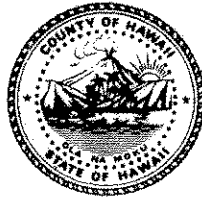


Harry Kim  
Mayor



William Takaba  
Director

Nancy E. Crawford  
Deputy Director

## County of Hawaii

### Finance Department

25 Aupuni Street, Room 118 • Hilo, Hawaii 96720  
(808) 961-8234 • Fax (808) 961-8248

December 20, 2006

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

Dear Ms. Salmonson:

Subject: Sale of County of Hawai'i Pa'auilo Lands Final Environmental Assessment;  
TMKs (3) 4-3-07:01, 4-3-09:19 and 24, 4-3-11:01 and 02, Pa'auilo, Hawai'i

The Hawai'i County Department of Finance has reviewed the comments received during the 30-day public comment period which began on August 23, 2006. The agency has determined that this project will not have significant environmental effects and has issued a FONSI. Please publish this notice in the next available (January 8, 2006) OEQC Environmental Notice. We have enclosed the following:

- Two (2) hard copies of the Final EA;
- One (1) CD (PDF) of the Final EA;
- A completed OEQC Environmental Notice Publication Form (enclosed on CD); and
- *Revised* project summary (enclosed on CD).

Please contact Nancy Crawford at (808) 961-8234, or Marissa Furfaro at (808) 961-3333, if you have any questions.

Sincerely,

William Takaba  
Director of Finance

Encs.

cc: Marissa Furfaro, PBR Hawaii (w/o encs.)  
Nancy Crawford, Deputy Director of Finance

RECEIVED  
DEC 21 P2:07  
OFFICE OF ENVIRONMENTAL  
QUALITY CONTROL

# Pa‘auilo Lands

---

## *Final Environmental Assessment*



*TMKs: (3) 4-3-07:01, 4-3-09:19, 4-3-09:24,  
4-3-11:01 and 4-3-11:02  
Pa‘auilo, Hāmākua, Hawai‘i*

**Prepared for:**  
County of Hawai‘i  
Department of Finance

**Prepared by:**



December 2006

# Pa‘auilo Lands

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## *Final Environmental Assessment*

*TMKs: (3) 4-3-07:01, 4-3-09:19, 4-3-09:24,  
4-3-11:01 and 4-3-11:02*

*Pa‘auilo, Hāmākua, Hawai‘i*

### **Prepared for:**

County of Hawai‘i  
Department of Finance

Prepared by:



December 2006

**PA‘AUILO LANDS**  
Final Environmental Assessment

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**PA‘AUILO LANDS**  
Final Environmental Assessment

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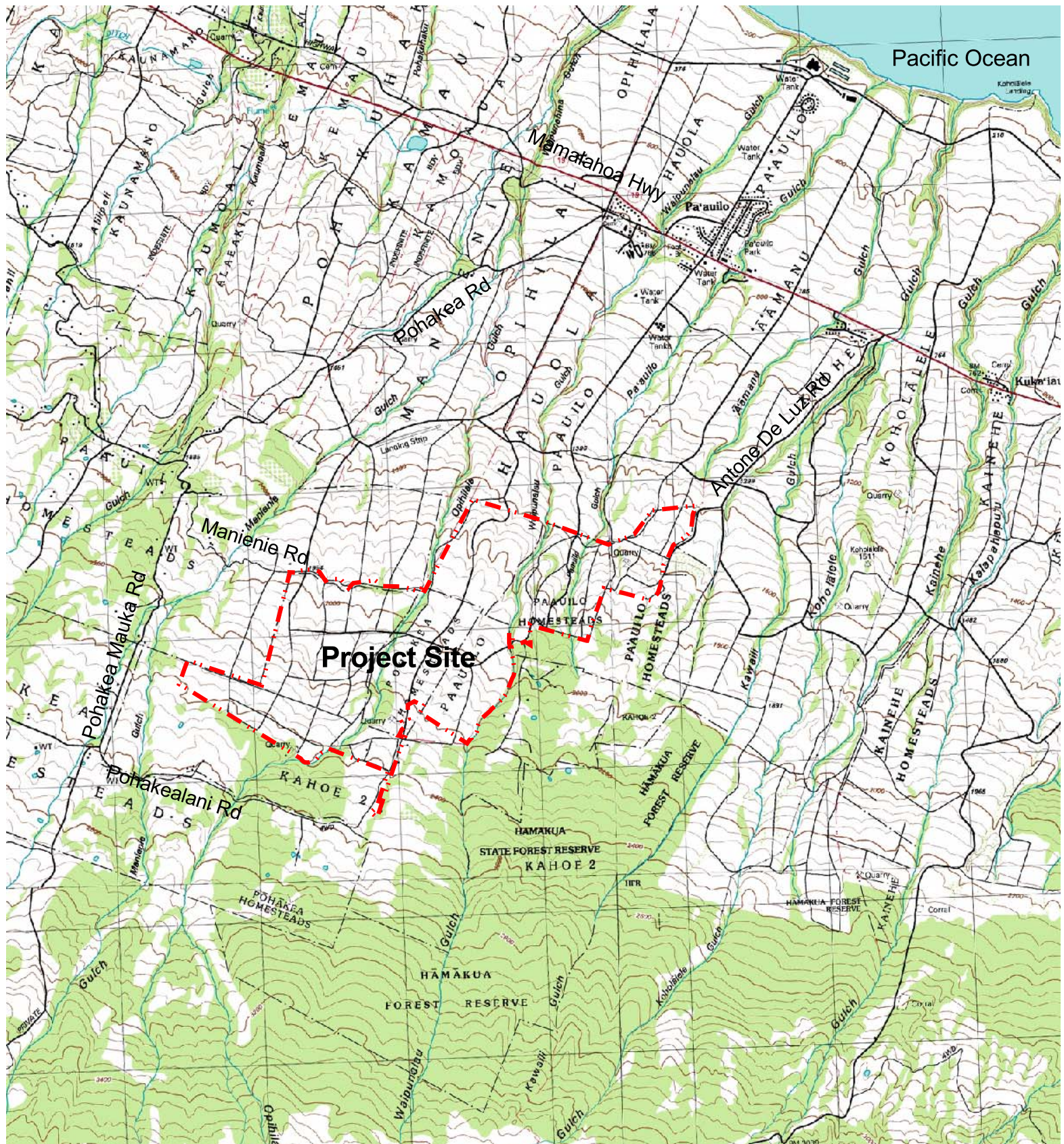
## **1.0 INTRODUCTION**

### **1.1 PROJECT SUMMARY**

The following summary describes the project location, existing entitlements, and proposed actions:

<b>Project Name:</b>	Pa‘auiilo Lands
<b>Location:</b>	Pa‘auiilo, Hāmākua District, Hawai‘i (Figure 1)
<b>Landowner:</b>	County of Hawai‘i
<b>Applicant:</b>	County of Hawai‘i
<b>Tax Map Key:</b>	(3) 4-3-7:01, 4-3-9:19 and 24 and 4-3-11:01 and 2 (Figure 2)
<b>Land Area:</b>	Approximately 740 acres
<b>Existing Use:</b>	Open, vacant land
<b>Proposed Use:</b>	No use proposed at this time
<b>Land Use Designations:</b>	
State Land Use District:	Agriculture (Figure 3)
Hawai‘i County Zoning:	A-40a (641 acres) and A-5a (92.5 acres) (Figure 4)
County General Plan:	Important Agricultural Lands (706.4 acres) Extensive Agriculture (32.3 acres) (Figure 5)
<b>Action Requested:</b>	Sale of County lands
<b>Accepting Authority:</b>	County of Hawai‘i, Department of Finance
<b>Anticipated Determination:</b>	Finding of No Significant Impact (FONSI)





# Legend

— Project Site Boundary

Source:  
United States Geological Survey

Disclaimer:  
This map has been prepared for  
general planning purposes only.

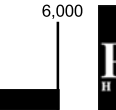
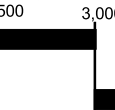
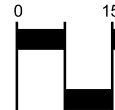
Figure 1  
Location Map  
**Pa'auilo Lands**

County of Hawai'i

ISLAND OF HAWAII

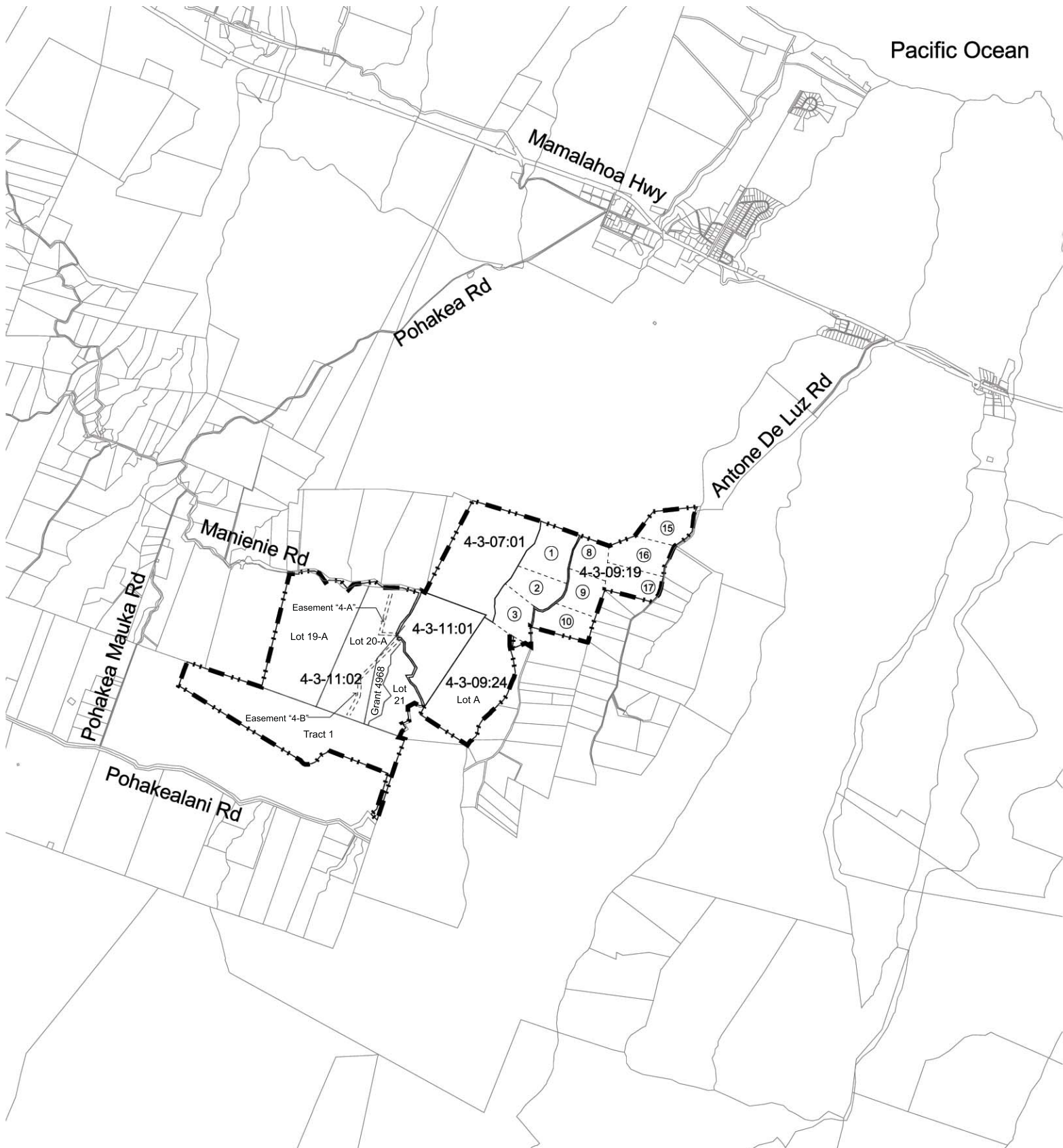
NORTH

LINEAR SCALE (FEET)



June 2006





Pacific Ocean

Mamalahoa Hwy

Pohakea Rd

Antone De Luz Rd

Manienie Rd

Pohakea Mauka Rd

Pohakealani Rd

4-3-07:01

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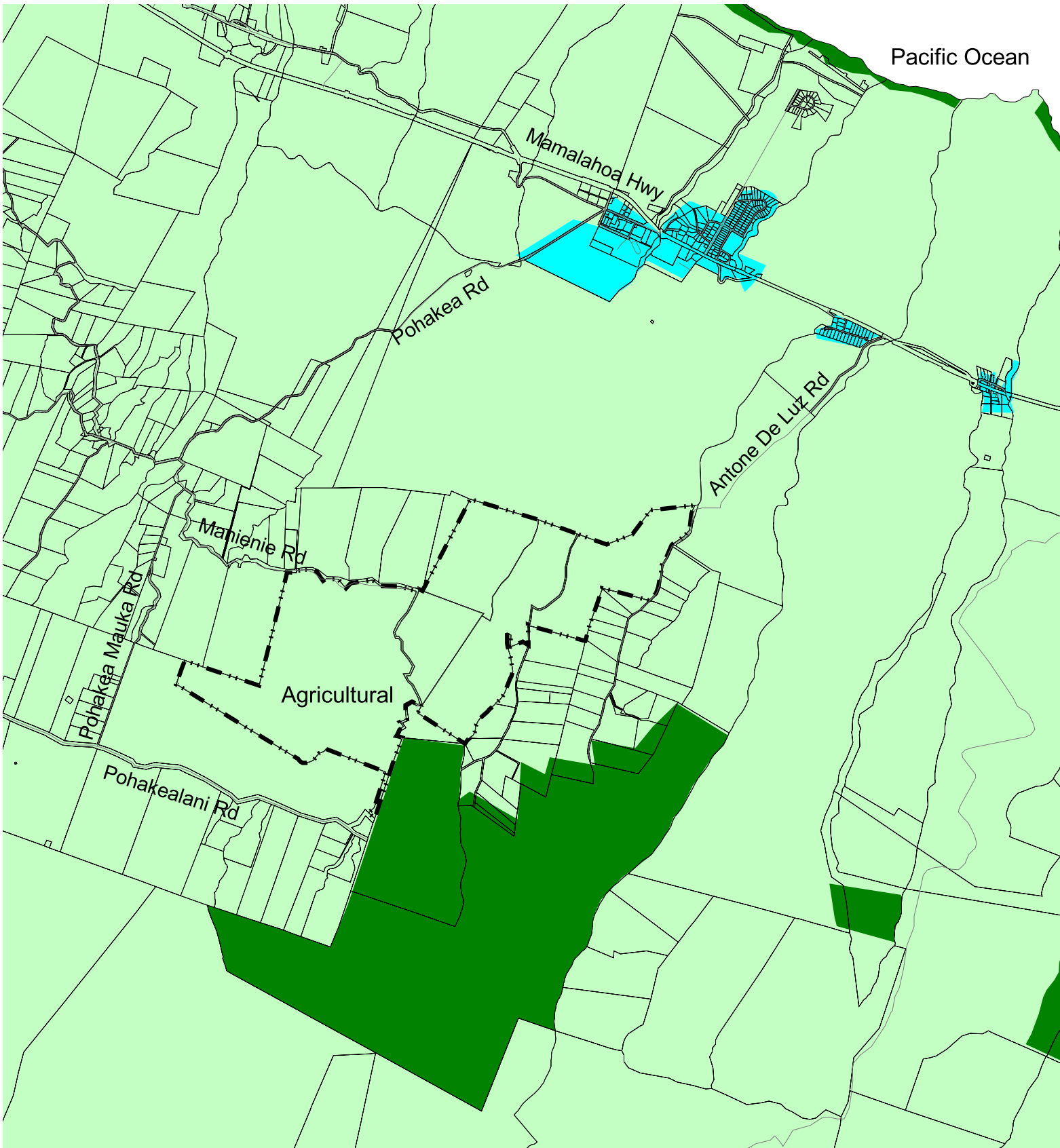
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2



**Legend**

**Land Use Districts**

- Agricultural
- Conservation
- Urban

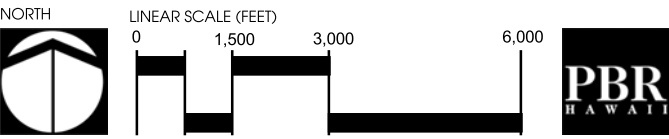
**--** Project Site Boundary

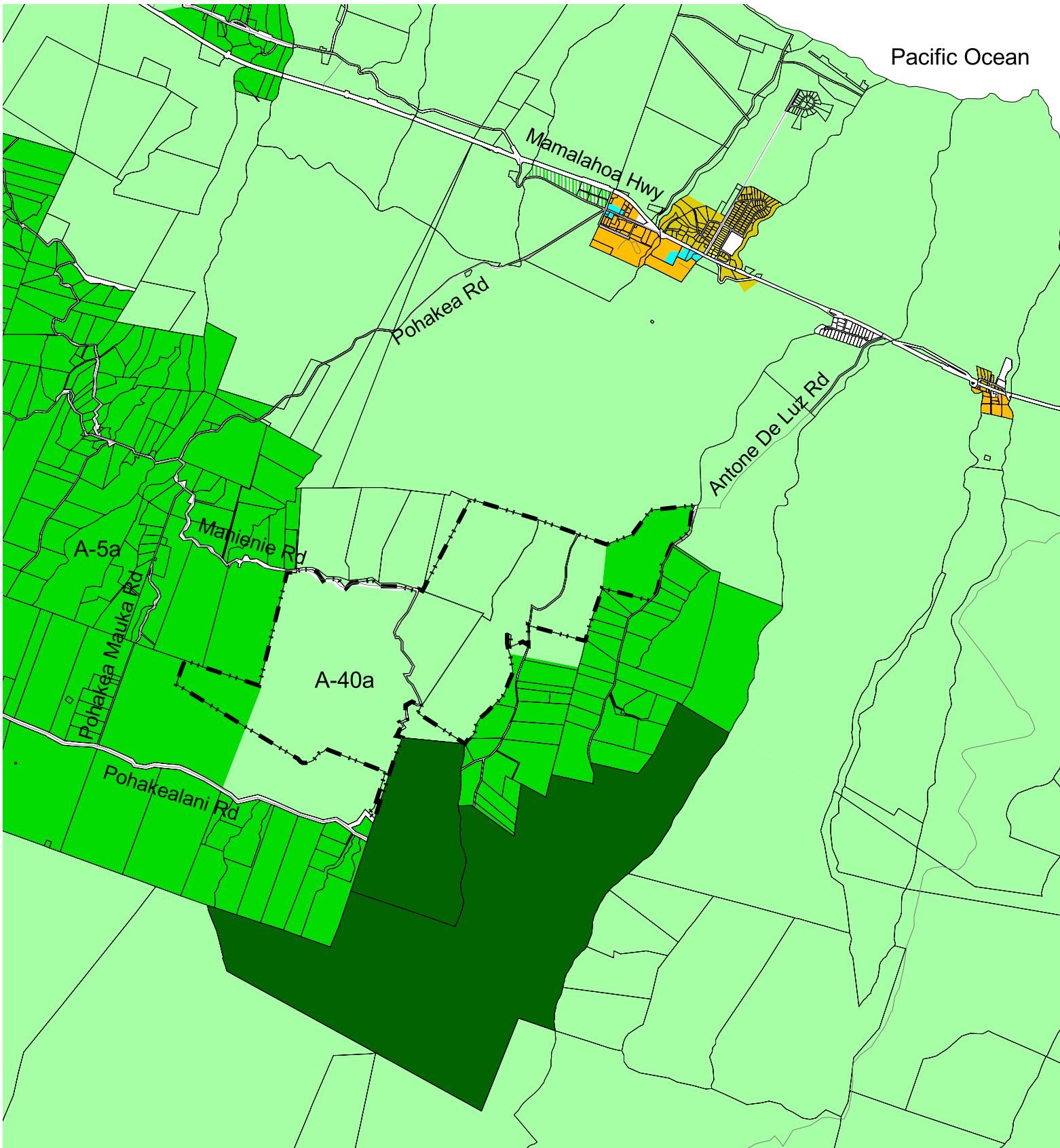
Source:  
State Land Use Commission (2006)

Disclaimer:  
This map has been prepared for  
general planning purposes only.

**Figure 3**  
**State Land Use District Map**  
**Pa'auilo Lands**

County of Hawai'i ISLAND OF HAWAII





**Legend**

**Zoning Districts**

**Agricultural**

- A-1a
- A-40a
- A-5a

**Residential**

- RD-3.75
- RS-10
- RS-7.5

**Commercial**

- CV-10

**Open**

- Open

**Forest Reserve**

- Forest Reserve

Project Site Boundary

Source:  
County of Hawai'i (2005)

Disclaimer:  
This map has been prepared for  
general planning purposes only.

**Figure 4**  
**Hawai'i County Zoning Map**  
**Pa'auilo Lands**

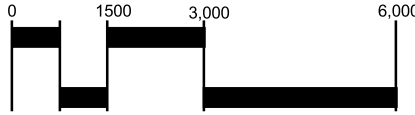
County of Hawai'i

ISLAND OF HAWAII

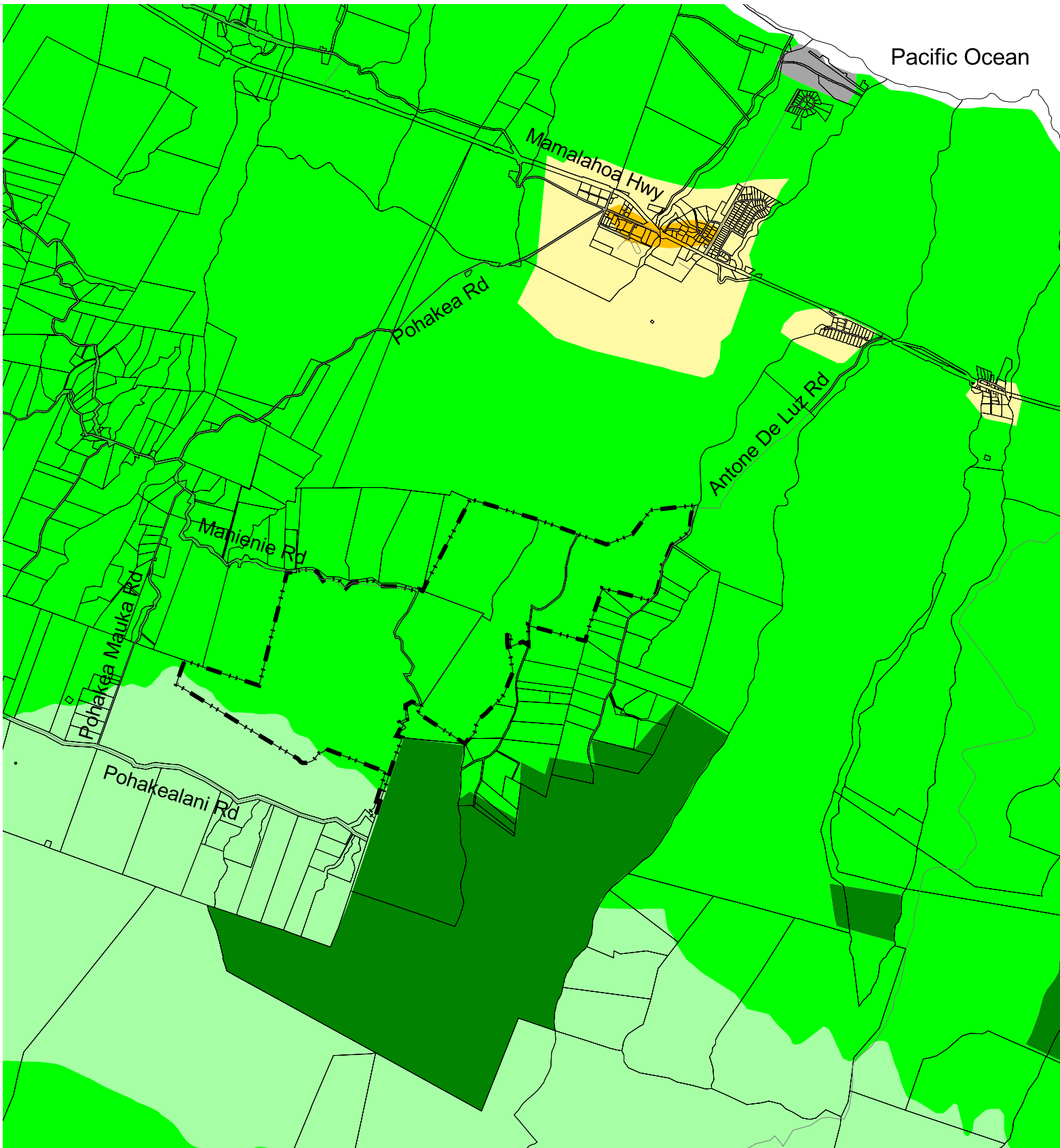
NORTH



LINEAR SCALE (FEET)



June 2006



#### Legend

##### Land Uses

- Conservation
- Extensive Agriculture
- Important Ag. Lands
- High Density Urban
- Medium Density Urban
- Low Density Urban
- Rural
- Open Area
- Industrial

-- Project Site Boundary

Source:  
County of Hawai'i (2005)

Disclaimer:  
This map has been prepared for  
general planning purposes only.

#### Figure 5

Hawai'i County General Plan LUPAG Map

### Pa'auilo Lands

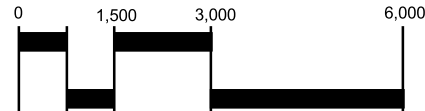
County of Hawai'i

ISLAND OF HAWAII

NORTH



LINEAR SCALE (FEET)



June 2006

# PA‘AUILO LANDS

## FINAL ENVIRONMENTAL ASSESSMENT

---

### 1.2 PROPOSING AGENCY

In accordance with Section 343-5(b), *Hawaii Revised Statutes* (HRS), whenever an agency proposes the use of county lands, that agency shall prepare an environmental assessment for the action at the earliest practicable time to determine whether an environmental impact statement shall be required.

In order to comply with Chapter 343, HRS, the County Department of Finance (DOF) has contracted PBR HAWAII to prepare and process this environmental assessment. The County DOF is the proposing agency for this project; the mailing address and primary contact person is listed below:

Ms. Nancy Crawford, Deputy Director  
County of Hawai‘i  
Department of Finance  
25 Aupuni Street, Room 118  
Hilo, Hawai‘i 96720

### 1.3 OWNERSHIP AND MAJOR APPROVALS REQUIRED

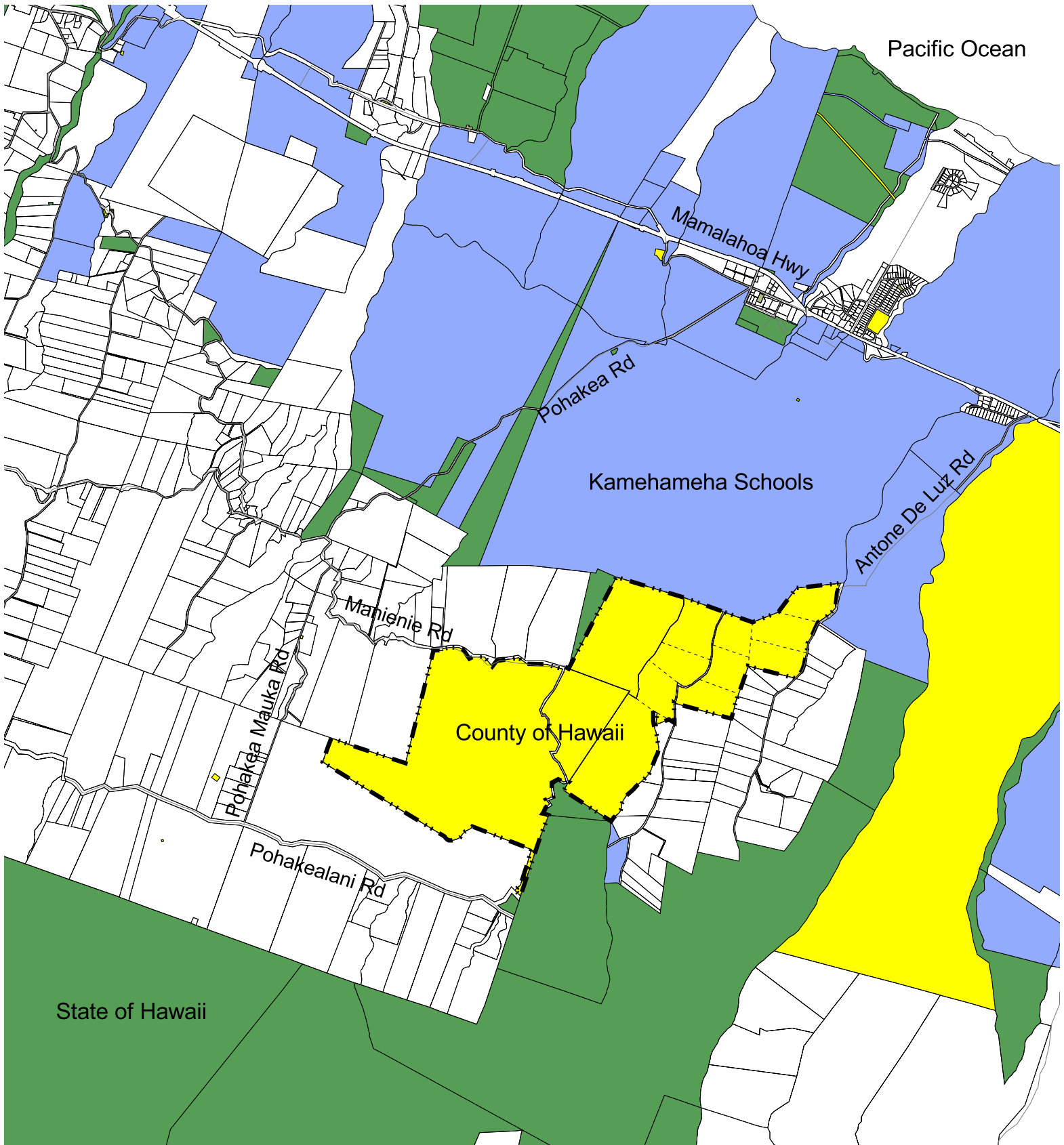
The County of Hawai‘i is the landowner of the subject property and is the agency preparing this environmental assessment. As there is no development or construction proposed at this time, no approvals other than the acceptance of this document as a FONSI are required.

### 1.4 DESCRIPTION OF THE PROPERTY

The Pa‘auilo Lands lie in the Hāmākua District, within the Pa‘auilo Homesteads on the northeast side of the Island of Hawai‘i and comprise five (5) tax map keys. Within those five (5) parcels there are six (6) underlying grants on TMK 4-3-09:19 and four (4) underlying grants on TMK 4-3-09:24, which are all “lots of record” (Subdivision No. SUB-05-000130, approved on August 10, 2005 (please refer to Figure 2). There are also five (5) “lots of record” on TMK 4-3-11:02 (SUB-06-000427, approved on December 4, 2006).

The Pa‘auilo Lands lie on the middle slopes of Mauna Kea, approximately 3.5 miles mauka (roughly south), of Pa‘auilo Town and Hawai‘i Belt Road (Highway 19). The lands are fallow, formerly cultivated in sugar cane, and are now vegetated primarily by introduced weedy grasses, herbs, shrubs, and scattered trees. The climate in the Hāmākua District is wet, and at the elevation of the Pa‘auilo Lands, the temperature is mainly cool.





#### Legend

- Project Site Boundary
- County of Hawaii
- State of Hawaii
- Kamehameha Schools
- Other - Private

Source:  
County of Hawai'i

Disclaimer:  
This map has been  
prepared for general  
planning purposes only.

## Figure 6 Land Ownership Map Pa'auilo Lands

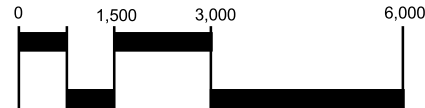
County of Hawai'i

ISLAND OF HAWAII

NORTH

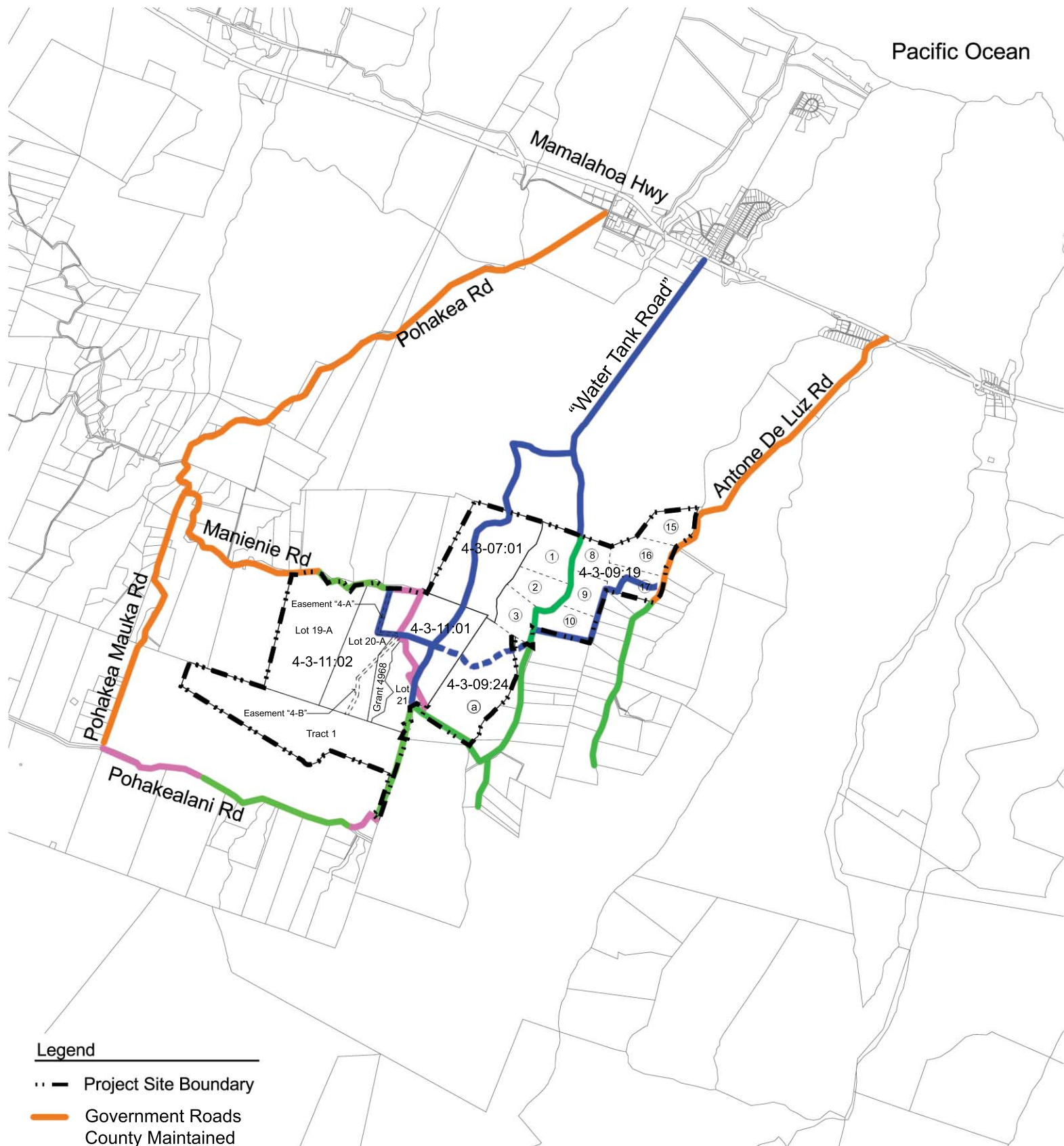


LINEAR SCALE (FEET)



October 2006

Pacific Ocean



# Legend

-- Project Site Boundary

Government Roads  
County Maintained

Government Roads  
(Including Homestead  
Roads)

Government  
"Paper" Roads

Private Roads  
(Including Cane  
Haul Roads)

Private Roads  
Impassable

Source:  
County of Hawai'i

Disclaimer:  
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general planning purposes only.

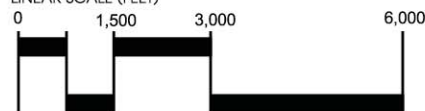
## Figure 7 Roadway Network Map Pa'auilo Lands

County of Hawai'i

ISLAND OF HAWAII

NORTH

LINEAR SCALE (FEET)



October 2006



## **1.5 SURROUNDING LAND USES**

Surrounding land uses include private homes, ranches, farms, a dairy, the University of Hawai‘i College of Tropical Agriculture and Human Resources (CTAHR) Hāmākua Research Station, and open land. The project site is bounded on all sides, in part, by open land. To the north and west it is bounded by land owned by Kamehameha Schools and a portion of Mānienie Road. On the south it is bounded by the CTAHR research station. On the southeast lies the John Paul Mitchell Systems ‘Awapuhi Farm, a portion of Antone DeLuz Road, and a portion of the paved, private, plantation road that accesses the lands (Figures 6 and 7).

## **1.6 BACKGROUND**

The DOF acquired the subject property from the Hāmākua Sugar Company in 1994 as a result of a real property tax settlement. Prior to the DOF’s acquisition, the property had been in active sugar cane production for decades. DOF will be selling these lands in accordance with prior County Council action in January and June of 2002, authorizing the sale of these lands.

The sale will allow these lands to be put back into productive agricultural use while the proceeds from the sale will provide additional funding for County programs. The revenues from the sale may also provide the County greater flexibility in budgeting additional funding for the acquisition of lands identified by the Public Access, Open Space and Natural Resource Preservation Commission.

## **2.0 PROJECT DESCRIPTION**

### **2.1 PROJECT GOALS AND OBJECTIVES**

The Hawai‘i County Department of Finance proposes to sell the subject properties at public auction. The goal and objective of the DOF will be to sell these lands in accordance with prior County Council action in January and June of 2002, authorizing the sale of these lands. The sale will allow these lands to be put back into productive agricultural use while the proceeds from the sale will provide additional funding for County programs. The revenues from the sale may also provide the County greater flexibility in budgeting additional funding for the acquisition of lands identified by the Public Access, Open Space and Natural Resource Preservation Commission.

### **2.2 NEED FOR THE PROJECT**

The County has owned the Pa‘auilo Lands since 1994, when it was acquired from Hāmākua Sugar Company in lieu of real property taxes owed. The County views that the sale of these lands will serve the greater public interest in that it will allow these lands to return to productive agricultural use while allowing the County to recoup previously unpaid real property taxes that it may use to fund existing or additional programs. The sale will also mean that these lands will revert to private ownership and will be subject to real property taxes that are currently not being paid under County ownership.

Additionally, the proceeds from the sale and added real property tax revenue may provide greater flexibility for the County to allocate additional funding to the Public Access, Open Space and Natural Resource Preservation Fund for the purposes of acquiring lands targeted for acquisition by the Public Access, Open Space and Natural Resource Preservation Commission.

### **2.3 POTENTIAL USES**

While the lands are expected to remain in agriculture, the exact use and any associated impacts are unknown at this time. This EA, however, discusses potential impacts and mitigation measures for the possibility that the maximum possible farm dwellings are built. There are two (2) different scenarios from which to calculate the maximum possible farm dwellings:

**Scenario 1:** Existing Lots of Record Based on the Consolidation/Re-Subdivision (SUB-05-000130) approved on August 10, 2005 and the Subdivision (Sub-06-000427) approved on December 4, 2006:

The project site comprises five (5) tax map key parcels. Within those five (5) tax map key parcels there will be a total of 17 saleable lots described as follows:

- **TMK 4-3-09:19** - Six (6) lots based on the, Consolidation/Re-Subdivision (SUB-05-000130) approved on August 10, 2005;
- **TMK 4-3-09:24** - Four (4) lots based on the Consolidation/Re-Subdivision (SUB-05-000130) approved on August 10, 2005);

**PA‘AUILO LANDS**  
FINAL ENVIRONMENTAL ASSESSMENT

---

- **TMK 4-3-07:01** - One (1) lot based on the Subdivision (Sub-06-000427) approved on December 4, 2006. The subdivision also included TMKs 4-3-11:01 and 02. Although the subdivision resulted in ten (10) lots, three (3) of those lots are road lots that will be retained by the County and absorbed into the existing homestead road right-of-way to mitigate encroachments of the existing road outside or too close to the actual boundaries of the homestead road right-of-way.
- **TMK 4-3-11:01** - One (1) lot based on the Subdivision (Sub-06-000427) approved on December 4, 2006. The subdivision also included TMKs 4-3-11:02 and 4-3-07:01. Although the subdivision resulted in ten (10) lots, three (3) lots are road lots that will be retained by the County and absorbed into the existing homestead road right-of-way to mitigate encroachments of the existing road outside or too close to the actual boundaries of the homestead road right-of-way.
- **TMK 4-3-11:02** - Five (5) lots based on the Subdivision (Sub-06-000427) approved on December 4, 2006. The subdivision also included TMKs 4-3-11:01 and 4-3-07:01. Although the subdivision resulted in ten (10) lots, three (3) lots are road lots that will be retained by the County and absorbed into the existing homestead road right-of-way to mitigate encroachments of the existing road outside or too close to the actual boundaries of the homestead road right-of-way.

Counting the existing parcels, lots of record, and the lots that were recently created on TMK 4-3-11:02, there is a potential for up to 17 separate parcels and/or lots within the project area (See Table 1 below):

**Table 1: Number of Potential Lots Based on Existing Lots of Record and Existing Zoning**

<b>TMK Number</b>	<b>Potential Number of Lots</b>
4-3-07:01	1
4-3-09:19	6
4-3-09:24	4
4-3-11:01	1
4-3-11:02	5
<b>Total:</b>	<b>17</b>

**PA‘AUILO LANDS**  
FINAL ENVIRONMENTAL ASSESSMENT

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**Scenario 2:** Potential Number of Lots Based on Existing Lots of Record and Further Subdivision Based on Existing Zoning:

**TMK 4-3-07:01** - The parcel currently A-40a zoning that could allow a subdivision into two (2) lots.

**TMK 4-3-09:19** - There are currently three (3) “lots of record” that are zoned A-5a:

- Portion of TMK 4-3-09:19, Lot 15-A is 18.551 acres. This could allow for a subdivision of three (3) lots
- Portion of TMK 4-3-09:19, Lot 16-A is 20.231 acres. This could allow for a subdivision of four (4) lots.
- Portion of TMK 4-3-09:19, Lot 17-A is 19.353 acres. This could allow for a subdivision of three (3) lots.

**TMK 4-3-09:19** - There are currently three (3) “lots of record” that are zoned A-40a zoning:

- Portion of TMK 4-3-09:19, Lot 8-A is 16.224 acres. No further subdivision is possible under its current A-40a zoning.
- Portion of TMK 4-3-09:19, Lot 9-A is 16.307 acres. No further subdivision is possible under its current A-40a zoning.
- Portion of TMK 4-3-09:19, Lot 10-A is 15.334 acres. No further subdivision is possible under its current A-40a zoning.

**TMK 4-3-09:24** - There are currently four (4) “lots of record” that are zoned A-40a:

- Portion of TMK 4-3-09:24, Lot 1-A is 23.337 acres. No further subdivision is possible under its current A-40a zoning.
- Portion of TMK 4-3-09:24, Lot 2-A is 20.191 acres. No further subdivision is possible under its current A-40a zoning.
- Portion of TMK 4-3-09:24, Lot 3-A is 20.699 acres. No further subdivision is possible under its current A-40a zoning.
- Portion of TMK 4-3-09:24, Lot A is 84.454 acres. This could allow for a subdivision of two (2) lots under its current A-40a zoning.

**TMK 4-3-11:01** - No further subdivision is possible based on its current A-40a zoning.

**TMK 4-3-11:02** is currently split-zoned with approximately 34.5 acres zoned A-5a and approximately 271.775 acres zoned A-40a. Lot 19-A (103.977 acres) could be subdivided into two (2) lots. No further subdivision is possible on Lots 20-A, 21-A, and Grant 4968. The portion of Tract 1 that is zoned A-5a could be subdivided into six (6) lots on the A-5a portion, creating a seventh lot on the remainder of Tract 1, for a total of 12 lots.

**PA‘AUILO LANDS**  
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Therefore, the potential number of lots and allowable farm dwellings based on *current zoning* (assuming approval under the formal subdivision process) is 32 demonstrated in Table 2, below:

**Table 2: Number of Potential Lots Based on Current Zoning**

<b>TMK Number</b>	<b>Potential Number of Lots</b>
4-3-07:01	1
4-3-09:19	13
4-3-09:24	5
4-3-11:01	1
4-3-11:02	12
<b>Total:</b>	<b>32*</b>

**\*Note:** This scenario assumes that purchasers of these lots will be able to further subdivide based on the existing zoning. It should be emphasized that this scenario assumes a “worst case” and any further subdivision by purchasers will require compliance with current subdivision code. Subdivision approval for the creation of the total number of lots described in Scenario 2 may face significant challenges due to limited access, substandard roads, limited utilities and cost of required onsite and offsite improvements.

