html>>>.

**Prevailing Wind:**

The prevailing wind direction is from East to East/Northeast. These “trade winds” are typically 10 to 20 miles/hour. Although winds in the Waialua-to-Kaena regime are generally mild and favorable to most crops, strong trade winds and gusts can be cause for windbreaks in certain sensitive crops.

## AGRICULTURAL SUBDIVISION

The subdivision application proposes to consolidate the existing 11 lots of record, which comprise the 2,722 acre Property, and to subdivide the resulting consolidated property to create a new Agricultural Subdivision. The new Agricultural Subdivision will be made up of the several entities including the 80 Five-Acre Lots comprising 477 acres of land located mauka of the existing Dillingham Ranch operation and the Dillingham Ranch House.

In addition to the 80 Five-Acre Lots, the following entities will be located within the boundaries of the Property: 1) The existing Dillingham Ranch Palm Tree Farm, Dillingham Ranch Stables and Equestrian Center, and Dillingham Ranch House; 2) Private Subdivision Roadways; 3) Five Historic Cultural Sites, designated by the State of Hawaii Preservation Division (SHPD) for Passive Preservation, comprising a total of about 25-acres of land; 4) Private wells and water storage tank sites. Furthermore, the State of Hawaii DLNR Peacock Flats Access Road, and two parcels of land owned by Other Owners (Coastal View Properties) comprising 56-acres of land, are physically located within the boundaries of the Property, but are not a part of the Agricultural Subdivision. All the foregoing are shown on the Dillingham Ranch Master Plan (Figure 11; facing pages 38 and 39)

The entire Property will continue under its present agricultural usage after re-subdividing, but with the 80 Five-Acre Lots enhancing or preserving the overall agricultural value as described below.

### Planned 80 Five-Acre Lots

The 80 Five-Acre Lots will be an enhancement to the three commercially viable components of the existing Dillingham Ranch operations: 1) The Dillingham Ranch Palm Tree Farm, and the existing Dillingham Ranch Stables and Equestrian Center on the lower 271-acre parcel adjacent to Farrington Highway, and including the existing Ranch Office. 2) The existing Dillingham Ranch House and Ranch Foreman's residence, which are situated on a 30-acre parcel of land located immediately mauka of the tree farm. 3) The Cattle operation which will be concentrated on portions of the remaining mauka lands, which comprise about 2,000-acres of land.

Upon Final Subdivision Approval and approval of the Petition for the Land Court Map, the Subdivided Lots are to be sold in fee to other parties. It is anticipated that these purchasers may utilize portions of the Subdivided Lots for the construction of dwellings, subject to the provisions of the Land Use Ordinance.

The majority of land comprising each Subdivided Lot is intended for agricultural use. Pursuant to Section 205-4.5, HRS, the Subdivided Lots will be conveyed subject to recorded covenants requiring each Lot to be maintained in agricultural use in perpetuity. Notice of the restrictive covenants will be incorporated into all sales documents and instruments of conveyance.

## Supporting Infrastructure

**Roadway Access:** Farrington Highway provides the primary access to the Property, and it will continue to do so in the future.

The primary entrance and egress for the Subdivision will be the new subdivision road, which will enter the property from Farrington Highway at the same location as the existing roadway that serves the existing Dillingham Ranch Stables and Equestrian Center. This new subdivision road will evolve into a network of roads, which will provide access to all of the 80 Five-Acre Lots. Three culs-de-sac are planned to extend to the boundary between the 80 Five-Acre Lots and the undeveloped, mauka properties, providing vehicular access, as well as access for livestock to these undeveloped lands.

The existing gravel road that serves the Dillingham Ranch Palm Tree Farm, and the Dillingham Ranch House will be extended and connect to the new subdivision roadway network, and will constitute a secondary entrance and egress for the Subdivision.

**Water:** Potable water is supplied to the Property by the existing Dillingham Ranch private water system, North Shore Water, LLC, which will continue to provide water to the Property in the future. Due to the sizing of the private water transmission facilities, fire protection considerations may be addressed by incorporating fire sprinkler systems into the design and construction of any dwellings on the Subdivided lots.

**Ag Water:** Non-potable water for agricultural use will be provided from the same private system. The laterals for the non-potable irrigation systems will be segregated from the laterals for potable water service. The non-potable irrigation systems will incorporate back-flow prevention devices to preclude contamination of the potable water supply.

**Sewage Disposal:** There is no regional wastewater treatment plant in the Waialua/Mokuleia area. Sewage Disposal for the existing Dillingham Ranch Palm Tree Farm, the Dillingham Stables and Equestrian Center, and the existing Dillingham Ranch House and foreman's residence, to remain, will continue to be provided by the existing Individual Wastewater Systems that service them now. Proposed development on the new 80 Five-Acre Lots will be served by a new, managed individual wastewater treatment system.

