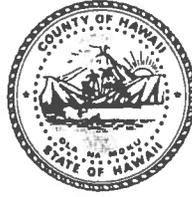


William P. Kenoi
Mayor



Clayton S. Honma
Director

Robert A. Fitzgerald
Deputy Director

County of Hawai'i
DEPARTMENT OF PARKS AND RECREATION
101 Pauahi Street, Suite 6 • Hilo, Hawai'i 96720
(808) 961-8311 • Fax (808) 961-8411

FILE COPY

AUG 23 2013

August 5, 2013

Director
Office of Environmental Quality Control
Department of Health, State of Hawai'i
235 S. Beretania Street, Room 702
Honolulu, Hawai'i 96813

RECEIVED
13 AUG -7 AM:23
OFFICE OF ENVIRONMENTAL
QUALITY CONTROL

Subject: Waimea District/Regional Park – Draft EA and AFONSI

Dear Director:

With this letter, the County of Hawai'i Department of Parks and Recreation hereby transmits the draft environmental assessment and anticipated finding of no significant impact (DEA-AFONSI) for the Waimea District/Regional Park situated at Tax Map Keys (3) 6-7-001:025 (portion); (3) 6-7-002:017 (portion); and (3)-6-7-002.063 (portion), in the district of South Kohala on the island of Hawai'i for publication in the next available edition of the Environmental Notice.

Enclosed is a completed OEQC Publication Form, two copies of the DEA-AFONSI, an Adobe Acrobat PDF file of the same, and an electronic copy of the publication form in MS Word. Simultaneous with this letter, we have submitted the summary of the action in a text file by electronic mail to your office.

If there are any questions, please contact James Komata, Park Planner at (808) 961-8311.
Sincerely,

Clayton S. Honma
Director

Enclosures

AGENCY ACTIONS
SECTION 343-5(B), HRS
PUBLICATION FORM (FEBRUARY 2013 REVISION)

Project Name: Waimea District/Regional Park
Island: Hawai'i
District: South Kohala
TMK: (3) 6-7-001:025 (portion); (3) 6-7-002:017 (portion); (3)-6-7-002.063 (portion)
Permits: NPDES Permit, Section 401 Water Quality Certification, Stream Channel Alteration Permit, Plan Approval, Grading/Building Permits, Clean Water Act Section 404, Federal Emergency Management Agency Letter of Map Revision

Proposing/Determination Agency:
County of Hawai'i Department of Parks and Recreation
ATTN: James M. Komata, Park Planner
Aupuni Center
101 Pauahi Street, Suite 6
Hilo, Hawai'i 96720-4224
Phone: (808) 961-8311
Fax: (808) 961-8411

Accepting Authority:
(for EIS submittals only)

Consultant:
PBR HAWAII & Associates, Inc.
ATTN: Tammy Kapali
1001 Bishop Street, Suite 650
Honolulu, Hawai'i 96813
Telephone: (808) 521-5631
Fax: (808) 523-1402

Status (check one only):

- _x_**DEA-AFNSI Submit the proposing agency notice of determination/transmittal on agency letterhead, a hard copy of DEA, a completed OEQC publication form, along with an electronic word processing summary and a PDF copy (you may send both summary and PDF to oeqchawaii@doh.hawaii.gov); a 30-day comment period ensues upon publication in the periodic bulletin.
- _**FEA-FONSI Submit the proposing agency notice of determination/transmittal on agency letterhead, a hard copy of the FEA, an OEQC publication form, along with an electronic word processing summary and a PDF copy (send both summary and PDF to oeqchawaii@doh.hawaii.gov); no comment period ensues upon publication in the periodic bulletin.
- _**FEA-EISPN Submit the proposing agency notice of determination/transmittal on agency letterhead, a hard copy of the FEA, an OEQC publication form, along with an electronic word processing summary and PDF copy (you may send both summary and PDF to oeqchawaii@doh.hawaii.gov); a 30-day consultation period ensues upon publication in the periodic bulletin.
- _**Act 172-12 EISPN Submit the proposing agency notice of determination on agency letterhead, an OEQC publication form, and an electronic word processing summary (you may send the summary to oeqchawaii@doh.hawaii.gov). NO environmental assessment is required and a 30-day consultation period upon publication in the periodic bulletin.
- _**DEIS The proposing agency simultaneously transmits to both the OEQC and the accepting authority, a hard copy of the DEIS, a completed OEQC publication form, a distribution list, along with an electronic word processing summary and PDF copy of the DEIS (you may send both the summary and PDF to oeqchawaii@doh.hawaii.gov); a 45-day comment period ensues upon publication in the periodic bulletin.
- _**FEIS The proposing agency simultaneously transmits to both the OEQC and the accepting authority, a hard copy of the FEIS, a completed OEQC publication form, a distribution list, along with an electronic word processing summary and PDF copy of the FEIS (you may

OFC. OF ENVIRONMENTAL QUALITY CONTROL
RECEIVED
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13 JUL 30 09:02
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send both the summary and PDF to oeqchawaii@doh.hawaii.gov); no comment period ensues upon publication in the periodic bulletin.

___ Section 11-200-23
Determination

The accepting authority simultaneously transmits its determination of acceptance or nonacceptance (pursuant to Section 11-200-23, HAR) of the FEIS to both OEQC and the proposing agency. No comment period ensues upon publication in the periodic bulletin.

___ Section 11-200-27
Determination

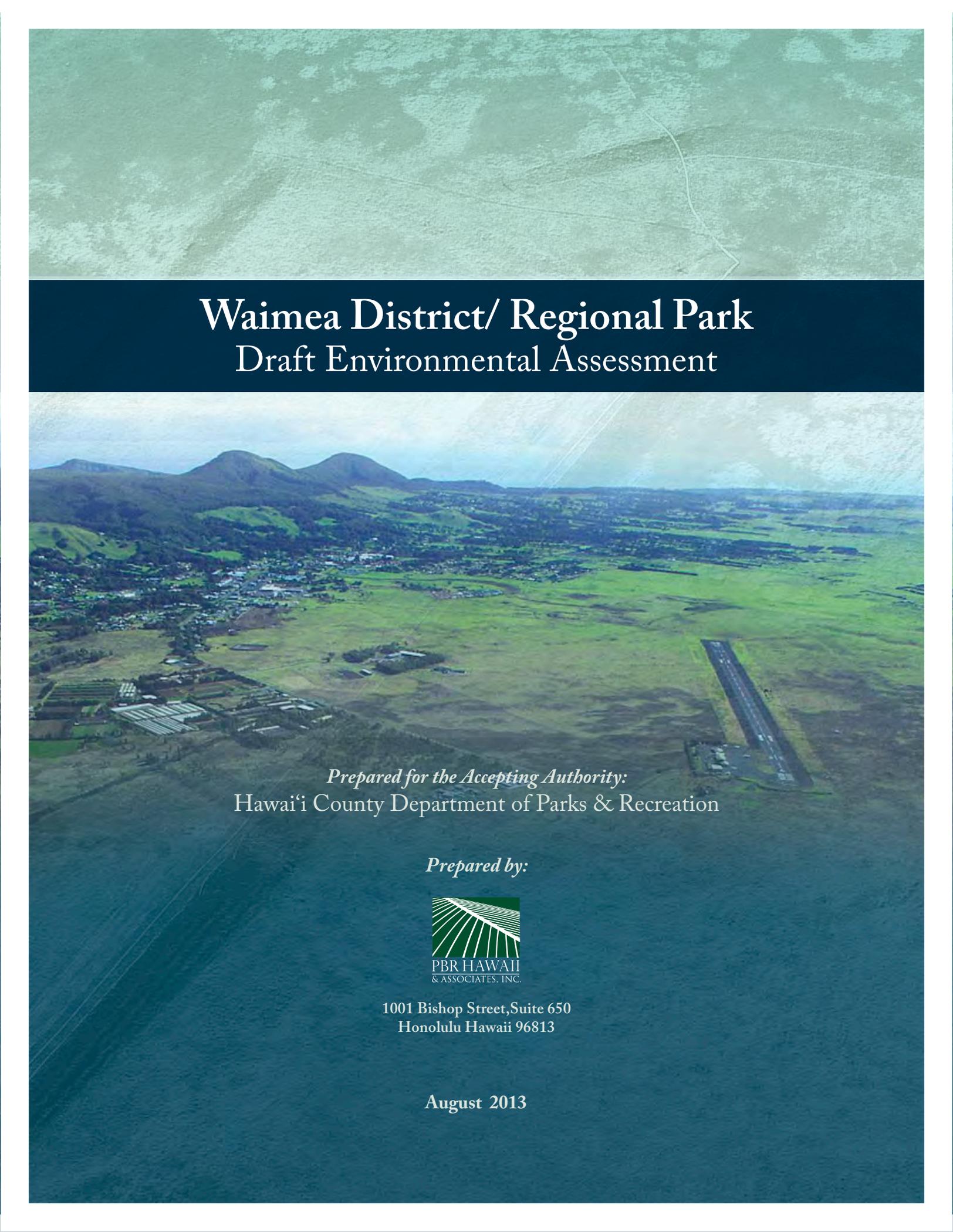
The accepting authority simultaneously transmits its notice to both the proposing agency and the OEQC that it has reviewed (pursuant to Section 11-200-27, HAR) the previously accepted FEIS and determines that a supplemental EIS is not required. No EA is required and no comment period ensues upon publication in the periodic bulletin.

___ Withdrawal (explain)

Summary (Provide proposed action and purpose/need in less than 200 words. Please keep the summary brief and on this one page):

Waimea District/Regional Park will be a master-planned facility that will offer diversified recreational opportunities for both indoor and outdoor sports. The Waimea District/Regional Park will be developed in two phases. In the first phase, approximately 24 acres will be developed as a district park. For the second phase, approximately 26 additional acres will expand the district park into a regional park.

The primary purpose for the Waimea District/Regional Park is to address a deficiency of athletic and recreational opportunities for Waimea residents and for other surrounding communities in the South Kohala District. The park will include fields for football, rugby, soccer, baseball, and softball as well as a covered play court for sports such as volleyball and basketball. The park will also provide a larger community gathering area to address existing and future demand.



Waimea District/ Regional Park Draft Environmental Assessment

Prepared for the Accepting Authority:
Hawai'i County Department of Parks & Recreation

Prepared by:



1001 Bishop Street, Suite 650
Honolulu Hawaii 96813

August 2013

SUMMARY

Project Name:	Waimea District/Regional Park
Location:	Waimea, South Kohala, Island and County of Hawai‘i
Judicial District:	South Kohala
Tax Map Key (TMK):	(3) 6-7-001:025 (portion); (3) 6-7-002:017 (portion); (3)-6-7-002.063 (portion)
Land Area:	Approximately 50 acres
Proposing Agency:	County of Hawai‘i Department of Parks and Recreation
Accepting Authority:	County of Hawai‘i Department of Parks and Recreation, as the Mayor’s Designee
Landowner:	Parker Ranch Land Trust
Existing Use:	Vacant land, grazing of livestock
Proposed Action:	Waimea District/Regional Park will be a master-planned facility consistent with the community’s vision and guiding principles for the new park. The Waimea District/Regional Park will be developed in two phases. In the first phase, approximately 24 acres will be developed as a district park. For the second phase, approximately 26 additional acres will expand the district park into a regional park.
Current Land Use Designations:	<i>State Land Use:</i> Agriculture and Urban <i>County General Plan LUPAG:</i> Important Agricultural Lands, Industrial, and Low Density Urban <i>County Zoning:</i> A-40a and RS-10 <i>Special Management Area (SMA):</i> Not in SMA
Alternatives Considered:	Three alternatives were considered: <ul style="list-style-type: none">• No action: The existing recreational facilities in Waimea are deficient in capacity for athletic and community gathering.• Alternative sites: Other open fields in Waimea were evaluated but would result in higher civil improvement costs, higher wind and rain exposure, further distance from Waimea town, and increased dependence on irrigation for soils and landscaping

- Alternative designs: Four conceptual park plan alternatives were developed by community design groups at multiple planning workshops. The consultant team synthesized the plans and prepared the Final Master Plan, the plan subject to this environmental assessment (see Figure 1).

Potential Impacts and Mitigation Measures:

The Park, as a recreational site, provides a significant beneficial impact for public health and social welfare. The following potential adverse impacts would be mitigated:

- Construction and park uses within floodplain. Portions of the Park are within the AE flood zone and serve as a detention basin. The current drainage function and capacity will be maintained throughout the entire development process. The requirements of Hawai‘i County Code Chapter 27, Flood Plain Management will be followed to ensure that there is no rise in base flood elevation and no adverse impact to the flood plain due to these improvements.
- Potential distraction to night-flying birds from exterior lighting for regular nighttime use. The design will specify minimal shielded security lighting. All other exterior lighting would be turned on only as needed and designed in accordance with the County’s exterior lighting standards.
- Grading of archaeological sites. If preservation or avoidance of the four archaeological sites is not possible, the archaeologist determined that the mapping, written description, and photography of the sites adequately documents them and no further work or preservation is recommended for three sites, and therefore no longer significant. One Site, Site 8804, is slated for further data recovery.

The Park will not affect the views toward the pu‘u. There are no impacts to endangered species or its habitats. The proposed buildings such as the play court, multi-use community building, comfort stations, and newly landscaped areas will increase water, electrical and waste water demand. This will be mitigated through appropriate infrastructure upgrades, use of energy saving fixtures, and incorporation of sustainable and green concepts wherever possible.

Anticipated Determination:

Finding of No Significant Impact



LEGEND

- Phase 1: +/- 24 acres
- Phase 2: +/- 26 acres

Phase 1

- Covered play court
- Multi-use community building
- Community gathering/family recreation area
- Comfort station (1)
- Regulation football/soccer field
- Regulation soccer/rugby field (1)
- Youth baseball field (1)
- Multi-use walkway and trail
- Parking lots A, B, C & D

Phase 2

- Regulation soccer/rugby field (2)
- Youth baseball field (1)
- Regulation baseball fields (1 & 2)
- Extended multi-use walkway and trail
- Comfort stations (2 & 3)
- Parking lots E & F
- Covered play court converted to gymnasium*

FIGURE 1:
Conceptual Master Plan

**WAIMEA DISTRICT/
REGIONAL PARK**

Disclaimer: This Graphic has been prepared for general Planning purposes only and should not be used for boundary Interpretations or other spatial analysis.
 *Depending on project funding, the covered play court can be converted to an enclosed community gymnasium when the budget allows.