Estimate of Maximum Possible Farm Dwellings:

According to the Hawai‘i County Planning Department, one (1) farm dwelling is permitted per agricultural parcel without proof of any agricultural use or plan. Thus, using the highest yielding scenario, the “worst case” is that 32 farm dwellings are built on the Pa‘auilo Lands once they are sold. However, it should be emphasized that sale of the Pa‘auilo Lands is not proposing that 32 farm dwellings be constructed; it is simply a statement of the maximum number of farm dwellings allowed based on current zoning. Therefore, the potential impacts and mitigation measures in this EA will be based on the “worst case” calculation of 32 farm dwellings.

Additional farm dwellings *may* be permitted on the parcels and/or lots if a Farm Plan, which demonstrates the number of agricultural labor hours per week, is submitted and approved by the Hawai‘i County Planning Department. This requirement will help to ensure that any additional farm dwellings constructed are related to agriculture and thus will perpetuate agriculture on the Pa‘auilo Lands.

## **2.4 PHASING AND TIMING OF ACTION**

The proposed sale is tentatively planned for early 2007. Due to a survey discrepancy in connection with Lot A, within TMK: 4-3-09:24 and an encroachment problem on Lot 17-A, within TMK: 4-3-09:19, these two lots may be sold at a later date under a separate auction upon the resolution of their respective situations.

### **3.0 ASSESSMENT OF THE EXISTING NATURAL ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATION MEASURES**

This chapter describes the existing natural environment of the Pa‘auilo Lands and potential impacts that may result from the proposed sale of the lands. The chapter also describes mitigation measures to address potential impacts.

#### **3.1 CLIMATE**

Because the project site lies between the 1,400 and 2,400-foot elevations on the northeast side of Hawai‘i Island, it is affected by the prevailing northeast trade winds, making the climate there cool and wet. Winds are generally northeast, with typical trade wind speeds of 10-15 miles per hour.

Average annual rainfall in the general vicinity of the project site is approximately 70 inches. The average temperature ranges from approximately 57 degrees Fahrenheit to 70 degrees Fahrenheit (Pers. Comm., Kelvin Sewake, University of Hawai‘i, College of Tropical Agriculture and Human Resources, July 28, 2006).

##### ***Potential Impacts and Mitigation Measures***

The proposed sale and subsequent use of the Pa‘auilo lands will not affect the regional climate.

#### **3.2 TOPOGRAPHY AND GEOLOGY**

The Pa‘auilo lands are located approximately 3.5 miles mauka of Hawai‘i Belt Road, on the middle slopes of Mauna Kea. The site slopes downward, generally from southwest to northeast, at an average rate of 11 percent. Ground surface elevations range from approximately 1,400 feet above mean sea level (amsl) to 2,400 feet above amsl. The Pa‘auilo Lands are former sugarcane land, but are fallow now, and vegetated primarily in Guinea grass (*Panicum maximum*) and other introduced weedy grasses, herbs, shrubs, and trees.

Soils within the project area derive from Mauna Kea Ash deposited between 65,000 and 250,000 years ago. In places, the Mauna Kea Ash is overlain by deposits laid down between 4,000 and 7,000 years ago (Wolfe and Morris 1996).

##### ***Potential Impacts and Mitigation Measures***

No significant impacts to the regional geology and topography are anticipated as a result of the proposed sale or any subsequent use of the Pa‘auilo Lands.

#### **3.3 DRAINAGE**

The Pa‘auilo Lands are designated Zone X by the Flood Insurance Rate Map, indicating that the lands lie outside the 500-year floodplain (Figure 8). The site contains four named gulches (Opihilala, Waipunalau, Pa‘auilo, and ‘A‘āmanu), and slopes downward from southwest to

northeast at an average rate of approximately 11 percent. The lands contain no known drainage improvements.

### ***Potential Impacts and Mitigation Measures***

The sale of the Pa‘auiilo Lands is not anticipated to affect drainage within the site. Potential purchasers will be subject to the existing grubbing and grading ordinances through which the impacts of their specific uses will have to be addressed and mitigated.

## **3.4 SOILS**

Three soil suitability studies have been prepared for lands in Hawai‘i. These are the U.S. Department of Agriculture *Soil Conservation Service Soil Survey* (USDA 1972), the University of Hawai‘i Land Study Bureau *Detailed Land Classification* (Baker 1965), and the State of Hawai‘i Department of Agriculture’s *Agricultural Lands of Importance to the State of Hawai‘i* (ALISH) (State of Hawai‘i 1977). The principal focus of these studies has been to describe the physical attributes of Hawai‘i’s lands and the relative productivity of different land types for agricultural production purposes.

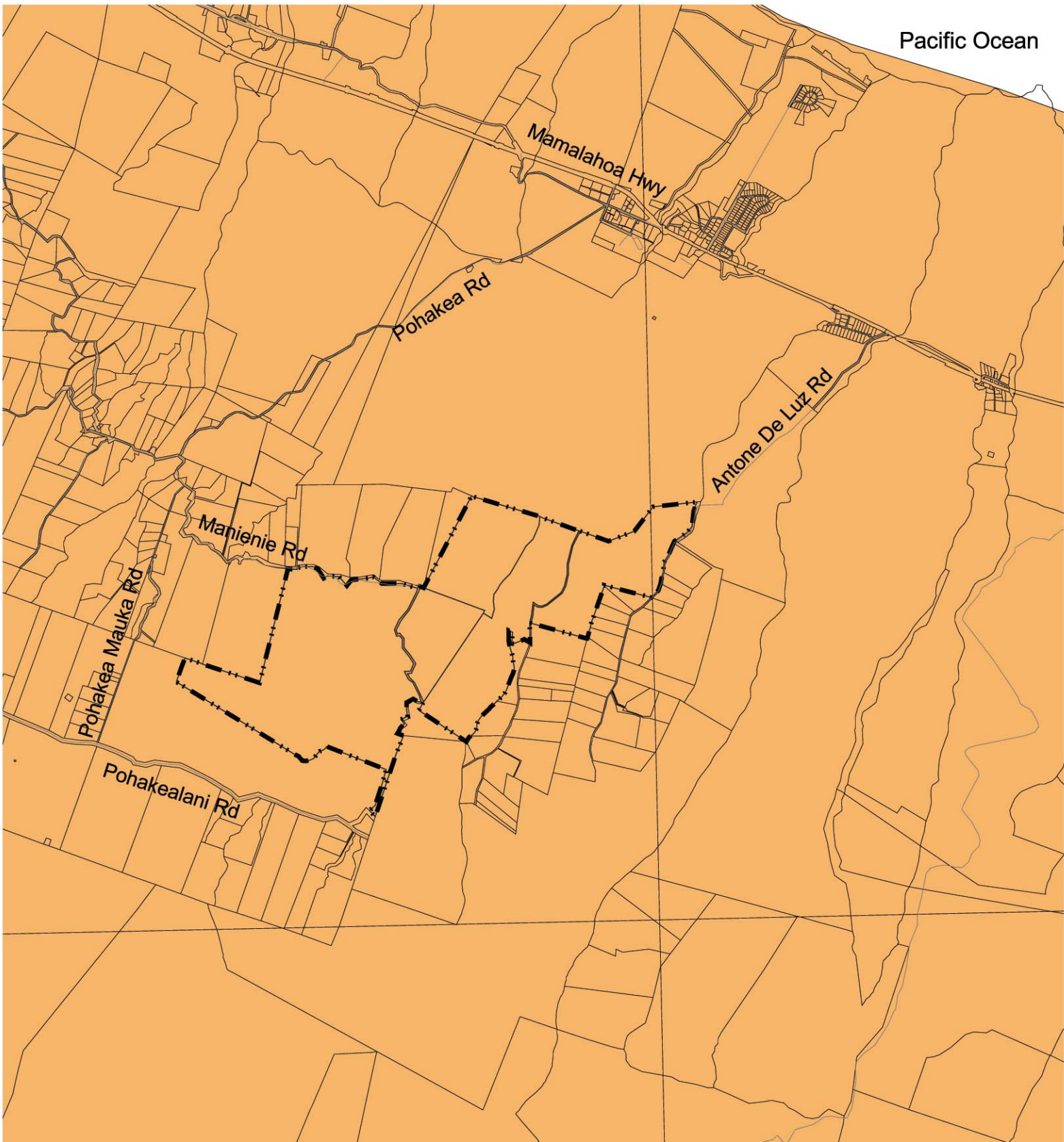
### **3.4.1 Soil Conservation Service Soil Survey**

The *Soil Survey of the Island of Hawai‘i, State of Hawai‘i* (USDA 1972) identifies the following six soil types at the Pa‘auiilo Lands (Figure 9).

- Honokaa Silty Clay Loam, HTD (10–20% slopes)
- Honokaa Silty Clay Loam, Low Elevation, HsC (0–10% slopes)
- Honokaa Silty Clay Loam, Low Elevation, HsD (10–20% slopes)
- Honokaa Silty Clay Loam, Low Elevation, HsE (20–35% slopes)
- Maile Silt Loam, MLD (6–20% slopes)
- Rough Broken Land, RB

**Honokaa Silty Clay Loam, 10–20% slopes (HTD)** constitutes approximately 17 percent of the Pa‘auiilo Lands. This soil is low on the windward side of Mauna Kea. In a representative profile, the surface layer is dark brown silty clay loam, approximately 6 inches thick. The subsoil is also silty clay loam. It is dark brown, very dark brown, and very dark grayish brown and is approximately 59 inches thick. This soil is medium acid to slightly acid throughout the profile. It dehydrates irreversibly into fine gravel-size aggregates. Permeability is rapid, runoff is slow, and the erosion hazard is slight. Roots can penetrate to a depth of 5 feet or more. This soil is used mostly for pasture and woodland. At the time of the survey, a small acreage at the lowest elevation was used for sugarcane. These soils are in capability Class IV.

**Honokaa Silty Clay Loam, Low Elevation, 0–10% slopes (HsC)** constitutes approximately 2 percent of the Pa‘auiilo Lands. This soil is similar to Honokaa silty clay loam 10 to 20 percent slopes, except that it is gently sloping and occurs at a lower elevation where the soil temperature is warmer. This soil is used mostly for sugarcane. Small areas are used for pasture and macadamia nuts. These soils are in Capability Class III.



#### Legend

##### Flood Zones

- Floodway
- 100-Year Floodplain
- 500-Year Floodplain
- Outside Floodplain/Minimal Flooding Area
- Undetermined Flood Hazards

-- Project Site Boundary

Source:  
Flood Insurance Rate Map  
Map ID: 1551660225C &  
1551660250C (1994)

Disclaimer:  
This map has been prepared for  
general planning purposes only.

**Figure 8**  
Flood Insurance Rate Map (FIRM)

## Pa'auilo Lands

County of Hawai'i

ISLAND OF HAWAII

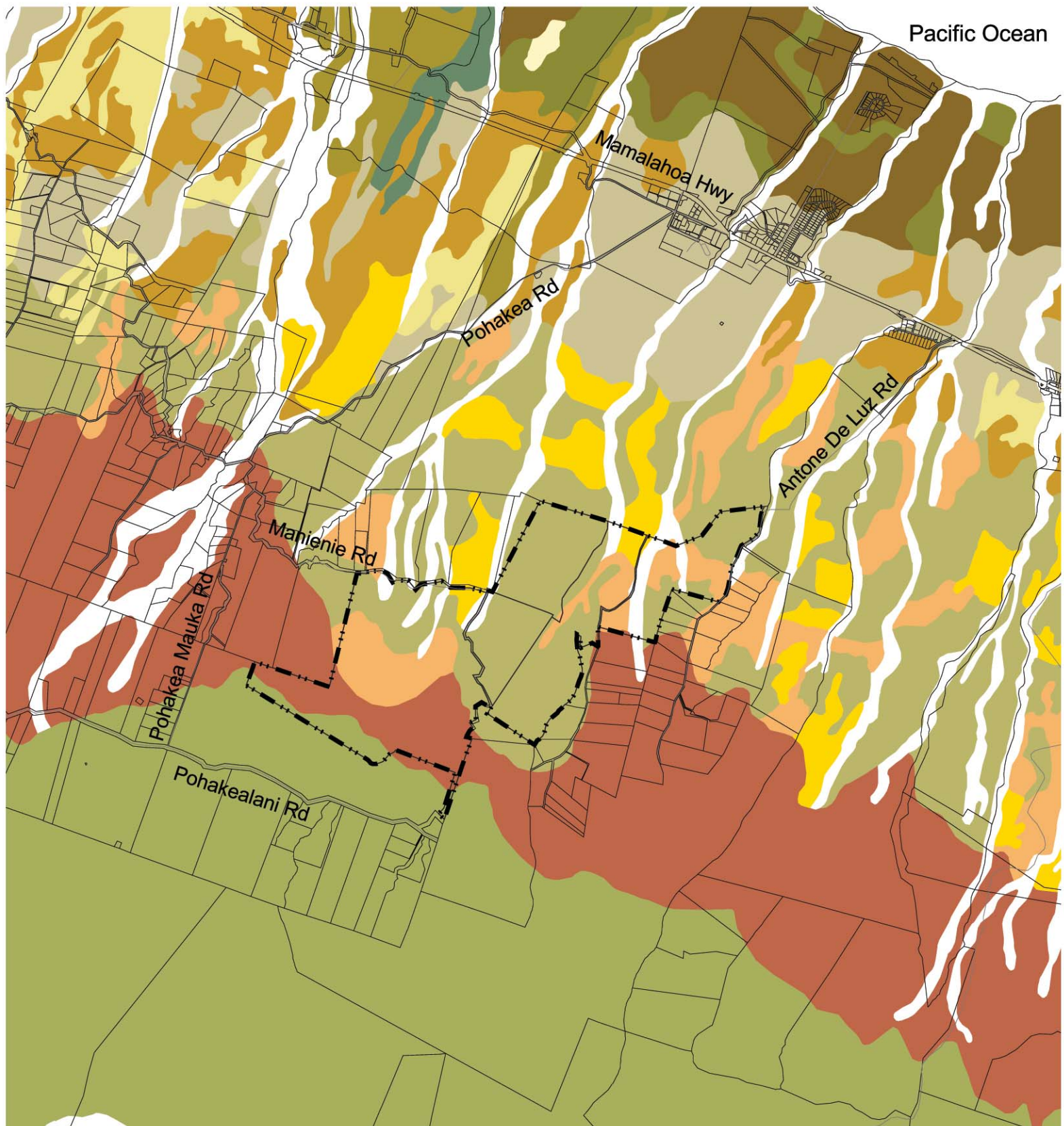
NORTH

LINEAR SCALE (FEET)



June 2006





## Legend

### Project Area Soil Types

- (HTD) Honokaa Silty Clay Loam, 10-20 % Slopes
- (HsC) Honokaa Silty Clay Loam, Low Elevation, 0-10 % Slopes
- (HsD) Honokaa Silty Clay Loam, Low Elevation, 10-20% Slopes
- (HsE) Honokaa Silty Clay Loam, Low Elevation, 20-35% Slopes
- (MLD) Maile Silt Loam, 6-20% Slopes
- (RB) Rough Broken Land
- Project Site Boundary

Source:  
United States Natural Resource  
Conservation Service (1997)

Disclaimer:  
This map has been prepared for  
general planning purposes only.

## Figure 9

### Natural Resource Conservation Service Soil Survey Map

## Pa'auilo Lands

County of Hawai'i

ISLAND OF HAWAII

NORTH

LINEAR SCALE (FEET)



June 2006

# PA‘AUILO LANDS

## FINAL ENVIRONMENTAL ASSESSMENT

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**Honokaa Silty Clay Loam, Low Elevation, 10–20% slopes (HsD)** constitutes approximately 48 percent of the Pa‘auilo Lands. This soil is similar to Honokaa silty clay loam 10 to 20 percent slopes, except that it occurs at a lower elevation where the soil temperature is warmer. This soil is used principally for sugarcane. Small areas are used for pasture and macadamia nuts. These soils are in Capability Class IV.

**Honokaa Silty Clay Loam, slopes Low Elevation, 20–35% (HsE)** constitutes approximately 20 percent of the Pa‘auilo Lands. This soil is similar to Honokaa silty clay loam 10 to 20 percent slopes, except that it is steep and occurs at a lower elevation where the soil temperature is warmer. Runoff is medium, and the erosion hazard is moderate. This soil is used mostly for sugarcane. Small areas are used for pasture and macadamia nuts. These soils are in Capability Class VI.

**Maile Silt Loam, 6–20% slopes (MLD)** constitutes approximately 4 percent of the Pa‘auilo Lands. This soil is at intermediate elevations on the windward side of Mauna Kea. It has a dominant slope of approximately 15 percent. A representative profile has a surface layer of dark reddish-brown to very dark brown silt loam approximately 14 inches thick. The subsoil is approximately 46 inches thick. It consists of dark yellowish-brown and very dark brown silty clay loam. The subsoil dehydrates irreversibly into fine sand-size aggregates. The profile grades from medium acid in the surface layer to slightly acid and neutral in the subsoil. Included in this mapping are small, steep drainageways and gullies. Permeability is moderately rapid, runoff is slow, and the erosion hazard is slight. Roots can penetrate to a depth of 5 feet or more. This soil is used for pasture and woodland. These soils are in Capability Class IV.

**Rough broken land, (RB)** constitutes approximately 7 percent of the Pa‘auilo Lands. Rough broken land is a miscellaneous land type that consists of very steep, precipitous land broken by many intermittent drainage channels. It occurs primarily in gulches, and the slope is dominantly 35 to 70 percent. The soil material ranges from very shallow to deep. Stones and rock outcrops are common in some areas. Elevation ranges from near sea level to 3,000 feet, and the annual rainfall ranges from 50 inches to more than 150 inches. Vegetation varies with rainfall. Kukui trees are common in the gulches. There are a few, scattered waterfalls. Rough broken land is used for pasture, woodland, wildlife habitat, and recreation areas. Adapted pasture plants and yields are similar to those for soils associated with this land type. These soils are in Capability Class VII.

Soil capability grouping shows, in a general way, the suitability of soils for most kinds of field crops. Soils are classed from I to VIII, with Capability Class I being the best suited for agriculture and Class VIII being the least suited. The Pa‘auilo Lands comprise soils in Classes III, IV, VI, and VII.

- Class III soils have severe limitations that reduce the choice of plants, require special conservation practices, or both.
- Class IV soils have very severe limitations that reduce the choice of plants, require very careful management, or both.
- Class VI soils have severe limitations that make them generally unsuited to cultivation and limit their use largely to pasture or range, woodland, or wildlife.

- Class VII soils have very severe limitations that make them generally unsuited to cultivation and restrict their use largely to pasture or range, woodland, or wildlife.

### **3.4.2 Land Study Bureau Soil Rating**

The *Detailed Land Classification, Island of Hawai‘i* (Baker et al. 1965) classifies non-urban areas based on a five-class rating system for agricultural productivity using the letters A, B, C, D, and E. Under this system, A represents the highest class of productivity and E the lowest. The Pa‘auiilo Lands comprise lands rated B, C, D and E (Figure 10).

The Pa‘auiilo Lands contain approximately 205 acres (28%) classified as B (Good for agriculture); 0.75 acres (0.1%) classified C (Fair); 466.2 acres (63%) classified D (Poor); and 66.7 acres (9%) classified E (very poor).

### **3.4.3 Agricultural Lands of Importance**

The ALISH system classifies four types of land: Prime Lands, Unique Lands, Unclassified, and Other Lands (State of Hawai‘i 1977). The Pa‘auiilo Lands comprise approximately 740 acres. Of these, approximately 407 acres (55%) are classified as Prime Agricultural Lands; 0.207 acres (less than 1%) are classified as Other Lands; and the remaining lands are unclassified (Figure 11).

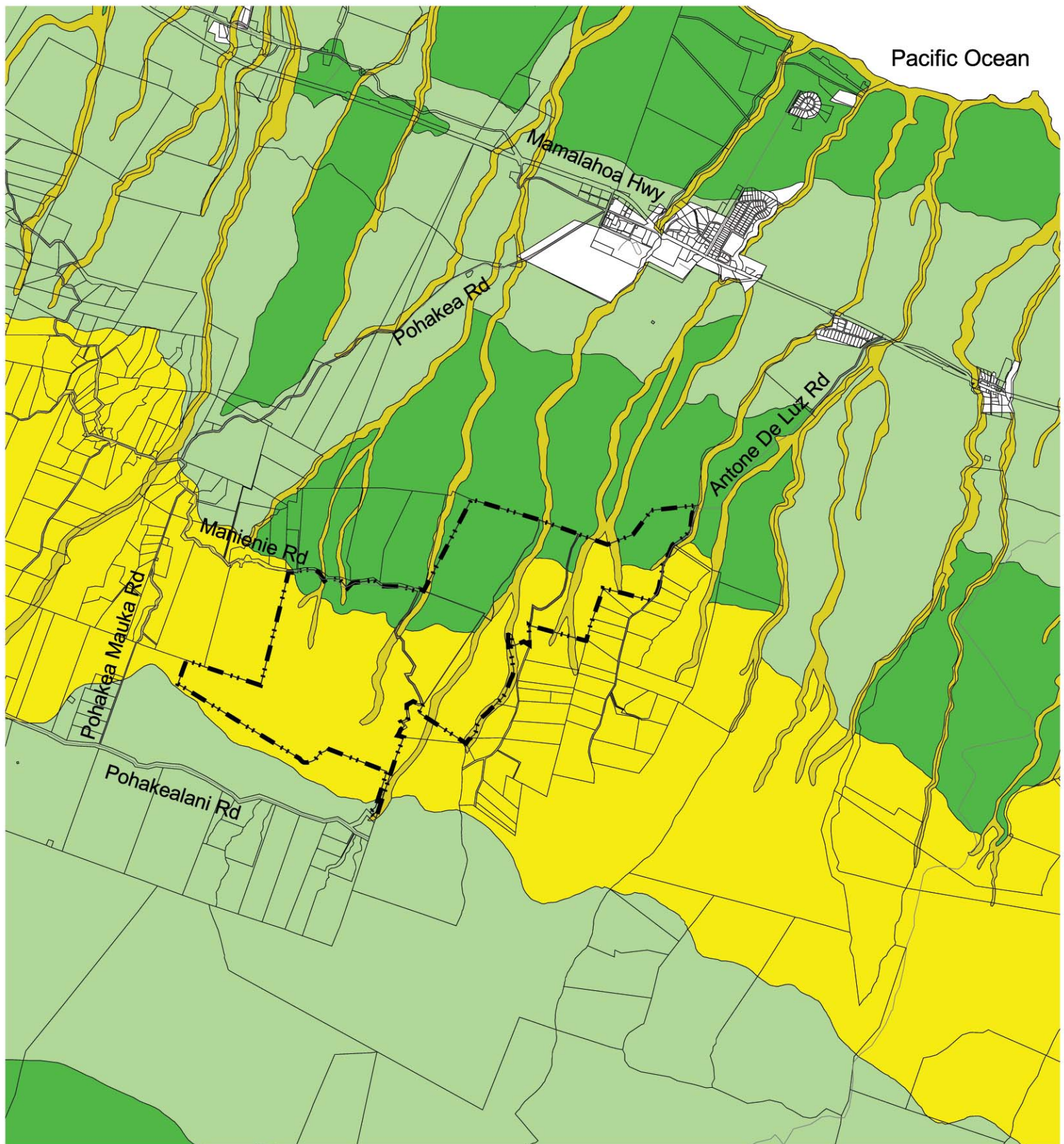
Prime Agricultural Land is land best suited for the production of food, feed, forage, and fiber crops. When treated and managed, including water management, and according to modern farming methods, the land has the soil quality, growing season, and moisture supply needed to economically produce sustained high yields of crops (State of Hawai‘i 1977).

Other Agriculture Land is land other than Prime or Unique Agricultural Land that is also of statewide or local importance for the production of food, feed, fiber, and forage crops. The lands in this classification are important to agriculture in Hawai‘i yet exhibit properties, such as seasonal wetness, erosion, limited rooting zone, slope, flooding, or drought, which exclude the lands from the Prime or Unique Agricultural Land classifications. By applying greater inputs of fertilizer and other soil amendments, providing drainage improvements, implementing erosion control practices, and providing flood protection, these lands can be farmed satisfactorily and produce fair to good crop yields (State of Hawai‘i 1977).

### ***Potential Impacts and Mitigation Measures***

The proposed sale of the Pa‘auiilo Lands is not expected to significantly affect soils or erosion characteristics in the vicinity. Potential purchasers will be subject to the existing grubbing and grading ordinances through which the impacts of their specific uses will have to be addressed and mitigated.





## Legend

### Agricultural Soil Ratings

- A (Excellent)
- B (Good)
- C (Fair)
- D (Poor)
- E (Very Poor)
- Not Classified

-- Project Site Boundary

Source:  
Land Study Bureau (1967)

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general planning purposes only.

**Figure 10**  
Detailed Land Classification Map

## Pa'auilo Lands

County of Hawai'i

ISLAND OF HAWAII

NORTH

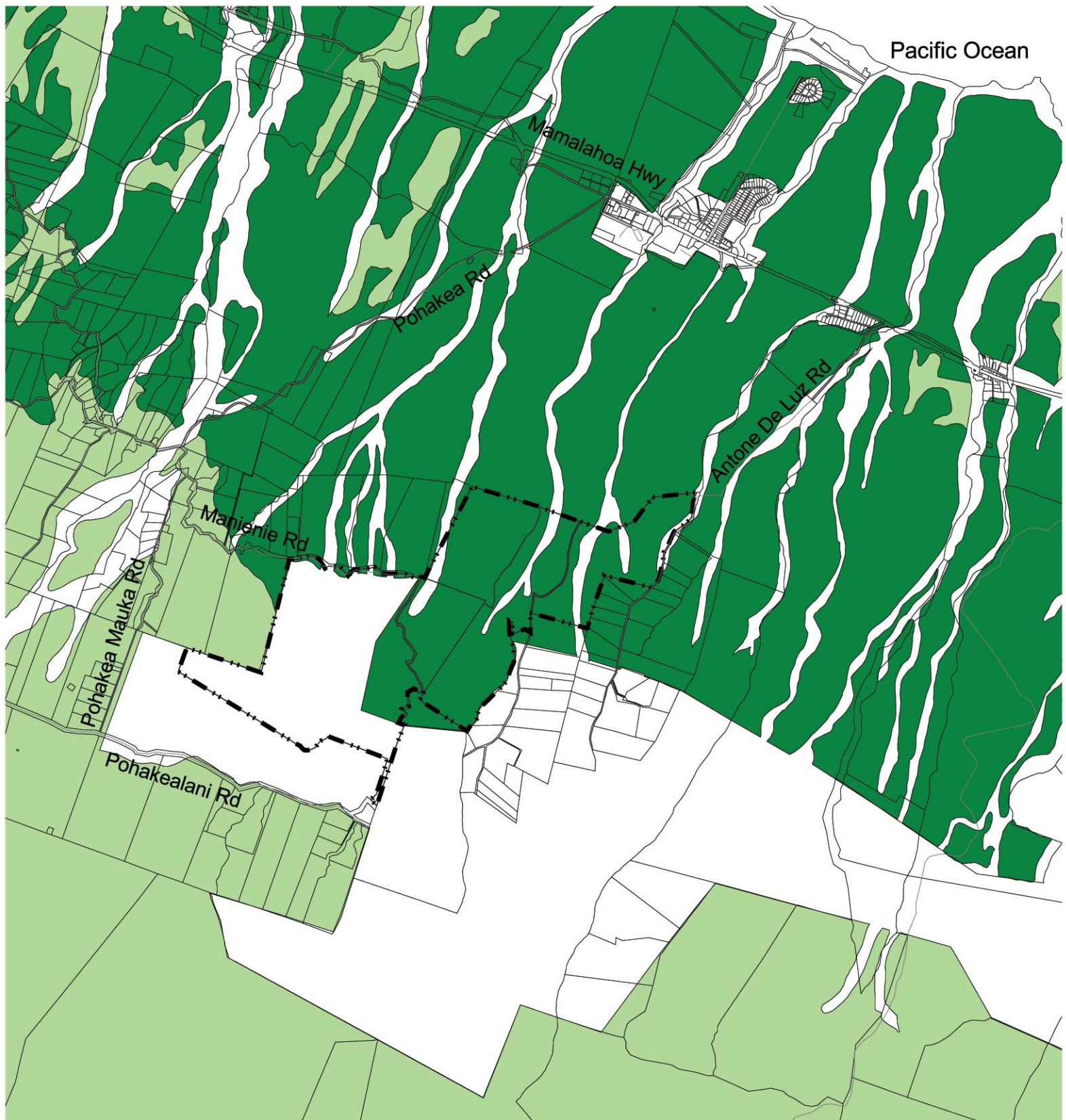


LINEAR SCALE (FEET)



June 2006





#### Legend

##### ALISH Types

- Prime ALISH Lands
- Unique ALISH Lands
- Other ALISH Lands
- Not Classified

-- Project Site Boundary

Source:  
United States Department  
of Agriculture (1977)

Disclaimer:  
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general planning purposes only.

**Figure 11**  
Agricultural Lands of Importance  
to the State of Hawai'i (ALISH) Map

## Pa'auilo Lands

County of Hawai'i

ISLAND OF HAWAII

NORTH



LINEAR SCALE (FEET)



June 2006

### **3.5 GROUNDWATER RESOURCES AND HYDROLOGY**

Pa‘auiilo sits atop the Pa‘auiilo Aquifer, which is a component of the East Mauna Kea Aquifer System. The Pa‘auiilo Aquifer has a sustainable yield of approximately 60 million gallons per day (CWRM 1995).

According to the County of Hawai‘i Department of Water Supply, the closest available Department of Water Supply facility is a 6-inch waterline within Pohakea Mauka Road, approximately 4,000 feet from the northwest corner of TMK 4-3-11:02. The Department is not allowing any additional services from the existing 4-inch waterline within Pohakealani Road near the southeast corner of TMK 4-3-11:02 until extensive water system improvements are made.

#### ***Potential Impacts and Mitigation Measures***

The proposed sale of the Pa‘auiilo Lands will not directly introduce new residents to the project area. Additionally, no direct utility upgrades are being provided to the parcels. Therefore, should the “worst case” calculation of 32 farm dwellings be constructed, it would be expected that water use would be limited until extensive water system improvements are made. Water supply for future dwellings will possibly be limited to rain-water catch stored in tanks or reservoirs.

### **3.6 NATURAL HAZARDS**

Natural hazards that could impact the property include earthquakes, volcanic eruptions, hurricanes, and flooding. The island of Hawai‘i is associated with volcanic eruption and earthquakes. The U.S. Geological Survey (USGS) has developed lava-flow hazard zones with a numerical rating of 1 to 9, with 1 having the greatest risk. The Pa‘auiilo Lands are in Lava-Flow Hazard Zone 8, which indicates that only a few percent of this area has been covered by lava in the past 10,000 years (USGS, 1992). Mauna Kea last erupted approximately 4,000 years ago.

The State of Hawai‘i has been affected twice in the past two decades by devastating hurricanes – Hurricane ‘Iwa, in 1982, and Hurricane ‘Iniki in 1992. The most recent series of earthquakes, with magnitudes of 6.7 and 6.0, occurred at Kīholo Bay on October 15, 2006. While it is difficult to predict these natural occurrences, it is reasonable to assume that future events could occur. The project area, as the rest of the island and state, is vulnerable to the destructive winds and torrential rains associated with hurricanes. Honoka‘a High School, located approximately 6.8 miles west of the project site, is a designated Emergency Evacuation Center for the Pa‘auiilo area (Personal Communication, Hawai‘i County Civil Defense).

According to the Flood Insurance Rate Map (FIRM), the project site is designated as Zone X meaning that it is located outside of the 500-year floodplain (Figure 8). The site is located approximately 2.3 miles from the shoreline and is outside of the tsunami evacuation area.

#### ***Potential Impacts and Mitigation Measures***

The sale of the Pa‘auiilo Lands is not expected to exacerbate any hazardous conditions.

### **3.7 FLORA**

Geometrician Associates conducted a botanical survey of the Pa‘auiilo Lands in June 2006 (Appendix A). The survey determined that the lands had been heavily modified by decades of sugar cane cultivation that left most of them uniformly alien in vegetation. The property contains several vegetation types but is dominated basically by alien assemblages that vary according to slope and local disturbance history.

Most of the lands are vegetated in the secondary grassland most often associated with abandoned sugar cane fields. It is dominated by guinea grass (*Panicum maximum*), interspersed with the alien trees ironwood (*Casuarina* sp.) and eucalyptus (*Eucalyptus* sp.). Koa (*Acacia koa*) is also fairly common in places, especially at higher elevations. Where there are water run-off channels or slopes with exposed soil, ferns are predominate, including alien and indigenous sword ferns (*Nephrolepis* spp.) and the alien golden fern (*Pityrogramma austroamericana*). Along the many unpaved roads are weedy species such as Florida beggarweed (*Desmodium tortuosum*) and hyptis (*Hyptis pectinata*). The gulches have steep sides and are often dominated by coffee (*Coffea arabica*), strawberry guava (*Psidium cattleianum*), and kukui (*Aleurites moluccana*). A few grasses (one a bamboo) and a member of the leguminous family could not be identified, but are almost certainly alien.

The native plants that are found on the site are relatively common. Native species identified, in addition to koa, were the trees ‘ōhi‘a, kōlea, and kōpiko (*Psychotria hawaiiensis*), and the tree ferns hāpu‘u (*Cibotium glaucum*) and ‘ama‘u (*Sadleria cyatheoides*). These native species are restricted to the steeper gulches and hills. The most intact native vegetation was found in an unquarried hilly feature near the top of the property, in the southeast corner of parcel 4-3-11:001.

#### ***Potential Impacts and Mitigation Measures***

No plant species listed or proposed as threatened or endangered by the U.S. Fish and Wildlife Service or the Hawai‘i State Department of Land and Natural Resources were found. One species, Koai‘a, is considered rare, but its presence here is probably a result of planting, and would not indicate a natural occurrence necessitating special conservation measures. It is assumed that the intensive sugar cane cultivation that took place on the project site had a great impact on the vegetation that exists today.

The proposed sale and subsequent use poses little potential for secondary or cumulative impacts to botanical resources, as a majority of the vegetation is alien and thus has low conservation value. The cumulative loss of some of the common native plants found on the property that might occur when considering this project in addition to other past, present, and foreseeable future actions in Hāmākua is small. This loss would detract only negligibly from the population of these species and would not affect the general health or makeup of lowland areas in forest areas on the Hāmākua coast with intact ecosystems (mostly found further south and mauka in North and South Hilo). There would be little or no potential for adverse effects to accumulate with others.

### **3.8 FAUNA**

Rana Productions conducted an avifaunal and faunal survey of the project site in July 2006 (Appendix B). The survey was conducted to determine if the Pa‘auilo Lands contain avian or mammalian species currently listed as endangered or threatened, or that are proposed for listing, under either federal or State of Hawai‘i endangered species programs.

**Avifauna.** Birds were observed from 20 systematically placed count stations, between 7:00 a.m. and 11:00 a.m., the peak of daily bird activity. Additional observation was conducted over two evenings to detect nocturnally flying seabirds. During time not spent counting, observers searched the remainder of the study site for species and habitats not detected during count sessions.

Avian diversity and densities were typical of the habitat present within the study area. The survey recorded 501 individuals comprising 24 avian species over two days. Four species, Japanese White-eye (*Zosterops japonicus*), Zebra Dove (*Geopelia striata*), House Finch (*Carpodacus mexicanus frontalis*), and Common Myna (*Acridotheres tristis*) accounted for 59 percent of the total number of birds recorded. The Japanese White-eye was the most common avian species recorded, accounting for slightly less than 20 percent of the total individual birds recorded.

One species recorded, the Hawaiian Hawk (*Buteo solitarius*) is an endemic, endangered species. Two species detected, Hawai‘i ‘Amakihi (*Hemihgnathus virens*) and ‘Apapane (*Himatione sanquinae*) are relatively common endemic forest birds usually found in native vegetation. These birds were all recorded at the upper reaches of the property in very small numbers. Two indigenous, resident species were also recorded, the Black-crowned Night-Heron (*Nycticorax nycticorax hoactli*) and Short-eared Owl (*Asio flammeus sanwicensis*). The remaining 19 species detected were alien to the Hawaiian Islands.

Hawaiian Hawks are found in nearly all island habitats with large tree components. They are regularly seen foraging in the Hāmākua area. Hawk densities are highest in mature, native species dominated forests, with grassy understories and extensive forest edges. This habitat supports numerous prey species for the hawk and also provides numerous perches and nesting sites. Although not detected during this survey, it is possible that small numbers of the endangered endemic Hawaiian Petrel (*Pterodroma sandwichensis*) and the threatened Newell’s Shearwater (*Puffinus auricularis newelli*) over-fly the project area between the months of May and November.

**Feral Mammals.** A mammalian survey was conducted by means of visual and auditory detection and the observation of scat, tracks, and other animal signs. A running tally was kept of all vertebrate species observed and heard within the project area. A survey for bats was conducted during the evenings of July 6 and 7, 2006. Bats were detected visually and by electronic scans with specialized equipment.

Nine mammalian species were detected during the course of this survey, including Hawaiian hoary bats (*Lasiurus cinereus semotus*), known locally as ‘Ōpe‘ape‘a, which were seen on both nights of the survey. Other mammalian species detected were European house mouse (*Mus domesticus*), dog (*Canis f. familiaris*), small Indian mongoose (*Herpestes a. auropunctatus*), cat



# PA‘AUILO LANDS

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(*Felis catus*), horse (*Equus c. caballus*), pig (*Sus s. scrofa*), and cattle (*Bos Taurus*). Several species of rat may also utilize resources at the project properties.

The findings of the mammalian survey are consistent with the habitat present on the site. With the exception of the endangered Hawaiian hoary bat, all mammals detected were alien, and most are ubiquitous. The bat is relatively common in the Hāmākua District, on a seasonal basis.

### ***Potential Impacts and Mitigation Measures***

As it relates to native avifauna and mammals, there is nothing unique about these lands. They are highly degraded and are of minimal value to native avian and mammalian species in their current condition. The riparian habitat within the various gulches on the properties likely supports Hawaiian hoary bats. The upper, open slopes provide foraging and possibly some nesting opportunities for Hawaiian Hawks. Both of these listed species are relatively common in the Hāmākua District, and can be expected to use resources on similar lands within the district. The proposed sale and subsequent use of the Pa‘auilo Lands is not expected to have any substantial adverse impact on native avian and mammalian species present in the area.

## **4.0 ASSESSMENT OF THE EXISTING HUMAN ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATION MEASURES**

This chapter provides background information on the existing human environment of the proposed project area. Subject areas addressed include archaeology, historic resources, culture, noise, air quality, visual environment, population and housing, community character, and economic environment. This chapter also addresses the potential impacts of the proposed sale and identifies appropriate mitigation measures to minimize the identified short-term and long-term impacts.

### **4.1 ARCHAEOLOGICAL AND HISTORIC RESOURCES**

An archaeological inventory survey was conducted during June 2006 by Haun & Associates (Appendix C). The survey identified two Historic-Period sites comprising four features.

Site 25536 consists of a terrace and retaining walls that may be associated with an early 20th century homestead. The features may have been constructed to control erosion, since it is situated on a steep slope that is unlikely to have been used for agriculture. The features may have been constructed to stabilize the slope in conjunction with planting eucalyptus trees in response to deforestation by sugar cane plantations as the land expanded its acreage in sugar. The eucalyptus may also have been intended to provide timber and firewood.

Site 25537 is a concrete wall that retains a dirt road. The use of formed concrete at Site 25537 indicates a probable 20th century date for the site. The road is part of a network of roads associated with sugar planting and harvesting, and it is likely that the site was constructed by the Hāmākua Sugar Company or its predecessor, the Hāmākua Mill Company.

No traditional Hawaiian sites were identified. This was expected because according to the archaeologist, the density of traditional sites in this area would have been low and because little archaeological evidence for use and temporary habitation would remain. Habitation structures would probably have been made entirely of perishable materials, wood and thatch, because surface stones are rare in the area. Any archaeological evidence in the tillable portions of the Pa‘auilo Lands would have been destroyed by the extensive mechanized cultivation of sugar cane. Although terraces for taro cultivation of wet taro are known for the Hāmākua Coast, the project area drainages (gulches) are narrow, steep-walled, and relatively straight, and have been periodically scoured during heavy rains. The gulches are unlikely to contain cultural deposits.

The sites were assessed as significant for information value, Criterion “d,” as described in the DLNR Rules Governing Procedures for Historic Preservation Review. The mapping, written descriptions, photography, and excavation done during the inventory survey have adequately documented them, and no further work or preservation is recommended.

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### *Potential Impacts and Mitigation Measures*

The two sites identified during the inventory survey have been adequately documented, and no further work, or preservation, is recommended for them. The sale of the Pa‘auilo Lands is not expected to affect archaeological resources.

Final approval of the archaeological inventory survey conducted for this property is pending State Historic Preservation Division (SHPD) approval. Because of the long history of ground disturbance related to sugar cane cultivation, it is highly unlikely that any significant historic sites would be found on the property. Should any historic remains such as artifacts, burials, concentrations of shell or charcoal be encountered during construction activities, work shall cease immediately in the vicinity of the find. The SHPD shall be contacted immediately and the find shall be protected from damage. SHPD will assess the significance of the find and recommend appropriate mitigation measures, if necessary.

## 4.2 CULTURAL RESOURCES

Pa‘auilo is a large, rural community along the Hāmākua Coast. The community lies on both sides of Māmalahoa Highway. The subject property lies within the former Pa‘auilo Homesteads. There are several place names associated with the project site and the vicinity. They are listed below and include a translation (if available) as found on the search engine Ulukau:

- **Pa‘auilo** – no translation
- **Mānienie** - Bermuda grass
- **Mānienie Gulch**: no translation; joins Opihilala Gulch at 820 ft. elev. to form Waipunahina Gulch.
- **Opihilala** – no translation
- **Hauola** – dew of life; there was a heiau said to be located "at place of same name, not identified; said to have been an ancient puuhonua."
- **‘Ā‘āmanu** - birds panic stricken; ‘Ā‘āmanu gulch is the boundary between ‘Ā‘āmanu and Pa‘auilo.
- **Waipunahina Gulch** – many water springs; boundary between Pa‘auilo and Pouki‘i.
- **Pōhākea Homesteads**: white stone

After thoroughly searching the old Hawaiian newspapers for all of the place names above, no significant stories or legends associated with the area were found. In fact, most references to these place names in the old newspapers were related to deaths.

The Office of Hawaiian Affairs Hilo Office was contacted in order to connect with any native Hawaiians from the area who may be able to provide information on cultural resources, practices, or history. Mr. Walter Victor, Jr., president of the Laupāhoehoe Hawaiian Civic Club, was contacted on more than one occasion both by the Office of Hawaiian Affairs and by the preparer of this Environmental Assessment, however, no response was ever received.

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Ms. Irene Angot, President of the Pa‘auilo Senior Citizens Group was contacted and she arranged interviews with Ms. Sandra Gomes and Ms. Nancy Kidani, both of Pa‘auilo. Both Ms. Gomes and Ms. Kidani were interviewed in November 2006. The following summaries are provided:

Ms. Kidani was born on April 22, 1926 in Kapahu, Hawai‘i. Her parents were Hatsuyo and Kichigo Yamamoto. Ms. Kidani was raised in Kapahu and has resided in Pa‘auilo for the last 56 years. She is one of 10 children, and is the third oldest. In referring to her large family, Ms. Kidani stated that everyone had gardens, chickens, eggs, and ducks that they survived on. During her working years, Ms. Kidani was a seamstress and also did farming.

As a child, Ms. Kidani walked to Kapahu School, which took 20 minutes. Ms. Kidani fondly recalled that they were often chased by cows on their walk to/from school. When asked if they ever came across Hawaiian sites such as heiau when they would walk to/from school, Ms. Kidani responded “never” because it was all ranch land. When asked if the project site was ever frequented for the gathering of cultural resources, Ms. Kidani explained that those areas were part of homesteads, so you did not go on other people’s property.