The 80 Five-Acre Lots are located above the Underground Injection Control Line for effluent disposal, in the No Pass Zone. As allowed by the State of Hawaii Department of Health Administrative Rules, for "developments consisting of one dwelling unit per acre or greater" the managed individual wastewater treatment system for the 80 Five-Acre Lots will be comprised of individual septic tank systems located on each of the 80 Five-Acre Lots. These systems will be connected by a collection system of pipes that will collect and discharge the effluent into a common leach field, to be located in the Pass

Zone, below the Underground Injection Control Line for effluent disposal. Maintenance of this managed individual wastewater treatment system, will be overseen by an Association of Lot Owners; this work will be contracted to a firm with a record of at least five years of successful, individual wastewater systems management experience

Drainage: Drainage of the Property will be controlled by a planned system of grading and other improvements, designed to manage and direct rainwater flows into naturally existing drainage ways in such a way as to preserve and protect the existing capacity and character of these existing drainage ways.

Electrical Power: Electrical power for the Property is provided by Hawaiian Electric Company (HECO) and will continue to be provided by HECO in the future. A 12 KV HECO distribution line runs along Farrington Highway. Based upon the minimal additional load required by the 80 Five-Acre Lots, it is anticipated that HECO will be able to provide the required service



## AGRICULTURAL USE OF THE PROPERTY

The owner proposes to subdivide the consolidated parcels into a new Agricultural Subdivision comprising the several entities described in this Report, which will include a 428-acre, planned, contiguous area referred to in this Report as the 80 Five-Acre Lots (Figure 7).

### Agricultural Proposal

The proposal is to encourage the pursuit of diverse agricultural activities on 428 acres of land that has historically been underutilized. The potential exists to increase productivity of the traditional pasture and to support other specialized ventures. In addition to encouraging new revenue-based agriculture ventures, the location of the 80 Five-Acre Lots between the more commercially active areas of the Property and the remote, steep, mauka interior offers operational and logistical advantages. Operationally, the commercially active Dillingham Ranch Palm Tree Farm, Dillingham Ranch Stables and Equestrian Center, and other Cattle ventures can be networked with the pasture and horticultural activities of the future owners of the 80 Five-Acre Lots. Logistically, Dillingham Ranch Aina, LLC, or a future Association of Lot Owners may become a facilitator of materials, maintenance, and other support functions for the future Lot owners. New roadways required for the 80 Five-Acre Lots will also improve the access to the Property's remote terrain, which the Owners need to manage.

This Report takes a critically important view that, while some irrigation will be important, intensive irrigation is not needed to successfully develop the 80 Five-Acre Lots for greater productivity. This is based on the history of un-irrigated pasture on the vast majority of the Property and other crops in the area that have been successful without irrigation, including the Owner's palms, which are grown on the makai portion of the Property for sale to the landscape industry. Moreover, the greater Property is either in production or overgrown, indicating that the productive potential does not necessarily depend on irrigation; rather, improving productivity necessarily depends on a greater level of management, with the Lot owners managing the allotted water.

Although an appreciable investment is expected to be made for infrastructure in the Agricultural Subdivision, irrigation sources will be called on only to renovate manageable portions of each Lot. The 80 Lots are each intended to protect and preserve the existing landscape (natural and economic) and the livelihood of its future residents. The agricultural pursuits of the Lot owners will not include irrigation-intensive farming strategies and, therefore, will not significantly alter the demands on the aquifer.

The Management Plan presented in this Report recognizes the limitations found in the stony, steep terrain. The existing usage -- pasture -- becomes the theme of the Subdivision because it has long been proven to be sustainable. The Management Plan also recommends supplementary ventures (niche crops) that are reasonably suitable for that environment. The credibility of each venture is determined by its known success in similar environments or in the general Waialua-Mokuleia area.

### Resource Information and Economic Considerations

The Management Plan below takes the perspective that while many (diversified) crops are suitable for the Subdivided Lots, the diversification efforts will be subsidiary to the opportunity to improve



the pastures on the Lots and increase the productive grazing of cattle or horses. Grazing is a revenue-generating activity that is consistent with the use of surrounding lands. Therefore, individual Lot owners/tenants would have the capability and incentive to undertake pasture improvement on their respective Lots.

The general guidelines below direct Lot purchasers to helpful sources of information that can assist decisions on pasture management and crop selection. A chief resource and overall starting place for information is the College of Tropical Agriculture and Human Resources (CTAHR; <http://www.ctahr.hawaii.edu>) at the University of Hawaii Manoa. The University actively supports the agricultural community through its network of Cooperative Extension Service offices. Also important to prospective Lot owners is the long agricultural history of the Waialua-Mokuleia area, which is home to many growers, farm managers, and agriculture specialists.