DATE 03/08/13

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ACRONYMS

ALISH	Agricultural Lands of Importance to the State of Hawai‘i
BMP	Best Management Practices
CWRM	Commission on Water Resource Management
CZM	Coastal Zone Management
DBEDT	Department of Business, Economic Development, and Tourism
DLNR	Department of Land and Natural Resources
DOE	Department of Education
DOH	Department of Health
DOT	Department of Transportation
DPR	Department of Parks and Recreation
DWS	Department of Water Supply
EIS	Environmental Impact Statement
EISPN	Environmental Impact Statement Preparation Notice
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
gpd	Gallons per day
HAR	Hawai‘i Administrative Rules
HELCO	Hawaiian Electric Company
HRS	Hawai‘i Revised Statutes
LSB	Land Study Bureau
LUC	Land Use Commission
MGD	Million gallons per day
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination Systems
NRCS	Natural Resources Conservation Service
OEQC	Office of Environmental Quality Control
ROW	Right-of-way
SCS	Soil Conservation Service
SHPD	State Historic Preservation Division
SMA	Special Management Area
TMK	Tax map key
UBC	Uniform Building Code
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WWTP	Wastewater treatment plant

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1 INTRODUCTION

This Environmental Assessment (EA) is prepared in accordance with Chapter 343, Hawai‘i Revised Statutes (HRS) for the proposed Waimea District/Regional Park in Waimea, South Kohala, Island and County of Hawai‘i, State of Hawai‘i.

1.1 LANDOWNER

The landowner is Parker Ranch Land Trust. Per the conditions of approval for the Waimea Town Center Plan (County of Hawai‘i Ordinance No. 02-25), and subsequent agreements between Parker Ranch Land Trust and the County of Hawai‘i, Parker Ranch Land Trust will provide approximately 24 acres of land to the County of Hawai‘i for the creation of a district park. Survey and boundary staking, preparations of maps, subdivision/reconsolidation action, dedication to and acceptance of the land by the County are required to commence this Park. Parker Ranch has also agreed to reserve additional lands needed to expand the district park into a regional park.

1.2 PROPOSING AGENCY AND ACCEPTING AUTHORITY

The County of Hawai‘i Department of Parks and Recreation (DPR) is the proposing agency and the Mayor’s designated accepting authority.

Contact: County of Hawai‘i Department of Parks and Recreation
ATTN: James M. Komata, Park Planner
Aupuni Center
101 Pauahi Street, Suite 6
Hilo, Hawai‘i 96720-4224
Phone: (808) 961-8311
Fax: (808) 961-8411

1.3 ENVIRONMENTAL CONSULTANT

PBR HAWAII is the environmental planning consultant.

Contact: PBR HAWAII & Associates, Inc.
ATTN: Tammy Kapali
1001 Bishop Street, Suite 650
Honolulu, Hawai‘i 96813
Telephone: (808) 521-5631
Fax: (808) 523-1402

1.4 COMPLIANCE WITH STATE OF HAWAI‘I ENVIRONMENTAL LAWS

Preparation of this document is in accordance with the provisions of Chapter 343, HRS and Title 11, Chapter 200, Hawai‘i Administrative Rules (HAR) pertaining to Environmental Impact Statements. Section 343-5, HRS established nine “triggers” that require either an EA or an Environmental Impact Statement (EIS). The use of State or County lands or funds is one of these “triggers.” Because the County of Hawai‘i Department of Parks and Recreation will use County funds to build the Waimea District/Regional Park, the preparation of an Environmental Assessment is required.

1.5 STUDIES CONTRIBUTING TO THIS EA

The information contained in this report has been developed from site visits, generally available information regarding the characteristics of the site and surrounding areas, and technical studies. Technical studies are provided as appendices to this EA. These studies include:

- Biological Surveys
- Archaeological Inventory Survey
- Cultural Impact Assessment
- Traffic Impact Assessment Report

2 PROJECT DESCRIPTION

2.1 BACKGROUND INFORMATION

2.1.1 Location and Property Description

The Waimea District/Regional Park (“the Park”) is proposed to be located in the town of Waimea (Kamuela), Pu‘u Kapu *ahupua‘a*, South Kohala District, Island and County of Hawai‘i (Figure 2). The approximately 50-acre site (“the Site”) is identified as TMKs (3) 6-7-001:025 (portion), (3) 6-7-002:017 (portion) and (3)-6-7-002.063 (portion) (Figure 3).

The Site is bound by Ala ‘Ōhi‘a Road to the northwest, Parker Ranch Headquarters to the west and undeveloped vacant lands to the north, south, and east.

The Site is open pasture land with the majority used as a drainage basin. As part of Parker Ranch drainage improvements, the Kamuela and Lanimaumau Streams were diverted to the Site. Two raised soil berms were constructed to form storm water detention basins across the swale.

Vegetation at the Site is dominated by pasture grasses, reflecting the present use as pasture for horses and cattle. Only one species of grass, Kikuyu (*Pennisetum clandestinum*), is recognizable across the Site, except in rocky areas where *Digiteria ciliaris* is present in small numbers. Figure 4 contains Site photographs.

Elevations range from approximately 2,620 to 2,650 feet above mean sea level, with average slope of one to two percent in an east-west direction.

Access to the Site is from the Parker Ranch Headquarters immediately to the west via a dirt road.

2.1.2 Existing Land Use Designations

Current land use designations for the Waimea District/Regional Park Site are:

- State Land Use: Agricultural and Urban (Figure 5)
- County General Plan LUPAG: Important Agricultural Lands, Industrial, and Low Density Urban (Figure 6)
- County Zoning: A-40a and RS-10 (Figure 7)
- Special Management Area (SMA): Not in SMA

2.1.3 Surrounding Land Uses

Waimea Town is spread out along Māmalahoa Highway and Kawaihae Road and is a center for ranching activities. Most of the commercial development is concentrated in and around the Waimea Town Center, less than one mile north of the Site.

North: Ala ‘Ōhi‘a Road, a two-lane bypass road connecting Māmaloahoa Highway and the Pukalani Road Extension, is immediately north of the Site and generally travels in an east-west direction. Luala‘i subdivision is directly across the Site and north of Ala ‘Ōhi‘a Road.

East: Lands immediately east of the Park are undeveloped Parker Ranch land zoned RS-10 (Residential).

South: Lands immediately south of the Park are undeveloped. Further south of the Park is the Waimea-Kohala airport, a general aviation airport. The 90-acre facility has a single runway and one taxiway and a small terminal. The runway is approximately 1,000 feet from the southeast corner of the Park. There is one daily commercial flight into Waimea by Pacific Wings.

West: The Parker Ranch corporate headquarters, along with a historic race track, is located off of Māmaloahoa Highway and immediately west of the Park. Lālāmilo farm lots occupy lands further west of the Park across Māmaloahoa Highway.

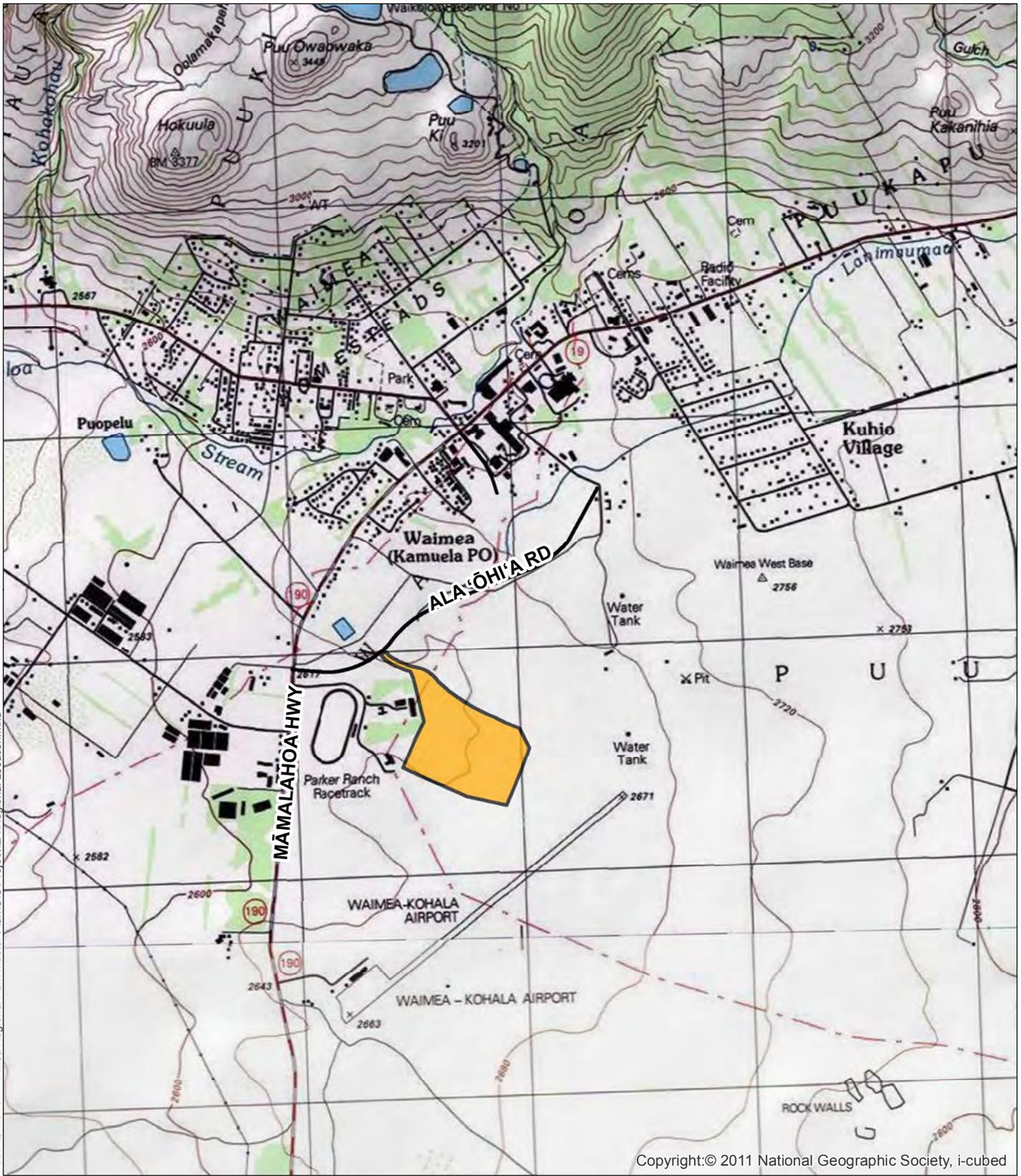
2.1.4 Regional Land Use History

Initial settlement of the uplands near Waimea likely occurred during the 13th through 15th centuries (Clark & Kirch, 1983). The warm coast and beaches on the western boundaries of the South Kohala District were used seasonally by early Polynesians who eventually migrated to the cooler plateau in Waimea.

South Kohala, in particular Kawaihae and Waimea, was an important political region on the Island of Hawai‘i. Many high ranking *ali‘i* (chiefs) regularly visited the area and held court even up to the time of Kamehameha and his son Liholiho.

Toward the mid-19th century and on into the 20th century, ranching became a flourishing economic factor in Kohala and North Kona with the introduction of cattle left by Captain George Vancouver in 1793 (Rosendahl, 1995). In 1847, Parker Ranch was founded by John Palmer Parker with two acres of land. Since then, Parker Ranch land holdings have increased exponentially. Today, Parker Ranch is one of the largest privately owned ranches in the world and is a major landowner in South Kohala.

During the World War II era, Parker Ranch played an integral part in hosting army and marine troops as they prepared for the battles in Iwo Jima and Okinawa. Waimea had a huge tent city at one point which became known as Camp Tarawa. During their stay in Waimea, the military constructed an entertainment center which was renamed Kahilu Hall and an airstrip that was later converted to commercial use. A firing range for artillery practice was set up and a dirt road for tank travel extended between Kawaihae and Pu‘u Ke‘eke‘e (Brennan 1974:164). The old wagon road connecting Waimea to the Humu‘ula area became the Saddle road, constructed by the Civilian Conservation Corps in 1943.



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DATE: 3/6/2013

LEGEND

 Waimea District/Regional Park



FIGURE 2:

Regional Location

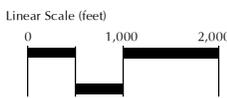
**WAIMEA DISTRICT/
REGIONAL PARK**

County of Hawaii Department of Parks & Recreation Island of Hawaii

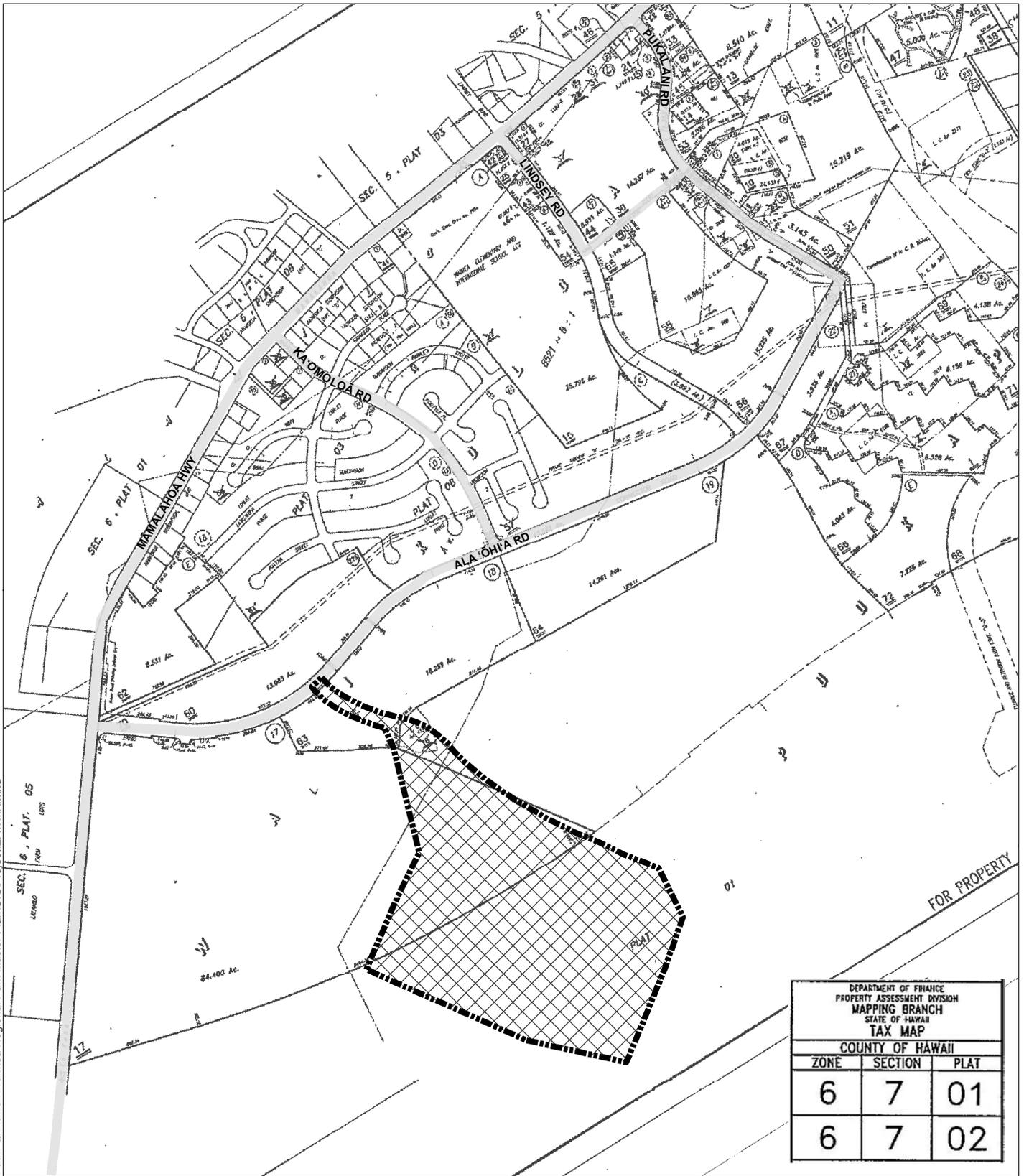
North



Linear Scale (feet)




PBR HAWAII & ASSOCIATES, INC.