Ms. Kidani was raised on a 61-acre farm which was planted in coffee and had 16 cattle. They would come home after school and work on the farm, sometimes picking coffee until dark. Someone would come and pick up their coffee harvests and take it to Kona.

Kapahu School educated children up until the sixth grade and after that students went to Honoka‘a School by bus. Eventually, Pa‘auilo School opened and students who attended school beyond Grade 6 went there. Ms. Kidani said that most people only went to school up until the sixth or ninth grade and then would drop out. She went to school until the tenth grade and would have kept attending had the World War not broken out. In 1947, the Federal Bureau of Investigations (FBI) came to her home three times. Her father was originally from Japan and was a soldier there before he migrated to Hawai‘i. She recalls fearing for her life because of the way that she was looked at as a Japanese American when she walked to school. She and her family were very afraid that her father would be taken away (as one other man in town was). Due to the pressure of being a Japanese American at that time, her father dug a cesspool type hole and buried all of his things from Japan, including his sword and military uniform.

Ms. Sandra Gomes was born on February 18, 1936 in Honaunau, Kona, Hawai‘i. Her parents were Saturino Bailado (Philippines) and Miriam Keomalu Bailado (Pa‘auilo). Ms. Gomes’ mother gave birth to 24 children, of which 13 survived. Ms. Gomes grew up in Pa‘auilo and now resides on Hauola Lane in Pa‘auilo.

Ms. Gomes stated that her mother knew of many Hawaiian stories from the area, but she could not recall any of them during the interview. She does recall going to a Chinese graveyard in ‘Ā‘āmanu as a child. The graveyard was located makai of the present highway and was known for its abundance of mango.

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Ms. Gomes recalled that her grandmother used to live where the Kamehameha Schools is now located in Pa'auilo; she said there is a gulch there where they used to go down and wash their clothes. There were also school cottages where the Pa'auilo School is now located.

When Ms. Gomes was a child, Pa'auilo town had two theaters (one old and one new), the Arita Hotel, two Japanese churches, five stores (one with a restaurant), one barber, one jewelry store, and the Catholic Church was newly built. There was a school up mauka in Kapahu that Ms. Gomes mother used to walk to from their property, which was located makai of the present highway.

For work, Ms. Gomes used to pick coffee in Kona and macadamia nuts in Kea'au. She also was a teacher's aide and worked in sales. Ms. Gomes opened Sandra's General Store in Kukaiau and ran it from 1985-1994. Before her health began to decline, Ms. Gomes aimed to start a museum for Pa'auilo that would contain memorabilia from the ranchers, store owners, and plantation days.

Ranching was a big part of life in Pa'auilo; there was the DeLuz Ranch, the Ramos Ranch and a slaughterhouse owned by DeLuz. There were also a lot of ranch workers.

### Plantation History:

According to the University of Hawai'i's Plantation Archives, the Hamakua Mill Company (HMC) was located in Pa'auilo from 1882-1959. The HMC was founded by Mr. Theophilus H. Davies and Mr. Charles Notley, Sr. The plantation encompassed an area of approximately 6 miles, with one side of the plantation bordered by the ocean and the other side rising to an elevation of approximately 2,000 feet.

By 1910, over 4,800 acres were cultivated in sugar and a railroad system was in use for transporting sugar cane. As was typical of plantations along the Hāmākua Coast, no irrigation was necessary. During 1910, the HMC boasted over 600 employees (considerable when compared to the 2000 Census population of 571) and had a company store. There was also a school and several churches in Pa'auilo. In 1914, Kukaiau Plantation merged with the HMC. In 1974, the HMC became a part of the Laupāhoehoe Sugar Company.

The Hawaii Consolidated Railway line ended at Pa'auilo, it did not continue on to Honoka'a due to a shortage of funding. It was a Hilo-based railroad that served the plantation communities during the early 20<sup>th</sup> century. Before sugar, Pa'auilo's economy was driven by coffee and cattle. It is clear from the interviews with Ms. Gomes and Ms. Kidani that although they themselves did not work for the sugar plantations, the plantation did have a large influence on the way of life in Pa'auilo.

### ***Potential Impacts and Mitigation Measures***

As no culturally significant resources or activities were found to occur in the project area, no impacts to cultural resources are anticipated.

### **4.3 NOISE**

Currently, the project site is vacant, open land. No significant noise is generated on site, and ambient noise in the area emanates from wind, wildlife, and the infrequent traffic along the various access roads in the project vicinity. It is anticipated that land uses after the sale of the Pa‘auilo Lands will be consistent with current zoning and, therefore, consistent with current uses on adjacent properties.

#### ***Potential Impacts and Mitigation Measures***

Before the sale of the lands, traffic on various access roads in the project vicinity will likely increase slightly as potential lot buyers inspect the properties. This will cause minimal, short-term, intermittent increases in noise levels. The sale itself will have no long-term noise impacts on the project vicinity.

Future land uses and activities would have to comply with Chapter 11-46, HAR, regarding Community Noise Control.

### **4.4 AIR QUALITY**

Air quality in Hawai‘i is among the best in the nation, and criteria pollutant levels remain well below state and federal ambient air quality standards. The State Department of Health, Clean Air Branch (CAB) monitors the ambient air in Hawai‘i and has established a statewide system of monitoring stations whose primary purpose is ensuring that air quality standards are met (CAB 2004).

Generally, air quality is affected by regional and local climate together with the amount and type of human activity in any given location. Federal and state ambient air quality standards have been established to regulate six parameters: particulate matter, sulfur dioxide, nitrogen dioxide, carbon monoxide, ozone, and lead. No state or county air-quality monitoring stations exist in the vicinity of the Pa‘auilo Lands.

Air quality in the vicinity of the Pa‘auilo Lands may be affected by pollutants from widely dispersed agricultural sources, such as concentrations of cattle and fugitive mists from infrequent spraying for agricultural pests. Other sources are emissions from occasional vehicular traffic on area roads and from farm machinery.

#### ***Potential Impacts and Mitigation Measures***

There are no large, stationary sources of air pollutants and no major industries that would contribute to air pollution within, or in the vicinity of, the project area. The sale of the Pa‘auilo Lands involves no development or land alteration, and thus, will not affect air quality in the vicinity.

Potential future land uses based on existing zoning of A-40a and A-5a, include agricultural uses and the “worst case” calculation of 32 farm dwellings. Future uses would need to be undertaken in accordance with applicable state and federal regulations. Other pollutants would be quickly dispersed by the prevailing winds.

#### **4.5 VISUAL RESOURCES AND OPEN SPACE**

The natural beauty of Hawai‘i is a universally recognized and considered to be a significant and valuable asset. Various portions of the Pa‘auiilo Lands offer spectacular views of the ocean, the upper slopes and summit of Mauna Kea, and the richly vegetated, broad lower slopes descending to the coast. In some *mauka* areas, near boundaries with private land and the Hāmākua Forest Reserve, there are views of native forest containing koa and ‘ōhi‘a trees.

The Pa‘auiilo Lands themselves are not listed in the *General Plan* as examples of natural beauty. Current zoning would preserve the current open space character of the lands.

##### ***Potential Impacts and Mitigation Measures***

The sale of the Pa‘auiilo Lands involves no development or land alteration, and thus, will not affect visual resources in the vicinity. Should future land owners choose to construct farm dwellings or agricultural structures, the heights for a residential structure within the agricultural district are limited to 35-feet and 45-feet for all other structures. The height limit ensures that visual resources will not be greatly affected should future land owners decide to construct farm dwellings and related agricultural structures.

#### **4.6 POPULATION**

At the time of the 2000 U.S. census, Hawai‘i County’s population was 148,677, having grown from 120,317 in 1990. At same time, 571 people lived in the Pa‘auiilo Census Designated Place (CDP), down from 587 in 1990 (DBEDT 2005).

In general, the CDP is slightly younger than Hawai‘i County as a whole, and has a racial mix that is somewhat less Asian and significantly less Caucasian. The CDP also has more households with children under 18 and significantly more single-parent households headed by females. In the CDP, a significantly smaller percentage of people rent the homes they live in.

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**Table 3. Demographic Characteristics: 2000**

Subject	Pa‘auilo CDP		Hawai‘i County	
	Number	Percent	Number	Percent
Total Population	571	—	148,677	100.0
<b>AGE</b>				
Under 5 years	31	5.4	9,130	6.1
5 – 19 years	148	25.9	33,690	22.7
20 – 64 years	298	52.1	85,738	57.6
65 years and over	94	16.4	20,119	13.5
Median Age (years)	37.4	—	38.6	—
<b>RACE</b> (alone or in combination with one or more)				
White	86	15.1	77,477	52.1
Black or African American	1	0.2	1,789	1.2
American Indian and Alaska Native	4	0.7	4,847	3.3
Asian	238	41.7	70,921	47.7
Native Hawaiian and other Pacific Islander	32	5.6	46,111	31.0
Other	205	35.9	7,271	4.9
<b>HOUSEHOLD (by type)</b>				
<b>Total Households</b>	<b>191</b>	<b>100.0</b>	<b>52,985</b>	<b>100.0</b>
Family Households (families)	142	74.3	36,903	69.6
With own children under 18 years	60	42.3	17,072	32.2
Married-couple family	102	53.4	26,828	50.6
With own children under 18 years	48	47.1	11,302	21.3
Female householder, no husband present	29	14.1	7,000	13.2
With own children under 18 years	7	25.9	4,095	7.7
Non-families	49	25.7	16,082	30.4
Living alone	40	20.9	12,240	23.1
65 years and over	20	10.5	4,214	8.0
Average persons per household	2.99	—	2.75	—
<b>HOUSING OCCUPANCY AND TENURE</b>				
<b>Total Housing Units</b>	<b>198</b>	<b>100.0</b>	<b>62,674</b>	<b>100.0</b>
Occupied units	191	96.5	52,985	84.5
By owner	162	84.8	34,175	64.5
By renter	29	15.2	18,810	35.5
Vacant units	7	3.5	9,689	15.5
<b>INCOME IN 1999</b>				
Median household income	\$35,659	—	\$39,805	—

Source: DBEDT 2005.



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### *Potential Impacts and Mitigation Measures*

The proposed sale of the Pa'auilo Lands will not directly introduce new residents to the project area. Although the sale of the lands will not directly affect population, there are potential impacts to population based on possible future uses of the lands, as allowed by existing zoning designations for the lands. Based on the "worst case" calculation of 32 lots described earlier, approximately 32 farm dwellings could potentially be built on the Pa'auilo Lands after the sale.

Using the average household size of 2.99 for the Pa'auilo CDP, approximately 96 persons could potentially be added to the population of Pa'auilo after the Lands are sold if a dwelling is constructed on each parcel. This would represent an increase of approximately 16.8 percent. However, it is not expected that 32 dwellings would be constructed because there are no plans to provide direct utility upgrades (water or electric) to the parcels.

## **4.7 HOUSING**

There are currently no homes on the lands. The homes that exist near the project site are rather spread out as they are situated on large agricultural lots. The clustering of homes in Pa'auilo is denser as some of them were part of the old plantation camps.

The proposed sale of the Pa'auilo Lands itself will not directly affect the existing housing inventory in the area. However, purchasers of the lands could construct farm dwellings on some of the properties. Based on the "worst case" calculation of 32 lots described earlier, the number of potential farm dwellings that could be built is 32.

### *Potential Impacts and Mitigation Measures*

Sale of the Pa'auilo Lands will not directly affect the housing inventory in the Pa'auilo area. Although an increase in agricultural activity would be beneficial, the lack of water and infrastructure will probably limit the intensity of such agricultural uses and it is assumed that any need for housing will be reasonably accommodated within the specific parcel or by existing housing in the area. Based on the foregoing, no adverse impacts to housing are expected, and no mitigation measures are planned.

## **4.8 LIFESTYLE AND CHARACTER OF THE COMMUNITY**

The Pa'auilo area is largely a rural community, best known for its open spaces, ranching, and country lifestyle.

### *Potential Impacts and Mitigation Measures*

Because the Pa'auilo Lands are expected to retain their current zoning, their sale and subsequent use is not expected to significantly alter their rural character. Future potential use of the lands, which may include a "worst case" scenario of 32 farm dwellings, could moderately increase the number of homes in the area and lead to a moderate increase in the population as discussed in Sections 4.6 and 4.7 above.

## **4.9 THE ECONOMY AND EMPLOYMENT**

Specific data for the economy of the Pa‘auilo area is not available, but the Hawai‘i County General Plan (County of Hawai‘i 2005a) discusses the economy of the Hāmākua District, of which Pa‘auilo is a part. Despite the closing of Hāmākua Sugar in 1994, the population of the Hāmākua region has grown moderately, primarily due to the development of major resorts in the neighboring district of Kōhala. The economy has come to depend on cattle, macadamia nuts, and diversified agriculture. There are numerous cattle ranches in Hāmākua and several varieties of crops are grown in addition to macadamia nuts.

In mauka Pa‘auilo, the Hawaiian Vanilla Company currently has one acre of vanilla in production, and in the future may cultivate vanilla on as many as 25 acres. John Paul Mitchell Systems’ ‘Awapuhi Farm, which borders the Pa‘auilo Lands, raises ‘awapuhi ginger for use in personal care products. Other crops grown in the Hāmākua area are taro, watermelon, tomatoes, ginger, kava, coffee, and other vegetables. Manufacturing in the area is limited to processing agricultural crops, although a 60-megawatt co-generation power plant at Haina is expected to encourage other manufacturing activities (County of Hawai‘i 2005a).

Of the residents aged 16 years or older recorded for Pa‘auilo the CDP in the 2000 census, approximately 56 percent were in the labor force (DBEDT 2005). Of these, 28.7 percent worked in service occupations and 26.5 percent in management and professional occupations. Smaller numbers worked in production, transportation, and materials moving (12.6 percent); construction (10.3 percent); and in farming, fishing and forestry (5.8 percent).

Median household income was \$34,659 for the Pa‘auilo CDP. This compares with a median income of \$39,805 for Hawai‘i County and \$49,820 for the state (DBEDT 2005).

### ***Potential Impacts and Mitigation Measures***

Sale of the Pa‘auilo Lands itself will not significantly affect economic conditions in the community. However, the future potential agricultural use of the lands can only enhance the agricultural economic base of the Hāmākua area. The potential increase in agricultural activity would likely create long term agricultural related jobs together with short-term, construction-related jobs resulting from the potential construction of farm dwellings. Should any of the purchasers decide to construct farm dwellings, local businesses would also benefit from an increase in the demand for goods and services due to a slight increase in population.

In light of the economic impact of the closing of Hāmākua Sugar, returning these Pa‘auilo Lands to agricultural use consistent with its agricultural zoning would benefit the local economy. Also important to the recovering economy of Hāmākua is the work of the CTAHR Hāmākua Research Station located in the area of these Pa‘auilo Lands that tests and develops crops and livestock to succeed in the mauka Hāmākua environment. CTHAR currently accesses its agricultural research station through a road passing through parcels 4-3-07:1, 4-3-11:01 and 02. A County easement will be retained on this road through the subject properties. This also will allow for the possibility of public use if those road sections over private lands ever becomes publicly accessible.

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## **5.0 ASSESSMENT OF THE EXISTING INFRASTRUCTURE AND PUBLIC SERVICES, AND POTENTIAL IMPACTS AND MITIGATION MEASURES**

This chapter discusses the existing infrastructure of the project area and the proposed infrastructure improvements. Mitigation measures have also been identified to address potential impacts.

**On-site Improvements.** Infrastructure on the Pa‘auilo Lands consists of a network of roads in good to poor condition. No on-site improvements are required or planned with regard to the proposed sale of the Pa‘auilo Lands. After the sale, the purchasers may be required to implement improvements to on-site infrastructure consistent with the nature of the land use.

**Off-site Improvements.** No off-site improvements are required or planned with regard to the proposed sale of the Pa‘auilo Lands.

### **5.1 TRANSPORTATION FACILITIES**

**Existing Roadways.** TMK 4-3-11:02 is accessed from Hawai‘i Belt Road by means of Pohakea Road, Mānienie Road, and an unpaved extension of Mānienie Road. Lots 4-3-7:01, and 4-3-11:01, are currently accessed from Hawai‘i Belt Road, approximately 100 yards south of the Pa‘auilo Post Office, by means of an unpaved, gated extension off of a paved, privately owned, one- and two-lane road known locally as “Water Tank Road.” Although the road is open and is utilized by many people including CTHAR staff to access its Experiment and Research Station, it is a former plantation road on land now owned by Kamehameha Schools. Given private ownership, should access to this road be lost in the future, access to lots within TMKS 4-3-7:01, and 4-3-11:01 will have to be through TMK 4-3-11:02 utilizing easements created by the County of Hawai‘i prior to its sale. TMKs 4-3-09:19 and 24 are accessed via Antone De Luz Road and a narrow private road that connects to the top of “Water Tank Road” (See Figures 6 and 7) . These and other roads in the project vicinity are described below:

- **Hawai‘i Belt Road** is a two-way, two-lane arterial highway located *makai* of the project site.
- **Antone De Luz Road** is a narrow, curving paved county road that connects with Hawai‘i Belt Road, east of Water Tank Road. For a short distance, this road runs adjacent to the northeast boundary of TMK 4-3-9:19.
- **“Water Tank Road”** is a paved, privately owned, one- and two-lane road on land now owned by Kamehameha Schools. It runs *mauka–makai* and intersects Hawai‘i Belt Road approximately 0.8 miles northwest of Antone DeLuz Road, near the Pa‘auilo Post Office. Unpaved extensions off of this road extend through TMKs 4-3-7:01, 4-3-11:01 and 02, to the CTAHR research station.
- **Pohakea Mauka Road** is curving, paved two-lane County-maintained road northwest of the project area. It extends from Hawai‘i Belt Road to an intersection with Mānienie Road at approximately the 2,000 foot elevation.

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- **Mānienie Road** is an unpaved, one-lane road, in good condition, portions of which is maintained by the County. It extends roughly east from the intersection with Pohakea Road, to the northern edge of TMK 4-3-11:02. Mānienie Road extends past TMK 4-3-11:02 and becomes impassable when it intersects a gulch.

### *Potential Impacts and Mitigation Measures*

The Pa‘auilo Lands are currently vacant. The proposed sale of the lands may cause traffic to increase slightly on roads that access the properties due to potential buyers visiting the site. After the land sale, traffic on these roads may increase somewhat, depending on future land uses such as agricultural uses and construction of new farm dwellings. Impacts are not, however, expected to be significant.

Practical and legal access to the various lots proposed for sale, as well as to the CTHAR Experiment and Research Station will be preserved by way of various easements that have been created by the County of Hawai‘i prior to sale. However, it must be stressed that the maintenance of these easements will be the responsibility of the purchasers and will not be County maintained roads.

In response to concerns over preserving access to the forest reserve, the County of Hawai‘i will reserve rights to establish public access over these easements to the forest reserve areas mauka of these Pa‘auilo lands to be sold by the County of Hawai‘i. Although the County of Hawai‘i will maintain rights to establish public access rights over these easements, there is no intent on the part of the County of Hawai‘i to exercise those rights unless there is clear agreement on its maintenance as the County of Hawai‘i will not maintain roads for the sole purpose of access to forest reserve.

In response to those same concerns, the County of Hawai‘i will not be selling any existing homestead roads as part of these sales of its Pa‘auilo lands. These existing homestead road right-of-ways will be retained for now regardless of whether there is a physical road or not. Although no homestead road right-of-ways will be sold in connection with this sale of the subject County owned Pa‘auilo lands, this does not preclude the County of Hawai‘i from considering future sales of abandoned roads in the area. Such future sales, if any, will be considered under a separate action and will be subject to the normal approval process for the sale of abandoned roads or remnants.

The County will retain all government roads as depicted in Figure 7.

## **5.2 WATER SUPPLY FACILITIES**

The nearest County of Hawai‘i Department of Water Supply facility is approximately 4,000 feet from the northwest corner of TMK 4-3-11:02. The DWS has stated that they will not allow additional services from its existing 4-inch water line within Pohakealani Road, near the southeast corner of TMK 4-3-11:02 until extensive water system improvements are made.

### *Potential Impacts and Mitigation Measures*

The Pa‘auilo Lands are currently vacant. Their proposed sale may lead to an increase in the demand for water in the project vicinity as the purchasers may initiate agricultural uses or

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establish dwellings on the properties. The DWS is not, however, allowing new hookups from its existing 4-inch water line until extensive water improvements are made. There are no plans for any water improvements; therefore, any increased demand for water would need to be met through the use of rainwater-catch stored in tanks or reservoirs.

### 5.3 WASTEWATER FACILITIES

There are no wastewater treatment facilities in the vicinity of the project site.

#### *Potential Impacts and Mitigation Measures*

While the proposed sale itself will not cause an increase in the demand for wastewater treatment, future land use of the Pa‘auilo Lands, such as farm dwellings, could require wastewater treatment. After the sale, should the purchasers decide to construct dwellings, the subject properties will be served by individual septic tanks, as regulated by the State Department of Health.

### 5.4 DRAINAGE FACILITIES

The project area contains Opihilala Gulch, Waipunalau Gulch, ‘A‘āmanu Gulch, and Pa‘auilo Gulch (Figure 1), but it does not contain, or lie within, a flood zone. Slopes within the Pa‘auilo Lands average 11 percent and trend downward from southwest to northeast. Ground surface elevations range from approximately 1,400 feet above amsl to 2,400 feet above amsl.

The permeability of the natural ground surface within the Pa‘auilo Lands is moderately rapid to rapid, and runoff is slow to moderate, and generally flowing toward the gulches.

#### *Potential Impacts and Mitigation Measures*

The proposed sale of the Pa‘auilo Lands is not expected to affect area drainage. It is possible that berms dating to the plantation period may remain within the Pa‘auilo Lands and may influence drainage.

Depending on future land use after the sale, the purchasers may be required to implement drainage improvements in compliance with the Hawai‘i County Code, Chapter 10, Sections 25 and 26.

### 5.5 SOLID WASTE DISPOSAL FACILITIES

According to the *Update to the Integrated Solid Waste Management Plan for the County of Hawaii*, in 2002, the total amount of solid waste managed by the county system was approximately 160,000 tons (Harding ESE, 2002). The two landfills on the island are the South Hilo Landfill and the Pu‘uanahulu Landfill. The South Hilo Landfill is rapidly filling up and will have to close within the next two to five years (Geometrician Associates, 2006). The estimated lifespan of the Pu‘uanahulu Landfill, with a 15 percent diversion rate and receiving only West Hawai‘i waste, is until the year 2049. If the Pu‘uanahulu Landfill receives all of the county’s waste, and if planned recycling and resource recovery efforts progress (potentially increasing the diversion rate to 45 percent), then the Pu‘uanahulu Landfill has capacity until the year 2045.

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Additionally, the proposed waste reduction technology in East Hawai‘i could potentially expand the Pu‘uanahulu Landfill beyond the year 2049 (County of Hawai‘i, 2004).

The Pa‘auilo transfer station serves Pa‘auilo and is located mauka of the 37-mile marker. From this transfer station, solid waste is hauled to the county landfill at Pu‘uanahulu.

### ***Potential Impacts and Mitigation Measures***

The proposed sale of the Pa‘auilo Lands will have no direct affect on county solid waste disposal facilities.

Future use of the lands could add slightly (less than 1 percent) to the county’s solid-waste stream. The overall daily per capita municipal solid waste generation for Hawai‘i County is 6.2 pounds (Harding ESE, 2002). Using the average household size of 2.99 for the Pa‘auilo CDP, approximately 96 persons could potentially be added to the population after the lands are sold, should each new land owner choose to construct a farm dwelling. If the average amount of solid waste generated per person, per day is 6.2 pounds, then one can assume that approximately 98.5 tons of solid waste will be generated per year from this project site, should each new land owner choose to construct a farm dwelling in the future and each home is occupied by approximately 3 persons. Demand on the Pa‘auilo transfer station could increase somewhat, but demand on the Pu‘uanahulu Landfill would not significantly increase. However, it should be noted that the waste generation could be substantially less if future purchasers decide not to establish dwellings on their agricultural properties.

## **5.6 ELECTRICAL FACILITIES**

Currently, HELCO has 4160Volt Distribution Overhead lines running from the Pa‘auilo Substation along Hawai‘i Belt Road, up Pohakea Road, through Pohakea Mauka Road and along Pohakea Lani Road. The Pa‘auilo substation contains a 1,275 KW transformer. Of that capacity, 960 KW is used during peak periods of the year, which yields a 25 percent available overhead.

### ***Potential Impacts and Mitigation Measures***

The proposed sale of the Pa‘auilo Lands will have no direct affect on the demand for electrical services. The proposed sale of the Pa‘auilo Lands will not directly introduce new residents to the project area. Future land uses may require electricity service. Options would be the use of off-the-grid alternatives such as generators and photovoltaic devices.

## **5.7 EDUCATIONAL FACILITIES**

**Public Schools.** One public school is located near the project site, Pa‘auilo Elementary and Intermediate School, which serves grades K–9. During the 2005–2006 school year, the school had an enrollment of 241, well below its present capacity of 336. Current projections have enrollment virtually unchanged through 2011. Pa‘auilo students in grades 10 through 12 attend Honoka‘a High School, which operated at slightly over its 818-student capacity in 2005, with 835 students. By 2011, enrollment at the school is projected to increase to 885 (Pers. Comm. Ken Kajihara, Department of Education, Facilities Division July 5, 2006).

***Potential Impacts and Mitigation Measures***

The proposed sale of the Pa‘auilo Lands itself will not directly affect the existing population or introduce school-aged children to the area.

Utilizing the “worst case” calculation of 32 dwellings, school-aged children may be introduced to the area and affect area schools. However, this fact is not known at this time and therefore cannot be discussed in this EA.

## **5.8 POLICE PROTECTION**

The Pa‘auilo area is served by the Honoka‘a police station, which is located approximately seven miles from the Pa‘auilo Lands at 45-3400 Māmane Street, in Honoka‘a. The Honoka‘a police station has a staff of 18, including administration. It is manned 24 hours per day in three shifts, with five officers normally on duty per shift.

***Potential Impacts and Mitigation Measures***

The proposed sale of the Pa‘auilo Lands will not directly introduce new residents to the project area and is not anticipated to increase demand for police services.

If purchasers of the lands construct homes there, a “worst case” scenario of 32 farm dwellings could yield approximately 96 persons. Relative to the total population served by the Honoka‘a police station, the potential increase that would be attributable to the sale of the Pa‘auilo Lands is small and not expected to significantly increase the demand for police services.

## **5.9 FIRE PROTECTION**

Fire protective service and rescue services for the Hawai‘i County are provided by the Hawai‘i County Fire Department, which operates 14 regular fire stations and 18 volunteer fire stations. One fire station (at Pōhakuloa) is federally operated. The 14 regular fire stations and three of the volunteer stations (Laupāhoehoe, Pāhala, and Nā‘ālehu) provide 24-hour fire protection and emergency medical services. All fire personnel who provide advanced and basic life support possess appropriate certification and licenses (Hawai‘i County 2005a). The nearest station for the Pa‘auilo Lands is located at 45-3388 Māmane Street, in Honoka‘a, approximately 6.5 miles from the project lands.

***Potential Impacts and Mitigation Measures***

The proposed sale of the Pa‘auilo Lands will not directly increase the need for fire and emergency services in the vicinity.

If purchasers of the lands construct homes there, a “worst case” calculation of 32 farm dwellings could yield approximately 96 persons. Relative to the total population served by the Honoka‘a fire station, the potential increase that would be attributable to the sale of the Pa‘auilo Lands is small and not expected to significantly increase the demand for fire and emergency services.



## **5.10 HOSPITALS AND HEALTH CARE FACILITIES**

Hale Ho‘ōla Hāmākua long-term care facility (formerly Honoka‘a Hospital), in Honoka‘a is the primary healthcare facility serving the Hāmākua District. Located approximately 10 miles from the Pa‘auilo Lands, Hale Ho‘ōla Hāmākua is an acute and long-term care hospital with 50 beds (4 acute and long-term care and 46 skilled nursing and intermediate care), and 24-hour emergency room services.

North Hawai‘i Community Hospital also serves the Pa‘auilo area. Located in Waimea, at 67-1125 Māmalahoa Highway, approximately 21 miles from the project area, North Hawai‘i Community Hospital has 40 acute-care beds and offers 24-hour emergency service (NHCW 2006). Non-emergency medical facilities for the Pa‘auilo area are located at the Hāmākua Health Center, adjacent to Hale Ho‘ōla Hāmākua.

### ***Potential Impacts and Mitigation Measures***

The proposed sale of the Pa‘auilo Lands will not directly increase the need for healthcare in the vicinity.

If purchasers of the lands construct homes there, a “worst case” calculation of 32 farm dwellings could yield approximately 96 persons. Relative to the total population served by the Hale Ho‘ōla Hāmākua long-term care facility, the potential increase that would be attributable to the sale of the Pa‘auilo Lands is small and not expected to significantly increase the demand for healthcare facilities in the area.

## **5.11 COMMUNITY SERVICES**

The following community services and public facilities are located in the vicinity of the Pa‘auilo Lands:

- Pa‘auilo Park, which contains a community center and a gym
- St. Joseph Church
- St. Columbia Episcopal Church
- Pa‘auilo Hongwani Mission
- Pa‘auilo Kongoji Mission
- Pa‘auilo Post Office
- Various shops and businesses in Pa‘auilo.

### ***Potential Impacts and Mitigation Measures***

The proposed sale of the Pa‘auilo Lands itself will not directly affect the population in the project vicinity and will not dramatically affect the demand for community services or public facilities. However, based on the “worst case” scenario for 32 additional farm dwellings, the resulting population increase in the area of up to 96 people is not expected to overburden existing community services and public facilities.

## **6.0 LAND USE CONFORMANCE**

This section describes the State of Hawai‘i and County of Hawai‘i land use plans, policies, and ordinances relevant to the proposed sale of the Pa‘auilo Lands.

### **6.1 STATE ENVIRONMENTAL IMPACT STATEMENT LAW, CHAPTER 343, HAWAII REVISED STATUTES**

This Environmental Assessment is prepared pursuant to Chapter 343, HRS and Section 11-200-4, HAR, which states that, “the governor, or an authorized representative, whenever an action proposes the use of state/county lands or the use of state/county funds, or, whenever a state agency proposes an action within section 11-200-6(b) shall be the final authority to accept an environmental impact statement.”

Since the proposed project requires the use of county lands and funds, it will comply with applicable provisions of Chapter 343, HRS and Section 11-200-4, HAR. Therefore, the Governor or designated representative, the County of Hawai‘i, Department of Finance, will act as the Accepting Authority for the Sale of Pa‘auilo Lands environmental assessment.

Upon publication of the draft environmental assessment (DEA) in the Office of Environmental Quality Control’s (OEQC) August 23, 2006 edition of *The Environmental Notice*, a 30-day review period commenced. All comments and applicable responses are provided in Appendix E of this document.

#### **6.1.1 Chapter 205, Hawaii Revised Statutes – State Land Use Law**

The State Land Use Law establishes the Land Use Commission (LUC) and gives this body the authority to designate all lands in the state into one of four districts: Urban, Rural, Agricultural, or Conservation. The Pa‘auilo Lands are within the Agriculture District (Figure 3).

#### **6.1.2 Chapter 226, Hawaii Revised Statutes – Hawaii State Plan**

The *Hawaii State Plan* serves as a guide for the future long-range development within the state; it identifies goals, objectives, policies, and priorities for the state and provides a basis for determining priorities and allocating limited resources, such as public funds, services, human resources, land, energy, water, and other resources. The *Hawaii State Plan* also improves the coordination of federal, state, and county plans, policies, programs, projects, and regulatory activities, and establishes a system for formulating plans and coordinating programs to integrate all major state and county activities. Sections of the *Hawaii State Plan* applicable to the Pa‘auilo Lands are discussed in the following pages.

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### ***Section 226-4 State goals:***

*In order to guarantee, for present and future generations, those elements of choice and mobility that insure that individuals and groups may approach their desired levels of self-reliance and self-determination, it shall be the goal of the State to achieve:*

- (1) A strong, viable economy, characterized by stability, diversity, and growth, that enables the fulfillment of the needs and expectations of Hawaii's present and future generations.*

**Discussion:** The sale of the Pa‘auiilo Lands will support the local economy by opening up approximately 740 currently fallow acres for agricultural use in an area in which agriculture has long been the economic mainstay. Agricultural use of the lands could also provide jobs in the Pa‘auiilo area and opportunities for small farmers and ranchers. Should any of the purchasers decide to construct dwellings, local businesses would also benefit from an increase in the demand for goods and services due to a slight increase in population.

### ***Section 226-5 Objective and policies for population:***

- (a) It shall be the objective in planning for the State's population to guide population growth to be consistent with the achievement of physical, economic, and social objectives contained in this chapter.*
- (b) To achieve the population objective, it shall be the policy of this State to:*
  - (2) Encourage an increase in economic activities and employment opportunities on the neighbor islands consistent with community needs and desires.*
  - (3) Promote increased opportunities for Hawaii's people to pursue their socio-economic aspirations throughout the Islands.*
  - (7) Plan the development and availability of land and water resources in a coordinated manner so as to provide for the desired levels of growth in each geographic area.*

**Discussion:** Since the demise of Hāmākua Sugar in 1994, the economy in Hāmākua has struggled. The proposed project complies with these objectives and policies by allowing people to pursue their socio-economic aspirations by opening up approximately 740 acres to farming and ranching in an area where these pursuits have been economic mainstays. This will provide opportunities for small farmers and ranchers in the area. In addition, local businesses could see an increase in the demand for goods and services as a result of use of the lands.

### ***Section 226-7 Objectives and policies for the economy--agriculture***

- (a) Planning for the State's economy with regard to agriculture shall be directed towards achievement of the following objectives:*
  - (2) Growth and development of diversified agriculture throughout the State.*
  - (3) An agriculture industry that continues to constitute a dynamic and essential component of Hawaii's strategic, economic, and social well-being.*

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(b) *To achieve the agriculture objectives, it shall be the policy of this State to:*

(2) *Encourage agriculture by making best use of natural resources.*

**Discussion:** Since the demise of Hāmākua Sugar in 1994, the Hāmākua District has looked more and more to diversified agriculture to fill the economic void left by the sugar industry. Hawai‘i’s land is a valuable natural resource. The proposed sale of the Pa‘auilo Lands will transfer approximately 740 acres of government lands to private hands, with the expectation that the lands will be used for agriculture.

***Section 226-11 Objectives and policies for the physical environment – land-based, shoreline, and marine resources:***

(a) *Planning for the State’s physical environment with regard to land-based, shoreline, and marine resources shall be directed towards achievement of the following objectives.*

(2) *Effective protection of Hawaii’s unique and fragile environmental resources.*

(b) *To achieve the land-based, shoreline, and marine resources objectives, it shall be the policy of this State to:*

(1) *Exercise an overall conservation ethic in the use of Hawaii’s natural resources.*

(3) *Take into account the physical attributes of areas when planning and designing activities and facilities.*

(4) *Manage natural resources and environs to encourage their beneficial and multiple use without generating costly or irreparable environmental damage.*

(6) *Encourage the protection of rare or endangered plant and animal species and habitats native to Hawaii.*

(8) *Pursue compatible relationships among activities, facilities, and natural resources.*

**Discussion:** This EA identifies and discusses environmental resources occurring on the project site. Several surveys of the site have been conducted, and features such as slope, soil, drainage, flora, fauna, and archaeology have been identified. Potential impacts resulting from the project have been discussed in this EA, which also reports on proposed mitigation measures.

Botanical survey of the Pa‘auilo Lands revealed that the site contains no plant species listed or proposed as threatened or endangered by the U.S. Fish and Wildlife Service or the Hawai‘i State Department of Land and Natural Resources.

The Faunal survey observed the endangered Hawaiian hoary bat foraging over portions of the project area. It is speculated that the project area’s gulches may support this endangered mammal. The survey also recorded the endangered Hawaiian Hawk within the project area. Despite the observation of these two endangered animals, the faunal survey report concludes that, “The proposed sale and subsequent use of the Pa‘auilo Lands is not expected to have any substantial deleterious impact on native avian and mammalian species present in the area.”

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### ***Section 226-12 Objective and policies for the physical environment – scenic, natural beauty, and historic resources:***

- (a) Planning for the State’s physical environment shall be directed towards achievement of the objective of enhancement of Hawaii’s scenic assets, natural beauty, and multi-cultural/historical resources.*
- (b) To achieve the scenic, natural beauty, and historic resources objective, it shall be the policy of this State to:*
  - (1) Promote the preservation and restoration of significant natural and historic resources.*
  - (3) Promote the preservation of views and vistas to enhance the visual and aesthetic enjoyment of mountains, ocean, scenic landscapes, and other natural features.*
  - (4) Protect those special areas, structures, and elements that are an integral and functional part of Hawaii’s ethnic and cultural heritage.*
  - (5) Encourage the design of developments and activities that complement the natural beauty of the islands.*

**Discussion:** The sale of the Pa‘auilo Lands itself will not alter existing land use, which is primarily open, fallow former sugar cane land. No significant archaeological or historical resources are present on the lands. The lands are expected to retain their current zoning after the sale and be put to agricultural use; thus, views and vistas will largely be maintained. Bringing the lands into agricultural use is consistent with the cultural heritage of the Pa‘auilo area, which has a tradition of ranching and farming. Use of the Lands for agriculture will complement the natural beauty of the area.

### **6.1.3 Chapter 226, Hawaii Revised Statutes – State Functional Plans**

The *Hawaii State Plan* is primarily guided by the *State Functional Plans* (Chapter 226, HRS) and implemented by the State Department of Budget and Finance and the LUC. *State Functional Plans*, prepared by various state agencies with citizen input, provide specific recommendations for action. The areas addressed by the plans are: agriculture, conservation lands, education, employment, energy, health, higher education, historic preservation, housing, human services, recreation, tourism, and transportation. The current use of the Pa‘auilo Lands as open space complies with applicable *State Functional Plans*. Future lands uses may include agricultural uses and possible farm dwellings.

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### State Agriculture Functional Plan

The State Agriculture Functional Plan (prepared by the State Department of Agriculture) identifies two fundamental objectives to be achieved: (1) continued viability in Hawaii’s sugar and pineapple industries, and (2) continued growth and development of diversified agriculture throughout the state. The Pa‘auilo Lands were taken out of sugar production in 1994 and have since been fallow. The lands are zoned agricultural and it is desired that the lands be put back into agricultural productivity after the sale.

#### **6.1.4 Section 205A, Hawaii Revised Statutes – Coastal Zone Management Program**

The Coastal Zone Management Area as defined in Chapter 205A, Hawai‘i Revised Statutes (HRS), includes all the lands of the state. The objectives of the Hawai‘i Coastal Zone Management (CZM) Program, as set forth in Chapter 205A, include the protection and maintenance of the State’s coastal resources. As the Coastal Zone is defined in Chapter 205A, the Pa‘auilo Lands are within the Coastal Zone Management Area; however, the lands are located approximately 2.3 miles from the shoreline, at a minimum elevation of approximately 1,400 feet amsl. The following paragraphs discuss the project’s relationship to the objectives and policies of the Coastal Zone Management Program.

The proposed project site is approximately 2.3 miles from the shore and is not expected to have any adverse impacts on Coastal Recreational Resources, Coastal Ecosystems, or Beach Protection. For the same reason, the site will not be subject to potential impacts from Coastal Hazards.

The proposed sale of the lands will not adversely impact the area’s **Historic Resources**. Haun & Associates (2006) conducted an archaeological inventory survey of the project area. The survey documented two Historic-Period sites. The sites were fully documented during the inventory survey and no mitigation is necessary for them. No prehistoric archaeological resources were identified during the survey.

The proposed action will not significantly affect the **Scenic and Open Space** quality of the project area. The Pa‘auilo Lands are currently uncultivated open space. After the sale, the lands are expected to return to agricultural use, and some farm dwellings or farm structures may be built on them.

Sale of the Pa‘auilo Lands is expected to have a beneficial effect on **Economic Use**. The Pa‘auilo area has long been an agricultural community. The sale will make it possible to put the lands back into agricultural use after having been fallow for more than a decade. The land sale will provide opportunities for residents who wish to be in agriculture to obtain land for that purpose and enable the production of valuable agricultural commodities.

Regarding the CZM’s goals to promote **Public Participation**, this EA reports and publishes the potential short- and long-term impacts of the proposed sale of the Pa‘auilo Lands. Prior to, and throughout the development of this EA, various agencies (or agency documents) were consulted (see consultation list in Section 9.0). The Draft EA was distributed to various agencies and submitted to the Office of Environmental Quality Control (OEQC), which commenced a 30-day public review period. Additionally, the public review phase of the Draft EA allowed for public comments on the subject project and several members of the Pa‘auilo community were interviewed for the Cultural Resources section.

**Managing Development** is appropriately the role of those State and County agencies assigned the responsibility of implementing the provisions of Chapter 205A, HRS, and the Coastal Zone Management Program.

Based on the above, the proposed project complies with the policies and objectives of the Coastal Zone Management Program, as delineated within Chapter 205A-2, HRS, and Section 9-6 of the Hawai‘i County Planning Commission Rules of Practice and Procedure.

Chapter 205A also provides for a Special Management Area (SMA), an area extending inland from the shoreline, and seaward as well, that receives special protection. The Counties determine the extents of the Special Management Areas within their jurisdictions and must approve and issue a permit for any development within the SMA. The Pa‘auilo Lands are located outside the SMA, and no permit will be required.

## **6.2 COUNTY OF HAWAI‘I**

County-specific land use plans and ordinances pertaining to the Pa‘auilo Lands include the *County of Hawaii General Plan* and the Hawai‘i County Code. The following subsections present relevant elements of these land use plans and ordinances, accompanied with a description of how each will be addressed during the course of the proposed project.

### **6.2.1 General Plan**

The *County of Hawaii General Plan* (General Plan) was adopted in February 2005 and is a policy document for the long-range comprehensive development of the Island of Hawai‘i. The plan provides direction for the future growth of the County and offers policy statements that embody the expressed goals for present and future generations. The General Plan provides the legal basis for all subdivision, zoning, and related ordinances and for the initiation and authorization of all public improvements and projects.

Specific goals and policies applicable to the proposed sale of the Pa‘auilo Lands are discussed below.

#### **Natural Beauty**

##### **Goals:**

- (a) *Maximize opportunities for present and future generations to appreciate and enjoy natural and scenic beauty.*
- (b) *Protect scenic vistas and view planes from becoming obstructed.*

**Discussion:** The Pa‘auilo Lands offer views of Mauna Kea, the coastline, and ocean. As previously discussed in Section 4.5, the sale and subsequent use of the lands (assumed to be agricultural) is expected to preserve scenic places and vistas in the area.

#### **Environmental Quality**



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### Goals

- (b) *Maintain and, if feasible, improve the existing environmental quality of the island.*

### Policies

- (a) *Take positive action to further maintain the quality of the environment.*

**Discussion:** Sale of the Pa‘auilo Lands will maintain, and not negatively impact the environment. The sale itself involves no construction or development. The lands are expected to retain their current Agriculture zoning after the sale, and no significant environmental impacts are expected.

### Natural Resources

#### Goals

- (a) *Protect and conserve the natural resources from undue exploitation, encroachment and damage.*
- (c) *Protect and promote the prudent use of Hawaii’s unique, fragile, and significant environmental and natural resources.*

#### Policies

- (g) *Promote sound management and development of Hawaii’s land and marine resources for potential economic benefit.*

**Discussion:** Among the natural resources of Hawai‘i are its soil, water, and air. The Pa‘auilo Lands are in the state land use Agricultural District, are zoned by the County for Agriculture, and contain land rated as Prime Agricultural Lands. The sale of the lands itself will not negatively impact these natural resources. Sale and subsequent use of the Lands of is expected to maintain low population densities and put the land in agricultural use. Negative impacts to air and water quality and to soils are not expected.

### Economic

#### Goals

- (a) *Provide residents with opportunities to improve their quality of life through economic development that enhances the County’s natural and social environments.*
- (b) *Economic development and improvement shall be in balance with the physical, social, and cultural environments of the island of Hawaii.*
- (d) *Provide an economic environment that allows new, expanded, or improved economic opportunities that are compatible with the County’s cultural, natural and social environment.*

#### Policies

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- (a) *Assist in the expansion of the agricultural industry through the protection of important agricultural lands, development of marketing plans and programs, capital improvements and continued cooperation with appropriate State and Federal agencies.*

**Discussion:** The Pa‘auilo area has long been an agricultural community. Sale of the Pa‘auilo Lands will make it possible to put the lands back into agricultural use after having been fallow for more than a decade. It will provide an opportunity for residents who wish to be in agriculture to obtain land for that purpose. Putting the lands back into agriculture is consistent with the physical, social, and cultural environment of Hawai‘i. More than half of the acreage comprising the Pa‘auilo Lands is classified as Prime Agricultural Land. Sale of this important agricultural land will help keep it in agriculture.