The guidelines below coincide with *pasture* as the primary venture and recommended *niche crops* as subsidiary ventures. The niche crops recommended below are not comprehensive; rather they are reasonable examples with the expectation that individual Lot owners will have varied interests and varied horticultural specializations.

Pasture:                      A chief contact for detailed information on pasture management is

Mark S. Thorne, PhD -- State Range Extension Specialist  
Kamuela Extension Office  
67-5189 Kamamalu Road  
Kamuela HI 96743-8439  
Tel: (808) 887-6183

Also recommended is ATTRA Publication #IP284/514 found at  
<<[www.attra.org/attra-pub/sustpast.html](http://www.attra.org/attra-pub/sustpast.html)>>

The expected startup costs for a new Five-Acre Lot owner would be limited to fencing and weed control in designated areas of pasture management. Costs in the first year may range from \$1,000 to \$5,000/acre. Higher costs may be involved if the native guineagrass is replaced with more productive forage, especially if outside labor is required.

The Soil Survey indicates a doubling of productivity is achievable under a well managed program of pasture improvement on these soil types. On average, one acre of improved pasture would support a carefully managed grazing rotation of one cow or horse. However, sufficient rainfall or irrigation is needed to sustain regrowth for at least 30-days during non-grazing intercycles. A variable duration of the grazing cycles is expected, as the growth of the forage will vary according to the rainfall in the area.

The incentive for pasture management would be the rental income to the Lot owner from Dillingham Ranch (or from other clients) to graze cattle or horses in a managed paddock. As a point of reference, commercial operations charge about \$130 to \$200 per month to pasture a horse.

Natural or Organic: Specialists in organic farming are easy to find. Foremost at the University is Dr. Hector Valenzuela, who has serviced the organic farming community with technical information for many years. Other relevant organizations include:

Hawaii Organic Farmers Association, [www.hawaiiorganicfarmers.org](http://www.hawaiiorganicfarmers.org)  
Hawaii Cooperative of Organic Farmers, [asantoro@hawaii.rr.com](mailto:asantoro@hawaii.rr.com)  
Organic Consumers Association, [www.organicconsumers.org](http://www.organicconsumers.org)

The expected startup costs for an organic farm are not well documented, and the lead-time to establish the various alternative crops will vary considerably. Nevertheless, the demand for natural or organic farm products is increasing. Oahu's largest organic farm is 7 acres and there is a disproportionate need for more organic farms on Oahu, given Oahu's customer base (see Wanda Adams, "Pure Produce" *Honolulu Advertiser*, June 28, 2006, F1-2). Small farms can usually manage organic farming concepts more effectively than large farms. Examples of products in demand are cucumber, tomato, peppers, melons (all types), squash, cabbage, broccoli, onions, papaya and all the specialty orchard crops below. In addition, seed production for natural or organic crops commands a high price and organic seed can be sold outside the state.

Noni (*Morinda citrifolia*) and Kawa (*Piper methysticum*) are two crops that are easily cultivated and have had considerable interest as high-value Pacific specialty crops. Their market aims at nutritional, beverage, and pharmacology products.

Because the Planned 80 Five-Acre Lots Subdivision has never been subjected to conventional farming practices, it will qualify easily for certification under one of the natural or organic farm certification agencies.

Specialty Orchards: Tree crops have considerable research and extension support from the University. Two recommended contacts are H. C. "Skip" Bittenbender, PhD, Extension Specialist and Kent Flemming, PhD, Agriculture Economist.

Tropical fruits and specialty trees are perpetually suited to a wide range of landscapes in Hawaii. Citrus (orange, grapefruit, lemon), mango, lychee, and breadfruit have grown well on the Property for many years with little or no maintenance.

Cacao (*Theobroma cacao*) is currently being grown by Dole Foods in Waialua and is highly suited for the marginal soils of the 80 Five-Acre Lots. Cacao can be processed for chocolate locally on a small scale as a novelty business, or its beans can be fermented and sold to processors outside the state. (See Betty Shimabukuro, "Dole Food Co. turns former sugar acreage into stands of cacao" and Joan Namkoong, "The state's cacao industry explores options for growth" *Star Bulletin*, June 22, 2005).

There are no appreciable development costs unique to establishing specialty trees. The major development costs are for infrastructure, irrigation, and conservation. Future crop production costs will be mostly labor, which will be incurred by the owner/occupant.

Although specialty fruit can command premium prices of up to \$3.00/lb for longan and lychee, the seasonality of the fruit grown and the challenging terrain of the property will limit the ultimate revenue potential for fruit trees. The steady state mix of harvestable fruit is hard to forecast. However, at peak production, 20 trees could produce \$2,000 annual revenue as a general guideline for tropical fruits (various statistics by NASS at <<[www.naas.usda.gov/hi/rlsetoc.htm](http://www.naas.usda.gov/hi/rlsetoc.htm)>>).