DEPARTMENT OF FINANCE PROPERTY ASSESSMENT DIVISION MAPPING BRANCH STATE OF HAWAII TAX MAP		
COUNTY OF HAWAII		
ZONE	SECTION	PLAT
6	7	01
6	7	02

DATE: 3/7/2013

LEGEND

-  Waimea District / Regional Park
-  Major Roads

FIGURE 3:
Tax Map Key

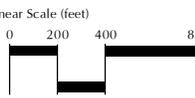
**WAIMEA DISTRICT/
REGIONAL PARK**

County of Hawaii Department of Parks & Recreation Island of Hawaii

North



Linear Scale (feet)





Source: Hawai'i County TMK (2012)

Disclaimer: This Graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.



1. Western most berm and storm water detention basin



2. Eastern berm in the far distance



3. Open pastureland with low rocky outcrops and dry Kikuyu grass vegetation



4. View looking west showing relatively flat terrain



5. View looking northeast



6. Copse of eucalytus trees along the western boundary with distant views of pu'u

SITE PHOTO KEY



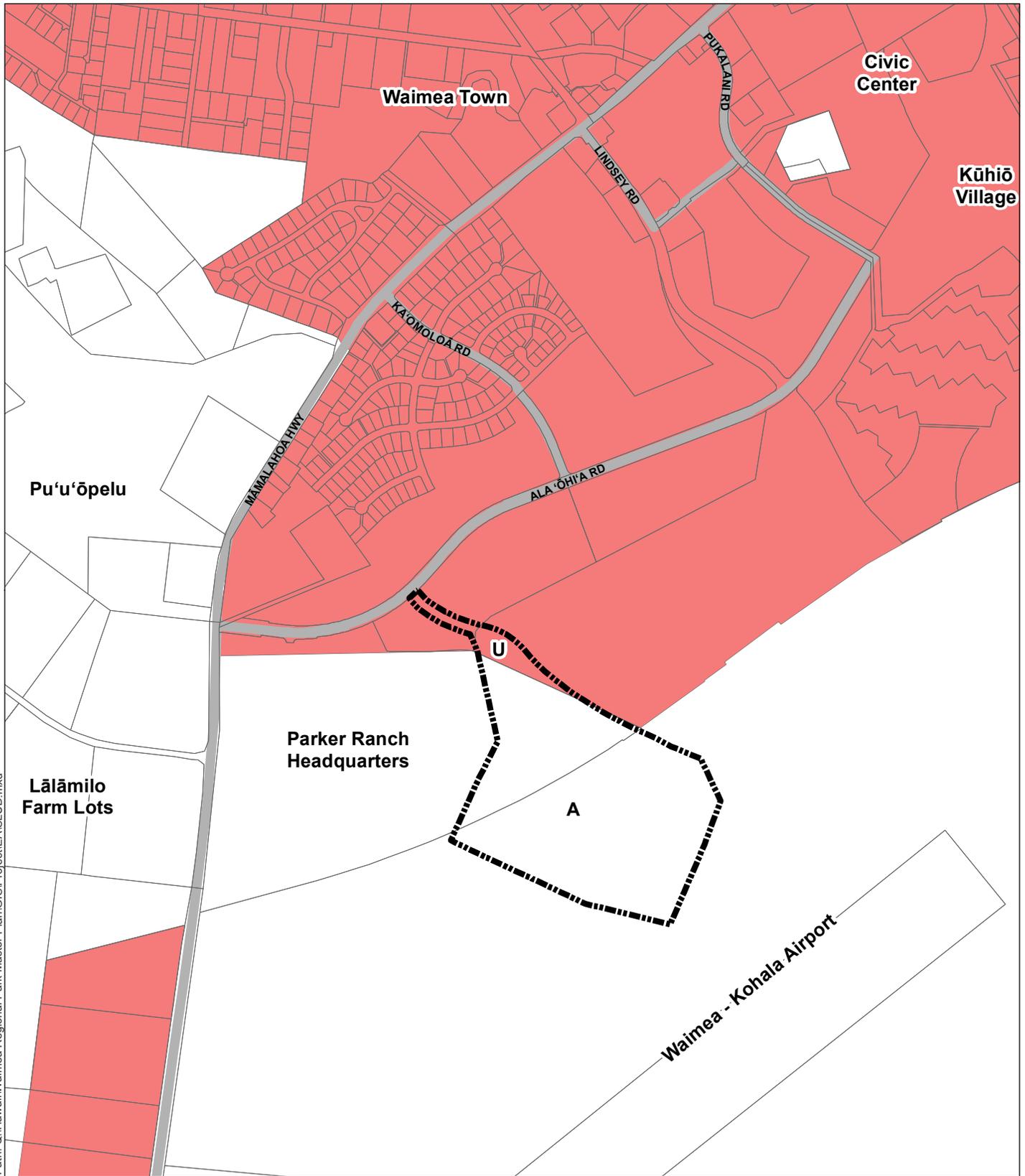
FIGURE 4:
Site Photos

WAIMEA DISTRICT/ REGIONAL PARK

County of Hawaii Department of Parks & Recreation

Island of Hawaii





DATE: 3/7/2013

LEGEND

Waimea District / Regional Park

Major Roads

State Land Use Districts

A - Agricultural

U - Urban

FIGURE 5:
State Land Use Districts

**WAIMEA DISTRICT/
REGIONAL PARK**

County of Hawaii Department of Parks & Recreation Island of Hawaii

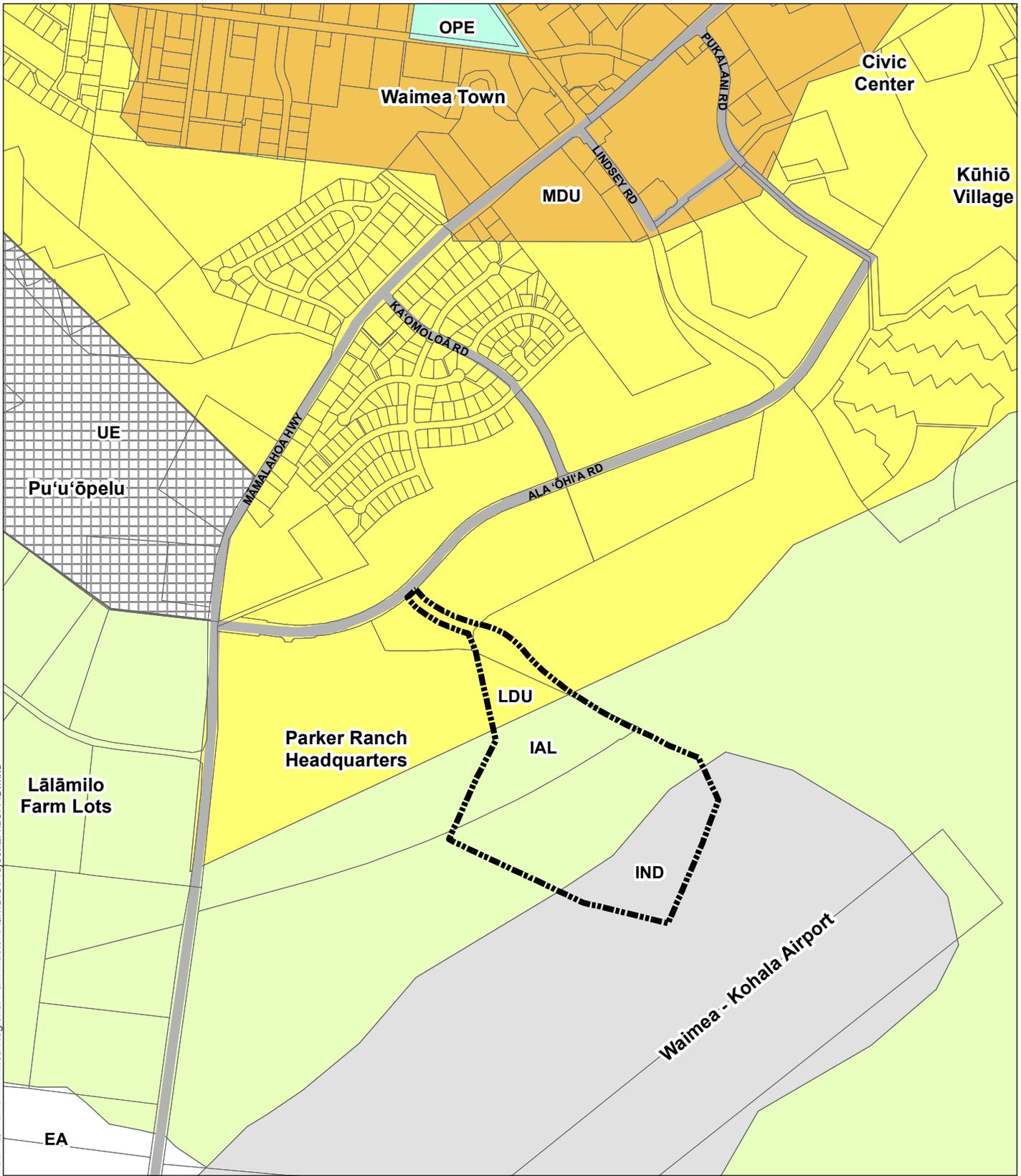
North

Linear Scale (feet)

0 250 500 1,000

Source: State Land Use Commission (2013)

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DATE: 3/7/2013

LEGEND

Waimea District / Regional Park

Major Roads

LUPAG

EA - Extensive Agriculture

IAL - Important Ag. Land

IND - Industrial

LDU - Low Density Urban

MDU - Medium Density Urban

UE - Urban Expansion

OPE - Open Area

FIGURE 6:

County of Hawai'i General Plan
 Land Use Pattern Allocation Guide

**WAIMEA DISTRICT/
 REGIONAL PARK**

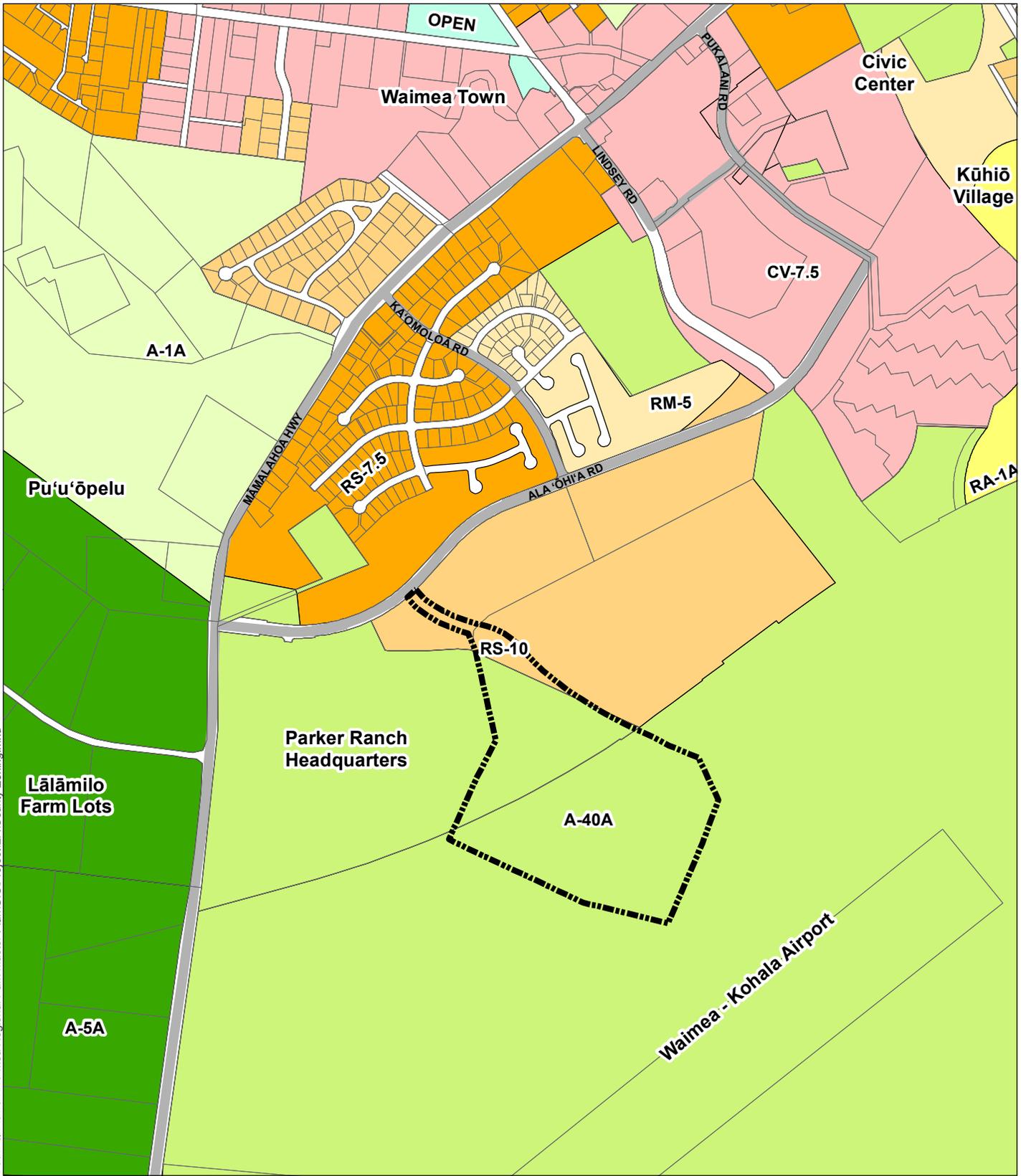
County of Hawai'i Department of Parks & Recreation

Island of Hawai'i



Linear Scale (feet)





DATE: 3/7/2013

LEGEND

- Waimea District / Regional Park
- Major Roads

A-1a Agricultural	CN-7.5 Commercial	RS-10 Residential
A-40a Agricultural	CV-7.5 Commercial	RS-7.5 Residential
A-5a Agricultural	RA-1a Residential	OPEN
	RM-5 Residential	

Source: County of Hawai'i, Planning Department (2010)

Disclaimer: This Graphic has been prepared for general planning purposes only and should not be used for boundary Interpretations or other spatial analysis.