### **Land Use – Agriculture**

#### **Goals**

- (a) *Identify, protect and maintain important agriculture lands on the island of Hawai‘i.*

#### **Policies**

- (j) *Ensure that development of important agricultural land be primarily for agricultural use.*

**Discussion:** The Pa‘auilo Lands are former sugar cane land that has lain fallow since 1994. It is expected that after their sale, the Lands will remain in agriculture.

On the county’s Land Use Pattern Allocation Guide (LUPAG) map, found in the Hawai‘i County General Plan (Hawaii County 2005), the Pa‘auilo Lands are designated Extensive Agriculture. Lands with this designation are “Lands not classified as Important Agricultural Land. Includes lands that are not capable of producing sustained, high agricultural yields without the intensive application of modern farming methods and technologies due to certain physical constraints such as soil composition, slope, machine tillability and climate. Other less intensive agricultural uses such as grazing and pasture may be included in the Extensive Agriculture category.” Because the Lands are expected to remain in Agriculture after their sale, the proposed sale of the Lands is consistent with the Extensive Agriculture designation.

### **6.2.2 Hawai‘i County Zoning**

Most of the Pa‘auilo Lands (641 acres) are zoned A-40a by the County of Hawai‘i, and a portion (92.5 acres) of the southwest corner of TMK 4-3-11:02 is zoned A-5a (Figure 2). Section 25-4-11 of the Hawai‘i County Code states that the purpose of the Agricultural district is to provide for agriculture and very low density agriculturally-based residential use, encompassing rural areas of good to marginal agricultural and grazing land, forest land, game habitats, and areas where urbanization is not found to be appropriate. Being that the lands are expected to be put to agricultural use by the future purchasers of the property, the proposed sale of the Pa‘auilo Lands is consistent with the current zoning.

## **7.0 ALTERNATIVES TO THE PROPOSED ACTION**

### **7.1 ALTERNATIVES CONSIDERED**

Under Section 11-200-10(6), HAR, Environmental Impact Statement Rules, the alternatives to the proposed action considered are limited to those that would allow the objectives of the project to be met, while minimizing potential adverse environmental impacts. The feasible alternatives must also address the project's economic characteristics while responding to the surrounding land uses that will be impacted by the project. In conformance with applicable regulations, the following alternatives, including alternative sites and uses of the property, have been identified and investigated.

### **7.2 NO-ACTION ALTERNATIVE**

Under the no-action alternative the County would retain ownership of the Pa‘auiilo Lands. The County would continue to pay expenses associated with owning the lands and not realize the benefits of selling the lands. In addition, the lands would not pass to new owners and would not be put to their best use. Thus, the no-action alternative has been rejected from further consideration.

### **7.3 THE ALTERNATIVE OF EXECUTING A LAND EXCHANGE**

Over the last few years, the County has explored land exchange options with large landowners in the vicinity. None of the parties involved could come to a mutually agreeable decision, therefore, this alternative is not provided a viable option at this time.

### **7.4 THE ALTERNATIVE OF LEASING THE LANDS**

The County explored the option of leasing the land to individuals or businesses that would put the land to productive use. Under the leasing alternative, the County would bear the costs associated with owning the land and administering the leases and forego the immediate larger financial benefits of selling the lands.

The larger revenue from the sales and increase in real property tax revenue not currently being collected on the subject lands would provide the County of Hawai‘i greater flexibility in allocating additional funding for the Public Access, Open Space and Natural Resource Preservation Fund for the purposes of acquiring lands targeted for acquisition by the Public Access, Open Space and Natural Resource Preservation Commission.

For the foregoing reasons, the sales alternative is viewed as preferred to the leasing alternative.

**7.5 ACTIONS OF A SIGNIFICANTLY DIFFERENT NATURE WHICH WOULD  
PROVIDE SIMILAR BENEFITS WITH DIFFERENT ENVIRONMENTAL IMPACTS**

There are no known actions significantly different than the proposed sale of the lands that would free the County from paying the expenses associated with owning and administering the lands. Neither are there any known actions that would bring to the County the immediate financial benefits of selling the lands.

**7.6 THE ALTERNATIVE OF POSTPONING ACTION PENDING FURTHER STUDY**

The County has evaluated the Pa‘auilo Lands in the context of its short-term and long-term plans and goals and has determined that owning the lands does not further those plans and goals. The County believes that it has evaluated all reasonable alternatives.

## **8.0 DETERMINATION, FINDINGS, AND REASONS FOR SUPPORTING DETERMINATION**

This EA has evaluated the potential primary, secondary, and cumulative environmental impacts, both short-term and long-term, that could result from the sale of the Pa‘auilo Lands. Mitigation measures have also been proposed to address potential impacts resulting from the project. Based on an assessment of existing research, a Finding of No Significant Impact (FONSI) has been issued.

### **8.1 FINDING OF NO SIGNIFICANT IMPACT (FONSI) DETERMINATION**

Based on the significance criteria established by the *Hawaii Administrative Rules* and the assessment of potential environmental impacts, a FONSI has been issued by the County of Hawai‘i, Department of Finance (the Accepting Authority), pursuant to Chapter 343, HRS.

### **8.2 SIGNIFICANCE CRITERIA**

According to the Significance Criteria contained in Section 11-200-12, HAR, an applicant or agency must determine whether an action may have a significant impact on the environment, including all phases of the project, its expected consequences both primary and secondary, its cumulative impact with other projects and its short-term and long-term effects. The HAR establish “significance criteria” to determine whether significant environmental impact will occur as a result of a proposed action. An action shall be determined to have a significant impact on the environment if it meets any one of the following criteria:

**(1) Involves an irrevocable commitment to loss or destruction of any natural or cultural resources**

Neither the sale of the Pa‘auilo Lands nor its subsequent use is expected to negatively impact natural resources in the lands or in the vicinity. While the lands are expected to remain in agriculture, the exact use and any associated impacts are unknown at this time. Purchasers of the Lands would have to comply with County, State, and federal regulations with regard to the protection of natural resources.

An archaeological inventory survey has been conducted for the project area and has been coordinated with the SHPD (Haun and Henry 2006). The survey documented two Historic-Period sites within the project area. The sites were fully documented during the inventory survey and no mitigation is necessary. No prehistoric archaeological resources were identified during the survey. Section 4.1 discusses the inventory survey in more detail.

No plant species listed or proposed as threatened or endangered were identified within the project area. Faunal survey recorded the endangered Hawaiian hoary bat and the endangered Hawaiian Hawk within the project area. The faunal survey report concluded that the proposed sale and subsequent use of the Pa‘auilo Lands was not expected to have any significant adverse impact on these species.



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**(2) Curtails the range of beneficial uses of the environment**

The Pa‘auilo Lands are currently undeveloped and unused. The proposed sale will be a beneficial use for Hawai‘i County residents: By selling the lands, the County will free itself from ongoing expenses associated with owning the lands and will benefit from the proceeds of the sale. Currently the lands are zoned A-40a and A-5a. By lying fallow under county ownership, the lands are not meeting its agricultural potential or benefiting the County and the taxpayers. The sale is expected to put the lands back into productive agricultural use.

**(3) Conflicts with the State’s long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS; and any revisions thereof and amendments thereto, court decisions, or executive orders**

The proposed sale is consistent with the environmental policies, goals, and guidelines established in Chapter 344, HRS. This EA has addressed such issues as natural resources conservation, soils, drainage, visual environment, flora and fauna, open space, air and water quality, wastewater, and energy.

**(4) Substantially affects the economic welfare, social welfare, or cultural practices of the community or state**

This EA has addressed questions of population, housing, educational facilities, economic development, quality of life, noise, and transportation. The proposed sale of the Pa‘auilo Lands will positively affect the economic and social welfare of the Hāmākua community by placing the lands in the hands of owners who are likely to put the lands back into productive agricultural use. Agriculture has long been the economic mainstay in the Pa‘auilo area and a strong cultural influence.

**(5) Substantially affects public health**

The sale and potential use of the Pa‘auilo Lands will not substantially affect public health in the area or island wide. The lands are expected to retain their current zoning after the sale. Utilizing the “worst case” calculation of farm dwellings (32), approximately 96 persons could potentially be added to the current population of Pa‘auilo. This represents an approximately 16.8 percent increase to the population of Pa‘auilo, and represents a much smaller percentage of the population served by the nearest healthcare facilities, in Honoka‘a and Waimea.

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

Based on the “worst case” scenario calculation of farm dwellings (32) discussed earlier, the demand for energy and water, as well as the generation solid waste and wastewater, will not increase significantly, either regionally or island wide.

# PA‘AUILO LANDS

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**(7) Involves a substantial degradation of environmental quality**

The sale of the Pa‘auilo Lands itself does not entail development or construction of any kind and will not degrade environmental quality. After the sale, it is expected that zoning of the lands will remain the same and that the lands will be likely be used for agricultural purposes. Potential impacts to the environment resulting from the sale and from use and potential occupation of the lands, and appropriate mitigation measures, have been identified in this EA.

**(8) Is individually limited but, cumulatively, has considerable effect on the environment, or involves a commitment for larger actions**

Because the sale of the Pa‘auilo Lands does not entail development of any kind, and the land will remain in its existing condition as open space, it will not affect the environment or involve a commitment for larger actions. Subsequent use of the lands is not expected to result in cumulative effects on the environment or involve a commitment for larger actions as the “worst case” calculation of farm dwellings allowed is 32.

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

The endangered Hawaiian hoary bat and the Hawaiian Hawk were recorded within the project area during faunal survey. Because these species are common in the Hāmākua region, and their habitat abundant, the sale of the Pa‘auilo Lands and their subsequent use are not expected to result in adverse impacts to them.

**(10) Detrimentally affects air or water quality or ambient noise levels**

The sale of the lands will not significantly affect noise and air quality levels. During the period preceding the sale, traffic and associated noise and pollution levels will increase slightly as potential buyers examine the properties. After the sale, although traffic on area roads is expected to increase somewhat as they will be used by the purchasers of the property, substantial detrimental impacts to air quality are not expected, as any air pollutants would be rapidly dispersed by the prevailing winds. Periodic vehicular traffic associated with use of the lands may periodically contribute to ambient noise levels in the immediate vicinity of area roads.

**(11) Affects or is likely to suffer damage by being located in an environmentally sensitive area, such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, freshwater, or coastal waters**

The Pa‘auilo Lands are not located in an environmentally sensitive area, such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters; as such, the sale and subsequent use of the lands would have no adverse impacts upon such areas, and the lands and any improvements to them would not be likely to suffer damage from hazards associated with such areas.

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**(12) Substantially affects scenic vistas and view planes identified in county or state plans or studies**

The project vicinity includes a diverse range of scenic vistas and open expanses that typify the upper Hāmākua coast. The Pa‘auilo Lands are located at higher elevations and offer views of the coastline. Existing views of the coastline from within the lands would be unaffected by the land sale.

In lands zoned for agriculture, any agricultural and residential structures built after the sale would be limited by zoning to 45 and 35 feet, respectively and are not expected to significantly affect views of the coast or to degrade views of the slopes of Mauna Kea from makai areas.

**(13) Requires substantial energy consumption.**

The proposed sale will not directly introduce new residents to the project area, and will not substantially increase energy consumption. After their sale, the lands are expected to be put to agricultural use, with the possibility that farm dwellings may be constructed. Because no utility upgrades are planned, purchasers constructing dwellings or undertaking agricultural uses that require electric power will need to explore off-the-grid alternatives such as generators and photovoltaic devices.

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## **9.0 CONSULTED PARTIES AND PARTICIPANTS**

### **9.1 PRE-ASSESSMENT CONSULTATION PERIOD**

Pre-consultation letters, along with a location map, were distributed to the agencies and organizations listed in the following table. Agency comment letters and appropriate responses for the Pre-Assessment Consultation Period are included in Appendix D.

<b>AGENCY</b>		<b>Letter Date</b>	<b>Date of Comments</b>
<b>County</b>			
1	Department of Environmental Management	6-16-06	6-23-06
2	Planning Department	6-16-06	7-12-06
3	Department of Public Works	6-16-06	None Received
4	Department of Research and Development	6-16-06	7-14-06
5	Department of Water Supply	6-16-06	7-11-06
6	Fire Department	6-16-06	7-07-06
7	Hawai‘i County Council	6-16-06	None Received
8	Police Department	6-16-06	7-06-06
9	Office of the Mayor		None Received
<b>State</b>			
10	Department of Business, Economic Development and Tourism (DBEDT)	6-16-06	None Received
11	DBEDT Land Use Commission	6-16-06	7-07-06
12	DBEDT Office of Planning	6-16-06	None Received
13	DBEDT Strategic Industries Division	6-16-06	None Received
14	Department of Health – Environmental Planning Office	6-16-06	None Received
15	Department of Land and Natural Resources (DLNR)	6-16-06	None Received
16	DLNR State Historic Preservation Division	6-16-06	None Received
17	Office of Environmental Quality Control	6-16-06	None Received
18	Office of Hawaiian Affairs	6-16-06	None Received
19	U.H. Mānoa College of Tropical Agriculture and Human Resources	6-16-06	7-07-06
<b>Other Organizations</b>			
20	Kamehameha Schools – Land Assets Division	6-16-06	None Received
21	Forest Solutions, Inc.	6-16-06	None Received

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### 9.2 DRAFT EA PUBLIC REVIEW PERIOD

The Draft EA was published in the August 23, 2006 issue of the OEQC’s *The Environmental Notice*, commencing a 30-day public review period which ended on September 22, 2006. Copies of the Draft EA were distributed to the agencies and organizations listed in the following table. Additionally, a copy of the Draft EA was provided during the public review period at the Honoka‘a Public Library. All written agency comment letters and appropriate responses are included in Appendix E

AGENCY		Letter Date	Date of Comments
<b>County</b>			
1	Department of Environmental Management	8-18-06	8-28-06
2	Planning Department	8-18-06	10-02-06
3	Department of Parks and Recreation	8-18-06	None Received
4	Department of Public Works	8-18-06	None Received
5	Department of Research and Development	8-18-06	None Received
6	Department of Water Supply	8-18-06	9-18-06
7	Fire Department	8-18-06	8-31-06
8	Hawai‘i County Council	8-18-06	None Received
9	Police Department	8-18-06	9-08-06
10	Office of the Mayor		None Received
<b>State</b>			
11	Department of Business, Economic Development and Tourism (DBEDT)	8-18-06	None Received
12	DBEDT Land Use Commission	8-18-06	9-11-06
13	DBEDT Office of Planning	8-18-06	None Received
15	Department of Health – Environmental Planning Office	8-18-06	None Received
16	Department of Land and Natural Resources (DLNR)	8-18-06	None Received
17	DLNR State Historic Preservation Division	8-18-06	None Received
18	Office of Environmental Quality Control	8-18-06	None Received
19	Office of Hawaiian Affairs	8-18-06	9-26-06
20	Office of Hawaiian Affairs – Community Resource Coordinator	8-18-06	None Received
21	U.H. Mānoa College of Tropical Agriculture and Human Resources	8-18-06	None Received
<b>Other Organizations</b>			
22	Kamehameha Schools – Land Assets Division	8-18-06	None Received
23	Forest Solutions, Inc.	8-18-06	None Received
24	Big Island Farm Bureau	8-18-06	None Received
25	Mauka-Makai Access Committee for the Hāmākua Agricultural Plan	8-28-06	9-15-06

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Other agencies (or agency documents) consulted in the preparation of this EA are listed below.

### **State of Hawai‘i**

University of Hawai‘i, Land Study Bureau

### **Federal**

- Department of Agriculture – Natural Resources Conservation Service
- Federal Emergency Management Agency
- U.S. Fish & Wildlife Service – Pacific Islands Office
- U.S. Geological Survey

### **Individuals or Organizations**

- Various members of the Mauka and Makai Access Committee of the Hāmākua Agricultural Plan

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# **Appendix A**

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Botanical Survey  
Geometrician Associates, LLC  
July 2006



# ***Botanical Survey County Lands at Pa‘auilo***

**By Ron Terry, Ph.D., Layne Yoshida, B.A., and Graham P. Knopp, Ph.D.  
Geometrician Associates, LLC  
Prepared for PBR Hawaii  
July 2006**

## ***Introduction***

This report describes the results of a botanical survey of 5 properties totaling about 740 acres in the Pa‘auilo area of the Hamakua District, identified by TMKs 4-3-07: 01; 4-3-9:19 & 24; and 4-3-11:01 and 02. The County of Hawai‘i plans to dispose of these properties at public auction, and given the context of the area, they are expected to remain in agricultural zoning and perhaps undergo farming or grazing. The properties vary in elevation from about 1,400 to 2,520 feet above sea level. Other than gulches and a few isolated areas, most of the land was cultivated for many decades in sugar cane. The properties are currently open with no active land uses. The properties are mapped in detail in the Environmental Assessment to which this report is an appendix; Figure 1 of this report illustrates their boundaries superimposed on recent IKONOS imagery of the area in order to illustrate gross vegetation features.

## ***Purpose and Methodology***

The objectives of the botanical survey were to 1) describe the vegetation; 2) list all species encountered; and 3) identify threatened or endangered plant species. The area was surveyed on foot by botanist Layne Yoshida, with assistance from Graham Knopp and Ron Terry, in June 2006.

The landscape has been heavily modified by decades of sugar cane cultivation that left much of the properties uniformly alien in vegetation. During the survey, areas of secondary alien vegetation were assessed by walking transects through representative sections. Small areas of semi-natural vegetation were carefully walked, and near-100 percent survey was obtained there.

Species were identified in the field and, as necessary, collected and keyed out in the laboratory. Special attention was given to the possible presence of any federally (USFWS 2000) listed endangered plant or animal species.

## ***Vegetational Influences***

The geologic substrate in this area is weathered Mauna Kea ash dating from 4,000 to 14,000 years BP (Wolfe and Morris 1996). The original vegetation of the general area was lowland rainforest, per Gagne and Cuddihy (1990), consisting of a closed canopy forest of ‘ohi‘a (*Metrosideros polymorpha*), koa (*Acacia koa*), and a diverse array of canopy and understory

trees, shrubs, herbs, vines and ferns, including kolea, (*Myrsine lessertiana*) hapu'u (*Cibotium* sp.) and uluhe (*Dicranopteris linearis*). These resources, along with the birds they supported, were harvested during traditional times by native Hawaiians, whose settlements and farms were mostly restricted to within 1.3 miles of the coast in Hamakua (Cordy 2000:44). No major disturbance of the area's vegetation likely occurred until the advent of sugar cane cultivation in the late 19<sup>th</sup> century, after which a century of clearing, application of fertilizers and pesticides, soil erosion, irrigation, and introduction of alien organisms utterly transformed the landscape. Even within protected gulches, the joint effects of all these forces has left only a little natural vegetation intact. As sugar cane declined, the old canefields have been left fallow or grazed by cattle. Weeds predominate but in certain areas a secondary forest with some native elements has begun to emerge.

### *Current Vegetation*

The property contains several vegetation types but is dominated by basically alien assemblages that vary according to slope and local disturbance history. They are subject to substantial change through time in a process similar to natural succession, as grasses give way to shrubs, and shrubs to trees. Factors both natural and human-disturbance related (e.g., periodic grazing) often restrict the development of these assemblages.

The two most basic vegetation types are areas that lie between gulches and have a regular, moderate slope – the type that takes up most of the property – and areas with gulches or steep hills, which occupy perhaps a tenth of the area (see Fig. 1).

The former type is vegetated in the secondary grassland most often associated with abandoned sugar cane fields. It is dominated by guinea grass (*Panicum maximum*), interspersed with the alien trees ironwood (*Casuarina* sp.) and eucalyptus (*Eucalyptus* sp.). Interestingly, the native tree dominant in the natural vegetation, koa (*Acacia koa*), is also fairly common in places, especially at higher elevations. An area of about 40 acres below the UH research station has particularly vigorous growth (see Fig. 1). The guinea grass grows as high as seven feet and may form almost impenetrable stands. Where there are water run-off channels or slopes with exposed soil, ferns predominate, including alien and indigenous sword ferns (*Nephrolepis* spp.) and the alien golden fern (*Pityrogramma austroamericana*). Along the many unpaved roads are weedy species such as Florida beggarweed (*Desmodium tortuosum*) and hyptis (*Hyptis pectinata*). The gulches have steep sides and are often dominated by coffee (*Coffea arabica*), strawberry guava (*Psidium cattleianum*) and kukui (*Aleurites moluccana*).

As discussed above, koa readily grows on the open grassland in places, but other natives, such as the trees 'ohi'a, kolea, and kopiko (*Psychotria hawaiiensis*), and the tree ferns hapu'u (*Cibotium glaucum*) and ama'u (*Sadleria cyatheoides*), are restricted to the steeper gulches and hills. They are mainly found within several of the gulches or around pu 'u (cinder hills), some of which were formerly quarries (see Fig. 1 for location). The best native vegetation is found in an unquarried hilly feature near the top elevations of the property that contains thick, clayey soil, perhaps derived from cinder. This area, which may represent original forest spared from clearing because of its steep slopes, contains a number of native trees including the relatively uncommon hame

(*Antidesma plathyphyllum*). One of the quarries contains many 'ohi'a seedlings up to seven feet tall, indicating active recruitment of this keystone plant species.

### *Flora*

A full list of plant species found on the site is contained in the table in Appendix 1, below. As described above, the majority (85%) of species are alien, and most of the native plants found on the site are relatively common, especially the ferns, grasses and herbs. Notwithstanding, there are a number of native trees of interest such as kolea, kopiko, hame, and koai'a (*Acacia koaia*). Koai'a was noted at the edge of one of the subject properties, near an adjacent home (see Fig. 1).

These koa'ia were probably planted, as they were growing alongside similarly sized (and probably aged) ornamental flowering cherries, parallel to an existing road.

A few grasses (one a bamboo) and a member of the leguminous family were not able to be identified. These species are almost certainly alien.

### *Threatened and Endangered or Rare Species*

No plant species listed or proposed as threatened or endangered by the U.S. Fish and Wildlife Service or the Hawai'i State Department of Land and Natural Resources were found.<sup>1</sup> Koai'a is considered rare, but its presence here is probably a result of planting, and probably does not indicate a natural occurrence necessitating special conservation measures.

### *Impacts and Mitigation Measures*

In general, the proposed sale and subsequent use of the Pa'auilo County lands is not expected to have any substantial adverse impact on the botanical resources or vegetation, as the property is overwhelmingly dominated by alien species. With the exception of koai'a (probably planted), all of the native plants which are found on the site can also be found in similar wet lowland environments in East Hawai'i and on most of the main Hawaiian Islands.

The concentration of native species around the hill feature identified on Figure 1 is an area that the County may wish to consider recommending for preservation by the purchaser. The fact that slopes there are steep likely prevented sugar cane plantations from using the area. This indicates that even now, mechanized land clearing and agricultural uses may be difficult. It is likely that many purchasers would consider this small concentration of semi-intact native forest an asset of the property that would not affect economic uses in other areas.

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<sup>1</sup> Koai'a is considered by many authors to be a legitimate species, called *Acacia koaia*. The *Manual of the Flowering Plants of Hawaii* (Wagner and Herbst 1990) classified it as a form of *Acacia koa* but recognized the need for more research. *Acacia koaia* was at one time listed by the U.S. Fish and Wildlife Service as a candidate endangered species, a status which required its consideration in federal projects but did not confer wider protection. When the system of classifying threatened and endangered species was revised in 1996, candidate species lost official recognition on the list of threatened and endangered species. Many, such as koai'a, became Species of Concern, a term that indicates that the U.S. Fish and Wildlife Service is closely monitoring their status. The State of Hawai'i, Division of Forestry and Wildlife also considers koai'a a Species of Concern.



The proposed sale and subsequent use poses little potential for secondary or cumulative impacts to botanical resources, as nearly all vegetation is alien and thus has low conservation value. The cumulative loss of some of the common native plants found on the property that might occur when considering this project in addition to other past, present and foreseeable future actions in Hamakua is small. This loss would detract only negligibly from the population of these species and would not affect the general health or makeup of lowland areas in forest areas on the Hamakua coast with intact ecosystems (mostly found further south and mauka in North and South Hilo). There would thus be little or no potential for adverse effects to accumulate with others.

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# Appendix 1

## Plant Species Identified on the Pa‘auilo County Lands

Scientific Name	Family	Common Name	LifeForm	Status*
<i>Abutilon pictum</i>	Malvaceae	Bell Hibiscus	Shrub	A
<i>Acacia koa</i>	Fabaceae	Koa	Tree	I
<i>Acacia koaia</i>	Fabaceae	Koaia	Shrub	I
<i>Acacia mearnsii</i>	Fabaceae	Black Wattle	Shrub	A
<i>Adiantum hispidulum</i>	Pteridaceae	Five-fingered maidenhair	Fern	A
<i>Adiantum raddianum</i>	Pteridaceae	Maidenhair	Fern	A
<i>Ageratina riparia</i>	Asteraceae	Pamakani	Herb	A
<i>Ageratum conyzoides</i>	Asteraceae	Ageratum	Herb	A
<i>Aleurites molucana</i>	Euphorbiaceae	Kukui	Herb	A
<i>Amaranthus spinosus</i>	Amaranthaceae	Spiny Amaranth	Herb	A
<i>Antidesma platyphyllum</i>	Euphorbiaceae	Mehame	Tree	I
<i>Arundina graminifolia</i>	Orchidaceae	Bamboo Orchid	Herb	A
<i>Asclepias</i> sp.	Asclepiadaceae	Milkweed	Herb	A
<i>Asplenium lobulatum</i>	Aspleniaceae	Analii	Fern	I
<i>Asplenium polyodon</i>	Aspleniaceae	Asplenium	Fern	I
<i>Bidens pilosa</i>	Asteraceae	Beggar’s Tick	Herb	A
<i>Blechnum appendiculatum</i>	Blechnaceae	Blechnum	Fern	A
<i>Brachiaria mutica</i>	Poaceae	California Grass	Herb	A
<i>Brassica</i> sp.	Brassicaceae	Mustard	Herb	A
<i>Buddleia asiatica</i>	Buddleiaceae	Buddleia	Shrub	A
<i>Castilleja arvensis</i>	Scrophulariaceae	Indian Paintbrush	Herb	A
<i>Casuarina equisetifolia</i>	Casuarinaceae	Ironwood	Tree	A
<i>Casuarina</i> sp.	Casuarinaceae	Ironwood	Tree	A
<i>Chamaecrista nictitans</i>	Fabaceae	Partridge Pea	Herb	A
<i>Chamaesyce hirta</i>	Euphorbiaceae	Hairy Spurge	Herb	A
<i>Chamaesyce hypericifolia</i>	Euphorbiaceae	Graceful Spurge	Herb	A
<i>Chamaesyce prostrata</i>	Euphorbiaceae	Spurge	Herb	A
<i>Chloris</i> sp.	Poaceae	Chloris	Herb	A
<i>Christella dentata</i>	Thelypteridaceae	Cyclosorus	Fern	A
<i>Cibotium glaucum</i>	Dicksoniaceae	Hapu‘u Pulu	Fern	I
<i>Cocculus trilobus</i>	Menispermaceae	Huehue	Vine	I
<i>Coffea arabica</i>	Rubiaceae	Coffee	Shrub	A
<i>Commelina diffusa</i>	Commelinaceae	Honohono	Herb	A
<i>Conyza bonariensis</i>	Asteraceae	Horseweed	Herb	A
<i>Conyza canadensis</i>	Asteraceae	Horseweed	Herb	A
<i>Cordyline fruticosa</i>	Agavaceae	Ki	Shrub	A
<i>Crepis capillaris</i>	Asteraceae	Hawk’s Beard	Herb	A
<i>Crotalaria micans</i>	Fabaceae	Crotalaria	Herb	A
<i>Crotalaria</i> sp.	Fabaceae	Crotalaria	Herb	A
<i>Cuphea carthagenensis</i>	Lythraceae	Tarweed	Herb	A
<i>Cycas revoluta</i>	Cycadaceae	Cycad	Shrub	A
<i>Cynodon dactylon</i>	Poaceae	Bermuda Grass	Herb	A
<i>Cyperus</i> sp.	Cyperaceae	Sedge	Herb	A
<i>Desmodium sandwicense</i>	Fabaceae	Desmodium	Herb	A
<i>Desmodium tortuosum</i>	Fabaceae	Beggarweed	Vine	A

<b>Appendix 1, continued</b>				
<b>Scientific Name</b>	<b>Family</b>	<b>Common Name</b>	<b>LifeForm</b>	<b>Status*</b>
Desmodium triflorum	Fabaceae	Desmodium	Herb	A
Dicranopteris linearis	Gleicheniaceae	Uluhe	Fern	I
Digitaria setigera	Poaceae	Itchy Crabgrass	Herb	I
Digitaria violascens	Poaceae	Violet Crabgrass	Herb	A
Drymaria cordata	Caryophyllaceae	Pipili	Herb	A
Eleusine indica	Poaceae	Wiregrass	Herb	A
Eragrostis sp.	Poaceae	Lovegrass	Herb	A
Erechtites hieracifolia	Asteraceae	Fireweed	Herb	A
Erechtites valerianifolia	Asteraceae	Fireweed	Herb	A
Eryobotrya japonica	Rosaceae	Loquat	Tree	A
Erythrina sp.	Fabaceae	Erythrina	Tree	A
Eucalyptus robusta	Myrtaceae	Swamp Mahogany	Tree	A
Eucalyptus sp.	Myrtaceae	Eucalyptus	Tree	A
Eucalyptus saligna	Myrtaceae	Sydney Blue Gum	Tree	A
Geranium sp.	Geraniaceae	Cranesbill	Herb	A
Gnaphalium japonicum	Asteraceae	Gnaphalium	Herb	A
Gravillea robusta	Proteaceae	Silver Oak	Tree	A
Hedychium coronarium	Zingiberaceae	White Ginger	Herb	A
Hedychium flavescens	Zingiberaceae	Yellow Ginger	Herb	A
Hypochoeris radicata	Asteraceae	Cat's Ear	Herb	A
Hyptis pectinata	Lamiaceae	Hyptis	Vine	A
Indigofera suffruticosa	Fabaceae	Indigo	Shrub	A
Ipomoea indica	Convolvulaceae	Morning Glory	Vine	I
Jacaranda mimosifolia	Bignoniaceae	Jacaranda	Tree	A
Kyllinga brevifolia	Cyperaceae	Green Kyllinga	Herb	A
Lepisorus thunbergianus	Polypodiaceae	Pleopeltis	Fern	I
Leucaena leucocephala	Fabaceae	Haole Koa	Tree	A
Linum trigynum	Linaceae	Linum	Herb	A
Lycopodium venustulum	Lycopodiaceae	Lycopodium	Fern Ally	I
Macadamia integrifolia	Proteaceae	Macadamia	Tree	A
Macroptilium atropurpureum	Fabaceae	Phaeseolus	Vine	A
Malvastrum coromandelianum	Malvaceae	Malvastrum	Herb	A
Medicago sp.	Fabaceae	Clover	Herb	A
Melaleuca quinquenervia	Myrtaceae	Paperbark	Tree	A
Melia azedarach	Meliaceae	Chinaberry	Tree	A
Melinis minutiflora	Poaceae	Molasses Grass	Herb	A
Metrosideros polymorpha	Myrtaceae	Ohia	Tree	I
Microlepia strigosa	Dennstaedtiaceae	Palapalai	Fern	I
Mimosa pudica	Fabaceae	Sleeping Grass	Herb	A
Morus alba	Moraceae	Mulberry	Shrub	A
Myrica faya	Myricaceae	Faya Bush	Tree	A
Myrsine lessertiana	Myrsinaceae	Kolea	Tree	I
Nephrolepis exaltata	Nephrolepidaceae	Sword Fern	Fern	I
Nephrolepis mutiflora	Nephrolepidaceae	Sword Fern	Fern	A
Odontosoria chinensis	Dennstaedtiaceae	Lace Fern	Fern	I
Oxalis corniculata	Oxalidaceae	Wood Sorrel	Herb	A
Panicum maximum	Poaceae	Guinea Grass	Herb	A
Paspalum conjugatum	Poaceae	Hilo Grass	Herb	A

<b>Appendix 1, continued</b>				
<b>Scientific Name</b>	<b>Family</b>	<b>Common Name</b>	<b>LifeForm</b>	<b>Status*</b>
Paspalum fimbriatum	Poaceae	Fimbriate Paspalum	Herb	A
Paspalum sp.	Poaceae	Paspalum	Herb	A
Passiflora edulis	Passifloraceae	Lilikoi	Vine	A
Passiflora ligularis	Passifloraceae	Sweet Granadilla	Vine	A
Pennisetum clandestinum	Poaceae	Kikuyu Grass	Herb	A
Pennisetum purpureum	Poaceae	Napier Grass	Herb	A
Persea americana	Lauraceae	Avacado	Tree	A
Phlebodium aureum	Polypodiaceae	Golden Polypody	Fern	A
Physalis peruviana	Solanaceae	Poha	Herb	A
Phytollaca octandra	Phytollacaceae	Southern Pokeberry	Herb	A
Pinus sp.	Pinaceae	Pine	Tree	A
Pityrogramma austroamericana	Pteridaceae	Gold Fern	Fern	A
Plantago lanceolata	Plantaginaceae	Plantago	Herb	A
Plantago major	Plantaginaceae	Common Plantain	Herb	A
Pluchea symphytifolia	Asteraceae	Sourbush	Shrub	A
Polygala paniculata	Polygalaceae	Pink	Herb	A
Prunus serrulata	Rosaceae	Flowering Cherry	Shrub	A
Psidium cattleianum	Myrtaceae	Strawberry Guava	Tree	A
Psidium guajava	Myrtaceae	Guava	Tree	A
Psilotum nudum	Psilotaceae	Moa	Fern Allie	I
Psychotria hawaiiensis	Rubiaceae	Kopiko Ula	Tree	I
Pteridium aquilinum	Hypolepidaceae	Bracken Fern	Fern	I
Pycnus polystachyos	Cyperaceae	Sedge	Herb	I
Raphanus sp.	Brassicaceae	Radish	Herb	A
Rhynchelytrum repens	Poaceae	Natal Grass	Herb	A
Rhynchospora caduca	Cyperaceae	Beak-rush	Herb	A
Ricinus communis	Euphorbiaceae	Castor Bean	Shrub	A
Rosa sp.	Roasaceae	Rose	Vine	A
Rubus rosifolius	Rosaceae	Thimbleberry	Herb	A
Rubus sp.	Rosaceae	Blackberry	Vine	A
Saccharum officinarum	Poaceae	Ko	Tree	A
Sacciolepis indica	Poaceae	Glenwood Grass	Herb	A
Sadleria cyatheoides	Blechnaceae	Amau	Fern	I
Schefflera actinophylla	Araliaceae	Octopus Tree	Tree	A
Schizachyrium condensatum	Poaceae	Beardgrass	Herb	A
Senecio madagascariensis	Asteraceae	Senecio	Herb	A
Senecio mikanioides	Asteraceae	German Ivy	Herb	A
Setaria gracilis	Poaceae	Yellow Foxtail	Herb	A
Setaria palmifolia	Poaceae	Palmgrass	Herb	A
Sida rhombifolia	Malvaceae	Sida	Herb	A
Solanum americanum	Solanaceae	Popolo	Herb	I
Sonchus oleraceus	Asteraceae	Pualele	Herb	A
Spermaceoce assurgens	Rubiaceae	Buttonweed	Herb	A
Sphenomeris chinensis	Lindsaeaceae	Palaa	Fern	I
Sporobolus indicus	Poaceae	Smut Grass	Herb	A
Stachytarpheta jamaicensis	Verbenaceae	Jamaican Vervain	Shrub	A
Syzygium jambos	Myrtaceae	Rose Apple	Tree	A
Crocasmia x crocosmiiflora	Iridaceae	Tritonia	Herb	A
Verbena litoralis	Verbenaceae	Owi	Herb	A

A = alien, E = endemic, I = indigenous, End = Federal and State listed Endangered Species



# **Appendix B**

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Avian and Terrestrial Mammalian Survey

Rana Productions, Ltd.

July 2006





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A Survey of Avian and Terrestrial Mammalian  
Species on TMK 4-3-07: 01; 4-3-9:19 & 24; and  
4-3-11:01 and 02, Hāmākua District,  
Island of Hawai‘i.

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## ***Introduction***

The County of Hawai‘i, Department of Finance is planning on divesting itself of five parcels of land totaling approximately 740-acres, located *mauka* of the town of Pa‘auilo, Hāmākua District, Hawaii. The properties are identified as, TMKs 4-3-07: 01; 4-3-9:19 & 24; and 4-3-11:01 and 02. Given the lands in the context of the area, it is expected that they will remain in agricultural zoning and perhaps be sold or farming or grazing. The properties are currently open with no active land uses. The properties are mapped in detail in the Environmental Assessment to which this report is an appendix. This report describes the results of avian and mammalian surveys conducted on the parcels. Fieldwork was conducted between July 6 and 8, 2006.

The primary purpose of the survey was to determine if there were any avian or mammalian species currently listed as endangered, threatened, or proposed for listing under either the federal or the State of Hawai‘i’s endangered species programs on, or within the immediate vicinity of any of the five parcels of land. Federal and State of Hawai‘i listed species status follows species identified in the following referenced documents (Department of Land and Natural Resources (DLNR) 1998, Federal Register 1999, 2005).

Avian phylogenetic order and nomenclature follows *The American Ornithologists’ Union Check-list of North American Birds 7<sup>th</sup> Edition* (American Ornithologists’ Union 1998), and the 42<sup>nd</sup> through the 47<sup>th</sup> supplements to *Check-list of North American Birds* (American Ornithologists’ Union 2000; Banks et al. 2002, 2003, 2004, 2005). Mammal scientific names follow *Mammals in Hawaii* (Tomich 1986). Plant names follow *Manual of the Flowering Plants of Hawai‘i* (Wagner et al. 1990, 1999). Place names follow *Place Names of Hawaii* (Pukui et al. 1976).

Hawaiian and scientific names are italicized in the text. A glossary of technical terms and acronyms used in the document, which may be unfamiliar to the reader, are included at the end of the narrative text on page 11.

## ***General Site Description***

The lands slope from west to east, from a maximum elevation of approximately 2700-feet above sea level, down to approximately 1,400-feet above sea level. The lands are transected by Opihilala, Waipunalau, Pa‘auilo, and ‘Ā‘amanu Gulches. The geologic substrate present in the area is weathered Mauna Kea ash disgorged from Mauna Kea between 65,000 and 250,000 years ago during the Pleistocene Age, portions of these deposits are covered by newer material deposited between 4,000 and 7,000-years ago during the early Holocene Age (Wolfe and Morris 1996).

The bulk of the lands were intensively farmed for sugar cane since the late 19<sup>th</sup> century. As with most of the former sugar cane lands in the Hāmākua District these lands have lain fallow or been used for cattle pasturage since the decline and finally cessation of

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sugar cultivation in the 1990's. The vegetation on the bulk of the property is dominated by alien species typical of former sugar cane lands in the Hāmākua District (Figure 1). In some of the higher areas a secondary forest containing some native components has begun to emerge on portions of the abandoned sugar cane fields. The bulk of the site is covered with extremely dense grass, much of which is over six foot tall, making transit through the area difficult (Figure 2).



**Figure 1 – Typical Vegetation on *mauka* Portions of the Pa‘auilo Property**

### ***Mammalian Survey Methods***

With the exception of the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*), or ‘ōpe‘ape‘a as it is known locally, all terrestrial mammals currently found on the Island of Hawai‘i are alien species. Most are ubiquitous. The survey of mammals was limited to visual and auditory detection, coupled with visual observation of scat, tracks, and other animal sign. A running tally was kept of all vertebrate species observed and heard within the project area. Visual and electronic scans, using a Broadband AnaBat II® ultrasonic bat detector, were made for bats during crepuscular periods on the evenings of July 6, and 7, 2006.



**Figure 2 – Typical Vegetation on Southern *makai* Pa‘auilo Lands**

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### ***Mammalian Survey Results***

A total of nine mammalian species were detected during the course of this survey. Hawaiian hoary bats were seen on both nights that we searched for them. On July 6, 2006 I saw individual bats flying above Opihilala Gulch, no more than one animal was seen at a time, though I had six separate sightings that evening, whether those sightings represent one bat or more than one is not known. On the evening of July 7, 2006 I recorded one bat flying over an area just south of Waipunalau Gulch. One unidentified rat (*Rattus* sp.) was seen along the unpaved section of Maniene Road. Several European house mice (*Mus domesticus*) were seen in various locations within the study area. Several dogs (*Canis f. familiaris*) were seen on the site, as were five small Indian mongooses (*Herpestes a. auropunctatus*). Two cats (*Felis catus*) were seen close to roadways within the site. Horse

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(*Equus c. caballus*), pig (*Sus s. scrofa*), and cattle (*Bos Taurus*) were seen in several locations on the property. Tracks, scat and sign of dog, mongoose, cat, horse, pig and cattle were seen at numerous locations within the site.

### ***Avian Survey Methods***

Twenty avian count stations were sited along four linear transects running from *mauka* to *makai* across the properties. Count stations were placed at approximately 300-meter intervals equally spaced along these transects. Six-minute point counts were made at each of the 20-count stations. Each station was counted once. Field observations were made with the aid of Leitz 10 X 42 binoculars and by listening for vocalizations. Counts were concentrated between 07:00 a.m. and 11:00 a.m., the peak of daily bird activity. An additional two hours were spent within the area on the evenings of July 6 and 7, 2006, and on the mornings of July 7 and 8, 2006, in an attempt to detect nocturnally flying seabirds over-flying the project area. Time not spent counting was used to search the remainder of the study site for species and habitats that were not detected during count sessions.

### ***Avian Survey Results***

A total of 501 individual birds of 24 different species, representing 15 separate families, and one sub-family were recorded during station counts (Table 1). One species recorded, the Hawaiian Hawk (*Buteo solitarius*) is an endemic endangered species. Two species, Hawaii Amakihi (*Hemihgnathus virens*), and Apapane (*Himatione sanguinae*) are endemic forest birds and two; Black-crowned Night-Heron (*Nycticorax nycticorax hoactli*), and Short-eared Owl (*Asio flammeus sanwichensis*) are indigenous resident species. The remaining 19-species detected are alien to the Hawaiian Islands.

Avian diversity and densities were in keeping with the habitat present within the study area. Four species, Japanese White-eye (*Zosterops japonicus*), Zebra Dove (*Geopelia striata*), House Finch (*Carpodacus mexicanus frontalis*), and Common Myna (*Acridotheres tristis*) accounted for 59% of the total number of birds recorded during station counts. The most common avian species recorded was Japanese White-eye, which accounted for slightly less than 20% of the total number of individual birds recorded. An average of 25 individual birds were recorded per station count.

## ***Discussion***

### ***Mammalian Resources***

The findings of the mammalian survey are consistent with the habitat present on the site. The endangered Hawaiian hoary bats was recorded on both nights that they were surveyed for. This is not surprising, as this species is relatively common in the Hāmākua District on a seasonal basis. (Jacobs 1994, David 2006). Unlike nocturnally flying seabirds, which often collide with man-made structures, bats are uniquely adapted to avoid collision with most obstacles, man-made or natural. They navigate and locate their



prey primarily by using ultrasonic echolocation, which is sensitive enough to allow them to locate and capture small volant insects at night.