Any one tropical tree fruit (excluding pineapple, banana, and papaya) accounts for much less than 1,000 acres in the state. According to NAAS, fruit other than pineapple, banana and papaya in 2004 were grown on about 4,500 acres statewide. Overseas competition is also an increasing concern for those who regard the income from specialty fruits as important (see Sean Hao, "Farmers wary of Thai plan" *Honolulu Advertiser*, August 25, 2006. C1-2). Nevertheless, production of specialty fruit of all kinds is a credible component of the tropical agriculture in the state, and organizations such as the Tropical Fruit Growers Association offer a credible network of expertise.

**Landscape & Native:** The landscape and native plant industries service growing markets and are commercially dynamic year-around. The Landscape Industry Council of Hawaii (LICH) has a growing membership and access to excellent information and boasts a successful annual conference and trade show. Its network of specialists is balanced across both trade industries and universities.

Start-up costs are difficult to assess for garden-centers or landscape-plant ventures that specialize in growing and supplying plants. Significant immediate costs would be incurred for, materials, staging, nursery infrastructure, garden hardware, potting operations, watering, and fertilizing. Available water would limit the size of this activity on any of the Lots and a customized business model based on square footage would be important to the Lot owner. Projected revenue for successful landscape supply centers may range from \$10 to \$100 per square foot per year, depending on customer volume and the type of plants sold. However, the overall viability among garden-center and landscape-supply ventures is unclear.

**Flower & Nursery:** A prominent and devoted specialist to the flower and nursery industry is Heidi Bornhorst, whose columns in the Honolulu Advertiser have been consistently informative (see, for example, "At last, a great book for Hawai'i plumeria fans," August 25, 2006. E4).

Flower and ornamental plant nurseries in Hawaii have enjoyed increasing sales for several years (see Sean Hao, "Hawaii flower sales top \$100M" *Honolulu Advertiser*, July 8, 2006. C1). While this group overlaps considerably with Landscape & Native, it represents a significant niche opportunity. Typically, small flower growers have become important suppliers for much larger and well established nurseries.

Frangipani (genus *Plumeria*) is highly recommended for this un-irrigated terrain and can be planted in an orchard layout or as an augmented landscape. *Plumeria* flowers are in constant demand.

### Management Plan

The 80 Five-Acre Lots will allow new owners of the smaller "management units" to improve the overgrown terrain for greater activity as pasture land and to introduce diversified agricultural ventures that are proven suitable for the Waialua-Mokuleia area. The presently existing large-acreage pasture is too irregular, too stony, and too overgrown for one owner to transform economically. A better risk/reward incentive would exist where the land is subdivided into smaller management units and made available to a number of owners who have the expertise to maintain cattle or horses. Individually, the smaller size of each management unit would make it easier to manage the native pasture, selectively renovate acres for greater productivity, control weeds, and conduct pasture maintenance.

It is anticipated that individual owners will select portions of their Lot for special (*niche*) crops that generate secondary income. In addition, each owner/grower would live on the Lot, so that the cost for shelter would not be in addition to the lease or mortgage on a separate agricultural parcel. Each of the management units would be part of a coordinated Management Plan for 80 Lots, designed to conserve the native soil, preserve the historical livelihood of ranching, and increase the agricultural activity of the Property.

The Management Plan contemplates that a Conservation Plan will be prepared for the entire Subdivision in conjunction with the West Oahu Soil and Water Conservation District ("SWCD"). Upon request, the Natural Resources Conservation Service (NRCS), formerly the Soil Conservation Service, will develop a detailed soil and water "Conservation Plan" for owners of agricultural lands in cooperation with the local SWCD.

SWCD Cooperator: A Conservation Plan will improve the integrity of the Subdivision for pasture management and enhance the suitability of the Subdivided Lots for diversified ventures. Given the irregular and stony terrain, this Conservation Plan will be important to the overall stewardship of the Subdivision and to its ultimate productivity.

Dillingham Ranch Aina, LLC (the Owner) will seek to place a Director or Associate Director in the West Oahu SWCD. The present Directors may be contacted for more information. They are Larry Jefts (Larry Jefts Farms), Richard McCormack (Pioneer Hybrid), John McHugh (Crop Care Hawaii), Eric Mitchel (proprietor), and Roger Johnson (Monsanto).



The Owner will also become a “Cooperator” in the West Oahu SWCD and will request a Conservation Plan for the Subdivision. The Cooperator status is recognized by NRCS as the authorization it needs to develop a detailed Conservation Plan. Gill Costa (SWCD Employee) or Mike Bajinting (NRCS District Conservationist) may be contacted for information (99-193 Aiea Heights Drive, Room 109, Aiea HI 93701; tel 808-483-8600)

All prospective owners of Subdivided Parcels (Lots) will need to understand and acknowledge that they will also become “Cooperators” in the West Oahu SWCD and that their cooperator status is recognized by NRCS as authorization for a detailed Conservation Plan.