FIGURE 7:
County of Hawai'i Zoning

**WAIMEA DISTRICT/
REGIONAL PARK**

County of Hawai'i Department of Parks & Recreation Island of Hawai'i

North

Linear Scale (feet)
0 250 500 1,000

During the early and mid-20th Century many Japanese farmers settled in Waimea. They are an important part of Waimea's agricultural history and remain an important part of the community today, as many of these families are a major presence at the Lālāmilo farm lots.

Toward the end of the 20th century, the development of three world class resorts in South Kohala shifted the district's economic base from agriculture to tourism which has influenced land use and development patterns over the last several decades.

2.2 PURPOSE AND NEED

The Waimea District/Regional Park will provide: 1) improved and diverse athletic and recreational opportunities to a larger residential community in South Kohala; and 2) a large meeting and gathering place for the community and local schools.

Athletic and Recreational Park

The primary purpose for the Waimea District/Regional Park is to address a deficiency of athletic and recreational opportunities for Waimea residents and other surrounding communities in the South Kohala District. Existing recreational facilities in Waimea are limited and inadequate to support the many citizens of the area. As a rural community, Waimea lacks many of the commercial recreation outlets found in urban areas. Moreover, because Waimea does not have its own public high school, facilities traditionally associated with high school athletics are not available locally.

The Park will include fields for football, rugby, soccer, baseball, and softball as well as a covered play court for sports such as volleyball and basketball. Depending on project funding, the covered play court can be converted to an enclosed community gymnasium when the budget allows. The multi-use community building will provide indoor space to house a variety of leisure classes and youth after school activities. The multi-use trail system provides for passive recreation opportunities.

Community Gathering Place

The community has expressed a desire for a facility that can host community events that benefit the residents of Waimea and the greater area of South Kohala. Nearby public facilities in Waimea are limited to Waimea Community Center, Thelma Parker Gym, and Waimea Park. The Waimea Community Center provides limited space for community gatherings and is primarily a venue for smaller gatherings like birthday parties and graduation parties. Parking and total floor area space is also limited. Thelma Parker Gym, a State-owned facility that the County has an agreement to use on a restricted/limited basis, was constructed in the 1930's and is one of the older buildings in Waimea. The gym is in constant use by community sports leagues, fitness classes, and other community interest activities limiting the availability of this space for other community gatherings and functions.

The Park's multi-use community building and community gathering/family recreation area will provide indoor and outdoor space to address existing and future demand for larger community gatherings.

2.3 WAIMEA DISTRICT/REGIONAL PARK MASTER PLAN

The Waimea District/Regional Park is a master-planned facility that will offer diversified recreational opportunities for both indoor and outdoor sports. The Park will serve the residents of Waimea Town as well as residents in the neighboring districts of Hāmākua, North Kohala, North Kona and occasionally the population from further districts. As shown on Figure 1, the planned buildings and facilities are located in the northern portion of the Park. Sports fields and open areas occupy the southern portion of the Park.

Primary access to the Site will be provided via a new driveway connection to Ala 'Ōhi'a Road between the intersections of Māmalahoa Highway and Ka'omoloā Road. The new driveway will stretch approximately 2,040 feet from the northern boundary of the Park to the youth baseball field at the eastern boundary.

The Park will be developed in two phases. The first phase will consist of approximately 24 acres which will accommodate a district park. For the second phase, approximately 26 additional acres will expand the district park into a regional park.

To address the community's immediate recreational needs, the first phase of the park master plan (see Figure 1) includes the following amenities and facilities:

- Covered play court;
- Multi-use community building;
- Community gathering/family recreation area;
- One comfort station;
- Pavilion;
- Two multi-use regulation football/rugby/soccer fields;
- One youth baseball/softball field; and
- Multi-use walkway and trail.

The second phase is proposed to include:

- An additional football/rugby/soccer field;
- An additional youth baseball/softball field;
- Two regulation baseball/softball fields;
- Extended multi-use walkway and trail;
- Two additional comfort stations; and
- Conversion of covered play court to gymnasium, budget permitting.

Covered Play Court

The covered play court will have one full size basketball court and two overlapping volleyball courts. The facility will be similar to the County's Pana'ewa play court with additional restroom, concession, and storage rooms. It will be elevated above the designated flood elevation. The gross floor area of the covered play court is approximately 12,000 to 16,000 square feet. Depending on project funding, the covered play court can be converted to an enclosed community gymnasium when the budget allows. Under this scenario, it is assumed that the water, wastewater and other utilities will be installed with the covered play court. Locker rooms, offices, bleachers and other spaces will be built as part of the community gymnasium construction. If the gym is built, the gross floor area will total approximately 15,000 to 18,000 square feet.

Multi-Use Community Building

The multi-use community building will provide space to host parties and gatherings and house various types of community activities, including meetings, youth after-school programs, DPR programs and activities for keiki, kupuna, families, and all-comers.. The gross floor area of the proposed Multi-Use Community Building is anticipated to be approximately 6,000 to 8,000 square feet.

Community Gathering / Family Recreation Area

The community gathering/family recreation area offers a flexible open lawn area that provides space for informal passive recreation and community entertainment. The area is approximately one acre and will be elevated above the designated base flood elevation (see Section 3.6.1 Flood). The recreational facilities at this area may include a community pavilion, small group picnic area with tables and grills, an open stage and amphitheater for community gatherings and performances, and a tot-lot playground. Several canopy trees in this area could create a shaded outdoor environment.

The pavilion will be an open-sided structure with concrete pavement and picnic tables. Electrical service will be provided for this structure. The desirable size of the structure is approximately 700-1000 square feet. The pavilion and the adjacent area can be used as a stage and viewing area for community performances.

Sports Fields

Sports fields and open areas will occupy the southern portion of the Park. One regulation football field and two regulation soccer fields with overlapping regulation rugby fields will be located between the existing berms. The eastern portion of the Park is planned for baseball and softball fields.

Buffer areas will be provided around each baseball field. The buffer areas can accommodate accessory practice facilities such as batting cages as well as overflow parking when needed.

Spectator Seating

The berms facing the planned football and soccer/rugby fields will be used as spectator seating areas. There are at minimum two potential ways to convert the berm slope into a seating area. Option A uses the existing slope efficiently and creates a formal seating area by building the seats stepping down the slope. Option B fills the existing slope and the adjacent area to convert the slope from 45% to 25% (4 to 1 slope). The finished slope surface provides seating and standing area for spectators during games. If there is no game, the 4 to 1 finish slope offers a flexible open space for other recreational activities. Comparing the two options, Option A uses the berm more efficiently, but is more costly. Option B is less expensive, but it causes a larger impact area along the foot of the berm.

Comfort Stations

A total of three comfort stations will be strategically located to provide convenient service to each Park activity area. Since the majority of the Park Site is in the floodplain, the finish grade elevation of the comfort stations will have to be elevated above the designated flood elevation or a variance obtained. Each station will be approximately 600 square feet.

The restroom areas may also be designed to accommodate temporary concession areas for the various sport leagues during games and tournaments.

Parking

The Park will include both paved and unpaved parking areas. Parking lots will be paved. In addition to designated paved parking areas, there are several open areas which may be used as overflow parking as needed. The actual number of parking spaces will be further determined during the design of park and building facilities. The number of parking spaces provided in the park will also be reviewed and determined in coordination with the Director of the County Planning Department. A parking variance may be sought to: 1) allow less than the minimum number of required paved parking spaces as required by Hawai'i County Code; and 2) address the acceptability of unpaved (graded and/or grassed) parking which will decrease the amount of impervious surface.

Trails

Trails provide an enjoyable, safe, and environmentally sensitive passage for pedestrians and cyclists. A walking/biking trail system provided in the park can enhance the community's enjoyment of the natural environment and park recreational facilities.

The multi-use trail system within the Park will serve two purposes: 1) provide a safe trail experience for walking, jogging, or biking; and 2) provide efficient and economical access between the recreational facilities. The trail alignments are approximate and will require refinements with additional field study during both the design and construction phases. However, the overall trail plan provides a basis for the trail design and development in the Park.

The primary trails will be approximately 8 to 10 feet wide. The primary trail network will include sidewalks along the access road and the path meandering along the looped spur road. The primary trail is designed as a multi-purpose trail to accommodate both biking and walking. Permanent pavement and lane striping would define the direction of the pedestrian and the cycling circulation. Ultimately, the bikeway along the spine road will connect to the bikeway along Ala ‘Ōhi‘a Road, linking with the existing and planned pedestrian system in Waimea Town.

The Park’s secondary trails are approximately 4 to 6 feet wide and are planned only for walking/jogging to connect other trails and provide access to Park facilities.

Public Art Display Area

The public art display area will help the community to explore its history and culture and provide a sense of ownership to the local community. The community gathering/family recreation area and multi-use community building are potential display areas which can provide a focal point in the park. A collaborative effort between DPR, artists, park design team, and the community will facilitate the design of the public art display areas in the Park.

2.4 PLANNING PROCESS

2.4.1 Community Participation

Community involvement is critical in the planning process to reach a general consensus for Waimea District/Regional Park. A total of seven community meetings were held at Waimea beginning with meetings for the Site Selection Study and ending with a workshop and follow up meetings for the final Master Plan. The objectives of the community meetings were to meet with members of the community, present findings and pertinent data, discuss the planning progress, and solicit input at each key planning phase.

Announcements for the community meetings were published in both printed and online internet editions of local newspapers including West Hawai‘i Today and North Hawai‘i News. Invitations and meeting reminder notices were also e-mailed to community members and the representatives of local sports organizations.

In addition, two community questionnaire surveys were distributed through the Waimea Community Association’s (WCA) website. The first questionnaire was tailored for collecting

feedback on the recommended park sites during the Site Selection Study and the second assessed the community's recreational needs.

Site Selection Study

- November 6, 2008 – WCA Meeting at Parker School
 - Overview of the Master Plan Planning Process
 - Overview of the Site Selection Study Progress
- November 19, 2008 – Draft Report Distribution for Waimea District Park Builders Review / Comment
- November 24, 2008 – Community Meeting at Waimea Community Center
 - Present the Site Assessment Findings and Recommendation
 - Public Comments and Input
- November 25, 2008 to December 1, 2008 – Additional Public Comments Period, Questionnaire Survey
- From December 2008 to May 2009 – Final Site Selection Study

Recreation Needs and Preliminary Program

- June 16 to 25, 2009 - Recreational Facilities Survey and Park Development Program
- July 1, 2009 – Key Stakeholder Meeting to Review Findings of Survey
- July 9, 2009 – Community Meeting (WCA) – Preliminary Development Program

Master Plan

- August 15 and 16, 2009 – 2-Day Planning Workshop – Refined Development Program and Preferred Conceptual Plan
- September 22, 2009 – Community Meeting – Schematic Master Plan
- October 27, 2009 – Community Meeting – Draft Master Plan

2.4.2 Site Selection

PBR HAWAII conducted a site selection study for locating the Waimea District/Regional Park in the vicinity of Waimea Town. With community participation, nine possible sites were selected for the study. For detailed information regarding the process and procedure of the site selection study refer to Section 6.2 (Alternative Sites).

The nine sites were evaluated based on the following criteria: 1) location; 2) land ownership; 3) access and connectivity; 4) size and configuration; 5) land use regulations; 6) environmental characteristics; and 7) availability of infrastructure and development costs. The nine potential park sites were further narrowed down to four leading candidate sites.

DPR presented the findings and preliminary recommendations at a public meeting which was held on November 24, 2008 at Waimea Community Center. At the meeting, DPR asked for additional community input and comments and a questionnaire survey was distributed to seek more comments. After the meeting, community members could continue to provide additional comments in writing via email or through the questionnaire survey posted on the Waimea Community Association website until December 5, 2008.

Site P-2 (Waimea Town Center West), the Site subject to this environmental assessment, was chosen as the preferred site for the Waimea District/Regional Park based on the following criteria:

- Adjacent to Waimea Town and requires less travel distance.
- Direct access to the planned Parker Ranch equestrian trail.
- Estimated infrastructure and civil improvement costs are the lowest among all of the alternative sites.
- Thought to contain less archaeological resources and historic uses due to previous detention basin construction.
- Wind is not too strong and median annual rainfall is not too low.
- Good parcel configuration and adequate suitable area for future expansion.
- Not within the Lālāmilo Farm Lots buffer area.
- Soil productivity rating is relatively high.
- Not in the airport protection zone and avigation easement.

2.4.3 Master Plan

When the preferred site was selected, a more thorough site assessment was prepared to assist in preparing the park conceptual plan. PBR Hawaii conducted research, data collection and a public survey to understand the community's recreational needs and develop the preliminary recreational facility program. Based on the preliminary assessment, several conceptual site plan alternatives were prepared for the planning team and community to review.

In August 2009, a two-day park planning workshop was held in Waimea. The objective of the workshop was to review and refine the community recreation needs and conduct a "hands-on" community planning exercise to share planning ideas and visions for the district/regional park.

After the workshop, PBR Hawaii integrated the refined development program with the community preferred conceptual plan and created the Schematic Master Plan. The Schematic Master Plan was evaluated by civil engineers to determine potential infrastructure improvements and to estimate the associated costs per development phases. An architect also provided schematic designs for the key building facilities in the Park.

The Schematic Master Plan was refined by the planning team and presented to the community. Based on the Schematic Master Plan and comments provided at the community meeting, PBR Hawai'i refined the Waimea District/Regional Park Master Plan. The intended locations and scope of all site improvements are identified on the final park master plan with the overlay of the current topographic survey. The Master Plan report is the final document of the Waimea District/Regional Park master planning process. It includes all the information necessary to initiate preliminary design and the first phase design.