**Table 1**

<b>Avian Species Detected, Pa‘uilo Lands Survey</b>			
<b>Common Name</b>	<b>Scientific Name</b>	<b>ST</b>	<b>RA</b>
<b>GALLIFORMES</b>			
PHASIANIDAE - Pheasants & Partridges			
Phasianinae - Pheasants & Allies			
Black Francolin	<i>Francolinus francolinus</i>	A	0.55
Erckel’s Francolin	<i>Francolinus erckelii</i>	A	0.15
Red Junglefowl	<i>Gallus gallus</i>	D	0.65
Ring-necked Pheasant	<i>Phasianus colchicus</i>	A	0.40
ODONTOPHORIDAE - New World Quail			
California Quail	<i>Callipepla californica</i>	A	0.35
<b>CICONIIFORMES</b>			
ARDEIDAE - Herons, Bitterns & Allies			
Cattle Egret	<i>Bubulcus ibis</i>	A	0.15
Black-crowned Night-Heron	<i>Nycticorax nycticorax hoactli</i>	IB	0.10
<b>FALCONIFORMES</b>			
ACCIPITRIDAE - Hawks, Kites, Eagles & Allies			
Hawaiian Hawk	<i>Buteo solitarius</i>	EE	0.10
<b>COLUMBIFORMES</b>			
COLUMBIDAE - Pigeons & Doves			
Rock Pigeon	<i>Columba livia</i>	A	0.25
Spotted Dove	<i>Streptopelia chinensis</i>	A	1.55
Zebra Dove	<i>Geopelia striata</i>	A	3.60
<b>STRIGIFORMES</b>			
TYTONIDAE - Barn Owls			
Barn Owl	<i>Tyto alba</i>	A	0.50
STRIGIDAE - Typical Owls			
Short-eared Owl	<i>Asio flammeus sandwichensis</i>	IB	0.50
TIMALIIDAE - Babblers			
Hwamei	<i>Garrulax canorus</i>	A	0.90
ZOSTEROPIDAE - White-eyes			
Japanese White-eye	<i>Zosterops japonicus</i>	A	4.95
MIMIDAE - Mockingbirds & Thrashers			
Northern Mockingbird	<i>Mimus polyglottos</i>	A	0.20



Common Name	Scientific Name	ST	RA
	STURNIDAE - Starlings		
Common Myna	<i>Acridotheres tristis</i>	A	3.00
	CARDINALIDAE - Cardinals Saltators & Allies		
Northern Cardinal	<i>Cardinalis cardinalis</i>	A	1.70
	FRINGILLIDAE - Fringilline and Carduleline Finches & Allies		
	Carduelinae - Carduline Finches		
House Finch	<i>Carpodacus mexicanus</i>	A	3.15
	Drepanidinae - Hawaiian Honeycreepers		
Hawaii Amakihi	<i>Hemignathus virens</i>	EB	0.25
Apapane	<i>Himatione sanguinea</i>	EB	0.20
	PASSERIDAE - Old World Sparrows		
House Sparrow	<i>Passer domesticus</i>	A	0.80
	ESTRILDIDAE - Estrildid Finches		
	Estrildinae - Estrildine Finches		
African Silverbill	<i>Lonchura cantans</i>	A	0.50
Nutmeg Mannikin	<i>Lonchura punctulata</i>	A	1.45

#### KEY TO TABLE 1

<b>ST</b>	Status
<b>A</b>	Alien Species
<b>D</b>	Domestic – Not known to be established in the wild on the Island of Hawai‘i
<b>IB</b>	Indigenous Breeding – An indigenous resident breeding species
<b>EE</b>	Endangered Endemic – An endemic species listed as Endangered by both Federal and State statutes
<b>EB</b>	Endemic Breeding – An endemic resident breeding species
<b>RA</b>	Relative Abundance: Number of birds detected divided by the number of count stations (20)

The Hawaiian hoary bat is a typical lasurine bat, and as such they primarily lead a solitary existence, described as “over-dispersed”. They generally roost cryptically in foliage, which makes them difficult to study (Findley and Tomich 1983, Jacobs 1993, Carter *et al.* 2000). Very little research into the life cycle, distribution, or population estimates of this species, has been conducted; and much of what has been studied, were small, disconnected, or anecdotal studies as opposed to coherent controlled experiments. Fundamental research into this species distribution and life cycle has just begun (Bonaccorso *et al.* 2005).

One rat of indeterminate species and numerous mice were seen during this survey, as were several European house mice. It is likely that roof rats (*Rattus r. rattus*), Norway rats (*Rattus norvegicus*), and possibly Polynesian rats (*Rattus exulans hawaiiensis*) utilize resources on the property in addition to mice. Without conducting a trapping program, it is difficult to assess the population densities of these often hard-to-see alien mammals.

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### *Avian Resources*

Avian diversity and densities were in keeping with the habitat present within the Study area. A total of 24 avian species were detected during the course of this survey (Table 1). One species recorded, the Hawaiian Hawk (*Buteo solitarius*) is an endemic endangered species.

Hawaiian Hawks are currently found in nearly all habitats that still have some large tree components on the island. They are regularly seen foraging in the Hāmākua area. Hawk densities are highest in mature, native species dominated forests, with grassy under-stories. This habitat, with high amounts of forest edge, supports large populations of game birds and the four species of introduced rodents known from the island, all of which are prey items for the hawk. Additionally, this type of habitat also provides numerous perches and nesting sites suitable for this species (Klavitter 2000).

The Hawaiian Hawk, or 'io, is the only extant *falconiforme* in Hawai'i. It is currently endemic to the Island of Hawai'i. Sub-fossil remains indicate that it was also formerly found on Moloka'i and Kaua'i (Olson & James 1997). Several incidental unconfirmed sightings of this species exist from Kaua'i (Dole 1879, Beaglehole, 1967) and Maui (Banko 1980c). This species was first mentioned in the western literature by Cook and King in (1784) and was scientifically described by Peale in 1848 from a specimen collected in "Kealakekua" (Medway 1981, Peale 1848).

Current population estimates based on John Klavitter's research extrapolates that there are currently 1,457 Hawaiian Hawks that, in his estimation, is equal to or higher than what was present in pre-contact times (Klavitter 2000).

Hawaiian Hawks, like many other Hawaiian endemic avian species, have low mortality  $\leq 9\%$ , and reproductive rates, lay only one egg per season, fledge one chick, and live ~ 20 years (Klavitter 2000). The Hawaiian Hawk breeding season starts in late March, chicks hatch in May, and begin fledge in July (Griffin et al. 1998). Although hawks use resources in most forest habitats they usually pick 'ōhi'a trees in which to nest. Of 112 nests found during the 1998 and 1999 nesting seasons, 82% of the nests were located in 'ōhi'a trees (Klavitter 2000).

Two species detected, Hawaii Amakihi (*Hemihgnathus virens*), and Apapane (*Himatione sanquinae*) are relatively common endemic forest birds usually found in native vegetation. These birds were all recorded at the upper reaches of the property in very small numbers. Two other species recorded, Black-crowned Night-Heron (*Nycticorax nycticorax hoactli*), and Short-eared Owl (*Asio flammeus sanwichensis*) are indigenous resident species. The remaining 19-species detected are alien to the Hawaiian Islands.

Although not detected during this survey, it is possible that small numbers of the endangered endemic Hawaiian Petrel (*Pterodroma sandwichensis*), and the threatened Newell's Shearwater (*Puffinus auricularis newelli*), over-fly the study area between the months of May and November (Banko 1980a, 1980b, Harrison 1990, Day et al. 2003a).

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Hawaiian Petrels were formerly common on the Island of Hawai‘i (Wilson and Evans 1890–1899). This pelagic seabird reportedly nested in large numbers on the slopes of Mauna Loa and in the saddle area between Mauna Loa and Mauna Kea (Henshaw 1902), as well as at the mid-to-high elevations of Mount Hualālai. It has, within recent historic times, been reduced to relict breeding colonies located at high elevations on Mauna Loa and, possibly, Mount Hualālai (Banko 1980a, Banko et al. 2001, Cooper and David 1995, Cooper et al. 1995, Day et al. 2003a, Harrison 1990, Simons and Hodges 1998). The United States Fish & Wildlife Service (USFWS) listed Hawaiian Petrels as an endangered species in 1967 and by the State of Hawai‘i in 1973 (Federal Register 1967, DLNR 1998)

Newell’s Shearwaters were formerly common on the Island of Hawai‘i (Wilson and Evans 1890–1899). This species breeds on Kaua‘i, Hawai‘i, and Moloka‘i. Newell’s Shearwater populations have dropped precipitously since the 1880s (Banko 1980b, Day et al., 2003b). This pelagic species nests high in the mountains in burrows excavated under thick vegetation, especially *uluhe* (*Dicranopteris linearis*) fern. Newell’s Shearwater was listed as a threatened species by the USFWS in 1975 and by the State of Hawai‘i in 1973 (Federal Register 1975, DLNR 1998).

The primary cause of mortality in both Hawaiian Petrels and Newell’s Shearwaters is thought to be predation by alien mammalian species at the nesting colonies (USFWS 1983, Simons and Hodges 1998, Ainley et al. 2001). Collision with man-made structures is considered to be the second most significant cause of mortality of these seabird species in Hawai‘i. Nocturnally flying seabirds, especially fledglings on their way to sea in the summer and fall, can become disoriented by exterior lighting. When disoriented, seabirds often collide with manmade structures, and if they are not killed outright, the dazed or injured birds are easy targets of opportunity for feral mammals (Hadley 1961, Telfer 1979, Sincock 1981, Reed et al. 1985, Telfer et al. 1987, Cooper and Day 1998, Podolsky et al. 1998, Ainley et al. 2001). There is no suitable nesting habitat within the study area for either of these pelagic seabird species.

## ***Conclusions***

From a native avian and mammalian perspective there is nothing unique about these lands. By in large these lands are highly degraded, and are of minimal value to native avian and mammalian species in their current condition. The riparian habitat within the various gulches on the properties likely supports Hawaiian hoary bats. The upper, open slopes provide foraging and possibly some nesting opportunities for Hawaiian Hawks. Both of these listed species are relatively common in the Hāmākua District, and can be expected to use resources on similar lands within the District.

The proposed sale and subsequent use of the Pa‘auilo County lands is not expected to have any substantial deleterious impact on native avian and mammalian species present in the area.

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***Glossary:***

Alien – Introduced to Hawai‘i by humans.

Commensal – Animals that share humans’ food and shelter, such as rats and mice.

Crepuscular – Twilight hours.

Domesticated – Feral species, not considered established in the wild on the Island of Hawai‘i.

Endangered – Listed and protected under the Endangered Species Act of 1973, as amended as an endangered species.

Endemic – Native and unique to the Hawaiian Islands.

Indigenous – Native to the Hawaiian Islands, but also found elsewhere naturally.

*Mauka* – Upslope, towards the mountains.

*Makai* – Down-slope, towards the ocean.

Nocturnal – Night-time, after dark.

Pelagic – An animal that spends its life at sea – in this case seabirds that only return to land to nest and rear their young.

Threatened – Listed and protected under the ESA as a threatened species.

Volant – Flying, capable of flight, as in flying insect.

DLNR – Hawaii State Department of Land & Natural Resources.

ESA – Federal Endangered Species Act of 1973, as amended.

TMK – Tax Map Key.

USFWS – U.S. Fish & Wildlife Service.

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# **Appendix C**

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Archaeological Inventory Survey

Haun & Associates

August 2006



**ARCHAEOLOGICAL INVENTORY SURVEY  
COUNTY OF HAWAII PA'AUULO LANDS  
LANDS OF KAMOAUAU, MANIENIE, OPIHILALA,  
HAUOLA, PA'AUULO AND A'AMANU  
HAMAKUA DISTRICT, ISLAND OF HAWAII  
(TMK: [3] 4-3-007:001, 4-3-009:019, 024;  
4-3-011:001, 002)**

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**ARCHAEOLOGICAL INVENTORY SURVEY  
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# SUMMARY

At the request of PBR Hawaii Haun & Associates conducted an archaeological inventory survey of a c. 740 acre parcel located in the Lands of Kamoauau, Manienie, Opihilala, Hauola, Pa'auilo and A'amanu, Hamakua District, Island of Hawai'i (TMK: [3] 4-3-007:001, 4-3-009:019, 024, 4-3-011:001, 002). The objective of the survey was to satisfy current historic preservation regulatory review inventory requirements of the Department of Land and Natural Resources-State Historic Preservation Division.

The archaeological survey identified of two sites with four features. The identified sites conform to expected historic remains within the project area. One site consists of a terrace and retaining walls potentially associated with early 1900s homestead use of the parcel. These features potentially served to control erosion because the features are situated on a steep slope that is unlikely to have been used for agriculture. It is possible that the features were constructed to stabilize the slope in conjunction with planting eucalyptus trees.

The other site is a concrete wall that retains a dirt road. The use of formed concrete indicates a probable 1900s age for the site. The road is part of a network of roads that provided access to sugar cane fields and it is likely that the site was constructed by the Hamakua Sugar Company or is predecessor the Hamakua Mill Company.

No traditional Hawaiian sites were identified, but this is not unexpected because the area would have had a very low site density. Furthermore, archaeological evidence for such sites, primarily temporary camps and trails, would be minimal consisting of food remains and artifacts. Habitation structures were probably made entirely of perishable materials including wood and thatch because surface stones are rare. The extensive mechanized cultivation of sugar cane undoubtedly would have destroyed any evidence of traditional use in the areas occupied by fields. The drainages in the project area are narrow, steep-walled and relatively straight channels that are scoured during periodic floods and are very unlikely to contain cultural deposits.

Both sites are assessed as solely significant for their information content. The sites have yielded information important for understanding late prehistoric to historic land use. The mapping, written description, excavation, and photography at the sites adequately documents the sites and no further work or preservation is recommended.

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# INTRODUCTION

At the request of PBR Hawaii, Haun & Associates conducted an archaeological inventory survey of a c. 740 acre parcel located in the Lands of Kamoauau, Manienie, Opihilala, Hauola, Pa'auilo and A'amanu, Hamakua District, Island of Hawai'i (TMK: [3] 4-3-007:001, 4-3-009:019, 024, 4-3-011:001, 002; *Figures 1 and 2*). The objective of the survey was to satisfy current historic preservation regulatory review inventory requirements of the Department of Land and Natural Resources-State Historic Preservation Division (DLNR-SHPD), as contained within Hawaii Administrative Rules, Title 13, DLNR, Subtitle 13, State Historic Preservation Rules (DLNR 2003).

The survey fieldwork was conducted between June 27 and 30, 2006 under the direction of Dr. Alan Haun. Twelve person days were required to complete the fieldwork portion of the project. Described in this final report are the project scope of work, field methods, background research, survey findings, and significance assessments of the sites with recommended treatments.

## Scope of Work

Based on DLNR-SHPD rules for inventory surveys the following specific tasks were determined to constitute an appropriate scope of work for the project:

1. Conduct background review and research of existing archaeological and historical documentary literature relating to the project area and its immediate vicinity--including examination of Land Commission Awards, *ahupua'a* records, historic maps, archival materials, archaeological reports, and other historical sources;
2. Conduct a variable intensity, pedestrian survey coverage of the project area;
3. Conduct detailed recording of all potentially significant sites including scale plan drawings, written descriptions, and photographs, as appropriate;
4. Conduct limited subsurface testing (manual excavation) at selected sites to determine function;
5. Analyze background research and field data; and
6. Prepare and submit Final Report.

## Project Area Description

The project area consists of a c. 740-acre parcel that ranges in elevation from c. 1,590 to 2,520 ft. The parcel is comprised of abandoned sugar cane fields that are bisected by three stream gulches (Opihilala, Waipunalau and Pa'auilo Gulches), with a fourth gulch forming a portion of the eastern project area boundary (A'amanu Gulch). A series of dirt access roads extend throughout the project area, created to allow access to the cane fields. Several of the roads are no longer used and overgrown with grass.

The soil within the majority of the project area is comprised of Honokaa silty clay loam on 10-20% slopes. This soil is situated on the windward side of Mauna Kea and is characterized by a surface layer of dark brown silty clay loam, with a subsoil comprised of dark colored silty clay loam (Sato et al. 1973:18-19). This soil evidences a rapid permeability, a slow runoff and a slight erosional hazard and is suitable for pasture and woodland (1973:19). An area of Honokaa silty clay loam on 20 to 35% slopes is present in the

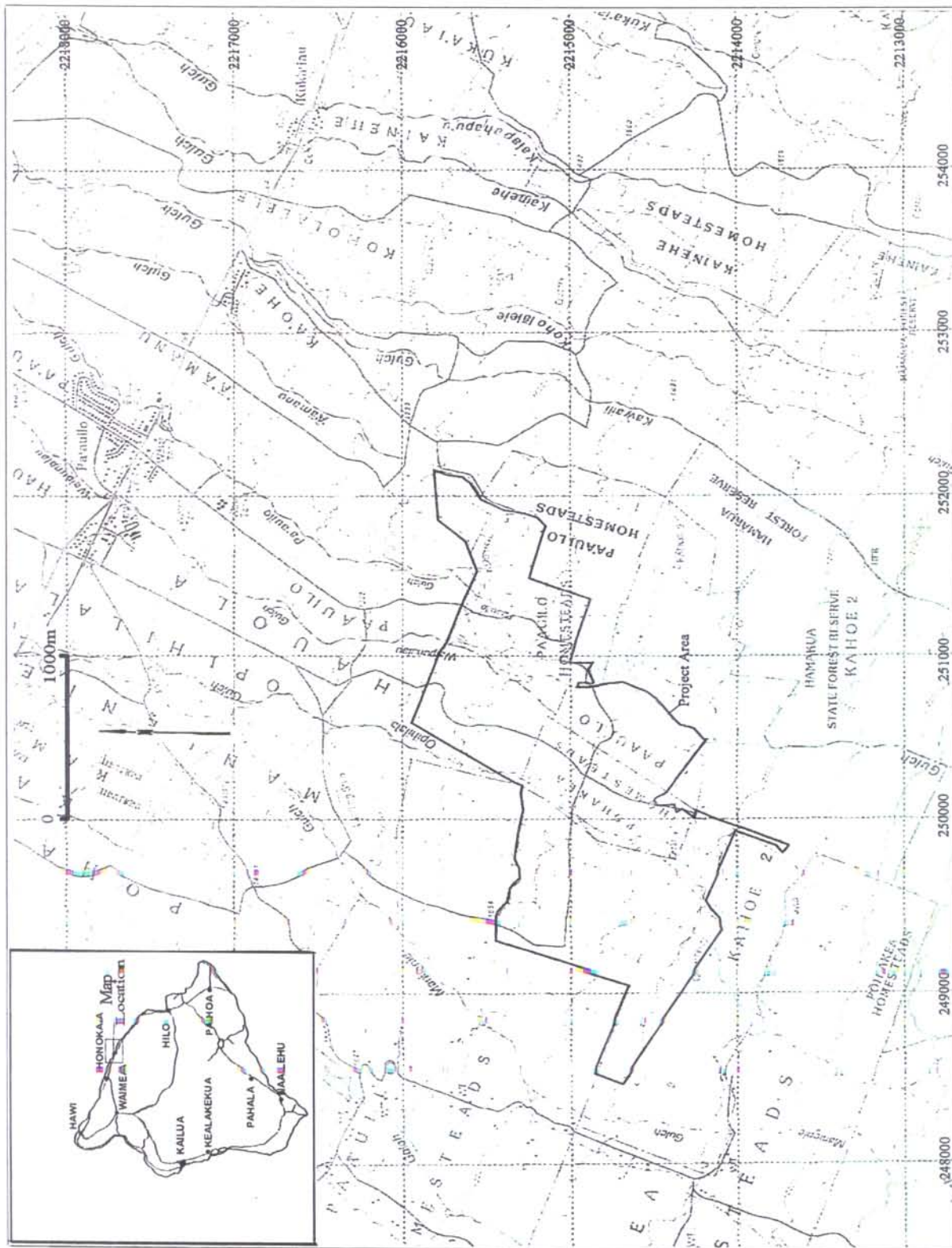
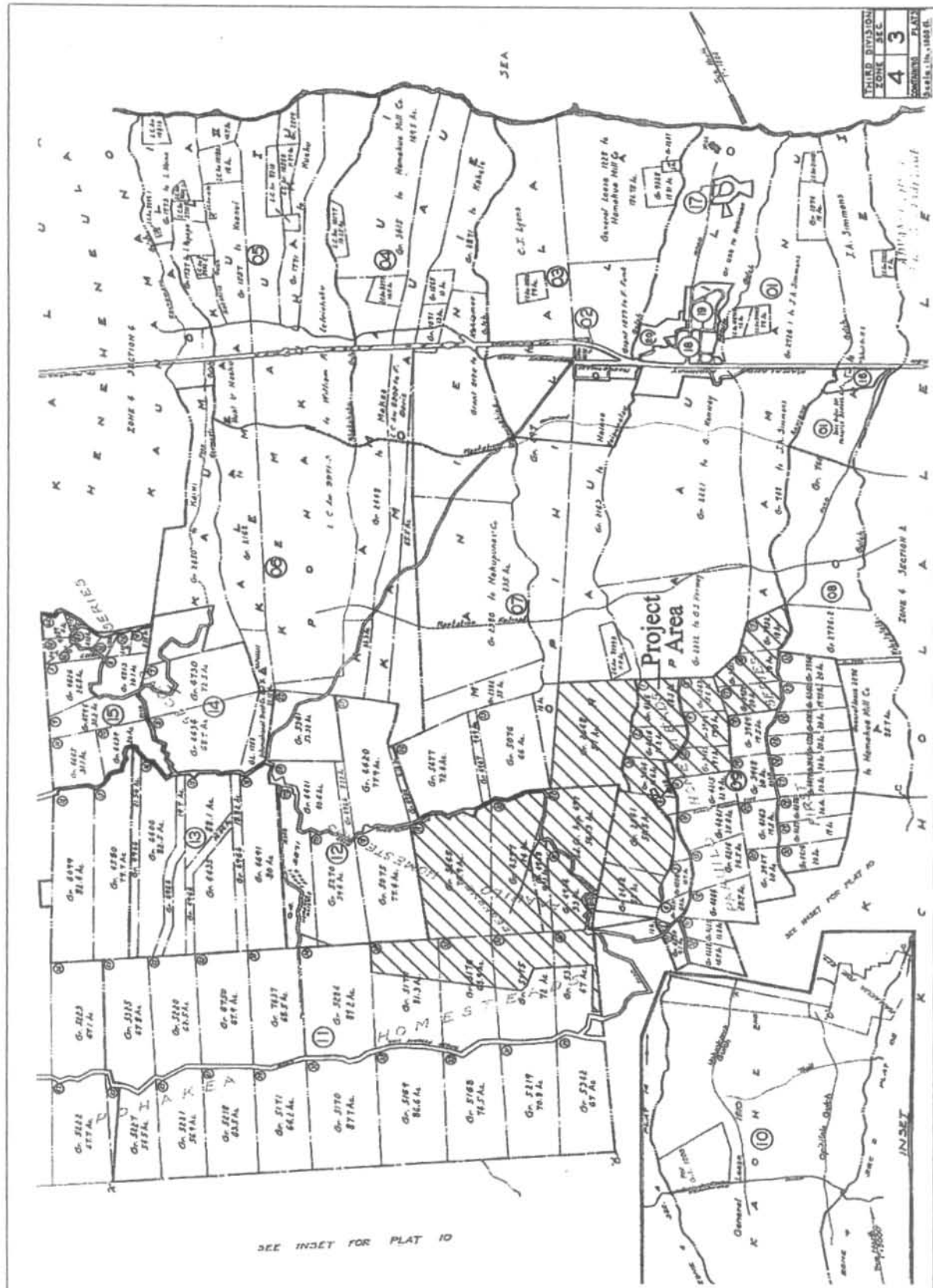


Figure 1. Portion of 1995 Honokaa USGS Quadrangle showing Project Area



southwestern portion of the parcel. This soil is similar to the 10-20% slope portion of the Honokaa soil, though it is steeper with medium runoff potential and a moderate erosional hazard (1973:19). Both soil types are listed as suitable for pasture and woodlands, with lower elevation areas suitable for sugar cane. The soil throughout the remainder of the project area consists of Rough Broken Land situated within the various stream gulches. Sato et al. describes this as a “...miscellaneous land broken by intermittent drainage channels...primarily in gulches” (1973:51). This land unit evidences a slope of from 35 to 70% with soils ranging from shallow to deep and intermixed with outcrops. It is classified as suitable for pasture, woodland, wildlife habitat and recreation. The underlying substrate in this area is comprised of Pleistocene Era lavas that originated from Mauna Kea (Wolfe and Morris 2000).

Rainfall in the project area vicinity ranges from 80 to 100 inches per year (Juvik and Juvik (1998:57). Vegetation throughout most of the parcel consists of feral sugar cane and other grasses. The stream drainages were mostly forested variably characterized by ironwood (*Casuarina equisetifolia* L.), eucalytus (*Eucalyptus spp.*), kukui (*Aleurites moluccana*), bamboo (*Bambusa spp.*), strawberry guava (*Psidium cattleianum* Sabine), Coffee (*Coffea Arabica*), orchids, passion fruit (*Passiflora edulis*), ginger (*Hedychium gardnerianum*) and numerous ferns. Examples of the project area vegetation are shown in Figures 3 and 4.

## Field Methods

As discussed above, the parcel is comprised of abandoned sugar cane lands bisected by a series of dirt roads and by four stream gulches. The areas of sugar cane fields were subjected to a vehicular examination with surveyors slowly driving all roads. In addition, sample pedestrian transects were walked through the central portions of TMK 4-3-11:002 and TMK 4-3-7:001 to confirm the disturbed nature of the former sugar cane fields.

The stream drainages were carefully examined with surveyors spaced at 10 m intervals. Transects were oriented in inland-seaward directions, following the stream courses. Four forested areas not in drainages also were systematically surveyed with 10 m interval transects. These areas consist of: (a) a ridge in the central seaward half of TMK: 4-3-009:024, (b) the central portion of TMK: 4-3-009:019, (c) the southeast corner of TMK: 4-3-11:002, and (d) the northeast corner of TMK: 4-3-011:001 and the western edge of TMK: 4-3-011:002 (Figure 4).

The identified sites and features were flagged with pink and blue flagging tape and their locations plotted on a scaled project area map. The sites were subjected to detailed recording consisting of the preparation of scaled plan maps, the completion of standardized site/feature forms, and photographic documentation. A metal site tag was placed at each site and the tag's location was plotted on the scaled plan maps. The identified sites/features were located with the aid of Garmin Global Positioning System (GPS) III+ using the World Geodetic Survey (WGS) 1984 datum. The accuracy of the GPS device for a single point is +/- 15 m. This accuracy is increased to less than c. 3-5 meters by taking multiple points including property corners and overlying the plotted points on a scaled map using AutoCAD software.

Subsurface testing during the survey consisted of the excavation of one test unit. The excavation was dug in arbitrary levels within stratigraphic layers and was terminated in culturally sterile soil. Standardized excavation records were prepared after the completion of each stratigraphic layer. The soil removed during the excavation was screened through ¼” mesh. Portable remains collected were placed in paper bags labeled with the appropriate provenience information. Recovered charcoal samples were collected during the screening process. These samples were deposited in aluminum foil pouches and placed in properly labeled paper bags. Following the excavation a section drawing depicting the stratigraphy was prepared, and post-excavation photographs were taken.



Figure 3. Project Area Overview, view to northwest



Figure 4. Project Area Overview, view to east



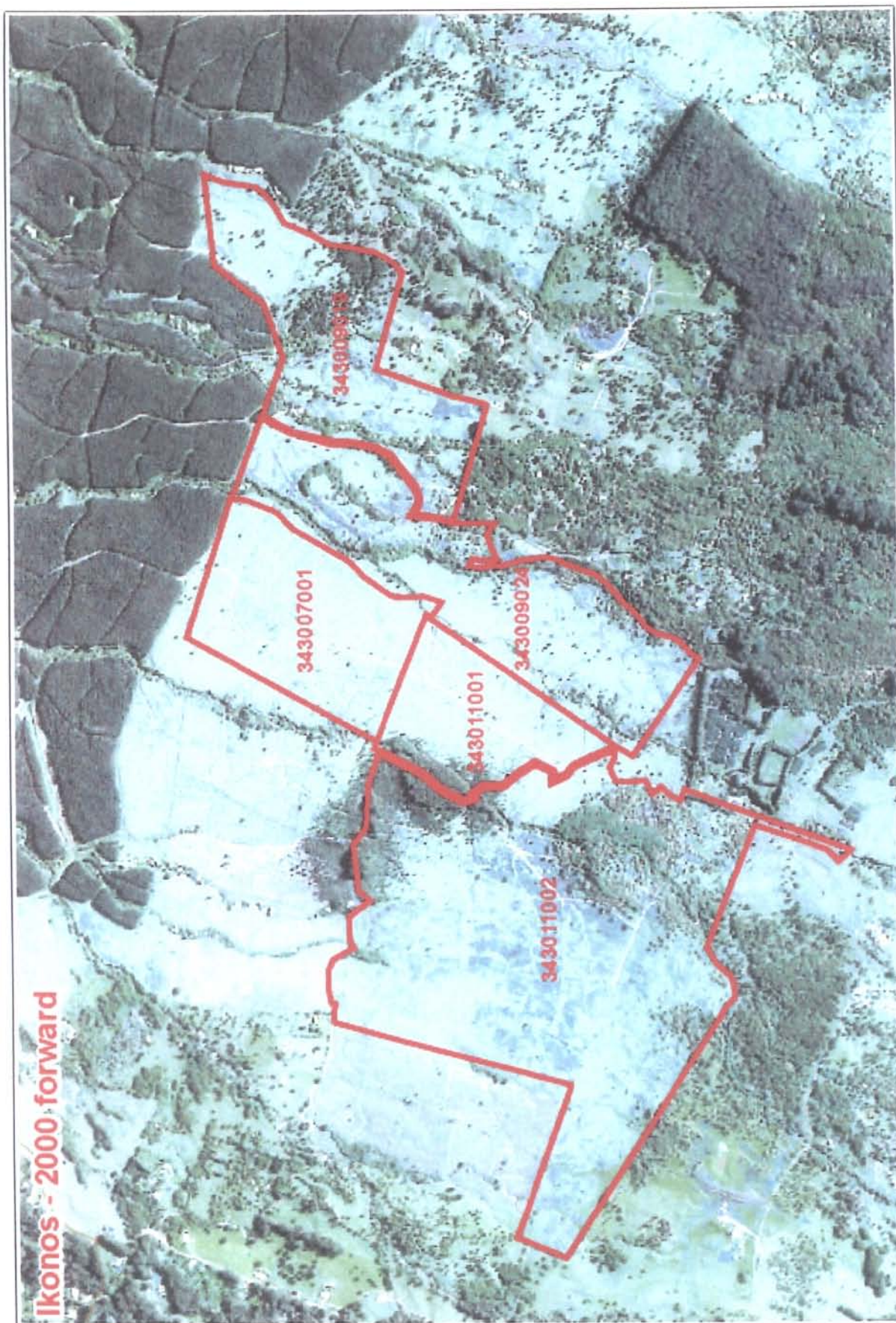


Figure 5. Satellite Image showing Project Area

# ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

## Historical Documentary Research

The project area is situated in Hamakua District in the *ahupua'a* of Kamoouau, Manienie, Opihilala, Hauola, Pa'auilo and A'amanu, which are situated in the sub-districts of Ka'ohe (Pa'auilo and A'amanu) and Hanakamali'i (Cordy 1994). The area was arduous to traverse because of the steeply walled valleys and stream crossings. These *ahupua'a* extend from the coast approximately three miles inland to between 2,400 and 2,500 ft elevation (Figure 6).

Originally, *ahupua'a* in the region were probably centered on the main drainages and the boundaries typically followed readily identified natural features such as ridges and drainages (Cordy 1994). The presence of numerous other small *ahupua'a* along the coast undoubtedly is a result of fissioning of land units in the lower elevation areas where traditional agriculture and settlement were concentrated. Such fissioning would likely have occurred with the separation of the smaller *ili*-level subdivisions of an *ahupua'a*, which originally were parallel strips of land perpendicular to the shoreline with access to the full range of natural resources. The *ili* was an important late prehistoric-early historic land unit because of its association with the *'ohana* as the family land holding unit, an important social element in the traditional Hawaiian land use system.

No specific legendary or traditional Hawaiian references to the project area *ahupua'a* were found. King Kalakaua (1972) described the region between Hilo and Waipio as follows:

In the time of Liloa [c. 1400s], and later, this plateau was thickly populated, and requiring no irrigation, was cultivated from the sea to the line of frost. A few kalo patches are still seen, and bananas grow, as of old, in secluded spots and along the banks of the ravines; but the broad acres are green with cane, and the whistle of the sugar cane-mill is heard above the roar of the surf...(1972:284).

One of the first western descriptions of the windward coast of Hawai'i Island comes from the naturalist Menzies, who was a member of Vancouver's expedition in 1793.

The land we passed in the forenoon rose in a steep bank from the water side and from thence the country stretched back with an easy acclivity for about four or five miles, and was laid out into little fields, apparently well cultivated and interspersed with habitations of the natives. Beyond this the country became steeply rugged and woody, forming the mountains of great elevation (1920:51-52).

The Reverend William Ellis sailed up the coast between Hilo and Hawi in 1823 and provides the following description:

The country by which we sailed, was fertile, beautiful, and apparently populous. The numerous plantations on the eminence's and sides of the steep ravines or valleys, by which it was intersected, with the stream meandering through them into the sea, presented altogether a most agreeable prospect (1963:244).

This part of the island, from the district of Waiakea to the northern point, appears to have remained many years undisturbed by volcanic eruptions. The habitations of the natives generally appear in clusters at the openings of the valleys, or scattered over the face of the high land. The soil is fertile, and herbage abundant (1963:251).

Cordy (1994) estimated the population of Hanakamali'i District to be 1,152 at contact. Missionary census figures cited by Cordy show a steady post-contact decline from 530 in 1831-2, to 424 in 1842, 280



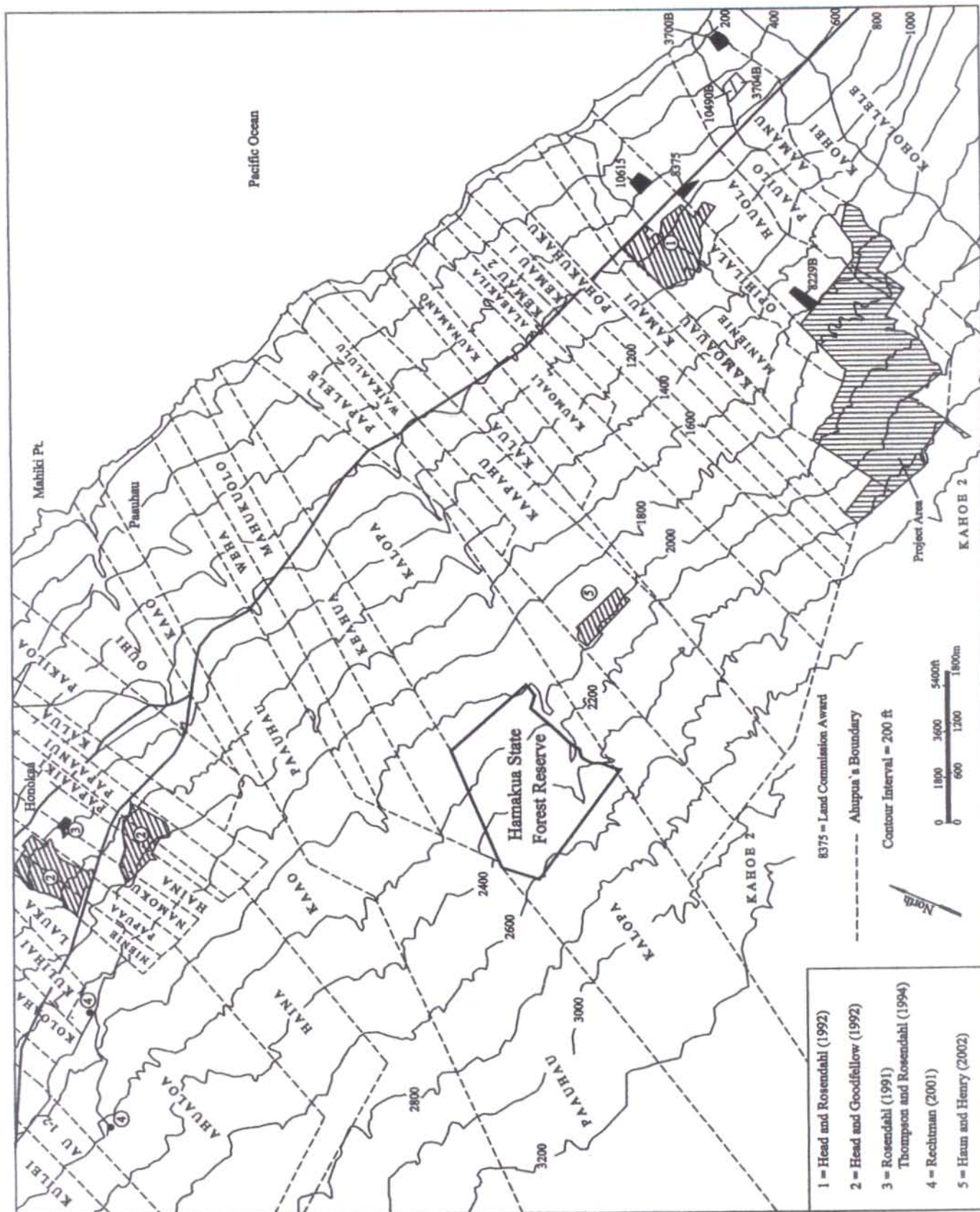


Figure 6. Ahupua'a Boundaries, Land Commission Awards and Previous Archaeological Work



in 1845, and 233 in 1849. The population of Ka'ohē was estimated to be 598 at contact with a post-contact decline from 275 in 1831-2, to 220 in 1842, 170 in 1845, and 139 in 1849. Cordy estimates that the average *ahupua'a* population in Hanakamali'i was 72 at contact and it declined to 27 by 1842. The contact period average was 60 for Ka'ohē declining to 22.

Cordy (1994) used missionary records, Boundary Commission (BC) records, Land Commission Award (LCA) testimony, early historic accounts, and other sources to develop a model for early historic settlement patterns in the windward, East Hamakua region. The model consists of four zones: the seashore, seaward upland slopes, 'Ōhi'a-Koa forest, and gulches. The shoreline, which primarily consists of a narrow marine bench, was almost solely used for marine exploitation. *Ahupua'a* boundary markers, consisting of stone cairns, were present on the shore.

According to Cordy (1994), the seaward upland slopes were the primary focus of habitation and agriculture. There were numerous houses and fields clustered along the Alanui Aupuni, or Government Road, that was the main trail paralleling the coast between 0.3 and 1.3 miles inland and generally following the route of today's Hawaii Belt Road. Houses and fields were also found seaward of the trail above the high sea cliffs. The residential structures were large, housing 3-4 families. Agriculture consisted of dryland fields predominantly planted in taro. Bananas and sweet potatoes were also cultivated. Hedges of sugar cane frequently surrounded cultivated plots. Livestock consisted of pigs, dogs, and chickens. *Ahupua'a* boundaries were marked by low stone walls and cairns. At least ten *heiau* were present along the coast between Kukuihaele and Koholalele and a *holua* was reportedly situated at Keahua.

The 'Ōhi'a-Koa forest zone was connected to the lower elevation habitation areas by trails. The zone was a source for bark for fish nets, bird feathers, and logs for canoes. Scattered plots of bananas and taro probably were present near the seaward edge of the forest. Stone cairns marking *ahupua'a* boundaries were present in gulches.

Cordy (1994) summarizes LCA data for two nearby *ahupua'a*, Pa'auhau to the north and Koholalele to the south. Most of the houses were clustered along the Government Road. House lots contained from one to four houses and a few were enclosed by walls. Traditional crops mentioned include *mamaki*, *wauke*, bananas, taro, sweet potatoes, and Historically-introduced crops mentioned consist of coffee, tobacco, and orange. Other plants mentioned include bamboo, *hau*, and unspecified vegetables.

During the Mahele Hauola and Opihilala became government lands. The Waihona 'Aina database (2000); which is a compilation of data from the Indices of Awards (Indices 1929), Native Register (NR n.d.), Native Testimony (NT n.d.), and Foreign Testimony (FT n.d.); lists nine awarded claims for project area *ahupua'a* (Table 1). Six of the awarded parcels appear on current tax maps (see Figure 6). The awarded parcels range from 3.96 to 14.5 acres in area with an average of 9.04 acres.

All except one of the awarded parcels on tax maps are concentrated between 200 and 800 ft elevation within one half mile from the shoreline. The claim testimonies mention seven house lots with thirteen houses. Four house lots were enclosed with walls. The LCA testimonies refer to 100 cultivated patches or *kihapai*. References to specific crops include 38 taro *kihapai*/patches, 10 potato *kihapai*/patches, 5 coffee *kihapai*, four banana *kihapai*, 3 *wauke* *kihapai*, a sugar cane *kihapai*, a tobacco *kihapai*, and a *lauhala kihapai*.

Subsequent historic use of the project area was dominated by sugar cane plantation agriculture beginning in the late 1870s and continuing in some areas until the 1990s. The following summary of plantation development is derived from Kalima (1992, Appendix B in Head and Rosendahl 1992) and Wilcox (1996). Plantation worker camps were scattered over the countryside connected by roads to the plantation villages at the sugar mills at Honokaa, Pa'auhau, and Pa'auilo. The Hamaku Mill Company was incorporated in 1883 and began operating a mill at Pa'auilo in 1885. The plantation fields extended for six miles along the coast and up to three miles inland to 2,000 ft elevation. In 1890 the mill employed 29 workers. The Hamakua Mill Company merged with the Honaka'a Mill Company in 1899. By 1910 the company employed over 600 workers and a school, company store, and several churches were established at

Table 1. Land Commission Awards

LCA	Claimant	Section No.	Ahupua'a	Ili	Land Use	Boundary Mauka	Boundary Kohala	Boundary Makai	Boundary Hilo	Date Rec'd	Giver	Acreage	Royal Patent	Sources
3700B	Keanalu		Aamau	ND						Kam I times	I's parents	7.20	none	NT 387v4
		1			1 taro kihapai	konohiki	konohiki	konohiki	konohiki					
		2			2 taro kihapai	I	"	"	"					
		3			3 taro kihapai	I	"	"	"					
		4			1 taro kihapai	I	"	"	"					
		5			1 taro kihapai	konohiki	konohiki	konohiki	konohiki					
		6			3 cultivated patches	I	"	"	"					
		7			1 coffee kihapai	konohiki	"	"	"					
		8			1 lauhala kihapai	"	"	"	"					
		9			1 wauke kihapai	"	"	"	"					
		10			1 wauke kihapai	"	"	"	"					
		11			1 potato kihapai	"	"	"	"					
3704B	Uau		Aamau							ND	ND	7.00	none	NT 390v4
		1			1 taro kihapai	konohiki	konohiki	konohiki	I					
		2			1 taro kihapai	"	"	"	konohiki					
		3			1 taro kihapai	"	"	"	"					
		4			1 coffee kihapai	"	"	"	"					
		5			cultivated patch	"	"	"	"					
		6			house lot with 1 house	"	"	"	"					
8209	Hua		Paaulo	Waipunalau						Kam I times	parents	9.00	7576	NR 320v8, NT 335v4
		1			house lot with 1 house	konohiki	konohiki	konohiki	konohiki					
		2			1 taro kihapai	"	"	"	"					
		3			3 cultivated kihapai	"	"	"	"					
		4			2 taro patches	"	"	"	"					
		5			1 cultivated kihapai	"	"	"	"					
		6			1 potato patch	"	"	"	"					
		7			1 cultivated patch	"	"	"	"					
		8			1 cultivated patch	"	"	"	"					
		9			1 taro patch	"	"	"	"					
		10			1 taro patch	"	"	"	"					
		11			1 cultivated kihapai	"	"	"	"					
8210	Huai		Pohakuhaku, Manienle	ND						Kam I times	Kapeu	14.50	4964	NR 321v8, NT 332v4
		1			house lot, enclosed, 2 houses	konohiki	Keleleiaiku	Nahale	ND					
		2			1 cultivated kihapai	"	konohiki	konohiki	konohiki					
		3			1 cultivated kihapai	"	"	"	"					
		4			1 cultivated kihapai	"	"	"	"					
8229B	Nainoa		Hauola	ND						Kam I times	parents	12.84	13	NR 334-335v4, 322 v8
		1			1 cultivated kihapai	konohiki	konohiki	konohiki	konohiki					
		2			1 taro kihapai	"	"	"	"					
		3			1 taro kihapai	"	"	"	"					
		4			1 sugar cane kihapai	"	"	"	"					
		5			1 cultivated kihapai	"	"	"	"					
		6			1 cultivated kihapai	"	"	"	"					
		7			1 taro kihapai	"	"	"	"					
		8			2 cultivated patches	"	"	"	"					
		9			1 coffee kihapai	"	"	"	"					
		10			1 cultivated kihapai	"	"	"	"					

Table 1. Land Commission Awards (cont.)