The Conservation Plan would be based on an evaluation of the Property and its parcels and make recommendations to minimize the risk of soil erosion and maximize the productive capacity of each parcel or Lot. The West Oahu SWCD is among the most active in the State of Hawaii, with several successful conservation plans and projects to its credit and an active network of agricultural professionals.

Site Preparation: Except as prescribed by NRCS, grading or cultivation of the soil on each Subdivided Lot is to be minimized. Where appropriate, terraces should be employed to create areas for cultivation, in lieu of large cuts and fills.

Infrastructure for a nursery on each Five-Acre Lot would be a consideration as cut flowers, nursery foliage, and ornamentals have an increasing demand on Oahu. Also, seedlings must be grown if trees or orchards are desired for the Subdivided Lot.

Nursery structures would vary from lot to lot, according to the objectives of each owner/grower, or the developer may determine a standard nursery design that accommodates the overall pasturage of animals and the covenants of the Subdivision. Every nursery structure shall comply with the restrictive covenants of the agricultural subdivision with respect to being “accessory structures.”

Because the pasturing of cattle or horses is the core activity on the Property, each Lot will have a managed paddock, or other appreciably defined area for pasture improvement. Owners will need to determine the vegetation for their pasture, whether native guineagrass, giant bermudagrass, or other. Lot owners will need to remove weeds which threaten the vitality of the pasture, and they must maintain a valid weed control program for their respective pasture areas.

Giant bermudagrass is recommended for areas which will support intensive grazing. The stone-free soil found on limited areas of the Subdivision is capable of supporting giant bermudagrass at up to 4,000 lb dry forage/acre annually. Glyphosate can be used to remove native guineagrass and can be used for extended weed control in a renovated pasture. The native



guineagrass is persistent and will require frequent spot treatments with Glyphosate for effective control.

As noted above, the selective replacement of forage grasses will require intensive management that can become costly, especially if labor must be hired and extended weed control must be maintained. Pasture management for forage and grazing in general should be coordinated with the related interests of the owner(s) of the greater Property (Dillingham Ranch Aina, LLC).

**Soil Improvement:** Grading and harrowing shall be conducted only as needed to condition the soil for pasture renovation or the planting of specific crops. Stoniness and difficult terrain will limit harrowing. Despite the stony, sloping terrain, the soils of the Five-Acre Lots generally have deep profiles to allow deep rooting. Also, these soils generally have clay or loam compositions that sustain tilth and store moisture. The soils also have adequate levels of Ca, Mg, K and P for plant nutrition.

No major soil amendments are recommended at this time, although a starter fertilizer may be required for certain crops at planting. For example, 500 lb/acre of a starter fertilizer such as 16-16-16, 10-20-10, or 11-52-00 can promote the early establishment of a pasture and improve the vigor of the forage.

Depending on the production objectives for niche crops, a long term nutrient management program may be helpful, beginning with a comprehensive soil test for each soil type. Representative soil samples may be taken to the CTAHR Diagnostic Service Center, University of Hawaii at Manoa (tel: 808-956-6706) or sent to one of several agricultural soil testing laboratories in the country that are certified to receive imported soil samples. Most soil testing laboratories also provide interpretations of the test results for the crops to be grown. No serious nutrient deficiencies are anticipated as these soils have been proven productive elsewhere in the Waialua-Mokuleia area.

**Irrigation:** Water for irrigation will be required to maintain nursery stock, to establish orchards, and to replant or regrow forage grasses. Irrigation may also be necessary to establish groundcover and other plant material as may be recommended by NRCS for a Conservation Plan. However, each Subdivided Lot, being about 5.0 acres, will regulate its water use to a maximum 3,000 gal/Lot/day.

During the summer (May to October), the water required for the recommended niche crops in the Five-Acre Lots may approach 1/5 inch per day (5,431 gal/ac daily). During the winter, much less irrigation is required due to rainfall, cooler temperatures and stored moisture in the subsoil.

Recognizing the significant variation in rainfall between the dry and wet seasons, supplemental irrigation would be required for the cultivation and

transplanting of trees during the summer months. Most tropical orchards would fit the topography of the Subdivision at 20 to 200 trees/acre. In the first two years, after transplanting from the nursery to the orchard, the trees would require 0.3 to 0.5 inches of water/week (about 1,200 to 2,000 gal/acre daily), assuming each tree seedling is trickle irrigated precisely. Once the orchard is established, the irrigation requirement may or may not change, depending on the type of tree, the soil profile, and the available soil moisture.