2.4.4 Sustainable Planning and Design

The park master plan has incorporated the following sustainable park planning principles where applicable, including consideration for the following:

- Buildings to take advantage of natural light, ventilation, and trade winds.
- Balance cut and fill on site.
- Manage and divert storm water on site to reduce flooding and runoff.
- Provide ADA access as required.
- Plan for and design social gathering spaces.
- Provide bicycle, pedestrian and equestrian linkages.
- Plan for the inclusion of public art.
- Involve the community who will ultimately use the park, after all they are the end users.
- Make room for composting on site.

To provide guidance in the design and implementation of the park master plan, the following additional sustainable guidelines are provided. During the design phase of the park improvements, these guidelines should be evaluated as to feasibility and cost effectiveness (upfront costs and operating and maintenance costs). With advancements in technologies, these guidelines and best management practices will need to be updated as the park is implemented.

Resource Conservation

- Plant appropriate trees (native preferable, as appropriate) on the south and west sides of buildings to reduce solar heat gain.
- Plant trees (native preferable, as appropriate) on the windward side of buildings and outdoor gathering areas for wind protection.
- Harvest rain water using catchment to reduce use of potable water.
- Design and implement efficient irrigation systems throughout.
- Specify climate specific native foliage for drought resistance and biophilia.
- Use local building and plant materials thus reducing transportation costs and supporting local economies.
- Use recycled materials where possible and Forest Stewardship Council

- Minimize night light pollution. Please refer to the source: Darksky Association www.darksky.org
- Partner with the agricultural communities or waste water facilities to use properly treated waste water for irrigation.
- Use locally available renewable energy sources to offset utilities, for instance wind and solar.

Infrastructure, Storm Water, and Waste Management

- Implement sustainable infrastructure engineering to lower overall upfront costs.
- Reduce pollution by treating storm water through use of bioswales, storm water planters, etc.
- Minimize impervious surfaces Integrate appropriate waste water strategies, water reduction, , and leach fields etc.

Maintenance

- Use native and drought tolerant plants.
- Reduce pruning needs by allowing plants to realize their natural forms and providing enough room for growth.
- Consider lawn substitutes to reduce the amount of ongoing mowing.
- Use organic mulch to retain water and suppress weeds.
- Use organic fertilizers and compost techniques.
- Discontinue the use of pesticides or herbicides where possible and employ integrated pest management practices.
- Educate grounds keepers in above mentioned techniques.

Social Capital

- Incorporate interpretive signs that speak of site and area history.
- Incorporate interpretive signs that speak of the sustainable principles used within the Park environment.
- Design and build using local architects, engineers, consultants and trades who understand the climate, soil conditions, storm considerations etc.
- Conduct community and institution education sessions, and use the park as a platform to create a community learning center as a destination for schools and outreach programs.

Waste Reduction

- Provide recycling bins for park users.
- Use climate appropriate quality products and materials that are durable and can be recycled.

2.5 DEVELOPMENTAL TIMETABLE AND PRELIMINARY COSTS

The County expects to commence construction after plans and permit applications are approved. It is estimated that Phase 1 will be completed by 2020 and Phase 2 by 2026.

The total anticipated cost for Phase 1 is \$30.3 million and \$6.6 million for Phase 2. The estimated costs include site development costs, landscaping costs, and buildings costs. The overall mass grading/earth work and some of the offsite civil improvement have to be finished before developing Phase 1. The estimated cost for mass grading/earth work is approximately \$3.6 million, and the estimated offsite civil improvement cost is approximately \$697,000.

3 DESCRIPTION OF THE NATURAL ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATION MEASURES

This section describes existing conditions of the natural environment, potential impacts related to the creation of the Waimea District/Regional Park, and mitigation measures to minimize impacts.

3.1 CLIMATE

Hawai'i Island's geological features heavily influence its climate. Mauna Loa (13,679 foot summit elevation) and Mauna Kea (13,796 foot summit elevation) dominate ground-based atmospheric influences. The Waimea region is further influenced by Kohala Mountain to the north.

Regional temperatures are generally cool due to the approximately 2,650-foot elevation of Waimea. Average annual temperatures range from 54-74 degrees Fahrenheit (County of Hawai'i Data Book).

According to *The Rainfall Atlas of Hawai'i*, the Site receives an average annual rainfall of approximately 20 inches (Giambelluca, et al., 2012). Waimea's rainfall pattern is characterized by windward-leeward differences due to Mauna Loa and Kohala Mountains.

Trade winds are typical of the Hawaiian Islands, blowing predominantly from a northeast direction, and averaging approximately seven miles per hour (mph). The Kohala Mountains and Mauna Kea further influence the wind pattern in Waimea where wind speed averages 19 mph. In the early morning, the prevailing wind pushes out toward the ocean, and in the afternoon, the winds blow from the ocean toward the island (Juvik & Juvik, 1998).

POTENTIAL IMPACTS AND MITIGATION MEASURES

Creation of the Waimea District/Regional Park is not expected to have a significant impact on the microclimate of the area, therefore no mitigation measures are planned or warranted. However, the relatively cool and windy climate in this area warrants the consideration for providing enclosed or weather protected recreational facilities on the Park Site.

Adequate rainfall can reduce the demand for park irrigation, ultimately reducing the maintenance cost in the long-run. However, this portion of Waimea is quite arid and will require irrigation of the active sports fields. The Site receives an average annual rainfall of approximately 20 inches. The dry season is generally from June to September, and the monthly rainfall is only about 1 inch during this period.

3.2 GEOLOGY AND TOPOGRAPHY

The Park Site is located on the southeastern flank of Kohala Mountain. Elevations across the Site range from approximately 2,620 to 2,650 feet above mean sea level and gently slopes from east to west. Average slope is one percent. Although the site is generally flat, it is a broad drainage swale, lined on both sides with two free standing berms at approximately 10 feet high. The slopes on both sides of the berms are approximately 45 percent from top to bottom.

Of the five volcanoes that formed the island of Hawai‘i—Kohala, Hualālai, Mauna Kea, Mauna Loa, and Kīlauea—only Mauna Loa and Kīlauea are presently considered active; the other three are considered dormant. Waimea is located in the saddle of Mauna Loa and Kohala Mountain which is characterized by several distinctive geological features:

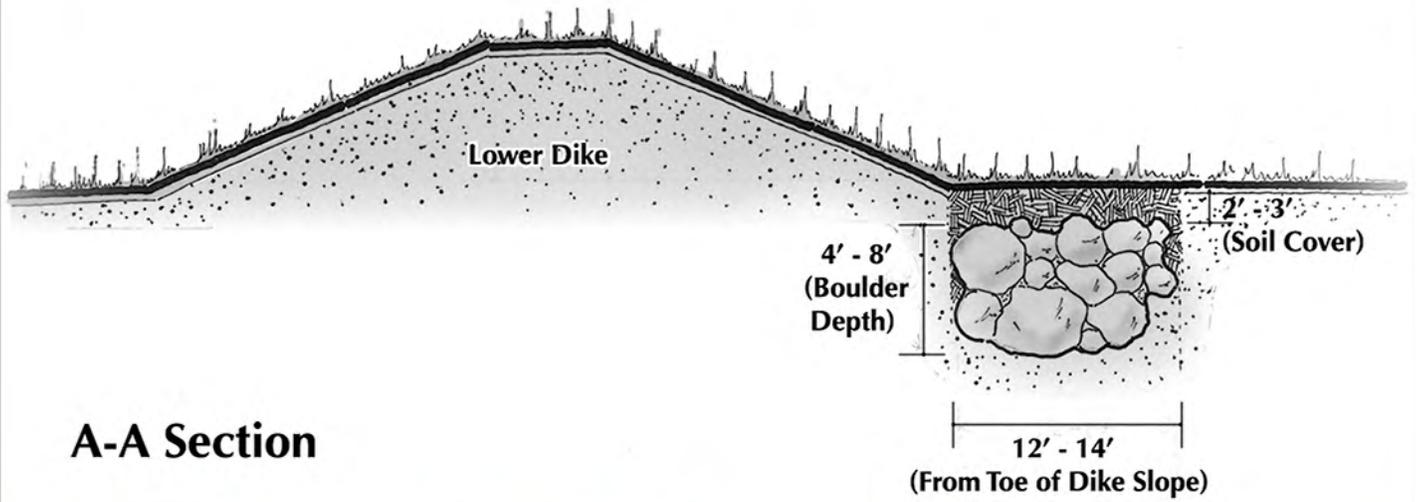
Kohala Mountain –Kohala Mountain, which forms the northern end of the island, consists of a shield volcano built around two rift zones that trend northwestward and southeastward from the summit region. Kohala Mountain appears to be the oldest volcano on the island with lava dated at 460,000 years old. The last eruption occurred approximately 60,000 years ago. The summit elevation is 5,480 feet above mean sea level. The rocks of the Kohala volcano are divided into two series: 1) Pololū Volcanic Series, consisting of very large flows of basalt; and 2) Hawi Volcanic Series, separated from the rocks of the Pololū Series by an eroded surface of deep valleys (Macdonald, Abbott, & Peterson, 1983).

Mauna Kea – The summit of Mauna Kea rises approximately 13,800 feet above mean sea level and provides the backdrop for Waimea toward the southeast. Younger eruptions from Mauna Kea cover the southern flank of Kohala Mountain forming the plateau of Waimea (Macdonald, Abbott, & Peterson, 1983). The western slope of Mauna Kea is dry and unscathed by erosion; whereas the northeastern slope is exposed to the trade-wind rains creating canyons a few hundred yards deep.

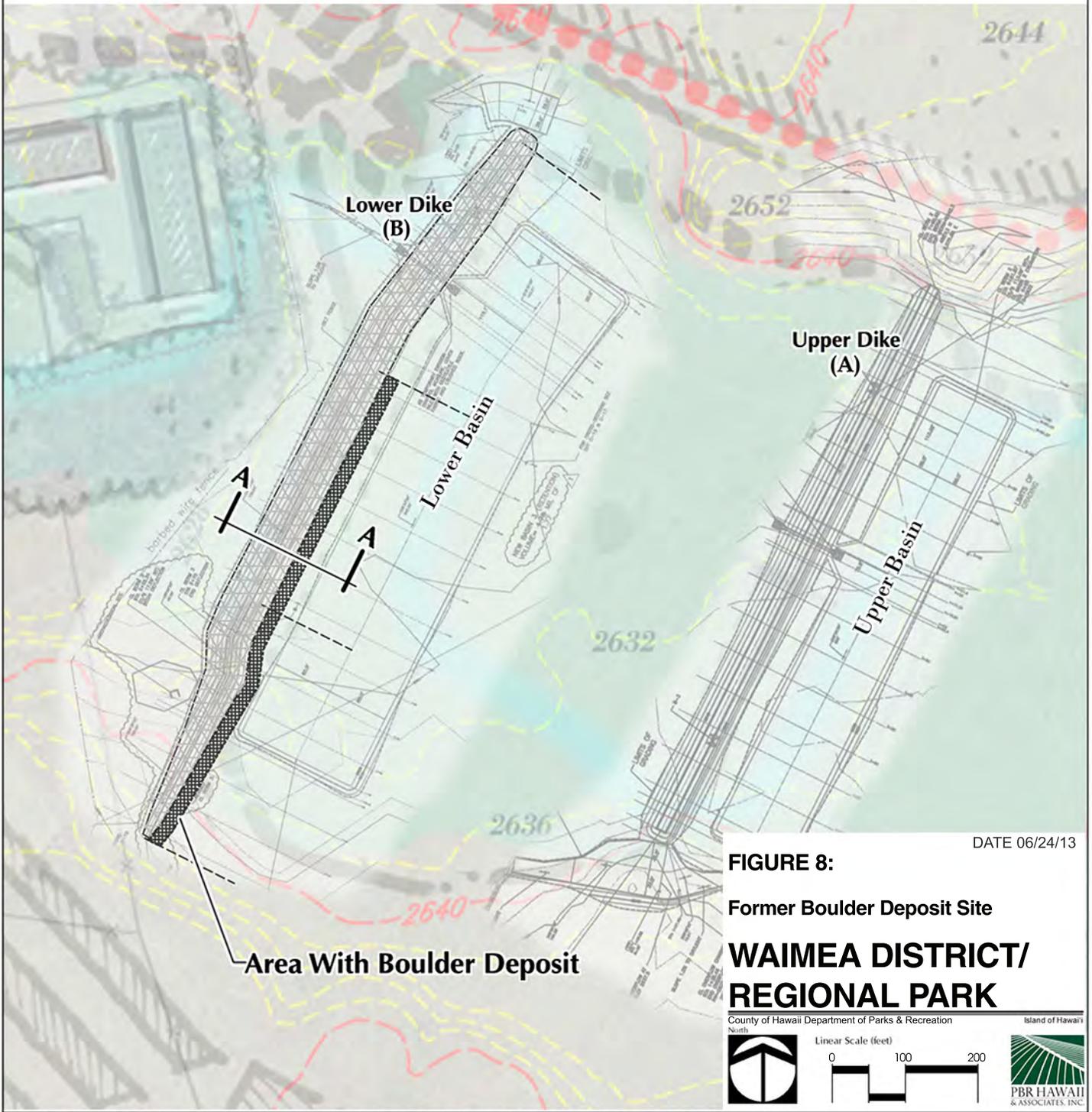
Pāhala Ash – Near the town of Waimea, remnants of the Nīnole eruption are covered by a reddish brown to yellow volcanic ash, known as Pāhala ash. In Waimea, it appears the ash is primarily from vents on Mauna Kea (Macdonald, Abbott, & Peterson, 1983).

Cinder Cones (Pu‘u) – The last eruptions of Kohala Mountain were moderately explosive and formed a series of large cinder cones that provide a landscape of rolling hills in Waimea (Macdonald, Abbott, & Peterson, 1983).

Boulder Deposit – A small portion of the Park Site was formerly used as a boulder deposit site along the southeastern side of the lower basin (Figure 8). The area was excavated about 11 feet deep and the original soil was removed/exported for offsite earth work. The excavation site was back filled with the unusable boulders.



A-A Section



DATE 06/24/13

FIGURE 8:
Former Boulder Deposit Site
**WAIMEA DISTRICT/
REGIONAL PARK**

County of Hawaii Department of Parks & Recreation Island of Hawaii

North

Linear Scale (feet)

0 100 200

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& ASSOCIATES, INC.**

According to the job superintendent, the layer of the back filled boulders is about 4 to 8 feet with a top layer of approximately 2 to 3 feet of soil coverage. The finish grading matches with the ground elevation of the adjacent area. The actual boundary of the former boulder deposit site is not apparent on the site.

POTENTIAL IMPACTS AND MITIGATION MEASURES

The Site offers a vast area of generally flat land which is optimal for developing sports fields.