LCA	Claimant	Section No.	Ahupua'a	III	Land Use	Boundary Manka	Boundary Kohala	Boundary Makai	Boundary Hilo	Date Rec'd	Giver	Acreage	Royal Patent	Sources
		11			1 cultivated kihapai	"	"	"	"					
		12			1 wauke kihapai	"	"	"	"					
		13			1 cultivated patch	"	"	"	"					
		14			1 cultivated kihapai	"	"	"	"					
8375	Elia Kelelo		Hauola	ND								3.96	8076	NR 335v8, NT 374v4
		1			1 taro kihapai	konohiki	konohiki	konohiki	konohiki					
		2			1 potato kihapai	"	"	"	"					
		3			house lot, enclosed, 2 houses, 2 taro kihapai	"	"	"	"					
10490B	I		Aamau	ND						1829	Laioha	7.20	none	NT 382v4
		1			1 taro kihapai	konohiki	konohiki	Keomalu	konohiki					
		2			2 coffee trees	"	"	konohiki	"					
		3			1 banana kihapai	"	"	"	"					
		4			1 taro kihapai	"	"	"	"					
		5			2 taro kihapai	"	Uau	Keomalu	"					
		6			1 banana kihapai	"	konohiki	konohiki	"					
		7			1 potato kihapai	"	"	"	"					
		8			house lot, 3 houses, 1 enclosed	"	"	Gov't Road	"					
		9			3 taro kihapai	"	"	konohiki	"					
		10			2 potato kihapai	"	"	"	"					
10490B		11			1 tobacco kihapai	"	"	"	"					
		12			house lot, 3 houses, partially enclosed	"	"	"	"					
		13			5 cultivated patches	"	"	Uau	Keomalu					
		14			2 potato kihapai	"	"	konohiki	konohiki					
		15			1 potato kihapai	"	"	"	"					
		16			2 taro kihapai	"	"	"	"					
		17			2 taro kihapai	"	"	"	"					
		18			2 banana kihapai	"	"	"	"					
10615	Laukea		Ophihala	ND						1840	Paakua	9.90	6197	NR 371v8, NT 346v4
		1			1 potato kihapai	konohiki	konohiki	Kanekoa	konohiki					
		2			1 cultivated kihapai	"	"	konohiki	"					
		3			1 coffee kihapai	Kanekoa	"	Kanekoa	Kanekoa					
		4			1 cultivated patch	Meheula	Kanekoa	konohiki	konohiki					
		5			house lot, 1 house, 2 cultivated kihapai	konohiki	konohiki	"	"					
		6			1 cultivated kihapai	"	"	"	"					
		7			1 cultivated kihapai	Kanekoa	Waiohinu	"	"					
		8			1 cultivated kihapai	konohiki	konohiki	"	"					
		9			1 cultivated kihapai	"	"	"	"					
		10			1 cultivated kihapai	"	"	"	"					
10793	Polohili		Manienie, Ahuloa	ND						ND	Kaiwi	9.80	7307	FT 372v8, NR 7307
		1			no fence, no house	konohiki	konohiki	konohiki	konohiki					
		2			3 taro kihapai	"	"	"	"					
		4			1 cultivated patch	"	"	"	"					
		5			3 cultivated patches	"	"	Kaihumoku	"					
		6			1 taro kihapai	"	Kahumoku	konohiki	"					

ND=No Data

Pa'auilo. At this time, the company cultivated 4,800 acres and nine miles of railroad track was used for hauling sugar cane. In the 1920s the work force doubled to over 1,200.

In 1972, Hamakua Mill Company became part of the Laupahoehoe Sugar Company and the milling operation was moved to Laupahoehoe. The Pa'auahu Sugar Company Plantation was purchased in 1972 by Theo Davies, which already controlled the Laupahoehoe and Honoka'a plantations. The merged companies subsequently formed the Hamakua Sugar Company, the largest plantation in the state with over 35,000 acres in cultivation. In 1984, Francis Morgan purchased the Hamakua Sugar Company. The company declared bankruptcy in 1993. The project area subsequently was conveyed to the County of Hawaii for unpaid taxes.

Following the Homestead Act of 1884 the Hawaiian government began surveying and selling homestead lots. Hamakua homesteads included lots in Ahualoa, Kaao, Kalopa, Ka'apahu, Pa'auilo, Pohakea, and Kainehe. *Figure 7* is a portion of Wall's 1915 map of Hamakua homesteads in Pa'auilo and Pohakea. The homesteads in Pa'auilo and Pohakea extended from approximately 1,000 to 2,950 ft elevation. *Table 2* lists the twenty-three land grants that comprise the project area. Three grants are not part of the homestead blocks and based on the 2000 series numbers are early grants probably dating to the 1850s or 1860s. The remaining grants include nine Pa'auilo Homesteads First Series grants, six Second Series grants, and portions of five Pohakea Homesteads grants. These grants were consolidated into five large parcels by the plantation as indicated on county tax maps (TMK: 4-3: Plats 007, 009, and 011).

**Table 2. Project Area Land Grants**

Grant	Owner	Acreage	Lot No.
<b>Early Grants</b>			
2048	Pakaula	57	-
2441	Kekalua	50.5	-
2442	Kamaihiai	55	-
<b>Pa'auilo Homesteads - First Series Grants</b>			
3950	J. De. Castecazinha	20	17
3951	J. Des. Ramos	18	15
3951	M.D. Canto	20	16
3962	F.O. Martes	17.3	9
3963	G. Leitz	19.1	10
3964	M. Dos. Santos	19.6	3
4063	M.M. Gosmos	15.6	8
4156	A.F. Gil	24.5	1
4216	M. Piemental	19.2	2
<b>Pa'auilo Homesteads - Second Series Grants</b>			
4229	A. De. Giar	9.1	4
4597	G. Seitz	74	20
4934	J. Waiohinu	33	21
5057	Mrs. Annie H. Taylor	77.4	18
5077	S. Friedenburg	56.5	22
5245	Emma Notley	76.9	19
<b>Pohakea Homesteads Grants (Portions)</b>			
5175	F. Furtado	72	30
5176	E.B. Kalua	68.9	32
5177	A. Fernandez	81.3	34
5284	G. Kretzschmar	89.2	36
5321	M. Aguiar	47	28



*Figure 7* also shows a network of four roads serving the homestead lots. The first road extends in and inland-seaward orientation through the eastern half of the Pa'auilo Homesteads- First Series lots. A second, similarly oriented road services the western half of the First Series Lots. The latter road connects to two other roads: a third road that extends through the center of the Pa'auilo Second Series lots and a fourth road that extends through the center of the Pohakea Homesteads lots.

*Figure 8* is a portion of the 1915 USGS Hamakua Quadrangle. The map shows the Pa'auilo and Pohakea Homesteads. A series of railroad grades and spurs extend from the Pa'auilo Mill at the coast. Two clusters of structures are present at the mill and in Pa'auilo town. The map shows the roads depicted on *Figure 7* in the project area and several structures are depicted along the roads in the project area: two along the first road noted above, four on the second road, three along the third and one on the fourth road. These structures probably are houses associated with the land grants and indicate that the area probably was used for ranching, agriculture and/or residence by some of the grantees. These grant lands were subsequently acquired by the plantation and put into sugar cane cultivation that continued until the early 1990s.

Black and white aerial photographs that show the project area from the early 1960s in Baker et al. (1965: Maps 438, 459, and 460) and early 1970s in Sato et al. (1972: Map 21) show the entire project area, except the gulches covered in sugar cane fields that extend to the coast.

## Previous Archaeological Research

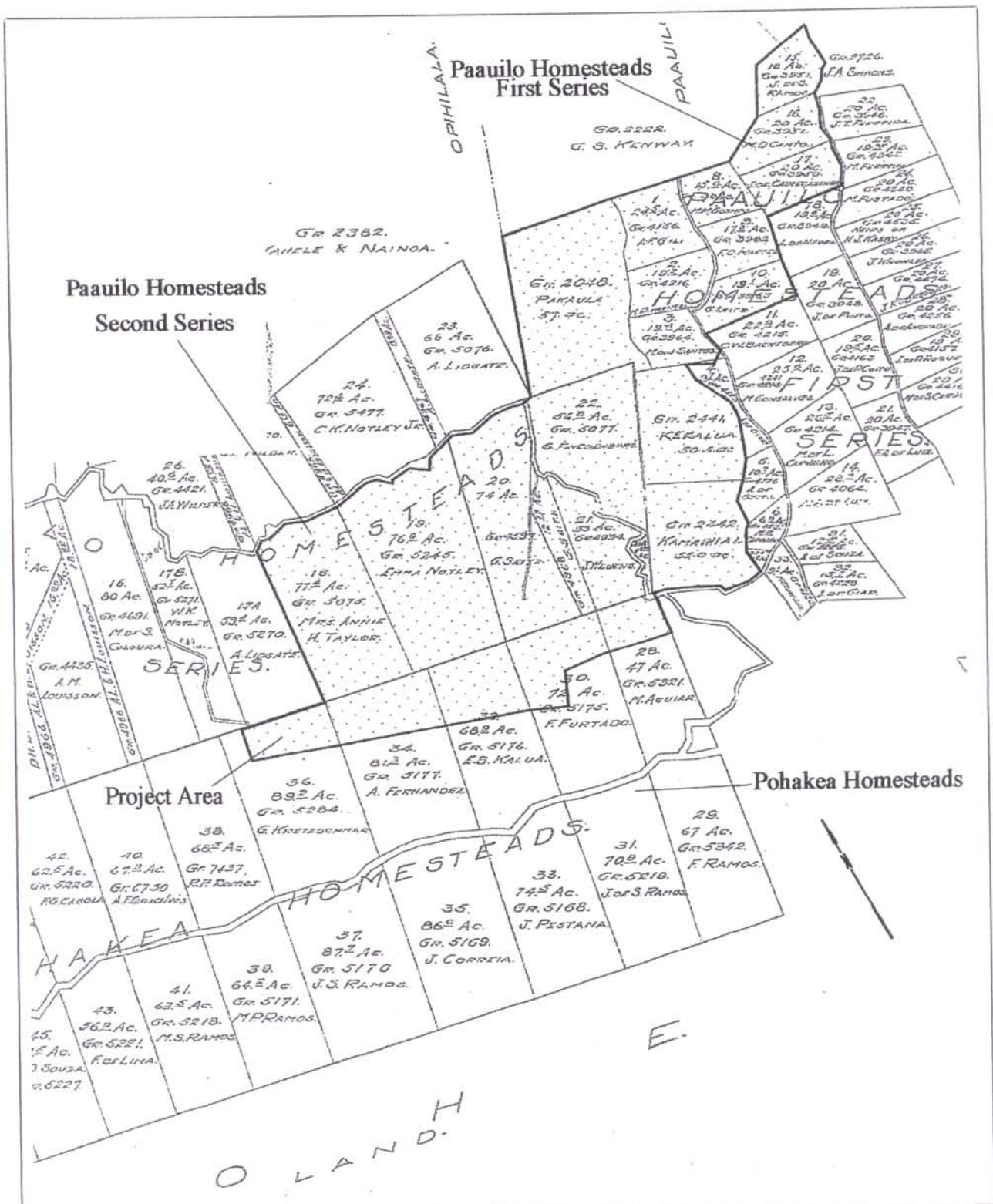
A search of the DLNR-SHPD archaeological report database and other sources identified five archaeological projects in Hamakua District between Ka'ohē and Honokaa. *Figure 6* shows the project location. Not included in the figure are the studies by Stokes (Stokes and Dye 1991) and Thrum (1908), which focused on major sites, primarily *heiau* throughout Hawaii Island, and a survey of east Hawaii by Hudson (1932). None of the previous studies included the current project area. Cordy (1994) reviewed the studies by Thrum, Stokes, and Hudson and found references to ten *heiau* in eastern Hamakua, east of Waipio Valley. Only one, Ka Loa Heiau at Ahualoa, was seen by Stokes and Thrum. Hudson was unable to relocate it in 1931, and presumed it was destroyed. No *heiau* were reported for the project area *ahupua'a*.

Head and Goodfellow (1992) conducted an archaeological inventory of 186 acres between 1,150 ft and 1,690 ft elevation in the *ahupua'a* of Papaanui, Paalaea, Haina, Namoku, Papuaa, and Nienie. Only two sites were identified during the survey of former sugar cane lands. The sites consist of two portions of the same lava tube system. The sites were interpreted to be temporary habitations. Two charcoal samples recovered by excavations at one site produced age ranges of 1634-1955, and 1680-1744 or 1802-1938. Two volcanic glass flakes were also recovered from the site. The dates and volcanic glass support an interpretation of the site as being occupied between the 1600s and the early historic period.

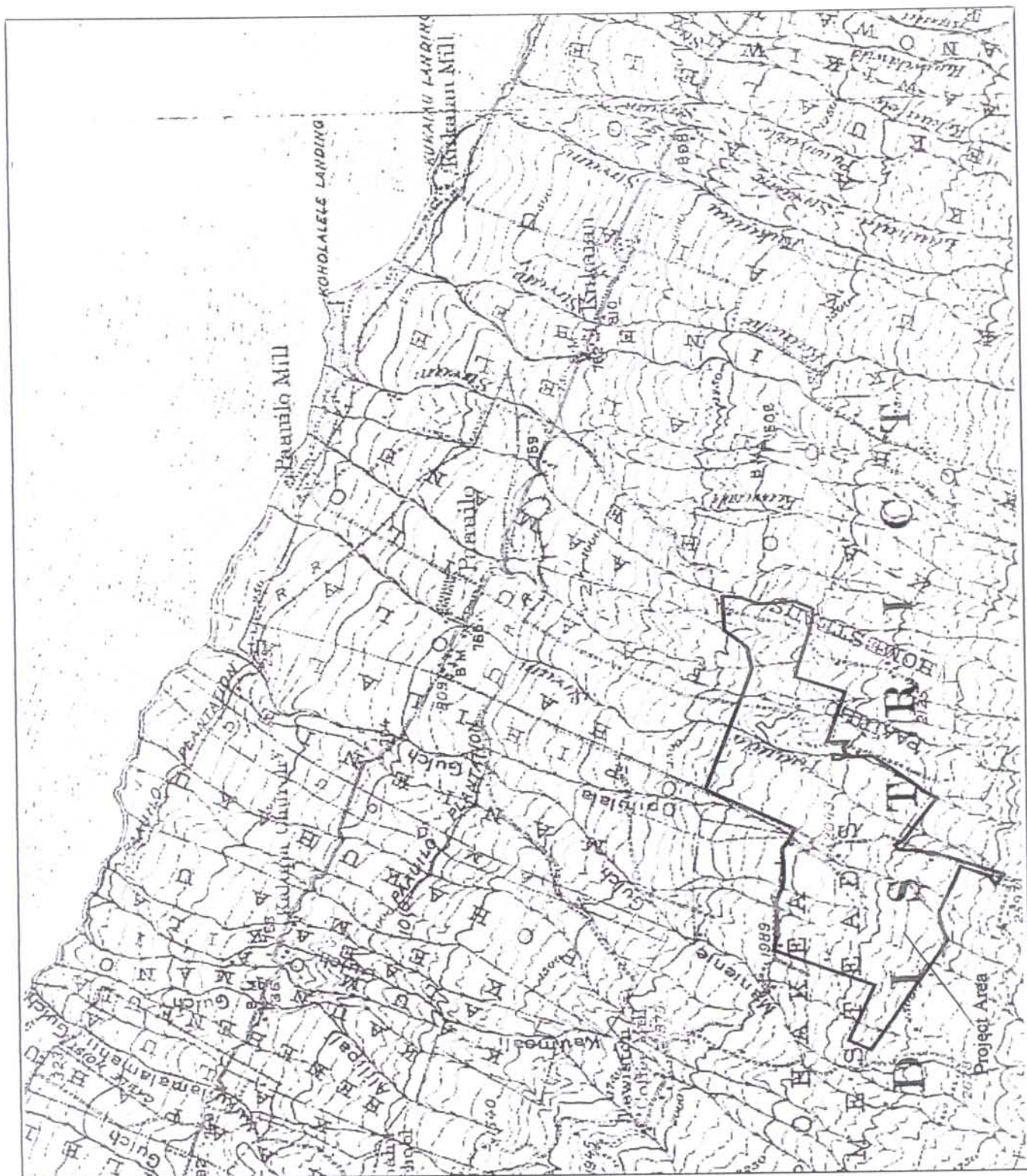
Head and Rosendahl (1992) conducted an archaeological inventory survey of 174 acres in the *ahupua'a* of Hauola, Opihilala, and Manienie. The survey area ranged from 700 to 1,000 ft elevation. Three historic sites were identified consisting of a road and three bridges. Two of the bridges were constructed in the 1910s by the Hamakua Mill Company, which was based in Pa'auilo.

Rosendahl (1991) and Thompson and Rosendahl (1994) conducted an archaeological survey and subsurface testing of a 15 acre parcel situated at 1,200 ft elevation in Haina and Namoku. Rechtman (2001) conducted an archaeological survey of two water tank sites in Ahualoa. No sites were identified by the projects.

Haun and Henry (2002) conducted an archaeological survey of 36.5 acres in the *ahupua'a* of Ka'apahu. The survey area ranged from 1,875 ft to 2,000 ft elevation and included two homestead lots. The survey identified five historic sites with six features including an oven, hearth, water troughs, terrace, and excavated pits.







The surveys above cover over 400 acres between 700 and 2,200 ft elevation. The surveys identified ten sites with fourteen features. The only traditional Hawaiian sites are two chambers of a lava tube system. The near absence of traditional sites is attributed to the massive ground disturbance of sugar cane cultivation and pasture development. Historic remains identified by the surveys consist of eight sites with ten features. The historic features consist of sugar plantation-related infrastructure, and habitation and ranch-related associated with homestead lots.

Cordy (1994) summarizes expected traditional Hawaiian site patterns for the East Hamakua Lower Windward Slopes Sub-region of Hamakua District. *Ahupua'a* boundary cairns are expected for the shoreline. Site types for the upland slopes include residences, burials, a few *heiau*, dryland field, trails, and *ahupua'a* and *'ili* boundary marking cairns. *Ahupua'a* boundary cairns are also expected in the gulches in eastern portion of the sub-region. Sites in the upland forest include camps and work stations associated with forest resource exploitation, water sources, *ahupua'a* border cairns, trails, a supplementary agricultural plots.

## PROJECT EXPECTATIONS

The project area is situated between c. 1,590 to 2,520 ft elevation, which is at the lower portion of Cordy's (1994) Ohi'a-Koa Forest Zone based upon cartographic data for nearby Pa'auhau. Based on previous archaeological work and historical documentary research, traditional Hawaiian site types potentially include temporary habitations, trails, *ahupua'a* border cairns, and scattered agricultural plots for bananas and taro. Expected historic features include agricultural fields, residences, and roads or trails.



## FINDINGS

The archaeological survey identified two sites with four features. The sites consist of a complex two retaining walls and a terrace that are probably historic features and potentially functioned to control erosion (Site 25536), and an historic retaining wall used to support a sugar cane plantation road (Site 25537). The sites are described below and their locations are illustrated in *Figure 9*. Subsurface testing was undertaken in one location during the study. The excavation consisted of a 1.0 by 1.0 m test unit dug at Site 25536, Feature A. The results of the excavation are incorporated into the following description for this feature.

### Site 25536

Site 25536 is a complex of a terrace and two retaining walls located on the side of a steep rocky slope that angles down to the east-southeast. The site is situated in the northeastern portion of the project area in the Land of Pa'auilo to the west of Pa'auilo Gulch. The site encompasses an area 98.5 m long (north-northeast by south-southwest) and 12 m wide, at elevations ranging from c. 1,790 to 1,805 ft. The features are illustrated in *Figure 10*. The steep slope is forested with strawberry guava in the vicinity of Features A and B and large eucalyptus trees up to c. 1.0 m in diameter around Feature C. The features are centrally located on the steep slope at about the same contour.

The **Feature A** terrace (UTM – E=251047, N=2215348) is situated at the northern end of the site. The terrace is roughly triangular in shape and is 2.92 m long (northeast by southwest) and from 0.35 to 1.95 m wide (*Figure 11*). It is bordered along the northeast and southeast sides by roughly stacked cobbles and small boulders, ranging in height from 0.17 to 0.4 m above the surrounding ground surface. The upslope side of the feature is flush with the slope. The surface of the terrace is comprised of level but unpaved cobbles with no cultural remains present.

A 1.0 by 1.0 m test unit (TU-1) was excavated into the surface of the terraced revealing three deposits (see *Figure 11*). Layer I consisted a single course thick (5-10 cm) layer of loose cobbles and pebbles with a decayed organic matrix. The stones probably were colluvially deposited on the surface of the feature. Layer II consisted of 0.32 to 0.41 m of a very dark brown (7.5YR 2.5/2) silt with c. 70 % pebbles, cobbles, and small boulders. Small quantities of charcoal (3.85 g) were scattered throughout this layer. Linear, ovoid lenses of a dark red (2.5YR 4/6) silt extended into the Layer III soil at the base of Layer II and into the southwest face of the unit in the base of Layer II. These lenses contained large amounts of charcoal fragments (114.5 g) and probably are the remains of burned tree roots based on cross-section shape and linear form. The Layer III deposit consists of a dark yellowish brown (10YR 3/4) silt B-horizon. The excavation of TU-1 was terminated 0.2 to 0.32 m into this in situ natural deposit. The charcoal in the deposit apparently is derived from a forest fire. The plantation burned sugar cane fields after harvesting and prior to replanting. It is likely that the burned tree in the terrace resulted from this activity.

The **Feature B** retaining wall is situated 34.5 m south of Feature A on the side of a rocky slope that angles down to the east (*Figure 12*). This feature is 2.4 m in length (north-northeast by south-southwest) and 0.9 m wide. A roughly piled cobble and small boulder retaining wall extends along the eastern downslope side, ranging in height from 0.4 to 0.43 m. The upslope side of the wall abuts the side of the slope. The surface is irregular and uneven and slopes down to the east. No cultural remains were present at the feature.

The **Feature C** is a linear retaining wall located 31.5 m to the south-southwest of Feature B (see *Figure 12* and *Figure 13*). The retaining wall evidences an overall length of 31.8 m (north-northeast by south-southwest). The retaining wall is discontinuous and incorporates several large basalt boulders. It is constructed of stacked and piled cobbles and small boulders, ranging in height from 0.4 to 1.1 m in height on the eastern downslope side and is level with surface of the sloping soil on the western upslope side. The retaining wall varies in width from 0.5 to 1.45 m. Two fallen eucalyptus trees have obscured portions of the feature, one at the north-northeast end and one in the south-southwest portion. No cultural remains were found in association with the feature.

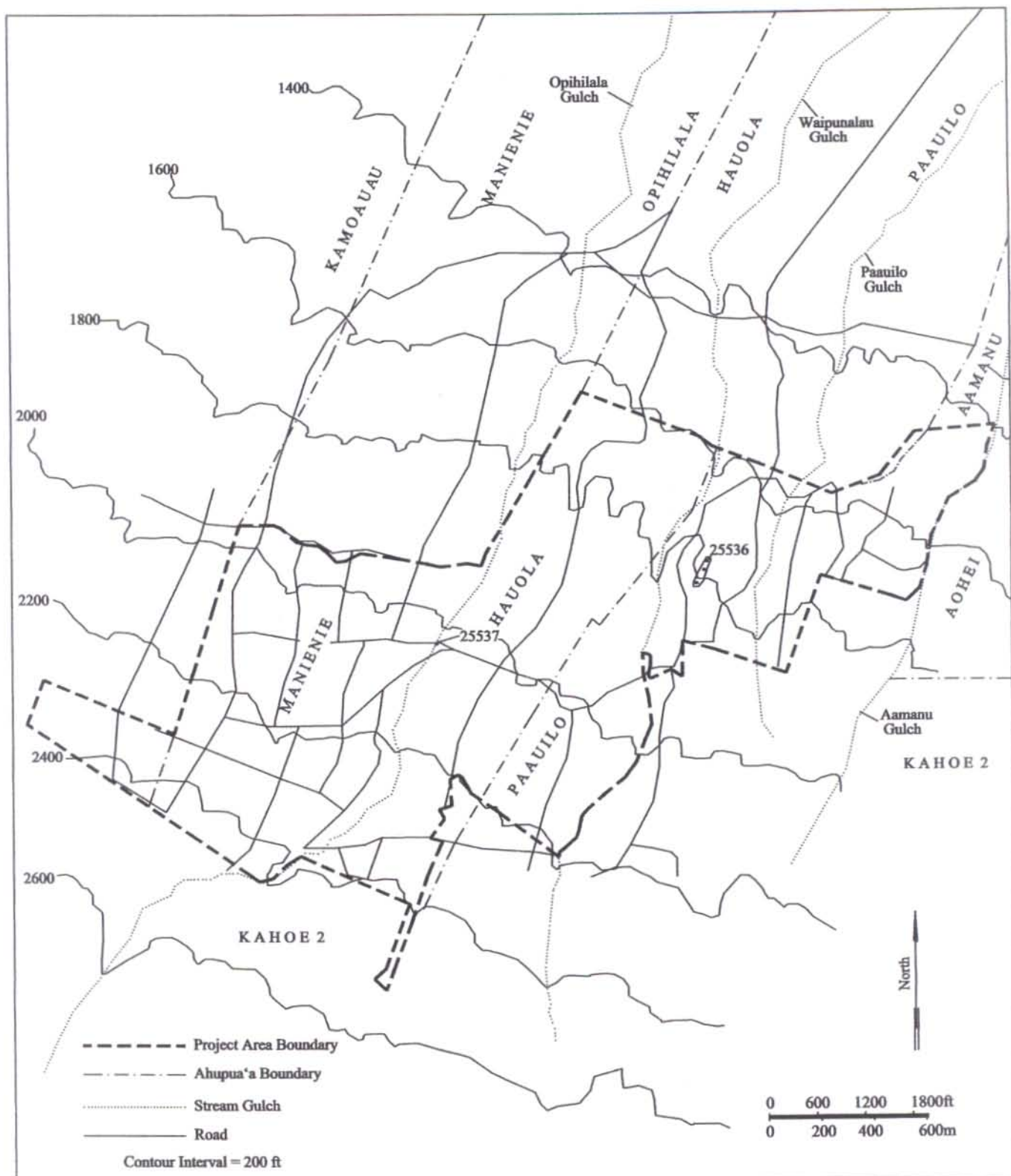


Figure 9. Site Location Map

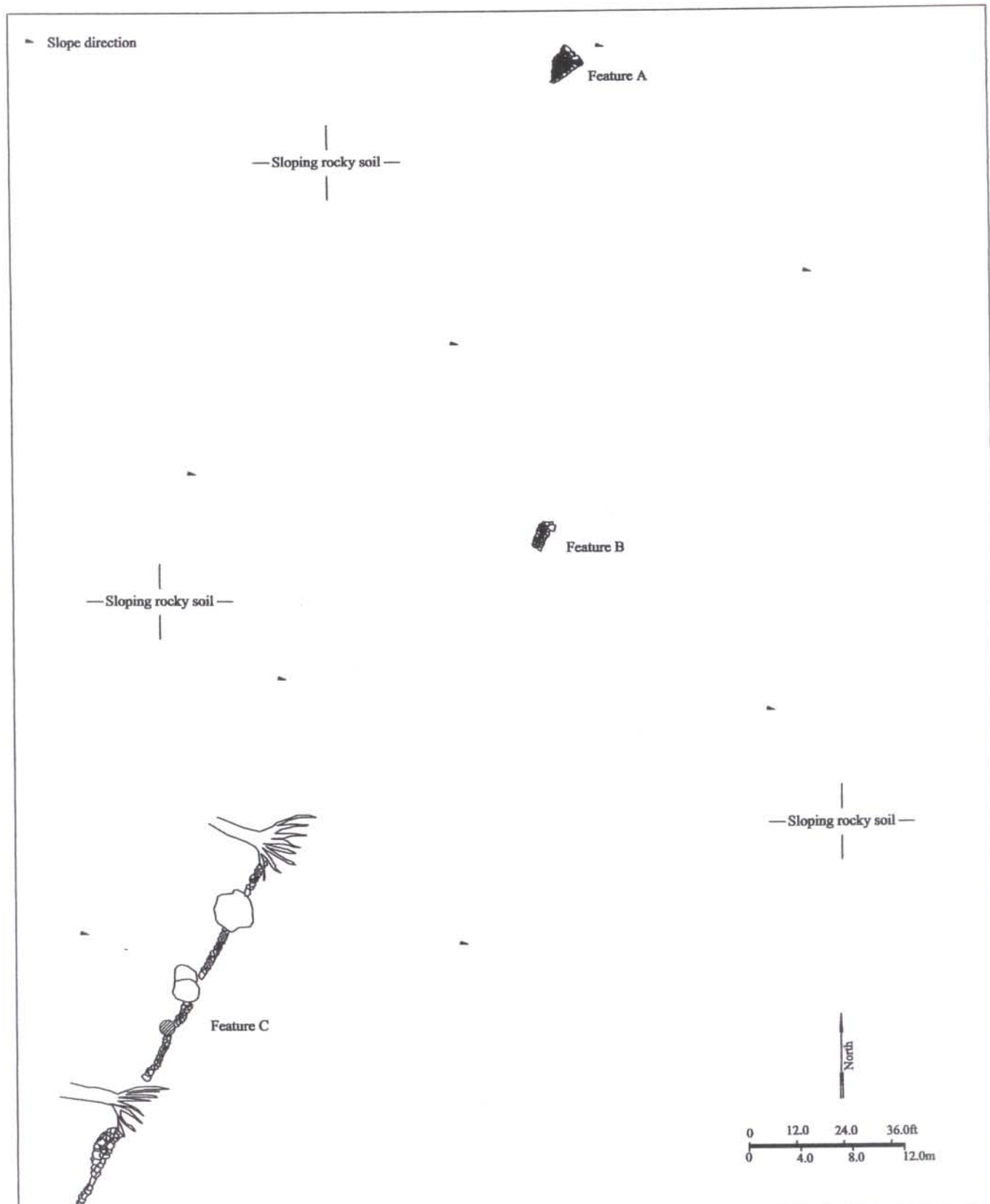


Figure 10. Site 25536 Plan Map

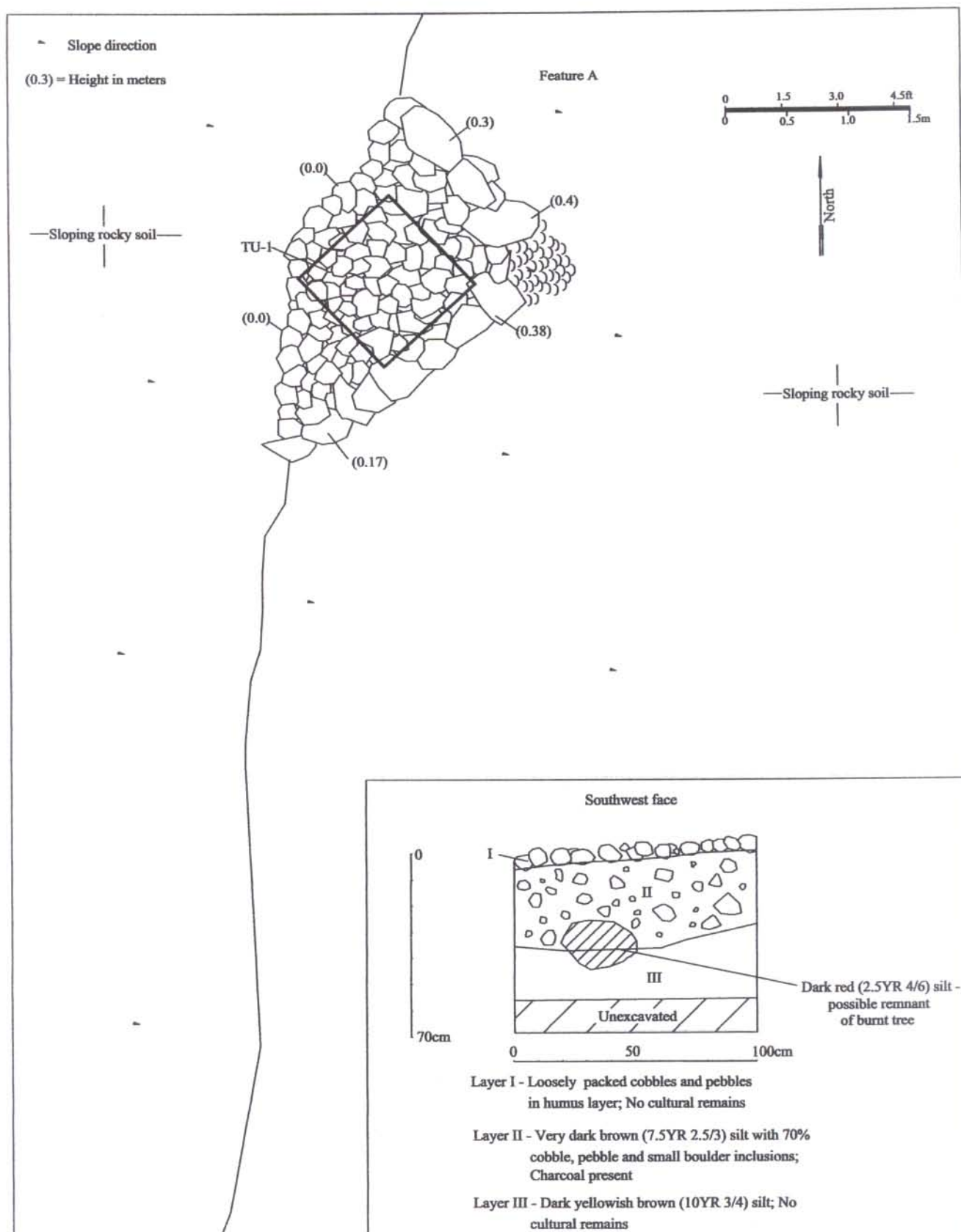


Figure 11. Site 25536, Feature A Plan Map and TU-1 Southwest face Profile

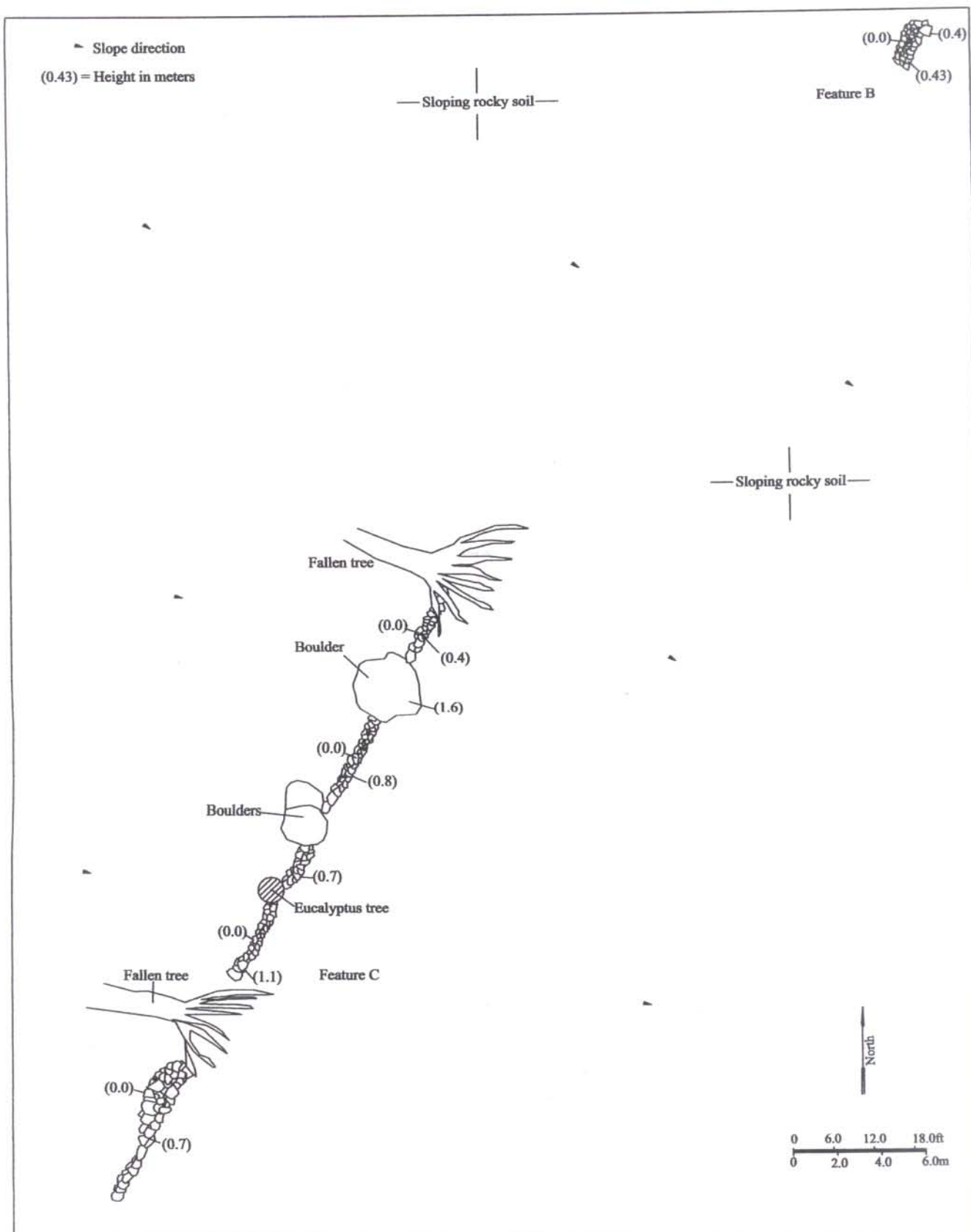


Figure 12. Site 25536, Feature B and C Plan Map





Figure 13. Photo of Site 25536, Feature C Retaining Wall, view to west-southwest



Figure 14. Site 25537 Retaining Wall, view to southwest

Site 25536 is interpreted as a complex of probable historic features because it is unlikely that traditional Hawaiian use of the 'Ohi'a-Koa forest zone (Cordy 1994), which largely was limited to exploitation of natural resources, would have included construction such features. The terrace and retaining walls potentially were used to retain the slope for erosion control because the slope probably is too steep for cultivation. The features may date to the late 1800s to early 1900s homestead use of the area. The features probably escaped destruction by mechanized cultivation of sugar cane because the site is situated on a relative steep and rocky slope. The site is unaltered and in fair condition.

## Site 25537

Site 25537 (UTM – E=250023, N=2214979) is a retaining wall built across the bottom of Opihilala Gulch on the seaward side of a dirt road that the wall retains. The retaining wall is made of concrete wall mixed with cobbles and small boulders that is 12.3 m long (northwest by southeast; *Figure 14*). The northeast side of the wall is vertical, ranging in height from 0.35 to 1.0 m. The face of the wall has regular horizontal grooves formed by corrugated metal roofing that was used a form for the concrete. The southwest side tapers down from the top. The wall is 1.0 m wide at the base and 0.65 m wide at the top. A 2" metal pipe extends horizontally through the wall at the southeastern end. Site 25537 is interpreted as an historic erosion control feature likely built to protect the road from periodic flooding. The wall probably was constructed by the sugar cane plantation. It is unaltered and in fair condition.

# CONCLUSION

## Discussion

The identified sites conform to expected historic remains within the project area. The sites include a terrace and retaining walls potentially associated with early 1900s homestead use of the parcel. The features potentially served to control erosion because the features are situated on a steep slope that is unlikely to have been used for agriculture. It is possible that the features were constructed to stabilize the slope in conjunction with planting eucalyptus trees. In the early 1900s in response to deforestation by sugar cane plantations to expand cultivation and for timber and firewood, the Territorial Bureau of Forestry began reforestation efforts by planting exotic trees including Sugi pine (*Cryptomeria japonica*), pine trees (*Pinus* spp.), and eucalyptus on the slopes above the sugar cane fields from Hilo to Honokaa (Haun et al. 2001).

Site 25537 is a concrete wall that retains a dirt road. The use of formed concrete indicates a probable 1900s age for the site. The road is part of a network of roads that provided access to sugar cane fields and it is likely that the site was constructed by the Hamakua Sugar Company or its predecessor the Hamakua Mill Company.

No traditional Hawaiian sites were identified, but this is not unexpected because the area would have had a very low site density. Furthermore, archaeological evidence for such sites, primarily temporary camps and trails, would be minimal consisting of food remains and artifacts. Habitation structures were probably made entirely of perishable materials including wood and thatch because surface stones are rare. The extensive mechanized cultivation of sugar cane undoubtedly would have destroyed any evidence of traditional use in the areas occupied by fields. Wet taro terraces are known from large stream drainages on the Hamakua coast (Cordy 1994). The drainages in the project area are narrow, steep-walled and relatively straight channels that are scoured during periodic floods and are very unlikely to contain cultural deposits.

## Significance Assessments

Pursuant to DLNR (1998) Chapter 275-6 (d), the initial significance assessments provided herein are not final until concurrence from the DLNR has been obtained. Sites identified during the survey are assessed for significance based on the criteria outlined in the Rules Governing Procedures for Historic Preservation Review (DLNR 2003: Chapter 275). According to these rules, a site must possess integrity of location, design, setting, materials, workmanship, feeling, and association and shall meet one or more of the following criteria:

1. Criterion “a”. Be associated with events that have made an important contribution to the broad patterns of our history;
2. Criterion “b”. Be associated with the lives of persons important in our past;
3. Criterion “c”. Embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; or possess high artistic value;
4. Criterion “d”. Have yielded, or is likely to yield, information important for research on prehistory or history; and
5. Criterion “e”. Have an important traditional cultural value to the native Hawaiian people or to another ethnic group of the state due to associations with traditional cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts--these associations being important to the group's history and cultural identity.



Based on the above criteria, both sites are assessed as significant under Criterion “d”. These sites have yielded information important for understanding historic land use in the project area.

## **Recommended Treatments**

The mapping, written descriptions, photography, and excavation adequately document the sites and no further work or preservation is recommended.

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# **Appendix D**

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## **Pre-Assessment Consultation Comment and Response Letters**



**UNIVERSITY OF HAWAII AT MĀNOA**

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

July 11, 2006

Ms. Marissa Furfaro, Planner  
PBR HAWAII  
101 Aupuni Street, Suite 310  
Hilo, Hawai'i 96720

Dear Ms. Furfaro:

SUBJECT: Hawai'i County Department of Finance Pa'auilo Lands-Pre-Consultation

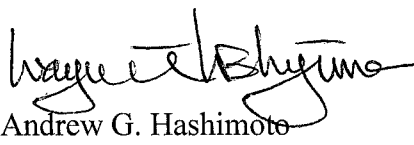
Thank you very much for your letter dated June 16, 2006 regarding the sale of County of Hawai'i lands at Pa'auilo, Hāmākua, Hawai'i. The University of Hawai'i at Mānoa, College of Tropical Agriculture and Human Resources (CTAHR), request the County of Hawai'i preserve the CTAHR current right of way through parcels 4-3-07:01, 4-3-11:01 and 4-3-11:02 to access its Hāmākua Research Station located on parcel 4-3-10:07. The right of way has been used by the University for the past 40 years and is essential for us to continue our research activities at this facility.

We also request that you contact the State of Hawai'i, Department of Land and Natural Resources for their input.

We appreciate the opportunity to comment on your proposed project. Please do not hesitate to contact me at 956-8234 if you have any questions. I look forward to reviewing the final draft of the environmental assessment.

Thank you for the opportunity to provide this comment.

Sincerely,

  
for Andrew G. Hashimoto  
Dean and Director

cc: Ms. Nancy Crawford, Deputy Director, County of Hawai'i, Department of Finance  
Ms. Lynn Nakamasu, UH Procurement and Property Management  
Mr. Thomas Lim, CTAHR Planning and Management



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*ASSOCIATE*

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1787 WILI PA LOOP, SUITE 4  
WAILUKU, HAWAII 96793-1271  
TEL: (808) 242-2878  
FAX: (808) 242-2902

August 4, 2006

Mr. Andrew Hashimoto, Dean and Director  
University of Hawai'i at Mānoa  
College of Tropical Agriculture and Human Resources  
3050 Maile Way, Gilmore Hall 202  
Honolulu, Hawai'i 96822-2271

SUBJECT: Pa'auilo Lands Draft Environmental Assessment  
Pre-Assessment Consultation  
TMKs: (3) 4-3-07:01, 4-3-09:19 and 24, 4-3-11:01 and 02

Dear Dean Hashimoto:

Thank you for your letter dated July 11, 2006 received during the pre-assessment consultation period for the subject Draft Environmental Assessment (EA). We acknowledge the following in the respective order of your comments:

1. The County acknowledges that your Hāmākua Research Station (located on parcel 4-3-10:07) has been utilizing a right of way that traverses through the project site for access to your research activities. The County will include in its sales agreements for the subject project language requiring the purchaser to preserve the access currently used by the personnel of the CTAHR agricultural research station on the road passing through these parcels.
2. The State Department of Land and Natural Resources (DLNR) was solicited for comments during the pre-assessment consultation period. The DLNR will also be sent a copy of the forthcoming Draft EA for comment and review.