Individual Lot owners will need to determine the best irrigation design for their respective crop, soil, and terrain. Local expertise is available as irrigation vendors have become increasingly specialized toward small farms and landscapes since the decline of the large plantations.

Groundcover: Mulch and compost may aid the establishment and maintenance of orchard crops in the Subdivision. The NRCS Conservation Plan may include the use of mulches or live groundcovers.

The long term incentive to the agricultural use of the 80 Five-Acre Lots depends on a program of improved pasture management and on the adoption of best management practices for niche crops that are proven for the area. In order to be effective, the Management Plan will encompass all eighty Five-Acre Lots. Accordingly, a copy of the management Plan will be provided to each prospective purchaser of a Subdivided Lot as part of the package of sale material.

## CONCLUSION

The 428 acres comprising the proposed 80 Five-Acre Lots have been historically grazed at minimal operating costs and with virtually no improvements and no agricultural development. The relatively large, the irregular, sloping, stony terrain does not support large scale agricultural ventures on these 428 acres. Specialized, small-farm, horticultural ventures are more likely to be suitable, as discussed in this Report. Small-farm ventures are common in the surrounding Waialua-Mokuleia area, where a strong agricultural history began in the early years of sugarcane.

For the 80 Five-Acre Lots to become more productive, incentive must exist for growers of niche crops that are suited to the varying topography. The size of the parcels must also be manageable by a family unit or a small enterprise. Unlike a large-area corporate farm (plantation), the Five-Acre Lots would create more intimate management units that maximize the productive capacity of each Lot. Collectively, the management units would be part of a coordinated Management Plan designed to improve the terrain, generate new revenue from specialized ventures, benefit the logistics of existing calving and grazing ventures on the greater part of the Property commonly known as Dillingham Ranch, encourage forestry stewardship projects in the difficult mauka portion of the Property, and enhance the integration of horticultural ventures in the Mokuleia-Waialua area.

This Report recommends that the new Agricultural Subdivision including the 80 Five-Acre Lots constitutes an improvement over the present condition of the land and should be undertaken as part of a master plan for the present Owner. The 80 Five-Acre Lots would support a more economically integrated and diversified agricultural community in the Mokuleia-Waialua area.

**ATTACHMENT F**

**FINDINGS OF FINAL SITE INSPECTION REPORT  
DILLINGHAM AIR FORCE BASE  
EXECUTIVE SUMMARY**



U.S. Army Corps of Engineers  
Southeast and Pacific IMA Region

***FINAL***  
**Site Inspection Report**  
**Dillingham Air Force Base**  
**Mokuleia, Hawaii**  
FUDS Project No. H09HI006501  
July 2008

*In Support of*  
**FUDS MMRP Site Inspections Project**

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**Huntsville, Alabama 35816-1822**

**Contract: W912DY-04-D-0005**  
**Task Order: 0008**

*The views, opinions, and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy, or decision, unless so designated by other documentation*



## EXECUTIVE SUMMARY

ES.1 The Dillingham Air Force Base Ordnance Storage Area was used as an ordnance storage depot supporting Mokuleia Airfield during and possibly after World War II. The airfield was renamed Dillingham Air Force Base when it became United States Air Force property in 1948. The land was originally acquired by the United States Army in 1925 for the establishment of Kawaihapai Military Reservation. Additional acreage was acquired in 1941 and Mokuleia Airfield was activated in 1942. The airfield was used extensively in the training of Army Air Corps personnel. It consisted of two landing strips, one of which was the longest in Hawaii at that time. There were also taxiways, parking areas, a scramble runway, barracks, and mess halls, all designed for a population of 5,000. It was at this time that an approximately 40 acre parcel was set aside and used as an ordnance storage depot. Following the end of World War II, the site was maintained on caretaker status and was sometimes used for tactical operations by troops based at Wheeler Air Force Base. In 1974, approximately 248 acres were returned to the private landowners and the State of Hawaii. The Ordnance Storage Area is currently owned by Mokuleia Ranch Estates LLC and Coastal View Properties LLC. A Site Inspection, documented in this report, was conducted to determine whether the site warrants further munitions and explosives of concern or munitions constituents response action or a determination of No Department of Defense Action Indicated. The Site Inspection of the Dillingham Air Force Base Ordnance Storage Area munitions response site was performed to confirm known or suspected former storage locations, to evaluate evidence for the presence of munitions and explosives of concern at the site, and to evaluate evidence of contamination from munitions constituents. To accomplish this objective, qualitative reconnaissance and munitions constituent sampling were performed during December 2007.

ES.2 If a No Department of Defense Action Indicated status is recommended and approved after evaluation of the site inspection data, the process for closeout of the site from the Formerly Used Defense Site inventory will be initiated. If an imminent threat to the public or the environment is identified, a time-critical removal action may be performed as an interim action, or a remedial investigation and feasibility study will be initiated to evaluate feasible response actions for munitions and explosives of concern and/or munitions constituents.