The Park will not adversely impact the topographic nature of the Site relative to the surrounding lands. Due to the generally flat surface, minimal grading will be required. Any grading will be in conformance with the Hawai'i County Grading Ordinance. To minimize potential impacts, grading will be segmented and exposed areas will be immediately grassed or landscaped before commencement of grading in the next phase, in compliance with Chapter 10 (Erosion and Sedimentation Control) of the Hawai'i County Code.

As a site development constraint, the proposed earthwork for future park development should avoid excavation near the former boulder deposit site (see Figure 8). If the excavation must be undertaken, it is recommended to conduct ground probing to confirm the extent and depth of the buried boulders prior to the design and permitting phases to avoid costly excavation.

3.3 SOILS

Three soil suitability studies prepared for lands in Hawai'i describe the physical attributes of land and the relative productivity of different land types for agricultural production; these are: 1) the U.S. Department of Agriculture Natural Resource Conservation Services (NRCS) Soil Survey; 2) the University of Hawai'i Land Study Bureau (LSB) Detailed Land Classification; and 3) the State Department of Agriculture's Agricultural Lands of Importance to the State of Hawai'i (ALISH) system.

Natural Resource Conservation Service Soil Survey

The NRCS Soil Survey for the Island of Hawai'i classifies the soil of the Waimea District/Regional Park site as Waimea Very Fine Sandy loam (WMC) Figure 9. The soils classified as Waimea Very Fine Sandy Loam (WMC) generally have 6 to 12 percent slopes and occur on the leeward slopes of Mauna Kea and the Kohala Mountains. This soil series consists of well-drained, very fine sandy loams that formed in volcanic ash underlain by weathering, hard basalt bedrock. The mean annual soil temperature is between 59° and 62°F. Permeability is moderately rapid, runoff is slow, and the erosion hazard is slight. The available water capacity is approximately 1.8 inches per foot of soil. This soil is used for pasture and irrigated truck crops. The agricultural capability classification is IIIe for both irrigated and non-irrigated crops (Soil Survey of the Island of Hawai'i, State of Hawai'i, 1973). Capability classification IIIe means this soil has very severe limitations when used for farming.

LSB Detailed Land Classification

The University of Hawai‘i LSB document, Detailed Land Classification, Island of Hawai‘i, classifies soils based on a productivity rating. Letters indicate class of productivity with A representing the highest class and E the lowest. The soils of the Waimea District/Regional Park site are classified as “C” and Not Classified (Figure 10). The “C” classification signifies land that is fairly suited for agriculture.

Agricultural Lands of Importance to the State of Hawai‘i

The ALISH system classifies agricultural lands as Prime, Unique, or Other Agricultural Land. The Waimea District/Regional Park Site lands are classified as Other Agricultural Land (Figure 11). Other Agricultural Land is land other than Prime or Unique Agricultural Land that is 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 they may exhibit properties such as seasonal wetness, erosion, limited rooting zone, slope, flooding, or drought, which exclude them from the Prime or Unique Agricultural Land classifications. These lands can be farmed satisfactorily (i.e. by applying greater inputs of fertilizer and other soil amendments, constructing drainage improvements, and implementing erosion control practices and flood protection measures), and can produce fair to good crop yields when managed properly.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Construction of the Waimea District/Regional Park will not reduce the inventory of agriculturally significant land. The Site has a NRCS capability classification of IIIe, meaning it has very severe limitations that reduce the choice of plants, require special conservation practices, or both. If the soils were put into active agriculture, the main limitation is risk of erosion unless close-growing plant cover is maintained. The Site is classified as “Fair” under the LSB classification where a portion is not classified and “other” under the ALISH system. Although soils at the Site are fairly suited for agriculture, there is an abundance of agriculture land in the area sufficient to support surrounding communities. The park will not take any active agricultural land out of production and should not impact the availability of agricultural land for cultivation.

Impacts to the soils include the potential for soil erosion and the generation of dust during grading and construction. All construction activities will comply with all applicable Federal, State, and County regulations and rules for erosion control. As typically required for projects on land greater than one acre in size, a National Pollutant Discharge Elimination System (NPDES) Notice of General Permit Coverage (NGPC) for Storm Water Associated with Construction Activity will be necessary.

To minimize potential impacts, necessary grading will be segmented and exposed areas will be immediately grassed or landscaped before commencement of grading in the next phase, in compliance with the Chapter 10 (Erosion and Sedimentation Control) of the Hawai‘i County Code. Measures to control erosion during the site development period will include:

- Minimizing the time of construction;
- Retaining existing ground cover as long as possible;
- Constructing drainage control features early;
- Using temporary area sprinklers in non-active construction areas when ground cover is removed;
- Providing a water truck on-site during the construction period to provide for immediate sprinkling, as needed;
- Using temporary berms and cut-off ditches, where needed, for control of erosion;
- Watering graded areas when construction activity for each day has ceased;
- Grassing or planting all cut and fill slopes immediately after grading work has been completed; and
- Installing silt screens, where appropriate.

3.4 HYDROLOGY

The State Commission on Water Resource Management (CWRM) established an aquifer coding system to characterize groundwater resources in Hawai‘i. Based on the CWRM’s coding system, the Site overlies the Waimea Aquifer System of the West Mauna Kea Aquifer Sector. The system extends from the summit of Mauna Kea to near the base of Kohala Mountain.

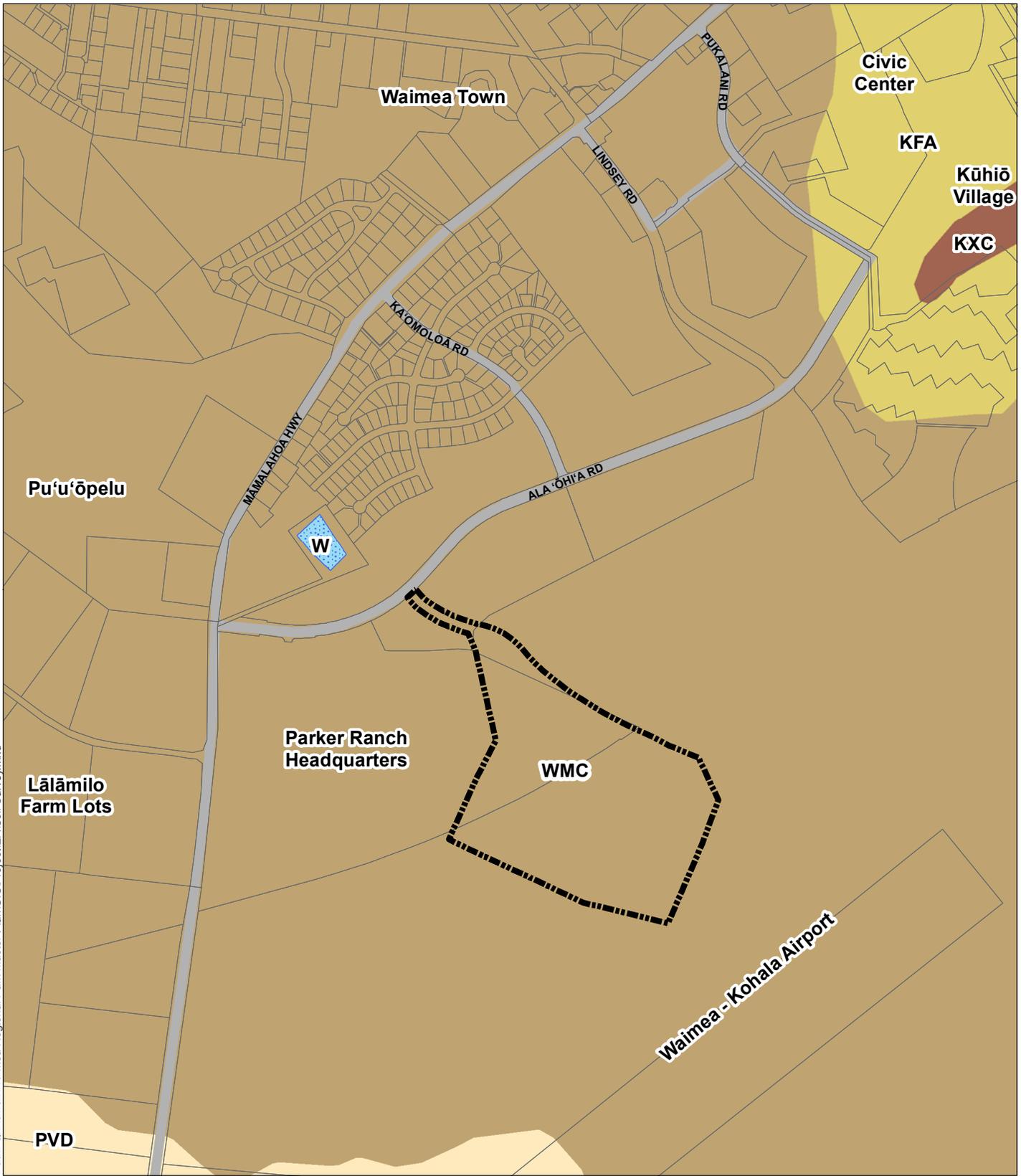
Sustainable yield is the amount of groundwater that can be pumped without depleting the source. The sustainable yield of the Waimea Aquifer is 24 million gallons per day (MDG), and existing water use is 9.173 MGD (Wilson Okamoto Corporation, 2008).

There are no perennial streams within the Park.

POTENTIAL IMPACTS AND MITIGATION MEASURES

The Park is not anticipated to have any significant adverse impact on groundwater or surface water resources. No uses that could contaminate groundwater are expected to be developed as part of the Park.

Potable water will be supplied by the County Department of Water Supply (DWS), which draws water from a network of groundwater wells. Coordination with DWS is ongoing. Section 4.71 (Water System) of this EA provides further information regarding anticipated water demands.



DATE: 6/24/2013

LEGEND

Waimea District / Regional Park Major Roads

Soil Type

- WMC: Waimea very fine sandy loam, 6-12%
- KXC: Kikoni very fine sandy loam, 3-12%
- KfA: Kikoni very fine sandy loam, 0-3%
- PVD: Puu Pa extremely stony very fine sandy loam, 6-20%
- W: Water > 40 acres

Source: U.S. Department of Agriculture, Soil Conservation Service (1973)

Disclaimer: This Graphic has been prepared for general planning purposes only and should not be used for boundary Interpretations or other spatial analysis.

FIGURE 9:
Soil Survey

**WAIMEA DISTRICT/
REGIONAL PARK**

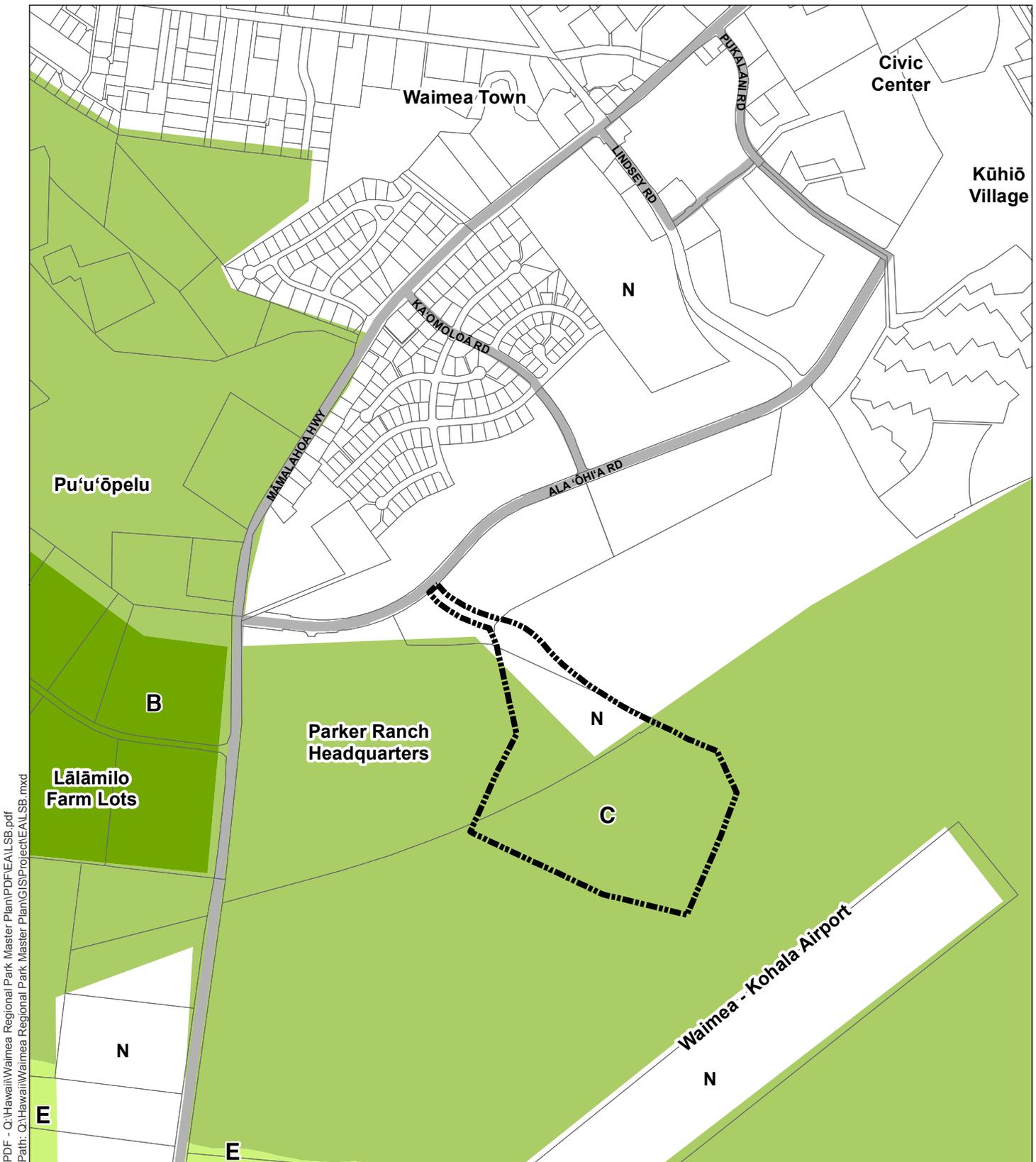
County of Hawaii Department of Parks & Recreation Island of Hawaii

North

Linear Scale (feet)

0 250 500 1,000

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PDF - Q:\Hawaii\Waimea Regional Park Master Plan\PDF\EA\LSB.pdf
 Path: Q:\Hawaii\Waimea Regional Park Master Plan\GIS\Project\EA\LSB.mxd

DATE: 6/24/2013

LEGEND

Waimea District / Regional Park Major Roads

Classification

- B - Good
- C - Fair
- E - Very Poor
- N - Not Classified

Source: U.S. Department of Agriculture, Soil Conservation Service (1973)

Disclaimer: This Graphic has been prepared for general planning purposes only and should not be used for boundary Interpretations or other spatial analysis.