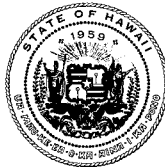
We appreciate your interest and participation in the pre-assessment consultation process. Your letter and this response will be included in the forthcoming Draft EA. Should you have any questions, please call me at 808.961.3333.

Sincerely,

PBR HAWAII

Marissa Furfaro  
Planner

cc: Nancy Crawford, County of Hawai'i Department of Finance



**STATE OF HAWAII**  
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM  
**LAND USE COMMISSION**  
P.O. Box 2359  
Honolulu, Hawaii 96804-2359  
Telephone: 808-587-3822  
Fax: 808-587-3827

July 7, 2006

Ms. Marissa Furfaro  
PBR Hawaii  
101 Aupuni Street, Suite 310  
Hilo, Hawaii

Dear Ms. Furfaro:


Subject: Hawaii County Department of Finance  
Paauilo Lands – Pre-Consultation

We are in receipt of your letter dated June 16, 2006, seeking our comments during the scoping process of the Environmental Assessment (EA) for the proposed sale of County of Hawaii lands at Paauilo, Hamakua, Hawaii.

We have reviewed the map and confirm that the project site, as generally represented, is designated within the State Land Use Agricultural District. We suggest that the draft EA include a map showing the project site in relation to the State land use districts.

We have no further comments to offer at this time. Thank you for the opportunity to provide comments on this matter. Should you have any questions, please feel free to call me or Bert Saruwatari of our office at 587-3822.

Sincerely,

  
ANTHONY J. H. CHING  
Executive Officer

c: Nancy Crawford, County of Hawaii, Finance Department  
Office of Environmental Quality Control





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FAX: (808) 242-2902

August 4, 2006

Mr. Anthony J. H. Ching, Executive Officer  
State of Hawai'i  
Department of Business, Economic Development & Tourism  
Land Use Commission  
P.O. Box 2359  
Honolulu, Hawai'i 96804-2359

SUBJECT: Pa'auilo Lands Draft Environmental Assessment  
Pre-Assessment Consultation  
TMKs: (3) 4-3-07:01, 4-3-09:19 and 24, 4-3-11:01 and 02

Dear Mr. Ching:

Thank you for your letter dated July 7, 2006 received during the pre-assessment consultation period for the subject Draft Environmental Assessment (EA). Thank you for confirming that the project site is located within the State Land Use Agricultural District. The Draft EA will include a map showing the project site in relation to the State land use districts.

Thank you for your interest and participation in the pre-assessment consultation process. Your letter and this response will be included in the forthcoming Draft EA. Should you have any questions, please call me at 808.961.3333.

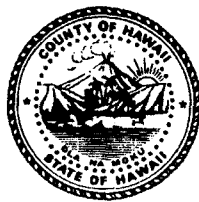
Sincerely,

PBR HAWAII

Marissa Furfaro  
Planner

cc: Nancy Crawford, County of Hawai'i Department of Finance

**Harry Kim**  
*Mayor*



**County of Hawai'i**  
**PLANNING DEPARTMENT**  
101 Pauahi Street, Suite 3 • Hilo, Hawaii 96720-3043  
(808) 961-8288 • FAX (808) 961-8742

**Christopher J. Yuen**  
*Director*  
**Brad Kurokawa, ASLA**  
**LEED® AP**  
*Deputy Director*

July 12, 2006

Ms. Marissa Furfaro, Planner  
PBR HAWAII  
101 Aupuni St., Ste. 310  
Hilo, HI 96720

Dear Ms. Furfaro:

**Subject: Environmental Assessment (EA) Pre-Consultation  
Proposed Sale of County of Hawai'i Lands  
TMKs: (3) 4-3-009:019 and 024; 4-3-007:001;  
and 4-3-011:001 and 002;  
Pa`auilo, Hāmākua District, Hawai'i Island**

The Hawai'i County Department of Finance proposes to sell approximately 700 acres of land acquired by the County from Hāmākua Sugar in 1994 in a settlement of taxes owed to the County. The plan is to sell these lands through public auction.

We offer the following comments:

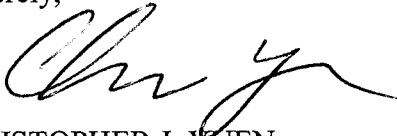
1. Your cover letter states that, "It is assumed that the properties will be used and maintained consistent with its current zoning and State Land Use Classification." Judging from the zoning, classifications, and agricultural ratings, all of the subject properties are intended to be agriculturally used. Therefore, it is important to explain in the Draft EA how agricultural use and potential agricultural use of all of these parcels will be assured and perpetuated after the proposed sale.
2. Because the lands involved are presently publicly owned, the Draft EA should describe the public benefit that will be served by the proposed land sale and what alternative actions have been considered.

Ms. Marissa Furfaro  
Page 2  
July 12, 2006

3. Government-owned roads appear to traverse TMKs: 4-3-009:019, 4-3-011:001 and 002. The Draft EA should address how the government-owned roads will be affected by the sale. Is the public using those roads presently? If not, have the roads been blocked off, thereby prohibiting access that existed in the past? Are any of those "roads," trails with public access/recreational potential? Will those roads remain in government ownership after the sale? If not, what public benefit will be served by the disposition of those roads?
4. TMK: 4-3-009:019 has County zoning of Agricultural-40 acres (A-40a) and Agricultural-5 acres (A-5a). It has been rated "1" (Prime Lands) in the "Agricultural Lands of Importance to the State of Hawaii" (ALISH) and has been given a "B" and "D" agricultural productivity rating by the Land Study Bureau. It has the State Land Use "Agricultural" classification. The County's General Plan gives the subject property the "Important Agricultural Land" (IAL) designation.
5. TMKs: 4-3-009:024, 4-3-007:001 and 4-3-011:001 have County zoning of A-40a and all of the same ratings and designations of 4-3-009:019.
6. TMK: 4-3-007:002 has County zoning of A-40a and A-5a. It does not have an ALISH rating; has the agricultural productivity rating of "B" and "D" by the Land Study Bureau; has the State Land Use Classification of Agricultural; and the County's General Plan designates it as IAL and EA (Extensive Agriculture).

Thank you for the opportunity to comment on this proposal to dispose of public lands. Please provide our office with a copy of the Draft EA. Should you have questions, please contact Deborah Chang of my staff at 961-8288, Ext. 254.

Sincerely,



CHRISTOPHER J. YUEN  
Planning Director

DLC:cd

P:\public\WPWIN60\Deborah\Comments\PreEASalebyCountyPaauilo.doc

cc: Nancy Crawford, Deputy Director, Dept. of Finance



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TEL: (808) 242-2878  
FAX: (808) 242-2902

August 4, 2006

Mr. Christopher J. Yuen, Director  
County of Hawai'i  
Planning Department  
101 Pauahi Street, Suite 3  
Hilo, Hawai'i 96720-3043

SUBJECT: Pa'auilo Lands Draft Environmental Assessment  
Pre-Assessment Consultation  
TMKs: (3) 4-3-07:01, 4-3-09:19 and 24, 4-3-11:01 and 02

Dear Mr. Yuen:

Thank you for your letter dated July 12, 2006 received during the pre-assessment consultation period for the subject Draft Environmental Assessment (EA). We offer the following responses in the respective order of your comments:

1. We do not anticipate the property being taken out of agricultural use in the future. However, should a future land owner decide to pursue a land use reclassification or zone change, we are confident that the public processes associated with those entitlements ensure adequate protection of the property.
2. The county has owned the Pa'auilo Lands since 1994, when it was acquired from Hāmākua Sugar Company in lieu of taxes owed. The county does not foresee the Pa'auilo Lands furthering county purposes while they are owned by the county. Furthermore, the county feels that the lands should be put to their best use, which can best be done by selling them. Currently they are zoned A-40a and A-5a, and by lying fallow under county ownership, the lands are not meeting their agricultural potential or benefiting the county and the taxpayers. Since the lands were obtained in lieu of taxes, the county feels that the taxpayers would be best served by their sale and the use of the proceeds for other county needs.
3. The government-owned road that runs adjacent to TMK 4-3-09:19 is the Antone De Luz Road. This road will remain in County ownership after the sale of the Pa'auilo Lands.

The government-owned roads that traverse TMKs 4-3-11:01 and 02 will be sold along with the property on which they lie. The Department of Finance will include in the sales agreements for TMKs 4-3-11:01 and 02 language requiring the purchaser to preserve the access currently used by the personnel of the University of Hawai'i College of Tropical Agriculture and Human Resources Hāmākua Research Station.

The public could be very well using the roads located on TMKs 4-3-11:01 and 02 since they are government roads. However, in order to access these roads, you must traverse a private road and private property owned by the Kamehameha Schools. Essentially, these parcels are landlocked so there is no potential to utilize these roads for public access or recreational purposes in the future as there is not a contiguous government road that accesses these properties.

The benefit to relinquishing ownership of the roads on TMKS 4-3-11:01 and 02 is that it will eliminate maintenance and liability issues for the County.

August 4, 2006

Mr. Chris Yuen

SUBJECT: Pa'auilo Lands Draft Environmental Assessment; Pre-Assessment Consultation;

TMKs: (3) 4-3-07:01, 4-3-09:19 and 24, 4-3-11:01 and 02

Page 2 of 2

4. Thank you for confirming the County zoning, County General Plan designation, and classifications for the "Agricultural Lands of Importance to the State of Hawaii" and the Land Study Bureau for TMK 4-3-09:19.
5. Thank you for confirming the County zoning, County General Plan designation, and classifications for the "Agricultural Lands of Importance to the State of Hawaii" and the Land Study Bureau for TMKs 4-3-09:24, 4-3-07:01 and 4-3-11:01.
6. Thank you for confirming the County zoning, County General Plan designation, and classifications for the "Agricultural Lands of Importance to the State of Hawaii" and the Land Study Bureau for TMK 4-3-11:02.

Thank you for your interest and participation in the pre-assessment consultation process. Your letter and this response will be included in the forthcoming Draft EA. Should you have any questions, please call me at 808.961.3333.

Sincerely,

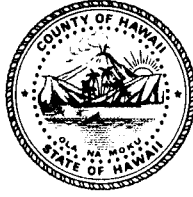
PBR HAWAII



Marissa Furfaro  
Planner

cc: Nancy Crawford, County of Hawai'i Department of Finance

Harry Kim  
*Mayor*



Barbara Bell  
*Director*

Nelson Ho  
*Deputy Director*

**County of Hawaii**  
**DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**  
25 Aupuni Street, Room 210 • Hilo, Hawai'i 96720-4252  
(808) 961-8083 • Fax (808) 961-8086

June 23, 2006

Ms. Marissa Furfaro  
PBR Hawaii  
101 Aupuni Street, Suite 310  
Hilo, HI 96720

Re: Hawai'i County Department of Finance  
Pa'auilo Lands – Pre-Consultation Environmental Assessment  
TMK: 4-3-09:19, 4-3-07:01, 4-3-11:01 and 02

Dear Ms. Furfaro,

We have no comments to offer on the subject Environmental Assessment.

Thank you for allowing us the opportunity to offer input on this project and if we can be of further assistance, please don't hesitate to contact us.

---

Barbara Bell  
DIRECTOR

cc: Nancy Crawford, Finance Dept.



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August 4, 2006

Ms. Barbara Bell, Director  
County of Hawai'i  
Department of Environmental Management  
25 Aupuni Street, Room 210  
Hilo, Hawai'i 96720

SUBJECT: Pa'auilo Lands Draft Environmental Assessment  
Pre-Assessment Consultation  
TMKs: (3) 4-3-07:01, 4-3-09:19 and 24, 4-3-11:01 and 02

Dear Ms. Bell:

Thank you for your letter dated June 23, 2006 received during the pre-assessment consultation period for the subject Draft Environmental Assessment (EA). We acknowledge that you have no comments to offer on the subject project.

Thank you for your participation in the pre-assessment consultation process. Your letter and this response will be included in the forthcoming Draft EA. Should you have any questions, please call me at 808.961.3333.

Sincerely,

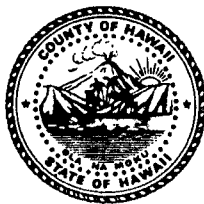
PBR HAWAII

A handwritten signature in black ink, appearing to read 'Marissa Furfaro', written in a cursive style.

Marissa Furfaro  
Planner

cc: Nancy Crawford, County of Hawai'i Department of Finance

Harry Kim  
Mayor



Jane H. Testa  
Director

Diane L. Ley  
Deputy Director

## County of Hawaii

### DEPARTMENT OF RESEARCH AND DEVELOPMENT

25 Aupuni Street, Room 109 • Hilo, Hawaii 96720-4252  
(808) 961-8366 • Fax (808) 935-1205  
E-mail: [chresdev@co.hawaii.hi.us](mailto:chresdev@co.hawaii.hi.us)

July 14, 2006

Marissa Furfaro, Planner  
PBR Hawai'i  
101 Aupuni Street, Suite 310  
Hilo, Hawai'i 96720

Subject: Hawai'i County Department of Finance  
Pa'auilo Lands – Pre-Consultation

Dear Ms. Furfaro,

Thank you for providing the Department of Research and Development with an opportunity to offer comments on the County of Hawai'i Department of Finance's proposed sale of lands at Pa'auilo, Hamakua.

As noted in your communication dated June 16, 2006, the subject lands fall within the State Land Use Agricultural District and are zoned by the County as Agriculture 40a and 5a. You also highlighted the fact that the lands were formerly in sugar cane production; thus, there is evidence that these lands were historically important to agriculture production in the Hamakua region.

Today, agriculture in Hamakua continues to transition and diversify from monocrop production of sugar cane to numerous food, fiber and animal units. This transformation has also included a movement from a single plantation to many individually operated farms and ranches. Such a dramatic transformation has required and will continue to require applied research, such as that provided by the U.S. Department of Agriculture's Pacific Basin Agricultural Research Center (PBARC) and the University of Hawai'i at Manoa's College of Tropical Agriculture and Human Resources (CTAHR).

Currently, CTAHR has an agricultural research station located near by and the water line that services the station crosses the County's lands. The Department of Research and Development, PBARC, the Hamakua Farm Bureau and others have acknowledged the potential for future use of these lands for research

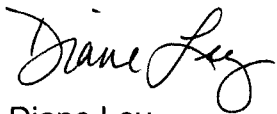


Marisa Furfaro  
PBR Hawai'i  
July 14, 2006  
Page 2.

programs and their potential to form partnerships among government agencies. Therefore, the draft environmental assessment should address issues related to agriculture and applied research.

Again, thank you for this opportunity to provide comments.

Sincerely,

A handwritten signature in cursive script, reading "Diane Ley".

Diane Ley  
Deputy Director

C: Nancy Crawford, Deputy Director  
Department of Finance



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FAX: (808) 523-1402  
E-MAIL: sysadmin@pbrhawaii.com

HILO OFFICE  
101 AUPUNI STREET  
HILO LAGOON CENTER, SUITE 310  
HILO, HAWAII 96720-4262  
TEL: (808) 961-3333  
FAX: (808) 961-4989

WAILUKU OFFICE  
1787 WILI PA LOOP, SUITE 4  
WAILUKU, HAWAII 96793-1271  
TEL: (808) 242-2878  
FAX: (808) 242-2902

August 4, 2006

Ms. Diane Ley, Deputy Director  
County of Hawai'i  
Department of Research and Development  
25 Aupuni Street, Room 109  
Hilo, Hawai'i 96720-4252

SUBJECT: Pa'auilo Lands Draft Environmental Assessment  
Pre-Assessment Consultation  
TMKs: (3) 4-3-07:01, 4-3-09:19 and 24, 4-3-11:01 and 02

Dear Ms. Ley:

Thank you for your letter dated July 14, 2006 received during the pre-assessment consultation period for the subject Draft Environmental Assessment (EA).

We are aware that the University of Hawai'i, College of Tropical Agriculture and Human Resources (CTAHR) has its Hāmākua research station adjacent to the subject project site. The CTAHR was consulted during the pre-assessment consultation period and will be consulted again during the public review process of the Draft Environmental Assessment.

Currently the property lies fallow under county ownership, and the lands are not meeting their agricultural potential. Once sold, the lands are expected to be put to agricultural productivity. Therefore, it is assumed that the lands will have a greater potential for agriculture and applied research once the County auctions the property.

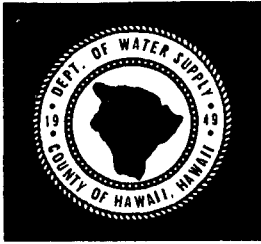
Thank you for your participation in the pre-assessment consultation process. Your letter and this response will be included in the forthcoming Draft EA. Should you have any questions, please call me at 808.961.3333.

Sincerely,

PBR HAWAII

Marissa Furfaro  
Planner

cc: Nancy Crawford, County of Hawai'i Department of Finance



**DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAI'I**

345 KEKUANAŌ'A STREET, SUITE 20 • HILO, HAWAI'I 96720

TELEPHONE (808) 961-8050 • FAX (808) 961-8657

July 11, 2006

Ms. Marissa Furfaro  
PBR Hawaii  
101 Aupuni Street, Suite 310  
Hilo, HI 96720

**COUNTY OF HAWAI'I PAAUULO LANDS  
PRE-ENVIRONMENTAL ASSESSMENT CONSULTATION  
HAMAKUA, ISLAND OF HAWAI'I, HAWAI'I  
TAX MAP KEY (3) 4-3-009:019 AND 024; 4-3-007:001; 4-3-011:001 AND 002**

Thank you for allowing us the opportunity to comment on the subject Pre-Environmental Assessment Consultation.

Please be informed that the closest available Department of Water Supply facility near the subject parcels is a 6-inch waterline within Pohakea Mauka Road approximately 4,000 feet from the northwest corner of Tax Map Key 4-3-011:002. The Department is not allowing any additional services from the existing 4-inch waterline within Pohakealani Road near the southeast corner of Tax Map Key 4-3-011:002 until extensive water system improvements are made.

Should you have any questions, please contact Mr. Finn McCall of our Water Resources and Planning Branch at (808) 961-8070, extension 255.

Sincerely yours,

Milton D. Pavao, P.E.  
Manager

FM:sco

copy - Ms. Nancy Crawford, Deputy Director, Finance Department, County of Hawai'i

*... Water brings progress...*



LAND PLANNING  
LANDSCAPE ARCHITECTURE  
ENVIRONMENTAL STUDIES

WM. FRANK BRANDT, FASLA  
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KIMI MIKAMI YUEN  
*ASSOCIATE*

SCOTT ABRIGO  
*ASSOCIATE*

**HONOLULU OFFICE**  
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**WAILUKU OFFICE**  
1787 WILI PA LOOP, SUITE 4  
WAILUKU, HAWAII 96793-1271  
TEL: (808) 242-2878  
FAX: (808) 242-2902

August 4, 2006

Mr. Milton D. Pavao, P.E., Manager  
County of Hawaii  
Department of Water Supply  
345 Kekūanaō'a Street, Suite 20  
Hilo, Hawai'i 96720

SUBJECT: Pa'auilo Lands Draft Environmental Assessment  
Pre-Assessment Consultation  
TMKs: (3) 4-3-07:01, 4-3-09:19 and 24, 4-3-11:01 and 02

Dear Mr. Pavao:

Thank you for your letter dated July 11, 2006 received during the pre-assessment consultation period for the subject Draft Environmental Assessment (EA). We will incorporate your comments on your existing facilities in the area into the Draft EA. We acknowledge that your department is not allowing any additional services from the existing waterline until extensive water system improvements are made. This project does not plan to provide any utility upgrades as the lands are expected to remain in agricultural use.

Thank you for your interest and participation in the pre-assessment consultation process. Your letter and this response will be included in the forthcoming Draft EA. Should you have any questions, please call me at 808.961.3333.

Sincerely,

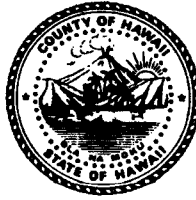
PBR HAWAII

A handwritten signature in black ink, appearing to read 'Marissa Furfaro', written in a cursive style.

Marissa Furfaro  
Planner

cc: Nancy Crawford, County of Hawai'i Department of Finance

**Harry Kim**  
*Mayor*



**Lawrence K. Mahuna**  
*Police Chief*

**Harry S. Kubojiri**  
*Deputy Police Chief*

## County of Hawaii

### **POLICE DEPARTMENT**

349 Kapiolani Street • Hilo, Hawaii 96720-3998  
(808) 935-3311 • Fax (808) 961-8869

July 6, 2006

Ms. Marissa Furfaro, Planner  
PBR Hawaii  
101 Aupuni Street, Suite 310  
Hilo, Hawaii 96720-4262

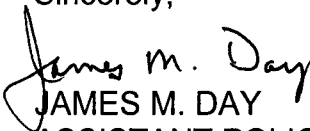
Dear Ms. Furfaro:

**SUBJECT: HAWAII COUNTY DEPARTMENT OF FINANCE  
PA'AUULO LANDS – PRE-CONSULTATION  
TMKS: (3) 4-3-09:19 & 24, 4-3-07:01, 4-3-11:01 & 02**

Staff, upon visiting the proposed site, recommends that the one-lane roadway be kept cleared of overgrown brush, especially in several areas with sharp curves, to allow sufficient sight distance to handle the expected increase in traffic with the proposed sale of properties.

Thank you for the opportunity to comment.

Sincerely,

  
JAMES M. DAY  
ASSISTANT POLICE CHIEF  
AREA I OPERATIONS

EWR:lli

cc: Ms. Nancy Crawford, County of Hawaii Department of Finance



LAND PLANNING  
LANDSCAPE ARCHITECTURE  
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KIMI MIKAMI YUEN  
*ASSOCIATE*

SCOTT ABRIGO  
*ASSOCIATE*

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1787 WILI PA LOOP, SUITE 4  
WAILUKU, HAWAII 96793-1271  
TEL: (808) 242-2878  
FAX: (808) 242-2902

August 4, 2006

Mr. James M. Day  
Assistant Police Chief  
County of Hawai'i  
Police Department  
349 Kapi'olani Street  
Hilo, Hawai'i 96720-3998

SUBJECT: Pa'auilo Lands Draft Environmental Assessment  
Pre-Assessment Consultation  
TMKs: (3) 4-3-07:01, 4-3-09:19 and 24, 4-3-11:01 and 02

Dear Assistant Chief Day:

Thank you for your letter dated July 6, 2006 received during the pre-assessment consultation period for the subject Draft Environmental Assessment (EA). We acknowledge that in order to maintain sufficient sight distance you recommend that the one-lane roadway be kept cleared of overgrown brush, especially in several areas with sharp curves. The County will be selling some of the roadways associated with various parcels, therefore relinquishing their maintenance responsibilities. Purchasers will be made aware of their responsibility to maintain site distances along their roadways.

Thank you for your participation in the pre-assessment consultation process. Your letter and this response will be included in the forthcoming Draft EA. Should you have any questions, please call me at 808.961.3333.

Sincerely,

PBR HAWAII

A handwritten signature in black ink, appearing to read 'Marissa Furfaro', written in a cursive style.

Marissa Furfaro  
Planner

cc: Nancy Crawford, County of Hawai'i Department of Finance

**Harry Kim**  
*Mayor*



**Darryl J. Oliveira**  
*Fire Chief*

**Desmond K. Wery**  
*Deputy Fire Chief*

## County of Hawai'i

### FIRE DEPARTMENT

25 Aupuni Street • Suite 103 • Hilo, Hawai'i 96720  
(808) 961-8297 • Fax (808) 961-8296

July 7, 2006

Ms. Marissa Furfaro  
PBR HAWAII  
101 Aupuni Street  
Suite 310  
Hilo, Hawaii 96720

SUBJECT: ENVIRONMENTAL ASSESSMENT CONSULTATION  
Hawaii County Department of Finance  
Pa'auilo Lands – Pre-Consultation

---

We have no comments to offer at this time in reference to the above-mentioned Pre-Environmental Assessment Consultation.

  
DARRYL OLIVEIRA  
Fire Chief

DJO:lpc





LAND PLANNING  
LANDSCAPE ARCHITECTURE  
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*ASSOCIATE*

SCOTT ABRIGO  
*ASSOCIATE*

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FAX: (808) 523-1402  
E-MAIL: sysadmin@pbrhawaii.com

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HILO LAGOON CENTER, SUITE 310  
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1787 WILI PA LOOP, SUITE 4  
WAILUKU, HAWAII 96793-1271  
TEL: (808) 242-2878  
FAX: (808) 242-2902

August 4, 2006

Mr. Darryl Oliveira, Fire Chief  
County of Hawai'i  
Fire Department  
25 Aupuni Street, Suite 103  
Hilo, Hawai'i 96720

SUBJECT: Pa'auilo Lands Draft Environmental Assessment  
Pre-Assessment Consultation  
TMKs: (3) 4-3-07:01, 4-3-09:19 and 24, 4-3-11:01 and 02

Dear Chief Oliveira:

Thank you for your letter dated July 7, 2006 received during the pre-assessment consultation period for the subject Draft Environmental Assessment (EA). We acknowledge that you have no comments to offer at this time.

Thank you for your participation in the pre-assessment consultation process. Your letter and this response will be included in the forthcoming Draft EA. Should you have any questions, please call me at 808.961.3333.

Sincerely,

PBR HAWAII

A handwritten signature in black ink, appearing to read 'Marissa Furfaro', written in a cursive style.

Marissa Furfaro  
Planner

cc: Nancy Crawford, County of Hawai'i Department of Finance



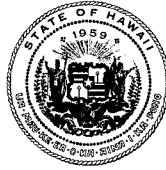


# **Appendix E**

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Draft Environmental Assessment  
Public Review  
Comment and Response Letters





**STATE OF HAWAII**  
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM  
**LAND USE COMMISSION**  
P.O. Box 2359  
Honolulu, Hawaii 96804-2359  
Telephone: 808-587-3822  
Fax: 808-587-3827

September 11, 2006

Ms. Marisa Furfaro  
PBR Hawaii  
Hilo Lagoon Center  
101 Aupuni Street, Suite 310  
Hilo, Hawaii 96720

Dear Ms. Furfaro:


Subject: Draft Environmental Assessment  
Pa'auilo Lands  
TMKs: 4-3-07:01, 4-3-09:19, 4-3-09:24, 4-3-11:01, and 4-3-11:02  
Pa'auilo, Hamakua, Hawaii

We have reviewed the Draft Environmental Assessment forwarded by your transmittal dated August 18, 2006.

Pursuant to §205-6, Hawaii Revised Statutes, and given the location, scope, and nature of the proposed activity, we have no further comments to offer at this time.

Thank you for the opportunity to comment on the subject project. Please do not hesitate to contact me at 587-3822 should you require clarification or any further assistance.

Sincerely,

  
ANTHONY J. H. CHING  
Executive Officer



LAND PLANNING  
LANDSCAPE ARCHITECTURE  
ENVIRONMENTAL STUDIES

WM. FRANK BRANDT, FASLA  
*CHAIRMAN*

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*PRESIDENT*

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*EXECUTIVE VICE-PRESIDENT*

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*VICE PRESIDENT*

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*SENIOR ASSOCIATE*

KEVIN NISHIKAWA, ASLA  
*ASSOCIATE*

KIMI MIKAMI YUEN  
*ASSOCIATE*

SCOTT ABRIGO  
*ASSOCIATE*

**HONOLULU OFFICE**  
1001 BISHOP STREET  
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101 AUPUNI STREET  
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1787 WILI PA LOOP, SUITE 4  
WAILUKU, HAWAII 96793-1271  
TEL: (808) 242-2878  
FAX: (808) 242-2902

September 13, 2006

Mr. Anthony J. H. Ching, Executive Officer  
State of Hawai'i  
Department of Business, Economic Development & Tourism  
Land Use Commission  
P.O. Box 2359  
Honolulu, Hawai'i 96804-2359

SUBJECT: Pa'auilo Lands Draft Environmental Assessment  
TMKs: (3) 4-3-07:01, 4-3-09:19 and 24, 4-3-11:01 and 02

Dear Mr. Ching:

Thank you for your letter dated September 11, 2006 commenting on the subject Draft Environmental Assessment (EA). We acknowledge that you have no further comments to offer at this time.

We appreciate your interest and participation in the public review phase of the Draft EA. Your letter, along with this response, will be reproduced in the forthcoming Final EA. Should you have any questions, please do not hesitate to me at 961.3333.

Sincerely,

PBR HAWAII

A handwritten signature in black ink, appearing to read 'Marissa Furfaro', written in a cursive style.

Marissa Furfaro  
Planner

cc: Nancy Crawford, County of Hawai'i Department of Finance



**STATE OF HAWAII**  
**OFFICE OF HAWAIIAN AFFAIRS**  
711 KAPI'OLANI BOULEVARD, SUITE 500  
HONOLULU, HAWAII 96813

HRD06/2509C

September 26, 2006

Marissa Furfaro  
PBR Hawai'i  
101 Aupuni Street, Suite 310  
Hilo, Hawai'i 96720

**RE: Draft Environmental Impact Statement (DEA) for the Proposed Sale of Hawai'i  
County Lands, Pa'auilo, Hawai'i; TMK 4-3-7:01, 4-3-9:10 and 24, 4-3-11:01 and 2**

Dear Ms. Furfaro,

The Office of Hawaiian Affairs (OHA) is in receipt of your undated request for comments regarding the proposed sale of Hawai'i County land in Pa'auilo. We apologize for the delay in our response, however, we offer the following comments.

OHA notes that the DEA lacks any type of cultural impact assessment, as required by Act 50, Session Laws of Hawai'i, 2000. At the very least, interviews with cultural practitioners in the area should be conducted. Our community resource coordinators on Hawai'i Island can assist you with locating suitable interviewees. The Hawai'i State Legislature, through Act 50, stated that "the past failure to require native Hawaiian cultural impact assessments has resulted in the loss and destruction of many important cultural resources and has interfered with the exercise of native Hawaiian culture." Because incorporation of a cultural impact assessment into all environmental assessments is statutorily mandated, OHA requests that the final EA contain such an analysis.

Thank you for the opportunity to comment. If you have any further questions or concerns please contact Koa Kaulukukui at (808) 594-0244 or [koalanik@oha.org](mailto:koalanik@oha.org).

Sincerely,

A handwritten signature in black ink, appearing to read "Clyde W. Nāmu'o".

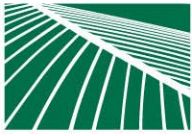
Clyde W. Nāmu'o  
Administrator

Marissa Furfaro  
September 26, 2006  
Page 2

CC: Ms. Nancy Crawford, Deputy Director  
County of Hawai'i, Finance Department  
25 Aupuni Street, Room 118  
Hilo, Hawai'i 96720

Lukela Ruddle  
OHA Hilo Office  
162 A Baker Avenue  
Hilo, HI 96720-4869

Ruby McDonald  
OHA Kona Office  
75-5706 Hanama Pl Suite 107  
Kailua Kona, HI 96740



# PBR HAWAII

& ASSOCIATES, INC.

November 8, 2006

W. FRANK BRANDT, FASLA  
*Chairman*

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*President*

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*Executive Vice-President*

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VINCENT SHIGEKUNI  
*Vice-President*

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*Principal*

TOM SCHNELL, AICP  
*Senior Associate*

RAYMOND T. HIGA, ASLA  
*Senior Associate*

KEVIN K. NISHIKAWA, ASLA  
*Associate*

KIMI MIKAMI YUEN, LEED® AP  
*Associate*

SCOTT ALIKA ABRIGO  
*Associate*

SCOTT MURAKAMI, ASLA  
*Associate*

Mr. Clyde W. Nāmu‘o, Administrator  
State of Hawai‘i  
Office of Hawaiian Affairs  
711 Kapi‘olani Boulevard, Suite 500  
Honolulu, Hawai‘i 96813

SUBJECT: Pa‘auilo Lands Draft Environmental Assessment  
TMKs: (3) 4-3-07:01, 4-3-09:19 and 24, 4-3-11:01 and 02

Dear Mr. Nāmu‘o:

Thank you for your letter dated September 26, 2006 commenting on the subject Draft Environmental Assessment (EA).

While preparing the Draft EA, we did consult the community resource coordinator of your Hilo Office. At that time, no suitable interviewees were located. We have since contacted your Hilo Office again. We have also made contact with the Pa‘auilo Seniors Group, of which we will interview two members. We will be including an assessment of cultural resources in the forthcoming Final EA.

We appreciate your interest and participation in the public review phase of the Draft EA. Your letter, along with this response, will be reproduced in the forthcoming Final EA. Should you have any questions, please do not hesitate to me at 961.3333.

Sincerely,

PBR HAWAII

Marissa Furfaro  
Planner

**HONOLULU OFFICE**  
1001 Bishop Street  
ASB Tower, Suite 650  
Honolulu, Hawai‘i 96813-3484  
Tel: (808) 521-5631  
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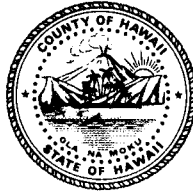
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Hilo, Hawai‘i 96720-4262  
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Fax: (808) 961-4989

**WAILUKU OFFICE**  
1787 Wili Pa Loop, Suite 4  
Wailuku, Hawai‘i 96793-1271  
Tel: (808) 242-2878

cc: Nancy Crawford, County of Hawai‘i Department of Finance



Harry Kim  
Mayor



Barbara Bell  
Director

Nelson Ho  
Deputy Director

**County of Hawaii**  
**DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**  
25 Aupuni Street, Room 210 • Hilo, Hawai'i 96720-4252  
(808) 961-8083 • Fax (808) 961-8086

August 28, 2006

Ms. Marissa Furfaro  
PBR Hawaii  
101 Aupuni Street, Suite 310  
Hilo, HI 96720

Re: Pa'auilo Lands  
Draft Environmental Assessment  
TMK: (3) 4-3-7:01, 4-3-9:19 and 24 and 4-3-11:01 and 2

Dear Ms. Furfaro,

We have no comments on this project.

Thank you for allowing us the opportunity to offer our input.

Barbara Bell  
DIRECTOR

cc: OEQC  
Nancy Crawford, Finance Department

8645A



LAND PLANNING  
LANDSCAPE ARCHITECTURE  
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TEL: (808) 242-2878  
FAX: (808) 242-2902

August 31, 2006

Ms. Barbara Bell, Director  
County of Hawai'i  
Department of Environmental Management  
25 Aupuni Street, Room 210  
Hilo, Hawai'i 96720

SUBJECT: Pa'auilo Lands Draft Environmental Assessment  
TMKs: (3) 4-3-07:01, 4-3-09:19 and 24, 4-3-11:01 and 02

Dear Ms. Bell:

Thank you for your letter dated August 28, 2006 commenting on the subject Draft Environmental Assessment (EA). We acknowledge that you have no comments to offer on the subject project.

We appreciate your interest and participation in the public review phase of the Draft EA. Your letter, along with this response, will be reproduced in the forthcoming Final EA. Should you have any questions, please do not hesitate to me at 961.3333.

Sincerely,

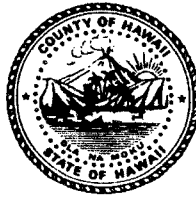
PBR HAWAII

A handwritten signature in black ink, appearing to read 'Marissa Furfaro', written in a cursive style.

Marissa Furfaro  
Planner

cc: Nancy Crawford, County of Hawai'i Department of Finance

**Harry Kim**  
Mayor



**Christopher J. Yuen**  
Director

**Brad Kurokawa, ASLA**  
**LEED® AP**  
Deputy Director

**County of Hawaii**  
**PLANNING DEPARTMENT**

101 Pauahi Street, Suite 3 • Hilo, Hawaii 96720-3043  
(808) 961-8288 • FAX (808) 961-8742

October 2, 2006

Ms. Marissa Furfaro, Planner  
PBR HAWAII  
101 Aupuni St., Ste. 310  
Hilo, HI 96720

Dear Ms. Furfaro:

**Subject: Draft Environmental Assessment (DEA)**  
**Proposed Sale of County of Hawai'i Lands**  
**TMKs: (3) 4-3-009:019 and 024; 4-3-007:001;**  
**and 4-3-011:001 and 002;**  
**Pa`auilo, Hāmākua District, Hawai'i Island**

Thank you for waiting to receive our comments on the above-mentioned DEA. We apologize for missing your deadline.

First, we would like to clarify the terminology used on p. 9 regarding "parcels." There are only five (5) **tax map key parcels** involved in the proposed sale. There are also nine (9) underlying grants on TMKs: 4-3-09:19 and 24 which are "lots of record" that could receive separate tax map keys.

The DEA discusses "potential impacts and mitigation measures for the possibility that the maximum allowable farm dwellings are built." (2.3 *Potential Uses*, p.9) Estimation of the maximum allowable farm dwellings that could be built on the 740 acres of County land is a key estimate from which all other potential impacts are derived in the DEA. We disagree with the estimate of 22 maximum possible farm dwellings used throughout the document and believe that 44 farm dwellings are a better estimate.

### **Estimate of Maximum Possible Farm Dwellings**

We base our estimates on the following:

1. The DEA clearly expresses the intention of consolidating and re-subdividing any underlying grants. There appears to be the potential for 21 separate parcels when the underlying grants are counted.
2. However, the DEA does not include an estimate of the potential parcels that could be created on existing A-5a zoning. A-5a zoning would enable subdivision of 58 acres on TMK: 4-3-009:019 into an additional 11 parcels and 16 additional parcels on the estimated 92.5 acres of A-5a in the southwest corner of TMK: 4-3-11:02 (p. 42). The number of parcels that could be created is an estimate, because actual conditions on the ground will ultimately determine road locations and lot sizes.
3. Taking into account the potential subdividing of underlying grants and the potential parcels in A-5a zoning, we estimate a minimum of 44 farm dwellings, based on one dwelling per parcel.

### **Additional Farm Dwellings**

Forty-four (44) farm dwellings on forty-four parcels is considered to be a minimum estimate, because if legitimate agricultural use is being made of the lands, additional farm dwellings can be approved by the Planning Department with the approval of a farm plan. The DEA incorrectly states on p. 9 that, "the landowner must be able to prove at least eight (8) hours of labor on the property per week related to agriculture" in order to be approved for a farm dwelling. The eight (8) hour agricultural labor guideline is used in assessing whether an additional farm dwelling will be permitted based on the farm plan that is submitted. In other words, one farm dwelling is permitted per agricultural parcel, without proof of any agricultural use or plan. Only the need for more than one farm dwelling on a parcel must be demonstrated via a farm plan which estimates the number of agricultural labor/week involved. Based on current practices, it is not unreasonable to expect second farm dwellings to be applied for once the parcels are created.

### **Public Rights-of-Way**

The DEA states on p. 30 that government ownership of roads and jeep trails shown on the maps will not be kept in government ownership (*Potential Impacts and Mitigation Measures*). Prior to sale of these properties, public rights-of-way which should be retained need to be clearly identified.

Further, the DEA on p. 28 recommends that the county include in the sales agreements language requiring the purchaser(s) to preserve the access currently used by the CTAHR agricultural research station for CTAHR's continued use. We recommend that the access preservation requirement include unrestricted use by state and county agencies.

Ms. Marissa Furfaro  
Page 3  
October 2, 2006


**Potential Impacts to Public Services and Infrastructure**

At the average household size of 2.99, approximately 132 persons could be minimally added to the population of Pa`auilo, given our estimate of the minimum number of farm dwellings that could be developed once the Pa`auilo Lands are sold. Anticipated impacts to public services and infrastructure, such as roads, solid waste disposal, schools, electrical services, public safety, etc. in the DEA should be revised to reflect the greater number of potential dwellings.

While a case can be made that sale of the property in and of itself will not result in direct impacts to public services and infrastructure, the EA should address the potential impacts that can be expected from the disposition of the Pa`auilo Lands presently in public ownership. Based on the anticipated impacts, conditions can and should be placed on future purchasers that will ensure that the public's interests are protected.

Again, thank you for your patience in waiting for our comments on the Draft EA. Should you have questions, please contact Deborah Chang of my staff at 961-8288, Ext. 254.

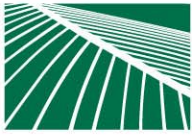
Sincerely,

  
CHRISTOPHER J. YUEN  
Planning Director

DLC:cd

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cc: Nancy Crawford, Deputy Director, Dept. of Finance



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Wailuku, Hawai'i 96793-1271  
Tel: (808) 242-2878

December 8, 2006

Mr. Christopher J. Yuen, Director  
County of Hawai'i  
Planning Department  
101 Pauahi Street, Suite 3  
Hilo, Hawai'i 96720-3043

SUBJECT: Pa'auilo Lands Draft Environmental Assessment  
TMKs: (3) 4-3-07:01, 4-3-09:19 and 24, 4-3-11:01 and 02

Dear Mr. Yuen:

Thank you for your letter dated October 2, 2006 commenting on the subject Draft Environmental Assessment (EA). We offer the following responses in the respective order of your comments:

1. The Final EA will reflect that the nine (9) underlying grants on TMKS 4-3-09:19 and 24 are "lots of record that could receive separate tax map keys." We will remove any reference to these nine (9) lots of record as "parcels."
2. We appreciate your explanation of your estimate of maximum possible farm dwellings.
  - a. It was not our objective to state that there is intent to consolidate and re-subdivide any underlying grants. The intent was to disclose that it is a possibility and the right of a future landowner, whether or not they choose to pursue it.

The Final EA will reflect that parcel 4-3-11:02 recently underwent subdivision (SUB-06-000427, approved on December 4, 2006). Therefore, the Final EA will state that there are 5 lots on parcel 4-3-11:02, instead of the nine (9) underlying grants.

- b. The Final EA will include an estimate of the potential parcels that could be created based upon existing zoning, assuming approval under the formal subdivision process.

For clarification, your letter states that there are 58 acres of A-5a zoning on TMK 4-3-09:19, which is correct. However, there are not 92.5 acres of A-5a zoning on TMK 4-3-11:02. There are approximately 34.5 acres of A-5a zoning on parcel 4-3-11:02 for a *total* of 92.5 acres of A-5a on the entire project site.

December 8, 2006

Letter to Mr. Christopher Yuen

Subject: Pa‘auilo Lands Draft Environmental Assessment; TMKs (3) 4-3-07:01, 4-3-09:19 and 24, 4-3-11:01 and 02

Page 2 of 5

I would like to further clarify that the portion of **TMK 4-3-09:19 zoned A-5a** has been consolidated and re-subdivided based on underlying grants (SUB-05-000130, approved on August 10, 2005). Therefore, there are currently 3 lots of A-5a zoning on TMK 4-3-09:19.

- c. There are two (2) different scenarios from which to calculate the maximum possible farm dwellings:

**Scenario 1: Underlying Grants**

The project site comprises five (5) parcels. Within those five (5) parcels there are six (6) underlying grants on TMK 4-3-09:19 and four (4) underlying grants on TMK 4-3-09:24, which are all “lots of record” (SUB-05-000130, approved on August 10, 2005) that could receive separate tax map keys in the future (please refer to Figure 2).

There are also nine (9) underlying grants on TMK 4-3-11:02. However, that parcel was recently subdivided (Sub-06-000427, approved on December 4, 2006) into five (5) lots (Lot 19, 20, 21, Tract 1, and Grant 4968).

Counting the existing parcels, lots of record, and the lots that were recently created on TMK 4-3-11:02, there is a potential for up to 17 separate parcels and/or lots within the project area:

**Table 1: Number of Potential Lots Based on Underlying Grants**

<b>TMK Number</b>	<b>Potential Number of Lots</b>
4-3-07:01	1
4-3-09:19	6
4-3-09:24	4
4-3-11:01	1
4-3-11:02	5
<b>Total:</b>	<b>17</b>

December 8, 2006

Letter to Mr. Christopher Yuen

Subject: Pa‘auilo Lands Draft Environmental Assessment; TMKs (3) 4-3-07:01, 4-3-09:19 and 24, 4-3-11:01 and 02

Page 3 of 5

### **Scenario 2: Existing Zoning**

No further subdivision is possible on **TMK 4-3-07:01** based on its current A-40a zoning.

There are currently three (3) “lots of record” that are zoned A-5a on **TMK 4-3-09:19**:

- Portion of TMK 4-3-09:19, Lot 15 is 18.551 acres. This could allow for a subdivision of three (3) lots
- Portion of TMK 4-3-09:19, Lot 16 is 20.231 acres. This could allow for a subdivision of four (4) lots.
- Portion of TMK 4-3-09:19, Lot 17 is 19.353 acres. This could allow for a subdivision of three (3) lots.