ES.3 The technical project planning process identified that, in addition to qualitative reconnaissance, the collection of a multi-incremental soil sample comprised of 50 sample increments would be sufficient to meet the Site Inspection project objectives. The soil sample was collected in triplicate. No groundwater sample was collected because there is no drinking water source within the munitions response site. No surface

water samples or sediment samples were collected because there is no permanent surface water within the munitions response site. An ambient surface soil sample was collected in triplicate from within the munitions response site.

ES.4 The Site Inspection for the Dillingham Air Force Base Ordnance Storage Area included completing approximately 3.04 miles of walking qualitative reconnaissance and collecting the multi-incremental surface soil sample. The multi-incremental surface soil sample increments were collected on an unbiased, systematic random basis at approximately equally spaced intervals over the decision unit covering the munitions response site.

ES.5 The surface soil samples were sent to TestAmerica Inc. (formerly Severn Trent Laboratories) in Arvada, Colorado for analysis for explosives and selected metals. The analytical results from the soil sampling were evaluated using the Hawaii Department of Health Environmental Action Levels for Soil (Groundwater Potential Drinking Water Source; <150m to Surface Water).

ES.6 No munitions and explosives of concern and no munitions debris were observed in the Dillingham Air Force Base Ordnance Storage Area munitions response site during the Site Inspection conducted in December 2007. A number of open storage areas were found to confirm the historical record. The storage areas were surrounded on three sides by earthen berms or revetments and at least one had a concrete floor. The open side faced a paved road that traversed the entire Ordnance Storage Area munitions response site. A summary of the qualitative reconnaissance results are presented in Table ES.1.

**Table ES.1  
Summary of Site Investigation Qualitative Reconnaissance  
Dillingham Air Force Base Ordnance Storage Area, Island of Oahu, Hawaii**

<b>Munitions Response Site</b>	<b>Munitions and Explosives of Concern Found</b>	<b>Munitions Debris Found</b>	<b>Munitions Related Structures Found</b>
Ordnance Storage Area	None	None	Storage revetments and road system

ES.7 No explosive compounds were detected in the surface soil samples. Munitions constituents copper, lead and zinc were detected in the surface soil. The mean concentrations of lead and zinc were above the background concentration derived from the ambient soil sample collected from within Dillingham Air Force Base Ordnance Storage Area site. Therefore a human health screening level risk assessment was conducted. The mean concentrations of lead and zinc were below the Hawaii Department of Health Soil Action Levels. As a result, no unacceptable risk to human health is expected from exposure to lead or zinc in the surface soil at this munitions response site. These results are summarized in Table ES.2

**Table ES.2  
Soil Human Health Screening Level Risk Assessment  
Dillingham Air Force Base Ordnance Storage Area, Island of Oahu, Hawaii**

Analyte	Units	Maximum Detected Site Concentration	HDOH Environmental Action Levels (EAL) for Soil*	Exceeds Screening Level?
<b>Metals:</b>				
Lead	mg/kg	11	200	No
Zinc	mg/kg	92	600	No

\*- Hawaii State Department of Health Environmental Action Levels for Soil (Groundwater Potential Drinking Water Source, <150m to Surface Water), dated August 2006

ES.8 The Dillingham Air Force Base Ordnance Storage Area was not considered to be an important ecological place. Therefore, ecological risk as a result of exposure to munitions constituents in the soil is not expected at the site.

ES.9 It is recommended that the Dillingham Air Force Base Ordnance Storage Area munitions response site proceed to a Remedial Investigation and Feasibility Study using geophysical investigation to locate potential munitions burial sites. This recommendation is based on finding evidence of Department of Defense activity at this site with a suspected potential for discarded military munitions. The recommendation is summarized in Table ES.3.

**Table ES.3  
Recommendation Summary  
Dillingham Air Force Base Ordnance Storage Area, Island of Oahu, Hawaii**

MRS	Acreage	Recommendation	Basis for Recommendation
			MEC/MC
Ordnance Storage Area	40 acres	Remedial Investigation and Feasibility Study	<p><b>Munitions and Explosives of Concern:</b> None observed. Suspected presence of buried fuzes was not disproved.</p> <p><b>Munitions Debris:</b> None observed</p> <p><b>Military Structures:</b> Storage revetments and road system</p>