FIGURE 10:

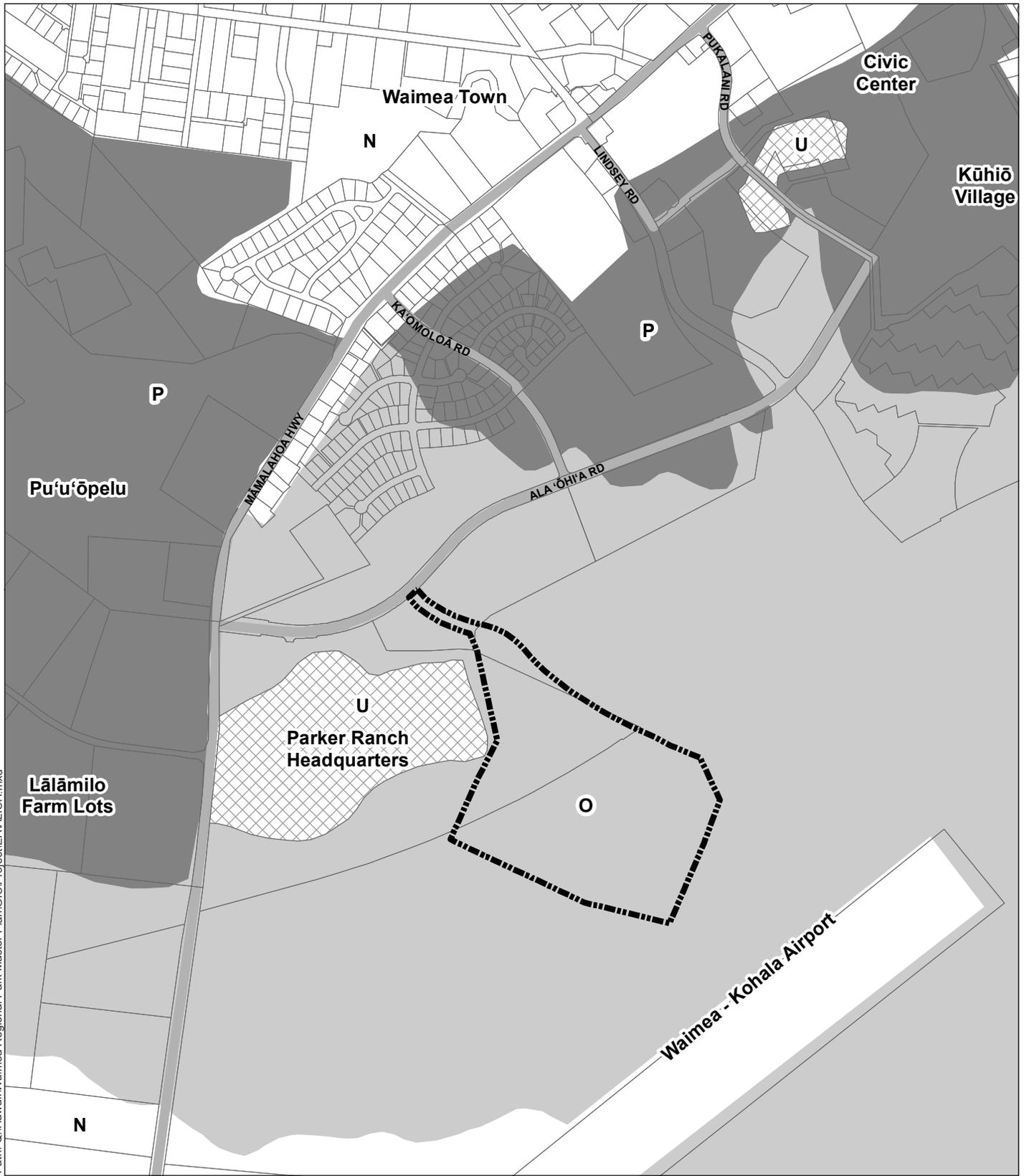
Land Study Bureau
 Detailed Land Classification

**WAIMEA DISTRICT/
 REGIONAL PARK**

County of Hawaii's Department of Parks & Recreation Island of Hawaii

North

Linear Scale (feet)
 0 250 500 1,000



DATE: 6/24/2013

LEGEND

Waimea District / Regional Park Major Roads

Classification

- P - Prime
- O - Other
- U - Unclassified
- N - None

Source: State Department of Agriculture (1977)

Disclaimer: This Graphic has been prepared for general planning purposes only and should not be used for boundary Interpretations or other spatial analysis.

FIGURE 11:

Agricultural Lands of Importance to the State of Hawai'i

**WAIMEA DISTRICT/
REGIONAL PARK**

County of Hawai'i Department of Parks & Recreation Island of Hawai'i

North

Linear Scale (feet)
0 250 500 1,000

3.5 MARINE WATERS

The Site is approximately 10 miles inland from the nearest coastline at Kawaihae. Near shore marine waters off the coast of Kawaihae are classified as class “A” and “AA” by the State Department of Health (2012).

According to DOH Water Quality Standards, “It is the objective of class A waters that their use for recreational purposes and aesthetic enjoyment be permitted as long as it is compatible with the protection and propagation of fish, shellfish, and wildlife, and with recreation in and on these waters.” “AA” is described as “waters remain in their natural pristine state as nearly as possible with an absolute minimum of pollution or alteration of water quality from any human-caused source or actions” (HAR §11-54-03).

POTENTIAL IMPACTS AND MITIGATION MEASURES

Creation of the Park will result in a slight increase in the amount of impermeable surface area of the Site. However the majority of the Park will be permeable, sport fields and other open space. Direct discharge of storm water runoff into marine waters is not anticipated due to the inland location of the Site. All NPDES permit requirements will be implemented. In the long-term, to minimize/eliminate the Park’s contribution to the region’s cumulative nonpoint source pollution, detention basins and grass paved parking will ensure storm water quality/quantity is not increased or degraded.

3.6 NATURAL HAZARDS

Hawai‘i island is susceptible to potential natural hazards, such as flooding, hurricanes, volcanic hazards, earthquakes, and wildfires. This section provides an analysis of the Site’s vulnerability to such hazards.

The State of Hawai‘i Department of Defense, Office of Civil Defense operates a system of civil defense sirens throughout the State to alert the public of emergencies and natural hazards, particularly tsunamis and hurricanes. The closest siren to the Site is Waimea Park Siren (HA401) located less than one mile north of the Site.

Impacts from natural hazards can be further mitigated by adherence to appropriate civil defense measures as determined by the State and County of Hawai‘i civil defense agencies.

3.6.1 Flood

The Federal Emergency Management Agency (FEMA) publishes flood information in the form of Flood Insurance Rate Maps (FIRM) used by government and insurance agencies to determine the relative potential for damage during flood events.

According to the FIRM and the latest Letter of Map Revision (LOMR) Determination Document, the majority of the Park is located in Zone AE, or an area determined to be within the 100-year floodplain which has a one percent annual chance of being inundated by a 100-year flood (Figure 12). Whole-foot base flood elevations derived from detailed analyses are shown at selected intervals within this zone. Within the Park boundaries, base flood elevations are 2,634 at the northernmost point of the western berm and 2,639 at the southernmost point of the eastern berm.

Areas along the periphery of the Park are located in Zone X, or an area determined to be outside the 0.2 percent annual chance (500-year) floodplain. No base flood elevations or depths are shown within this zone.

The Site serves as a detention basin for Kamuela and Lanimaumau Streams. In 1997, the stream channels were diverted toward open pasture land, which now includes the Park Site. Two approximately 10-foot high free standing berms were constructed as part of the diversion. The design volumes of the basins are approximately 1 million cubic feet (upper basin) and 1.77 million cubic feet (lower basin).

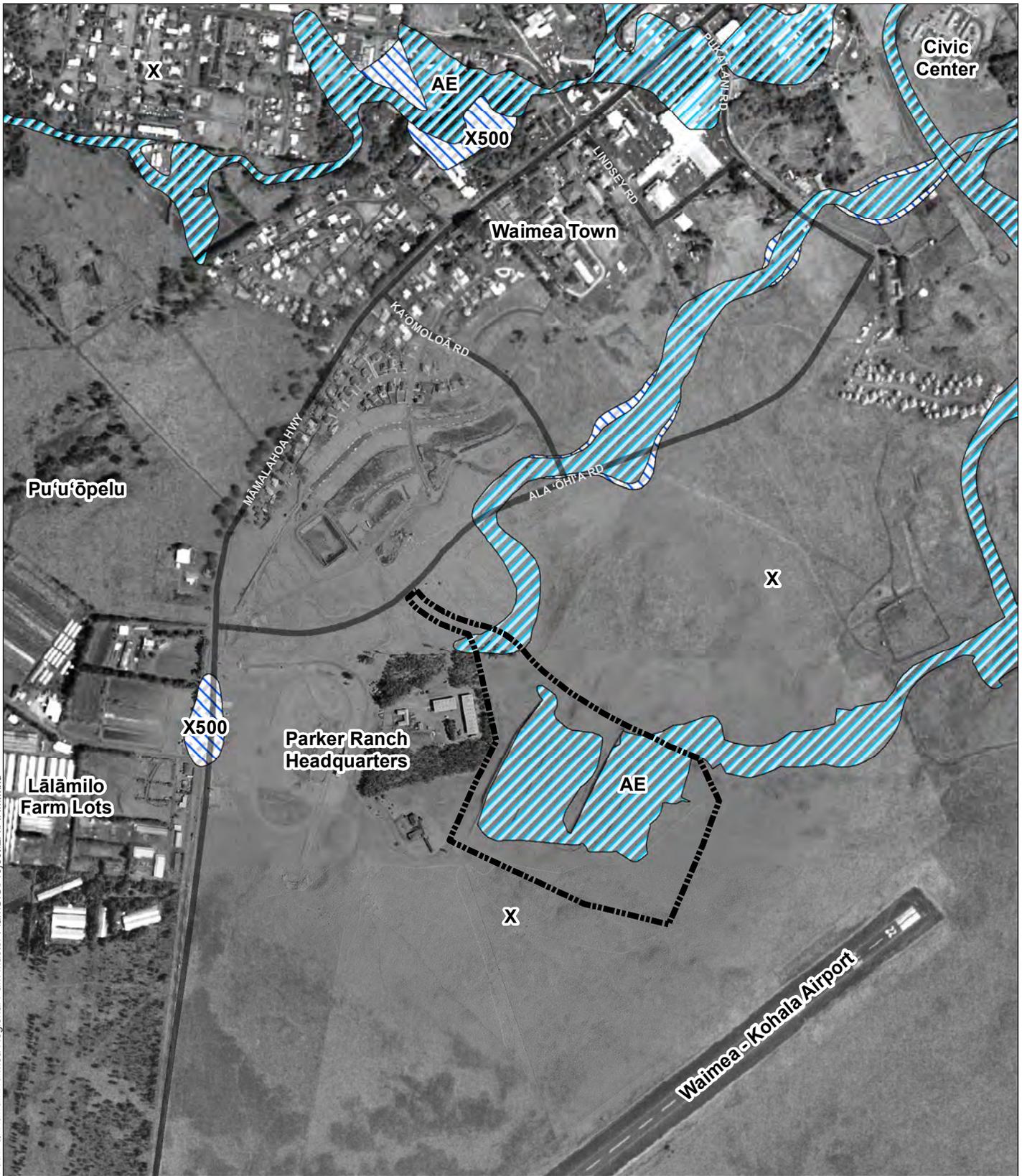
POTENTIAL IMPACTS AND MITIGATION MEASURES

During 100-year storm events, flooding is expected on all of the sport fields. The detention basins will operate as designed and slowly drain water through the pipes in the berms. It is assumed that there will be no use of the sport fields during major storm events, and proper warning measures will be taken to mitigate any danger caused by deep ponding of water in the basins.

According to Hawai'i County Code, Chapter 27 (Floodplain management), park recreational/sport fields and parking areas are permitted uses in the floodplain. However, the Park's buildings such as the play court, multi-use community building, and comfort stations must be located outside of Zone AE or designed with finished floor elevations above the designated base flood elevation plus an additional height of at least one foot or receive a variance.

In addition, because the majority of the Site serves as a detention basin, the current drainage function and capacity must be maintained throughout the entire development process. The cumulative effect of the proposed development, when combined with all other existing and anticipated development (including fill), cannot increase the water surface elevation of the base flood at any point (§27-18 Hawai'i County Code).

A floodplain amendment will be sought to raise the ground elevation and create a suitable area for the planned buildings. At the same time, certain areas will be excavated to offset the amount of displaced drainage capacity caused by the fill. The overall grading will provide a net increase in drainage storage volume. The design volumes of the basins will increase to approximately 1.93 million cubic feet (upper basin) and 1.96 million cubic feet (lower basin).



DATE: 6/24/2013

FIGURE 12:
 Flood Insurance Rate Map

LEGEND

Waimea District / Regional Park Major Roads

Flood Zone

- AE: 1% annual chance (100-Year) Floodplain
- X: 0.2% annual chance (500-Year) Floodplain
- X500: 0.2% to 1% annual chance (100-year and 500-year) Floodplain

Source: State Department of Agriculture (1977)

Disclaimer: This Graphic has been prepared for general planning purposes only and should not be used for boundary Interpretations or other spatial analysis.

**WAIMEA DISTRICT/
 REGIONAL PARK**

County of Hawaii Department of Parks & Recreation Island of Hawaii

North

Linear Scale (feet)
 0 250 500 1,000

PBR HAWAII & ASSOCIATES, INC.

FEMA reviews floodplain amendments. The amendment process requires two approvals: 1) Conditional LOMR, started during the design phase and approved before construction; and 2) LOMR Determination Document, completed after construction. Ideally grading and fill for the entire 50-acre Site would be completed during Phase 1 and not just for the first 24 acres; however if grading and fill for the entire 50-acre Site cannot be done in Phase I the FEMA floodplain amendment process will have to be undertaken twice: once when the grading is completed for Phase 1, and then again when grading is complete for Phase 2.

3.6.2 Tsunami

Twenty-five of the tsunamis recorded in Hawai‘i since 1812 had an adverse impact on the Island of Hawai‘i; seven caused major damage and three were generated locally. The most recent tsunami to impact Hawai‘i Island, which occurred on March 11, 2011, caused property damage at several locations on the Kona coast. There are, however, no records of inundation of developed lands in the South Kōhla district during any of the recorded tsunamis.