There are currently three (3) “lots of record” that are zoned A-40a zoning on **TMK 4-3-09:19**:

- Portion of TMK 4-3-09:19, Lot 8 is 16.224 acres. No further subdivision is possible under its current A-40a zoning.
- Portion of TMK 4-3-09:19, Lot 9 is 16.307 acres. No further subdivision is possible under its current A-40a zoning.
- Portion of TMK 4-3-09:19, Lot 10 is 15.334 acres. No further subdivision is possible under its current A-40a zoning.

There are currently four (4) “lots of record” that are zoned A-40a on **TMK 4-3-09:24**:

- Portion of TMK 4-3-09:24, Lot 1 is 23.337 acres. No further subdivision is possible under its current A-40a zoning.
- Portion of TMK 4-3-09:24, Lot 2 is 20.191 acres. No further subdivision is possible under its current A-40a zoning.
- Portion of TMK 4-3-09:24, Lot 3 is 20.699 acres. No further subdivision is possible under its current A-40a zoning.
- Portion of TMK 4-3-09:24, Lot A is 84.454 acres. This could allow for a subdivision of two (2) lots under its current A-40a zoning.

No further subdivision is possible on **TMK 4-3-11:01** based on its current A-40a zoning.

**TMK 4-3-11:02** is currently split-zoned with approximately 34.5 acres zoned A-5a and approximately 271.775 acres zoned A-40a. Lot 19-A (103.977 acres) could be subdivided into two (2) lots. No further subdivision is possible on Lots 20, 21, and Grant 4968. The portion of Tract 1 that is zoned A-5a could be subdivided into six (6) lots on the A-5a portion, creating a seventh lot on the remainder of Tract 1, for a total of 12 lots.



December 8, 2006

Letter to Mr. Christopher Yuen

Subject: Pa‘auilo Lands Draft Environmental Assessment; TMKs (3) 4-3-07:01, 4-3-09:19 and 24, 4-3-11:01 and 02

Page 4 of 5

Therefore, the potential number of lots and allowable farm dwellings based on *current zoning* (assuming approval under the formal subdivision process) is 32 as demonstrated below:

**Table 2: Number of Potential Lots Based on Current Zoning**

<b>TMK Number</b>	<b>Potential Number of Lots</b>
4-3-07:01	1
4-3-09:19	13
4-3-09:24	5
4-3-11:01	1
4-3-11:02	12
<b>Total:</b>	<b>32</b>

After reviewing the two scenarios, it can be determined that Scenario 2 provides the highest number of potential lots/parcels. It should be noted that these scenarios are only possible if a future subdivision action is in full compliance with the County of Hawai‘i subdivision and zoning codes.

According to the Hawai‘i County Planning Department, one (1) farm dwelling is permitted per agricultural parcel without proof of any agricultural use or plan. Thus, using the highest yielding scenario, there is a potential for 32 farm dwellings on the Pa‘auilo Lands once they are sold. However, it should be emphasized that sale of the Pa‘auilo Lands is not proposing that 32 farm dwellings be built, it is simply a statement of the maximum number of farm dwellings allowed based on current zoning and underlying grants. Therefore, the potential impacts and mitigation measures in the forthcoming Final EA will be based on the potential for 32 farm dwellings.

We further understand that additional farm dwellings *may* be permitted on the parcels and/or lots if a Farm Plan, which demonstrates the number of agricultural labor hours per week, is submitted and approved by the Hawai‘i County Planning Department. This requirement will help to ensure that any additional farm dwellings constructed are related to agriculture and thus will perpetuate agriculture on the Pa‘auilo Lands.

3. The Final EA will be revised to reflect that the first dwelling on each of the 32 potential parcels may be a single-family dwelling (without proof of agricultural use or plan). Further, the Final EA will state that if legitimate agricultural use is being made of the lands, additional farm dwellings can be approved by the Planning Department with the approval of a Farm Plan, which needs to estimate the number of agricultural labor hours/week involved.

December 8, 2006

Letter to Mr. Christopher Yuen

Subject: Pa'auilo Lands Draft Environmental Assessment; TMKs (3) 4-3-07:01, 4-3-09:19 and 24, 4-3-11:01 and 02

Page 5 of 5

4. We had previously stated in our Draft EA that portions of the government roads would be sold. However, the County Department of Finance has determined that all government roads (real or 'paper') will be retained. The Department of Finance will also encumber some of the parcels with easements, which will allow the County to impose public access over those easements should it become practical in the future.

The access route that CTHAR is currently using traverses both County property *and* private property. The County only has control over the County-owned portion of the access. The County has determined that a County easement will be retained on this road through the subject properties. This will allow for the possibility of public use if the road section ever becomes publicly accessible.

5. At the average household size of 2.99 (and the revised dwelling unit calculation of 32 dwellings), approximately 97 persons could be added to the population of Pa'auilo. The forthcoming Final EA will be revised to reflect the greater number of potential dwellings and residents and discuss the potential impacts to public services and infrastructure.

We appreciate your interest and participation in the public review phase of the Draft EA. Your letter, along with this response, will be reproduced in the forthcoming Final EA. Should you have any questions, please do not hesitate to me at 961.3333.

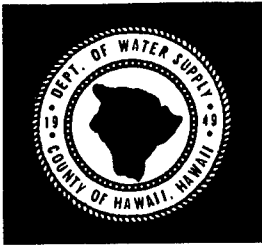
Sincerely,

PBR HAWAII



Marissa Furfaro  
Planner

cc: Nancy Crawford, County of Hawai'i Department of Finance



**DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAI'I**

345 KĒKŪANAŌ'A STREET, SUITE 20 • HILO, HAWAI'I 96720

TELEPHONE (808) 961-8050 • FAX (808) 961-8657

September 18, 2006


PBR Hawaii  
Hilo Lagoon Center  
101 Aupuni Street, Suite 310  
Hilo, HI 96720

**PAAUILO LANDS  
DRAFT ENVIRONMENTAL ASSESSMENT  
HAMAKUA, ISLAND OF HAWAI'I, HAWAI'I  
TAX MAP KEY (3) 4-3-007:001, 4-3-009:019, AND 024, 4-3-011:001 AND 002**

Thank you for allowing us the opportunity to comment on the subject Draft Environmental Assessment. We have no additional comments to provide at this time.

Should there be any questions, please contact Mr. Finn McCall of our Water Resources and Planning Branch at 961-8070, extension 255.

Sincerely yours,

)   
Milton D. Pavao, P.E.  
Manager

FM:sco

copy - State of Hawai'i, Office of Environmental Quality Control  
County of Hawai'i, Department of Finance

*... Water brings progress...*



LAND PLANNING  
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September 25, 2006

Mr. Milton D. Pavao, P.E., Manager  
County of Hawaii  
Department of Water Supply  
345 Kekūanaō'a Street, Suite 20  
Hilo, Hawai'i 96720

SUBJECT: Pa'auilo Lands Draft Environmental Assessment  
TMKs: (3) 4-3-07:01, 4-3-09:19 and 24, 4-3-11:01 and 02

Dear Mr. Pavao:

Thank you for your letter dated September 18, 2006 commenting on the subject Draft Environmental Assessment (EA). We acknowledge that you have no additional comments to offer on the subject project.

We appreciate your interest and participation in the public review phase of the Draft EA. Your letter, along with this response, will be reproduced in the forthcoming Final EA. Should you have any questions, please do not hesitate to me at 961.3333.

Sincerely,

PBR HAWAII

A handwritten signature in black ink, appearing to read 'Marissa Furfaro', written in a cursive style.

Marissa Furfaro  
Planner

cc: Nancy Crawford, County of Hawai'i Department of Finance

Harry Kim  
Mayor



Darryl J. Oliveira  
Fire Chief

Desmond K. Wery  
Deputy Fire Chief

## County of Hawai'i

### FIRE DEPARTMENT

25 Aupuni Street • Suite 103 • Hilo, Hawai'i 96720  
(808) 961-8297 • Fax (808) 961-8296

August 31, 2006

Attention: Ms. Marissa Furfaro  
PBR Hawaii  
Hilo Lagoon Center  
101 Aupuni Street, Suite 310  
Hilo, Hawaii 96720

RE: Draft Environmental Assessment for Pa'auilo Lands, Hamakua  
TMK: (3) 4-3-7:01, 4-3-9:19 and 24 and 4-3-11:01 and 2

In regards to the above-mentioned draft environmental assessment we offer the following response:

Fire apparatus access roads shall be in accordance with UFC Section 10.207:

#### "Fire Apparatus Access Roads

"Sec. 10.207. (a) **General.** Fire apparatus access roads shall be provided and maintained in accordance with the provisions of this section.

"(b) **Where Required.** Fire apparatus access roads shall be required for every building hereafter constructed when any portion of an exterior wall of the first story is located more than 150 feet from fire department vehicle access as measured by an unobstructed route around the exterior of the building. —

"**EXCEPTIONS:** 1. When buildings are completely protected with an approved automatic fire sprinkler system, the provisions of this section may be modified.

"2. When access roadways cannot be installed due to topography, waterways, nonnegotiable grades or other similar conditions, the chief may require additional fire protection as specified in Section 10.301 (b).



"3. When there are not more than two Group R, Division 3 or Group M Occupancies, the requirements of this section may be modified, provided, in the opinion of the chief, fire-fighting or rescue operations would not be impaired.

"More than one fire apparatus road may be required when it is determined by the chief that access by a single road may be impaired by vehicle congestion, condition of terrain, climatic conditions or other factors that could limit access.

"For high-piled combustible storage, see Section 81.109.

"(c) **Width.** The unobstructed width of a fire apparatus access road shall meet the requirements of the appropriate county jurisdiction.

"(d) **Vertical Clearance.** Fire apparatus access roads shall have an unobstructed vertical clearance of not less than 13 feet 6 inches.

"**EXCEPTION:** Upon approval vertical clearance may be reduced, provided such reduction does not impair access by fire apparatus and approved signs are installed and maintained indicating the established vertical clearance.

"(e) **Permissible Modifications.** Vertical clearances or widths required by this section may be increased when, in the opinion of the chief, vertical clearances or widths are not adequate to provide fire apparatus access.

"(f) **Surface.** Fire apparatus access roads shall be designed and maintained to support the imposed loads of fire apparatus and shall be provided with a surface so as to provide all-weather driving capabilities." (20 tons)

"(g) **Turning Radius.** The turning radius of a fire apparatus access road shall be as approved by the chief." (45 feet)

"(h) **Turnarounds.** All dead-end fire apparatus access roads in excess of 150 feet in length shall be provided with approved provisions for the turning around of fire apparatus.

"(i) **Bridges.** When a bridge is required to be used as access under this section, it shall be constructed and maintained in accordance with the applicable sections of the Building Code and using


designed live loading sufficient to carry the imposed loads of fire apparatus.

"(j) **Grade.** The gradient for a fire apparatus access road shall not exceed the maximum approved by the chief." (15%)

"(k) **Obstruction.** The required width of any fire apparatus access road shall not be obstructed in any manner, including parking of vehicles. Minimum required widths and clearances established under this section shall be maintained at all times.

"(l) **Signs.** When required by the fire chief, approved signs or other approved notices shall be provided and maintained for fire apparatus access roads to identify such roads and prohibit the obstruction thereof or both."

In that the catchment system will also be used for fire protection, it is recommended that the fire department connection to the tank be located in an area accessible by fire apparatus.



DARRYL OLIVEIRA  
Fire Chief

JCP:lpc



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September 8, 2006

Mr. Darryl Oliveira, Fire Chief  
County of Hawai'i  
Fire Department  
25 Aupuni Street, Suite 103  
Hilo, Hawai'i 96720

SUBJECT: Pa'auilo Lands Draft Environmental Assessment  
TMKs: (3) 4-3-07:01, 4-3-09:19 and 24, 4-3-11:01 and 02

Dear Chief Oliveira:

Thank you for your letter dated August 31, 2006 commenting on the subject Draft Environmental Assessment (EA).

In speaking with Captain Jack Pacleb of the Fire Prevention Bureau, it was clarified that the subject project does *not* propose any construction or development. Therefore, Captain Pacleb stated that there should be no comments on the subject project.

We appreciate your interest and participation in the public review phase of the Draft EA. Your letter, along with this response, will be reproduced in the forthcoming Final EA. Should you have any questions, please do not hesitate to me at 961.3333.

Sincerely,

PBR HAWAII

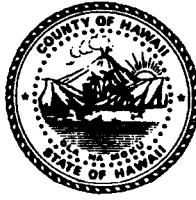
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Marissa Furfaro  
Planner

cc: Nancy Crawford, County of Hawai'i Department of Finance



**Harry Kim**  
*Mayor*



**Lawrence K. Mahuna**  
*Police Chief*

**Harry S. Kubojiri**  
*Deputy Police Chief*

## County of Hawaii

### **POLICE DEPARTMENT**

349 Kapiolani Street • Hilo, Hawaii 96720-3998  
(808) 935-3311 • Fax (808) 961-8869

September 8, 2006

Mr. Marissa Furfaro, Planner  
PBR Hawaii  
101 Aupuni Street, Suite 310  
Hilo, Hawaii 96720

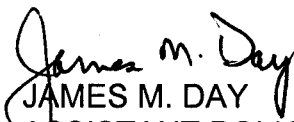
Dear Mr. Furfaro:

**SUBJECT: PA'AUILO LANDS DRAFT ENVIRONMENTAL ASSESSMENT  
PRE-ASSESSMENT CONSULTATION  
TMKs: (3) 4-3-07:01, 4-3-09:19 and 24, 4-3-11:01 and 02**

Staff, upon re-visiting the proposed site and receiving your response letter to our concerns of maintaining sufficient sight distance on the one-lane roadways, especially in several areas with sharp curves, is being addressed and has no additional comments.

Thank you for the opportunity to comment.

Sincerely,

  
JAMES M. DAY  
ASSISTANT POLICE CHIEF  
AREA I OPERATIONS

EWR:lli

cc: Nancy Crawford, Deputy Director, Finance Department



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LANDSCAPE ARCHITECTURE  
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September 13, 2006

Mr. James M. Day  
Assistant Police Chief  
County of Hawai'i  
Police Department  
349 Kapi'olani Street  
Hilo, Hawai'i 96720-3998

SUBJECT: Pa'auilo Lands Draft Environmental Assessment  
TMKs: (3) 4-3-07:01, 4-3-09:19 and 24, 4-3-11:01 and 02

Dear Mr. Day:

Thank you for your letter dated September 8, 2006 commenting on the subject Draft Environmental Assessment (EA). We acknowledge that you have no additional comments beyond those offered during the pre-assessment consultation phase of this project. We further acknowledge that you feel your previous comments are being sufficiently addressed.

We appreciate your interest and participation in the public review phase of the Draft EA. Your letter, along with this response, will be reproduced in the forthcoming Final EA. Should you have any questions, please do not hesitate to me at 961.3333.

Sincerely,

PBR HAWAII

A handwritten signature in black ink, appearing to read 'Marissa Furfaro', written in a cursive style.

Marissa Furfaro  
Planner

cc: Nancy Crawford, County of Hawai'i Department of Finance

Michael Crosson  
P O Box 12  
Honokaa, HI 96727

September 5, 2006

Ms. Marissa Furfaro  
PBR HAWAII  
101 Aupuni Street, Suite 310  
Hilo, HI 96720

Dear Ms. Furfaro,

Subject: Draft Environmental Assessment  
Proposed sale of County of Hawaii Lands  
Pa`auilo lands, Hamakua District, Hawaii Island

The following comments are offered concerning Draft Environmental Assessment (EA) for the proposed sale of county lands in Pa`auilo. Although not mentioned in the EA, the lands are all part of Pa`auilo Homesteads. The comments concern two areas.

The first concern is the inclusion of the government roads in the sale of the properties. The EA on pages 29 and 30, states that, "Manienie Road eventually degrades into a rough one-lane extension of itself that is no longer Manienie Road. The extension ends in a clearing within a eucalyptus grove.....While some of the existing roads and jeep trails may be utilized by members of the public, essentially the Pa`auilo Lands are landlocked by other properties that are owned by various private landowners. Once the Pa`auilo lands are sold, the existing roads and jeep trails that traverse these properties will not remain in government ownership."

The letter from the County Planning Department specifically asks about the roads. Your reply is the same as the one in the EA, that the roads are landlocked, so there is no potential to utilize these roads for public access or recreational purposes in the future as there is not a contiguous government road that accesses these properties. This is not true.

All of the homestead lots (historically) had a government road for access, as described in the Historical Documentary Research in Appendix C in the EA. Page 3, Figure 2, Tax Map Key 3-4-3 shows Manienie road connects to the forest reserve, Pohakealani Road and another homestead road. Also, on page 14 of Appendix C, is Figure 7. Portion of Wall's 1915 map of Hamakua Homesteads. This map clearly shows Manienie Road connecting to Pohakealani road and the Pa`auilo Homestead road. The text in Appendix C on page 13 describes the same roads as follows: "Figure 7 also shows a network of four roads serving the homestead lots. The first road extends in and inland-seaward

orientation through the eastern half of the Pa`auilo Homesteads- First Series lots. A second, similarly oriented road (they are describing Manienie Road here) services the western half of the First Series Lots. The latter road (Manienie Road) connects to two other roads: a third road that extends through the center of the Pa`auilo Second Series lots and a fourth road (Pohakealani Road) that extends through the center of the Pohakea Homesteads lots.”

The government roads should not be sold. They connect to other roads and to the forest reserve. They are of great value to the public and will become more valuable as population increases. They can connect mauka communities as they did years ago. People in Paauiilo homesteads should not have to go all the way down to the belt road and then all the way back up just to visit someone in the adjoining Pohakea homesteads. As general policy, the government should not sell roads and remnants that connect government properties. It is distressing to think that the kind of work in this (EA) results in a short-sighted recommendation to the county to include these roads in the sale, or sell other valuable “roads in limbo.” The county could sell the roads and use the EA as justification that the old government roads have no potential for future use.

The second concern is about the alternatives to the proposed action. The county could consider land exchange actions with Kamehameha Schools that could result in a better road network in the area. The county has already paved a portion of Water Tank road and other roads in the area that the EA says are privately owned. These roads are important accesses for the people who live in the homesteads. It is in the public’s interest to clear ownership issues over these roads. Shouldn’t this proposed sale of county owned lands be in the public’s interest? If so, then disposition of the government-owned roads should be shown to be in the public’s interest.

Some of these lands beings sold could be exchanged for KS lands that are traditional ocean accesses. Some of these lands could be exchanged for the proposed Honokaa School expansion. Why have no land exchange alternatives been considered in the EA?

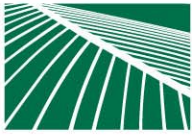
Thank you for the opportunity to provide comments on these matters.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael Crosson". The signature is fluid and cursive, with a long horizontal stroke at the end.

Michael Crosson  
Mauka and Makai Access (MAMA)

cc: Nancy Crawford, County of Hawai`i Department of Finance  
Mr. Harry Kim, County of Hawaii Mayor  
Mr. Chris Yuen, County of Hawaii Planning Director  
Dr. Fred Holshuch, County of Hawaii, Councilman



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December 8, 2006

Mr. Michael Crosson  
Mauka and Makai Access Committee  
P.O. Box 12  
Honoka'a, Hawai'i 96727

SUBJECT: Pa'auilo Lands Draft Environmental Assessment  
TMKs: (3) 4-3-07:01, 4-3-09:19 and 24, 4-3-11:01 and 02

Dear Mr. Crosson:

Thank you for your letter dated September 5, 2006 commenting on the subject Draft Environmental Assessment (EA). We offer the following responses in the respective order of your comments:

1. We acknowledge, and will make reference of in the Final EA, that the subject lands are all part of the Pa'auilo Homesteads.
2. The County has determined that they will not be selling any existing government roads and will encumber some of the subject parcels with easements, allowing the County to reserve the right to impose public access over those easements should public access become practical in the future.

To further clarify the Draft EA, parcels 4-3-07:01, 4-3-09:24 and 4-3-11:01 are considered to be 'landlocked' because the current physical access is not wholly-government owned. From the highway, access is gained via the "Water Tank Road" also known as the "Pa'auilo Mill Road." The portion of "Water Tank Road" that extends directly from the highway is owned by Kamehameha Schools. Only the upper portion of the road, which is within the homestead road system, is public.

The Final EA will reflect that the County will retain all homestead roads, including access across the portion of the "Water Tank Road" that is County-owned.

3. You suggest that crossroads could connect mauka communities as they did years ago. However, one of the reasons that some of these crossroads no longer exist is that they face wash-out problems due to the amount of water that travels across the slopes during rainy periods, making maintenance costs of these crossroads very high.

December 8, 2006

Letter to Mr. Michael Crosson

Subject: Pa'auilo Lands Draft Environmental Assessment; TMKs (3) 4-3-07:01, 4-3-09:19 and 24, 4-3-11:01 and 02

Page 2 of 2

4. As previously stated, the County will not be selling or abandoning any government roads. This does not, however, mean that a mauka access from Mānienie Road to DeLuz Road will be available. Portions of the homestead roads are "paper roads" and do not actually exist on the ground.
5. The County has met on several occasions with Kamehameha Schools and they have been unable to meet a mutually beneficial land exchange agreement. Those discussions also included the area adjacent to Honoka'a School.

We appreciate your interest and participation in the public review phase of the Draft EA. Your letter, along with this response, will be reproduced in the forthcoming Final EA. Should you have any questions, please do not hesitate to me at 961.3333.

Sincerely,

PBR HAWAII

A handwritten signature in black ink, appearing to read "Marissa Furfaro".

Marissa Furfaro  
Planner

cc: Nancy Crawford, County of Hawai'i Department of Finance

September 18, 2006

Ms. Marissa Furfaro  
PBR Hawaii  
101 Aupuni St., Suite 310  
Hilo, Hawaii 96720

The following comments are offered in response to the Draft Environmental Assessment for the sale of the Paauilo Lands. I am a 20-year resident of the area and I have some concerns, questions, corrections, and suggestions which I have listed below in accordance with the section or page of the Draft EA to which the comment relates.

2.3, p. 9, - requirement of 8 hours labor for farm dwellings. That is incorrect; it is not required for the first farm dwelling unless you are applying for a second farm dwelling. On these properties the dwelling is not even required to be a farm dwelling since these lots existed prior to 1976.

p. 15, Class of soils. This suggests that these lands are actually not suitable for diversified agriculture.

3.4.3, How can these lands be considered prime agricultural land when there is no water?

4.5, With the 90 acres being zoned 5-acre minimum, there is a potential for 33 lots with 33 dwellings rather than 22, and therefore 99 persons, instead of 66, which would be significantly more than the projected increase in population of 11.5%. There is also potential for additional farm dwellings to be built. How can it be said this will not introduce new residents to the area.

p. 20, 3.8, Avifauna. Amakihi and Apapane have disappeared from Kalopa and Kaapahu and should be considered endangered in this area. Just because they may not be on the official list does not mean they should not be protected.

p. 28, preserving the access used by the personnel of CTAHR. Why should this right of access not be reserved for the public also?

p. 29, Manienie Rd. is a one-lane road, not a two-lane road.

p. 30, Why should the roads not remain in public ownership? Roads are a public asset that should not be sold.

Pages 32-33, Police Protection and Fire Protection. The assertion that the sale will not increase demand for police and fire and emergency services contradicts the prediction of

an increase in population of 11.5% on page 27, which actually underestimates the potential increase in population.

p. 38, Why in all this time that the county has owned the land has it not been leased out for farming or ranching if this is indeed the best use of the land. What is wrong with open space?

p. 43, 7.2, What have been the actual costs of ownership of the lands by the county for the last 10-12 years? Cost of ownership is repeatedly cited as a reason to sell the lands, but no evidence of cost is presented. Why have not any uses been attempted, such as leasing the land, that would have helped defray these "costs". It could be more advantageous for agriculture users if it were leased or sold in bulk. There would also be less impact on public services. No quantitative analysis is presented to justify the costs and benefits to the county of various options for land use.

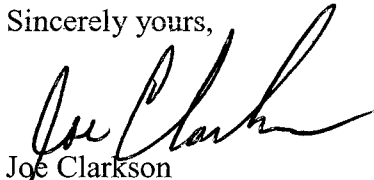
8.2, There is no reference to the cumulative impact in connection with other projects.

p. 46, (4) If farmers can't make a go of it on the lands makai of the highway with water, how can they possibly make this land productive since there is no water and the soils are poor and eroded.

Other alternatives to the sale of these parcels should be considered. It may very well be that the best use of the land is to have it leased for forestry or ranching as that would have less impact on the community and would preserve accesses and options for the future. Since no real financial analysis is included in the Draft Environmental Assessment, it is difficult to determine what the real benefits and costs of different uses really are.

It appears that the County is being tempted by the possible "windfall" sales revenue that would result from subdivision and retail sale of the property. The claim that subdivision is required to maximize agricultural use is not supported by anything in the EA and is contradicted by the continuing nationwide trend of commercial agriculture ventures using larger and larger parcels.

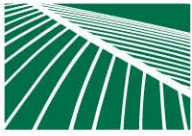
Sincerely yours,



Joe Clarkson

Cc: Chris Yuen, Planning Director  
Nancy Crawford, Deputy Director of Finance





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December 8, 2006

Mr. Joe Clarkson  
P.O. Box 1396  
Honoka'a, Hawai'i 96727

SUBJECT: Pa'auilo Lands Draft Environmental Assessment  
TMKs: (3) 4-3-07:01, 4-3-09:19 and 24, 4-3-11:01 and 02

Dear Mr. Clarkson:

Thank you for your letter dated September 18, 2006 commenting on the subject Draft Environmental Assessment (EA). We offer the following responses in the respective order of your comments:

1. We have verified with the Planning Department that the first dwelling is allowed to be a single-family dwelling and the additional dwelling must prove 8 hours of labor. This will be reflected in the Final EA.
2. Although the soil classification of these lands make it seem that the soil is not suitable, we know that this is not true since this land was once productive in sugar cane. Approximately 70% of the lands are suitable for pasture and macadamia nuts as described by the Soil Conservation Service Soil Survey. Approximately 17% is suitable for woodland and pasture. Therefore, this land does have agricultural capability.
3. Even without available water supply, the lands are classified as 'Prime Agricultural Land' by the State because of the lands capabilities.
4. As verified with the Planning Department, although a parcel may be zoned for higher density, that parcel as it currently exists does not allow for more lots unless it goes through the formal subdivision process. Given the fact that the Department of Water Supply has not plans for extending water lines in the area at this time, and other sub-division requirements, it is unlikely the area will be sub-divided to its zoned potential. However, the Final EA will reflect a revised calculation of the number of the potential farm dwelling units allowed based on current zoning and underlying grants, which is 32.

*Additional farm dwellings could be built if activity related to agriculture is taking place on the property. This could increase the number of households without formal subdivision. However, it would require the submittal and approval of a Farm Plan to the County Planning Department demonstrating the number of agricultural labor hours involved per week.*

December 8, 2006

Letter to Mr. Joe Clarkson

Subject: Pa'auilo Lands Draft Environmental Assessment; TMKs (3) 4-3-07:01, 4-3-09:19 and 24, 4-3-11:01 and 02

Page 2 of 3

The sale itself will not directly introduce new residents to the area. Since the future use and owners are not known, we cannot speculate that new residents will be introduced to the area. However, we can project a potential number of farm dwellings (not including additional farm dwellings that may be legitimized with a Farm Plan) based on what is allowed under the current zoning and dwelling allowances.

5. In consulting with the project's avifauna consultant, Amakihi and Apapane have disappeared in areas below the 3000' elevation because they cannot cope with the malaria from mosquitoes. Further, neither species are protected under either the State of Hawai'i or federal government.
6. The access route that CTHAR is currently using traverses both County property *and* private property. The County only has control over the County-owned portion of the access. The County will retain an easement across this road through the subject properties. This will allow for the future public access should it become practical. However, the County cannot grant public access rights of private lands/roads.
7. The Final EA will reflect that Mānienie Road is a one-lane road, not a two-lane road.
8. The County has determined that they will not be selling any existing government roads and will encumber some of the subject parcels with easements, allowing the County to reserve the right to impose public access over those easements should public access become practical in the future.
9. As mentioned in Response 4 above, the EA is *not* predicting that the population will increase by 11.5%. Since the future use and owners are not known, we cannot speculate that new residents will be introduced to the area. The population projection was given as a *scenario* for the potential number of people that *may* populate the area should each landowner decide to build a dwelling (this number does not include additional farm dwellings that may be legitimized with an approved Farm Plan). It is neither an absolute nor a recommendation.
10. The County has considered short- and long-term leases in the past. However, the County is not equipped to manage large tracts of land. Unlike the State, the County inadvertently became the owners of this property and wants to return it to better use.

The County is *not* opposed to open space, but there are maintenance issues that come along with this property as well as the obligation to be a good neighbor to adjacent landowners. The County Department of Finance (DOF), who is selling the Pa'auilo Lands, is also the same County agency that oversees the Public Access, Open Space, and Natural Resources Preservation Commission. The DOF supports utilizing revenue from the sale to purchase other, more suitable open space that is more accessible to the greater community

December 8, 2006

Letter to Mr. Joe Clarkson

Subject: Pa'auilo Lands Draft Environmental Assessment; TMKs (3) 4-3-07:01, 4-3-09:19 and 24, 4-3-11:01 and 02

Page 3 of 3

11. Lost real property tax revenues during County ownership, limited maintenance expenses and liability are costs of concern to the County. The services and facilities maintenance which were foregone as a result of the tax default is a greater cost. Recouping the lost tax revenue through sale of the property will provide funds for land acquisition and to meet other needs.

The County feels that these lands better serve the public by selling them and putting them into productive use. Additionally, the County has researched various leasing options and has determined that it is not feasible.

12. As far as the County is aware, there are no large scale projects in the immediate area that would contribute to cumulative impacts. The County acknowledges that land is being sold along the Hāmākua coast all the time, but not in any type of large-scale master-planned developments.
13. As stated in Response 2 above, there are suitable agricultural uses for the property such as pasture that do not require large scale irrigation.
14. The County has considered other alternatives such as a land exchange with other large land owners as well as leasing out the property. Discussions with other land owners were not fruitful and the leasing option was not feasible from a management standpoint.
15. The property is *not* being proposed for subdivision, nor was it stated anywhere in the EA that subdivision is required to maximize agricultural use. It was merely suggested that parcel 4-3-11:02 *could* be consolidated/re-subdivided by a future landowner based on the underlying grants/pre-existing lots of record on that parcel. No subdivision is being recommended for any of the parcels.

We appreciate your interest and participation in the public review phase of the Draft EA. Your letter, along with this response, will be reproduced in the forthcoming Final EA. Should you have any questions, please do not hesitate to me at 961.3333.

Sincerely,

PBR HAWAII



Marissa Furfaro  
Planner

cc: Nancy Crawford, County of Hawai'i Department of Finance

September 15, 2006

Ms. Marissa Furfaro  
PBR HAWAII  
101 Aupuni Street, Suite 310  
Hilo, HI 96720

Dear Ms. Furfaro,

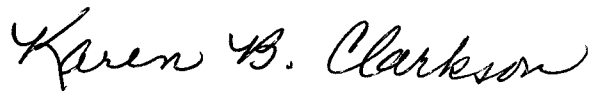
Subject: Draft Environmental Assessment  
Proposed sale of County of Hawaii Lands  
Pa'auilo lands, Hamakua District, Hawaii Island

As chair of the Mauka Makai Access Committee I am very concerned about Section 5.0, Assessment of the Existing Infrastructure regarding the sale of existing roads and jeep trails that traverse the properties to be sold. The Mauka-Makai Access Committee was formed as part of the development of Hamakua Agriculture Plan, a 2-year process in which hundreds of residents of the community identified key issues of importance to the community and identified goals and objectives to address these issues. A major goal of the Hamakua Agriculture Plan, a copy of which is enclosed, is to assure access to Hamakua's ocean and mountains with priority on publicly owned lands and public rights of way (Section 8.0, pages 27-31)

Towards this end the roads and trails that are within the Paauilo lands should remain under government ownership and not be sold with the properties. Some of them are not passable at this time, which should not preclude future development of pedestrian and equestrian trails or even paved roads. This network of roads was created to link the Paauilo Homesteads, which are 1500-2500 ft. above the main highway and are shown in Appendix C, Figure 7, and have cultural, economic, and historic significance. Where the roads are not passable cane roads and jeep trails referred to in the report have been used for generations to cross the mountainside to access homestead lands. They serve as access to the forest reserve, which has traditionally been a place for hunting and the gathering of native plants. Wild game is a significant part of the diet of many of the local residents. Hunting also controls the feral pig population and helps reduce destruction of native plants and forests and agricultural crops. Many ranchers have cattle in different locations in the homesteads and need to transport water to their stock, check on the animals, and maintain fences. Police and firefighters need to be able to freely travel across the homestead lands to provide protection to the area's residents. The high cost of gasoline makes travel up and down the roads very costly, so crossroads are essential. Therefore, loss of these homestead roads, trails, and cane roads would adversely affect the economic welfare, social welfare and cultural practices of the community, which is identified as a significance criteria in Section 8.2 of the DEA, and would therefore have a significant negative impact on the community.

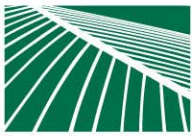
We therefore request that the County not relinquish the roads and trails when the lands are sold and that the County also reserve easements over any existing cane roads or trails that connect Manienie Road to Antone DeLuz Road, the road to the research station, and to Pohakealani Road. The road to the research station should remain in government ownership as it connects or should be connected to homestead roads shown on the map in Appendix C, Figure 7. The State has in the past fenced and locked the property where the station was located, but there should be access around the facility to the Forest Reserve and homestead roads. There may be some other public use for that land in the future, and it may not be possible or may be prohibitively expensive to reacquire access once it is gone. We must not be short-sighted by giving up an invaluable and irreplaceable asset for short-term profit. The overarching principle in the sale of the lands should be what is best for the greater community. The Hamakua community has time and time again decried the loss of accesses and has clearly made preservation of accesses a top priority. For the County to dispose of these accesses would contradict the community's wishes in the matter.

Sincerely yours,

A handwritten signature in black ink that reads "Karen B. Clarkson". The script is cursive and fluid, with the first letters of each word being capitalized and prominent.

Karen B. Clarkson, Chair  
Mauka Makai Access Committee  
P.O. Box 1396  
Honokaa, HI 96727

Cc: Christopher Yuen, Planning Director  
Nancy Crawford, Deputy Director Finance Department



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December 8, 2006

Ms. Karen Clarkson, Chair  
Mauka and Makai Access Committee  
P.O. Box 1396  
Honoka'a, Hawai'i 96727

SUBJECT: Pa'auilo Lands Draft Environmental Assessment  
TMKs: (3) 4-3-07:01, 4-3-09:19 and 24, 4-3-11:01 and 02

Dear Ms. Clarkson:

Thank you for your letter dated September 15, 2006 commenting on the subject Draft Environmental Assessment (EA). We offer the following responses in the respective order of your comments:

1. It has been clarified with the County that the network of roads identified as homestead roads in Appendix C, Figure 7, which traverse the subject properties, will remain in government ownership. The County has determined that they will not be selling any existing government roads and will encumber some of the subject parcels with easements, allowing the County to reserve the right to impose public access over those easements should public access become practical in the future.
2. To the degree that homestead roads have been used to access the State Forest Reserve they will continue to provide such access. However, the County cannot grant public access rights over private roads, such as plantation roads.
3. It is assumed that ranchers in the area who need to transport water to their stock, check on the animals, and maintain fences need to use vehicles to complete such tasks. Therefore, the County assumes that the ranchers are currently carrying out these tasks on their own private lands as well as government owned roads that are currently passable by vehicle. As previously mentioned, the County not be selling any existing government roads and will retain easements that they may impose public access upon in the future.
4. The County acknowledges that the Police and Fire Departments need access to the area. Neither department had substantial comments during the Draft EA review period, therefore it is assumed they also had no concerns with current access. Additionally, the high-level 'crossroads' that you refer to are currently not accessible by emergency vehicles as some are impassable.

December 8, 2006

Letter to Ms. Karen Clarkson

Subject: Pa'auilo Lands Draft Environmental Assessment; TMKs (3) 4-3-07:01, 4-3-09:19 and 24, 4-3-11:01 and 02

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5. To the County's knowledge, there is no data as to how many residents utilize the 'crossroads', therefore it is difficult to determine the impact to community. One reason that some of these crossroads no longer exist is that they face wash-out due to the amount of water that travels across the slopes during rainy periods, making maintenance costs of these crossroads very high.
6. The access route that CTHAR is currently using traverses both County property *and* private property. The County only has control over the County-owned portion of the access. The County has determined that a County easement will be retained on this road through the subject properties. This will allow for the possibility for public access in the future should it become practical. Since the County will not preserve the private roads that traverse the subject property, there will not be continuous public access between Manienie Road and Antone De Luz Road.

The County Department of Finance (DOF), who is selling the Pa'auilo Lands, is also the same County agency that oversees the Public Access, Open Space, and Natural Resources Preservation Commission. The DOF supports utilizing revenue from the sale to purchase other, more suitable open space that is more accessible to the greater community.

We appreciate your interest and participation in the public review phase of the Draft EA. Your letter, along with this response, will be reproduced in the forthcoming Final EA. Should you have any questions, please do not hesitate to me at 961.3333.

Sincerely,

PBR HAWAII



Marissa Furfaro  
Planner

cc: Nancy Crawford, County of Hawai'i Department of Finance

Peter Sparks  
46-4083 Kapena Road  
Honoka'a, HI 96727

22 September 2006

Ms. Marissa Turfaro, Planner  
PBR HAWAII  
101 Aupuni Street, Suite 310  
Hilo, Hawaii 96720

Aloha!

Thank you for this opportunity to comment on the Pa'auilo Lands Draft Environmental Assessment of August 2006.

I am a member of the Mauka and Makai Access Committee, or MAMA. This committee was formed last year during the development of the Hamakua General Plan. The residents of the Hamakua Coast were polled concerning their ideas and hopes for the future of this region. A high priority was placed on reversing the steady decline in public access to the shoreline and forests along the coast.

The citizens assembled and a shout went up; MAMA is an echo of that shout.

The Assessment is very interesting and informative; obviously a lot of work went into it. However, as a MAMA member I must point out that it pays scant attention to an important existing resource within and around the project area: the network of roads, public and private, government and plantation, real and imaginary. Some of these roads exist only on paper, but the ownership of their rights-of-way by the people of this County goes way back; others were built and maintained for nearly a hundred years by the sugar companies.

Although they may be presently lost in the guinea grass, their roadbeds remain as hidden infrastructure of a large investment in quarrying, crushing, hauling and spreading basaltic gravel. It would be good for the County to conserve this resource for future generations. It is too late in the Honoka'a area, where many cane haul roads were stitched right over by the tree-planting crews and are now lost and obliterated by the unnatural forest.

The text of the Assessment briefly mentions Watertank Road as being paved and private and owned by Kamehameha Schools. It implies that this road will be closed to public access once these lands are sold. Can this really be true? Have the people that use it daily been informed of this decision?

I was surprised, considering the overall thoroughness of the Assessment, to find that Water Tank Road is not even shown on eight of the nine maps in the Assessment, and not even named on that ninth map, although the names of other roads have been added to all of the maps.

The Ready Mapbook of East Hawaii identifies it as Pa'auilo Mill Road, and notes that the upper half is "partly paved, frequent washouts." Frankly, their map does not improve much on the Assessment in accuracy, as I drove down it last week and found it to be recently repaved, possibly by the County, and in top shape, although so narrow as to not rate a center line. To be fair, my Mapbook is merely out of date; leaving the road out of the Assessment is an egregious error.

maps



An avowed goal of Kamehameha Schools is to care for the future of Hawaii's children. How better to care for their adult needs than to ensure that they have roads for commerce and recreation. The County owns a lot of ex-sugar land. Surely they could figure out a way to trade some commercially valuable acreage, perhaps close to the highway, for Water Tank Road.

A government road may have never been used by automotive traffic; I live on one such road myself, in Ahualoa; according to local lore it was once traversed by wagons, but since their extinction is overgrown with gigantic eucalyptus trees. But the County and hence the people still own the right-of-way, and should preserve it for their future use. Such a right-of-way could be sold by the county for a pittance, merely for the convenience of a new landowner, who would then put his fenceline down the middle of that old basecourse. Once sold, it could only be recovered for the people at great effort and expense.

Highway 19 along the coast between Hilo and Honoka'a is a fine road but vulnerable to accidents and landslides. There are few alternate routes available in such eventualities. I'm sure the County has developed contingency plans for such occurrences; these old higher-elevation roads and rights-of-way could be factored into such plans.

It would be nice if the County's hopes are realized and these Pa'auilo Lands are purchased by bonafide farmers, but ~~there is~~ a good chance that they will end up occupied by gentleman farmers with non-farm income who are mainly interested in building a nice house in a rural setting. Available rights-of-way for hiking and equestrian purposes might be greatly appreciated. Here in Ahualoa there are lots of horse people, and a common complaint is lack of places to ride.

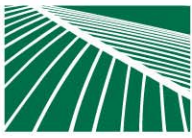
In conclusion I believe that the County should investigate these roads more thoroughly with an eye towards preservation of access. Once sold, these roads will never be regained.

I'm sure the County is anxious to divest itself of these properties and return them to productive use. I share that sentiment. But they have been lying fallow for the past twelve years. Rushing to sell these roads and rights-of-way without an understanding of their potential would be a mistake.

Well, if you've read this far, I thank you for your consideration. Remember, I'm not just an old hippie talking here . . . I am an echo of that shout.

Aloha,  
*Pete*  
Peter Sparks  
Ahualoa

775-0400



# PBR HAWAII

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December 8, 2006

Mr. Peter Sparks  
Mauka and Makai Access Committee  
46-4083 Kapena Road  
Honoka'a, Hawai'i 96727

SUBJECT: Pa'auilo Lands Draft Environmental Assessment  
TMKs: (3) 4-3-07:01, 4-3-09:19 and 24, 4-3-11:01 and 02

Dear Mr. Sparks:

Thank you for your letter dated September 22, 2006 commenting on the subject Draft Environmental Assessment (EA). We offer the following responses in the respective order of your comments:

1. We acknowledge your concern for the network of roads, public and private, government and plantation and your request that the County preserve these roads for future generations. The County has determined that they will not be selling any existing government roads and will encumber some of the subject parcels with easements, allowing the County to reserve the right to impose public access over those easements should public access become practical in the future.
2. "Water Tank Road": It was not implied anywhere in the EA that this road will be closed to public access. The portion of the road that extends directly from the highway to the County property is owned by Kamehameha Schools. The mauka portion of the road, through the County property is part of the homestead road system and will be retained as a public road. The reason that the "Water tank Road" was left off the maps is because it is not wholly owned by the County.
3. The forthcoming Final EA maps will include reference to "Water Tank Road".
4. The County Department of Finance has had previous discussions with Kamehameha Schools regarding acquisition of the "Water Tank Road" and other land exchanges. However, they were unable to reach a mutually beneficial agreement.
5. As mentioned previously, the County has determined that it will retain all homestead roads within the project site.

December 8, 2006

Letter to Mr. Peter Sparks

Subject: Pa'auilo Lands Draft Environmental Assessment; TMKs (3) 4-3-07:01, 4-3-09:19 and 24, 4-3-11:01 and 02

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6. You suggested that the older, higher elevation 'roads' and right-of-ways could be utilized as an alternative route should Highway 19 ever become impassable. While alternative routes are desirable, most of the 'roads' do not connect and they traverse gulches without any safe crossings. These 'roads' would require substantial improvements and ongoing maintenance that the County is not prepared to provide.
7. We acknowledge your desire to utilize the existing rights-of-way for hiking and equestrian trails. As previously mentioned, the County will retain easements that they may impose public access upon in the future.
8. Be assured that the County is not "rushing to sell these roads and rights-of-ways". The County has been analyzing this property for five (5) years, has had discussions with Kamehameha Schools about numerous options and has come to the conclusion that the highest and best use for these lands is to sell them. The County Department of Finance, who is selling the Pa'auilo Lands, is the same County agency that oversees the Public Access, Open Space, and Natural Resources Preservation Commission. The County Department of Finance supports utilizing revenue from the sale to purchase other, more suitable open space that is more accessible to the greater community

We appreciate your interest and participation in the public review phase of the Draft EA. Your letter, along with this response, will be reproduced in the forthcoming Final EA. Should you have any questions, please do not hesitate to me at 961.3333.

Sincerely,

PBR HAWAII



Marissa Furfaro  
Planner

cc: Nancy Crawford, County of Hawai'i Department of Finance