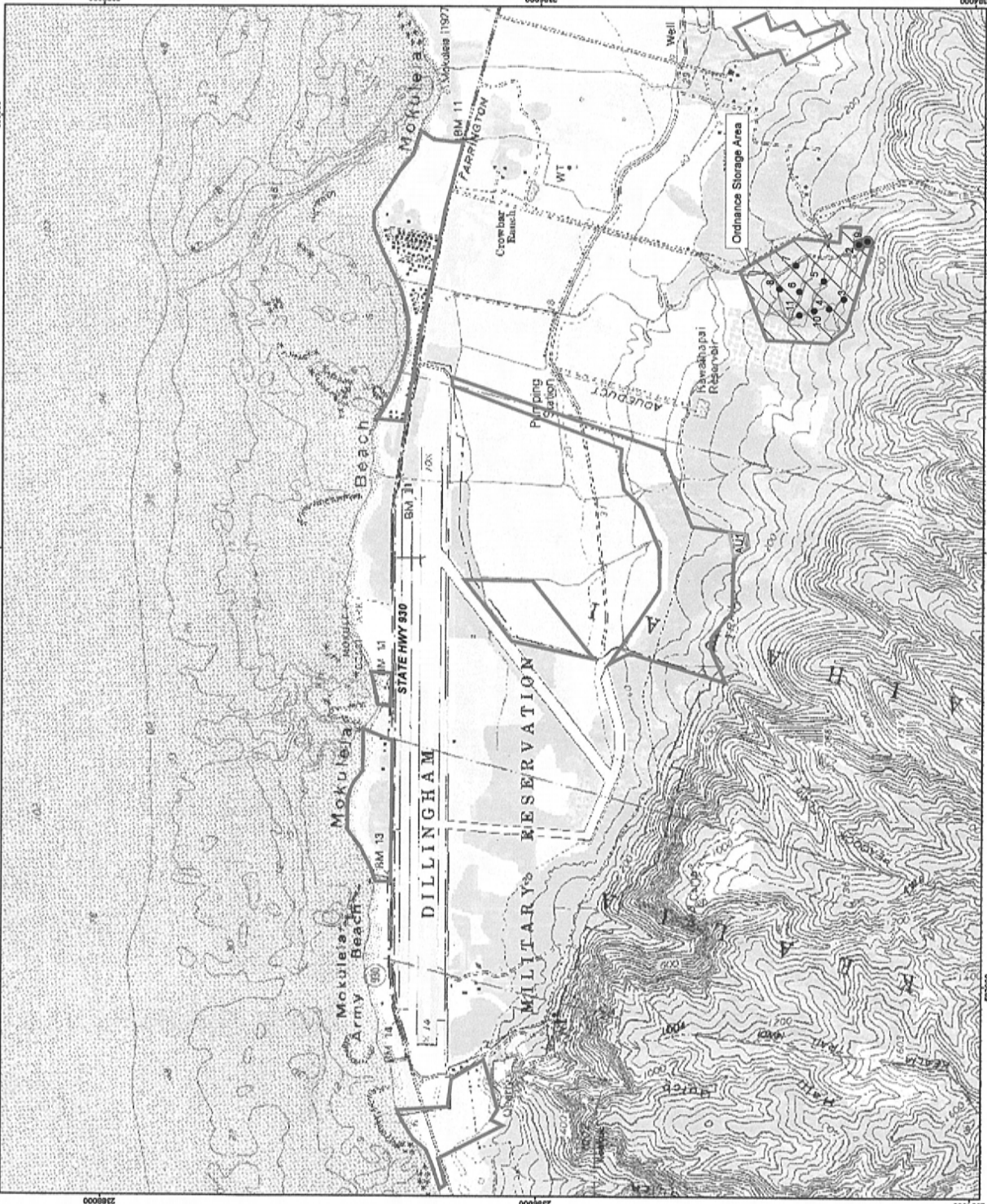
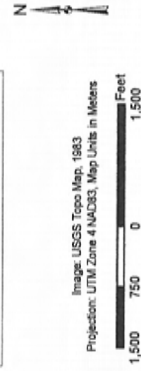
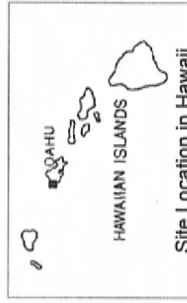
Figure ES.1

**General Site Overview**  
**Dillingham Air Force Base**  
**FUDS Project No. H09HI0006501**

Honolulu County, Hawaii

**Legend**

- Field Observation Location
- Soil Sample Location
- Approximate FUDS Property Boundary
- Qualitative Reconnaissance Track
- Decision Unit
- Ambient Multi-Incremental Sample
- AU (Not to Scale)



DESIGNED BY:	BT	PARSONS	U.S. ARMY CORPS OF ENGINEERS HUNTSVILLE CENTER
DRAWN BY:	BT		
CHECKED BY:	LK	<b>General Site Overview</b>	
DATE:	July 2008	PROJECT NUMBER:	744647.24000
DATE:	July 2008	PROJ. NUMBER:	ES-4
DATE:	July 2008	FILE NUMBER:	ES-4