The current tsunami evacuation zone is in the process of being updated by the Hawai‘i County Civil Defense Agency. At the 2,630-foot elevation, the Site is well outside of the current tsunami evacuation zone.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Construction of the Park will not exacerbate any tsunami hazard conditions. The Site is not in a designated tsunami evacuation zone and is not expected to be adversely impacted by a tsunami. In the event of a tsunami warning, the Park’s buildings would be available as an evacuation center for those coastal residents or visitors who need to evacuate and seek shelter elsewhere.

3.6.3 Hurricane

Since 1980, two hurricanes have had a devastating effect on Hawai‘i. They were Hurricane ‘Iwa in 1982 and Hurricane ‘Iniki in 1992. In 2007, Hurricane Flossie threatened to reach Hawai‘i, putting Hawai‘i on a hurricane watch. The hurricane, however, was downgraded from a hurricane to a tropical storm after passing Hawai‘i Island, 95 miles south of South Point (Associated Press, 2007). While it is difficult to predict such natural occurrences, it is reasonable to assume that future incidents are likely, given historical events. Several studies sponsored by the NASA Office of Earth Science have developed new models for estimating the probability of hurricanes in the Pacific. While the island of Hawai‘i has not been in the direct path of a hurricane since recordation began in 1950, the models indicate that the island has a long-term hurricane hazard higher than any of the other islands.

POTENTIAL IMPACTS AND MITIGATION MEASURES

In the event of a hurricane, the potential impact of destructive winds and torrential rainfall will be mitigated through compliance with the 2006 International Building Code (IBC).

3.6.4 Earthquake

In Hawai‘i, most earthquakes are linked to volcanic activity, unlike other areas where a shift in tectonic plates is the cause of an earthquake. Each year, thousands of earthquakes occur in Hawai‘i, the vast majority of which are so small they are detectable only with highly sensitive instruments. However, moderate and disastrous earthquakes have occurred in the islands.

Since 1868, nine disastrous earthquakes have occurred in Hawai‘i County. The largest earthquake series occurred between March 27 and April 2, 1868 with an epicenter a few miles north of Pāhala in the district of Ka‘ū. It is estimated that the magnitude of these earthquakes were 7.1 and 7.9. These earthquakes resulted in 77 deaths (46 from tsunami and 31 from landslides triggered by the earthquake). In 1929, an earthquake with an epicenter in Hualālai and a magnitude of 6.5 resulted in extensive damage. Another earthquake in 1951, with its epicenter in the Kona area and a magnitude of 6.9 also resulted in extensive damage. A series of earthquakes, with magnitudes of 6.7 and 6.0, occurred at Kīholo Bay on October 15, 2006. These earthquakes resulted in more than \$100 million in damages to the northwest area of the island (USGS, 2006).

POTENTIAL IMPACTS AND MITIGATION MEASURES

To mitigate the potential hazard from earthquakes, structural elements in the Park will be in accordance with the latest building code which is the 2006 International Building Code (IBC) as amended by State of Hawaii Building Code. The 2006 IBC provides minimum design criteria to address the potential for damage due to seismic disturbances.

3.6.5 Volcanic Hazards

Volcanic hazards include lava flows and emission of volcanic gases (vog).

Lava Flows

The volcanic hazard zone map for Hawai‘i Island divides the island into zones ranked from one through nine, with one being the area of greatest hazard and nine being the area of least hazard. The zones are based chiefly on the location of active vents, frequency of past lava coverage, and topography. According to this map, the Site is within Zone 8 (Figure 13), meaning only a small percent of this area has been covered by lava in the past 10,000 years (USGS, 1997). The Site is near two extinct volcanoes: Kohala and Mauna Kea.

Vog

Volcanic gases, which are visible as fog called vog, are emitted during all types of eruptions. Halema'uma'u, the crater located at the summit of Kīlauea is erupting large amounts of volcanic gas. Any hazard posed by volcanic gases is greatest immediately downwind from active vents; the concentration of the gases quickly diminishes as the gases mix with air and are carried by winds away from the source (USGS, 1997).

The Site is located 50 miles north of Kīlauea Volcano. The prevailing northeasterly tradewind flow tends to push vog and any airborne particulates away from the Site and out to sea. However, the amount of vog and other airborne particulates can significantly increase during periods when the winds shift to a southeasterly direction. Air flow from this direction carrying vog over and around the mountain barrier, can lead to an increase in pollution and a decrease in visibility.

POTENTIAL IMPACTS AND MITIGATION MEASURES

The Park is approximately 50 miles away from the nearest active volcano. Hazard and risk potential of volcanoes can be localized reasonably well, unlike some other types of natural disasters (earthquakes and hurricanes). The development of methods to predict volcanic eruptions is extremely important to provide for early evacuation of densely populated regions. The Site is in a low volcanic hazard zone.

3.6.6 Wildfires

Approximately 70 to 80 wildfires occur annually in Hawaii County. Humans are the number one cause of fires in Hawai'i. In July 2007, a brush fire burned over 9,300 acres near the Waikōloa Road and Māmalahoa Highway junction. Also, in October 2007, nine fires were started by arsonists, including a wildfire that spread over 1,000 acres near the Puakō community.

Currently, the Site vegetation is typically dominated by pasture grasses. Kikuyu (*Pennisetum clandestinum*), which is the most common grass on the Property, can easily carry fire.

POTENTIAL IMPACTS AND MITIGATION MEASURES

The creation of Waimea District/Regional Park will mitigate the potential for wildfires through its landscape design and plant palette. In large part, vegetative fuel for fires, such as dry grass, will be replaced by buildings and maintained landscaping of the park. Landscaping within the park will include native species less likely to catch fire and non-invasive succulents. Park roads and paved areas can help prevent or slow down the spread of wildfires.



DATE 06/24/13

LEGEND

★ Waimea District/Regional Park
~ Roadways

Hazard Zone	
Dark Red	1-High
Red	2
Orange	3
Yellow-Orange	4
Yellow	5
Light Green	6
Green	7
Dark Green	8
Very Dark Green	9-Low

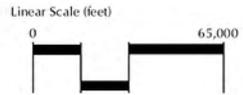
FIGURE 13:

Volcanic Hazards

**WAIMEA DISTRICT/
REGIONAL PARK**

County of Hawaii Department of Parks & Recreation

Island of Hawaii



Source: U.S. Geological Survey 1991

Disclaimer: This Graphic has been prepared for general planning purposes only and should not be used for boundary Interpretations or other spatial analysis.

3.7 BOTANICAL RESOURCES

Rana Biological Consulting, Inc and AECOS Consultants conducted a botanical survey of the Park Site. The results of the survey are summarized below. Appendix B contains the complete report.

No plant species currently listed, or proposed for listing under either the Federal or State of Hawaii endangered species statutes were detected during the course of the survey (Rana Biological Consulting, Inc. & AECOS Consultants, 2009).

The vegetation at the Site is overwhelmingly dominated by pasture grasses, reflecting the present use as pasturage for horses and cattle. Only one species of grass, Kikuyu (*Pennisetum clandestinum*), a non-native species originating in Africa was recognizable across the Site, except in a rocky area where Crabgrass (*Digitaria ciliaris*), a non-native species originating in North America was present in small numbers. It is likely that other pasture grasses occur on the Site, although in low abundance relative to Kikuyu. In all, 28 plant species were recorded during the survey (Rana Biological Consulting, Inc. & AECOS Consultants, 2009).

The only native species observed was 'ihi'ai (*Oxalis corniculata*), which may be an early Polynesian introduction rather than an indigenous species. The native 'ilima (*Sida fallax*) was abundant in the eucalyptus grove just outside the Site. Most of the varieties of plant species were associated with: 1) rocky outcrops that line the sides of the drainage swale; and 2) the lowest parts of the detention basins where standing water encouraged an extensive growth of weedy herbs (Rana Biological Consulting, Inc. & AECOS Consultants, 2009).

POTENTIAL IMPACTS AND MITIGATION MEASURES

The Park will not impact any Federal or State of Hawai'i listed threatened, endangered, or candidate plant species, as none were detected during the survey and none are expected to occur at the Site. In addition, the flora present on the Site is of no value from the perspective of native botanical resources.

The botanical survey recommends the use of appropriate dryland native plant species in the landscaping of the support areas of the Park. As such, the Park landscaping will attempt to utilize the maximum amount of native species feasible. The use of native dryland plant species will help propagate native species and will likely result in lower maintenance and irrigation costs.

3.8 WILDLIFE RESOURCES

Rana Biological Consulting, Inc and AECOS Consultants conducted an avian and mammalian survey of the Park Site. The results of the survey are summarized below. Appendix B contains the complete survey report.

Avian Resources

No Federal or State of Hawai'i listed threatened, endangered, or candidate avian species were detected during the course of the survey.

A total of 198 individual birds of 11 different species were recorded during the survey. Two of the species recorded, Pacific Golden-Plover (*Pluvialis fulva*), and Ruddy Turnstone (*Arenaria interpres*) are indigenous migratory shorebird species. The most common avian species recorded was Sky Lark, which accounted for 56 percent of the total number of individual birds recorded.

Although not detected during the survey, it is possible that small numbers of the endangered endemic Hawaiian Petrel (*Pterodroma sandwichensis*) and the threatened Newell's Shearwater (*Puffinus auricularis newelli*) may over-fly portions of the Site between the months of May and November.

Mammalian Resources

No Federal or State of Hawai'i listed threatened, endangered, or candidate mammalian species were detected during the course of the survey.

A total of four mammalian species were detected on or near the park site during the course of the survey including, eight horses (*Equus c. caballus*), one calf (*Bos Taurus*), one dog (*Canis f. familiaris*), and sheep (*Ovis aries*). All of the mammalian species recorded during the survey are commonly occurring species on farmland, pasturage and the grasslands present in the vicinity of the Site. In addition, all terrestrial mammals currently found on the Island of Hawai'i are alien species, with the exception of the endangered Hawaiian hoary bat or 'ōpe'ape'a (*Lasiurus cinereus semotus*). Although not detected during the survey, it is possible that Hawaiian hoary bats may fly over portions of the Site on a seasonal basis. However, there is no suitable roosting habitat present within or close to the Site.

The survey did not detect any endangered Blackburn's sphinx moths (*Manduca blackburni*). However, in a letter dated December 7, 2009, the U.S. Fish and Wildlife Service stated that according to their files the Blackburn's sphinx moth (*Manduca blackburni*) may occur in the vicinity of the Park. This species feeds on nectar from native plants including ipomea (*Ipomoea pes-caprae*), 'ilie'e (*Plumbago zeylanica*), maiapilo (*Capparis sandwichiana*), and 'aiea (*Nothocestrum breviflorum*). None of these plant species occur at the Site.

POTENTIAL IMPACTS AND MITIGATION MEASURES

The Park is not expected to significantly affect any Federal or State of Hawai'i listed threatened, endangered, or candidate avian or mammalian species, as none were detected during the survey. In addition, creation of the Park is not expected to impact the habitat of any avian or mammalian species due to the highly disturbed alien dominated grassland present on site.

Several species of migratory seabirds (including Hawaiian Petrels and Newell's Shearwaters) may fly over portions of the Park at night between the months of May and November; however, none are known to nest within the Site. Any outdoor lighting could result in seabird disorientation, fallout, injury, or mortality. To minimize the threat of disorientation or downing of migratory birds after construction, all outdoor lighting will be shielded in compliance with Section 14-50, Hawaii County Code. In addition, the USFWS recommends shielding all lights so the bulb can only be seen from below.

Hawaiian hoary bats are known to roost in native and non-native trees greater than 15 feet tall. USFWS recommends avoiding removal and trimming of trees greater than 15 feet tall during the pup rearing season between May 15 and August 15. While there are no trees or shrubs suitable for bat roosting currently on site, there may be trees planted as part of the Park landscaping. After the installation of Park landscaping, trimming of trees 15 feet in height or taller will be monitored so as to reduce the potential harm to bats.

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4 DESCRIPTION OF THE HUMAN ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATION MEASURES

This section describes the existing conditions of the human environment, preliminary potential impacts of Waimea District/Regional Park, and preliminary mitigation measures to minimize any impacts.

4.1 ARCHAEOLOGICAL AND HISTORIC RESOURCES

Pacific Legacy, Inc. conducted an archaeological inventory survey for the Park Site (2010). The survey report incorporates the findings of two previous surveys that have taken place in the vicinity of the Park: 1) for the proposed Waimea to Kawaihae Road corridor that covered a major portion of the Site (Clark & Kirch, 1983); and 2) for the Waimea Town Center project that covered the northern third of the Site (Butchard & Tomonari-Tuggle, 2003 & 2004). Findings of the survey work are summarized below. Appendix C contains the complete archaeological inventory survey report.

Historic Background

Initial settlement of the uplands near Waimea likely occurred during the 13th through 15th centuries (Clark & Kirch, 1983). The early historic vegetation pattern was probably a mix of cultivated fields and grasslands blending into relatively open ‘ōhi‘a forest. Though later historic land practices have obscured most evidence of such early cultivation, land court and other documents speak of traditional agriculture being practiced in the area.

The earliest detailed descriptions of settlement patterns and land use in Waimea came from observations of Reverends Bishop, Goodrich and Thurston, as recorded by William Ellis (1963). It is evident from Ellis’ account that in the early 1800’s the Waimea area was extensively cultivated and well-populated. Ellis (1963) provided Thurston’s description of the Waimea region as thus:

The soil over which he had traveled was fertile, well watered, and capable of sustaining many thousand inhabitants. In his walks he had numbered 220 houses, and the present population is probably between eleven and twelve hundred.

A mix of crops would have been traditionally grown in upland Waimea including: *kalo* (taro), *‘uala* (sweet potato), *kō* (sugar cane), *mai‘a* (banana), and *wauke* (paper mulberry, of which *kapa* is made). Individual fields of dryland *kalo* and *‘uala* would have been separated by windbreaks of *kō* and *mai‘a*. These windbreaks would have served to reduce evapotranspiration and help the soil retain moisture. Early sources also suggest that the *kula* (plains) land of Waimea was not uniformly carpeted in fields. Some form of crop rotation appears to have been practiced, with fields being allowed to lie fallow for a time.

By the mid-1800s, ranching became a flourishing economic factor in Kohala and North Kona with the introduction of cattle left by Captain George Vancouver in 1793 (Rosendahl, 1995). However, by 1846 cattle had increased to destructive numbers with approximately 25,000 wild and 10,000 tame cattle on the island of Hawai‘i (Clark & Kirch, 1983).

In 1876, King Kalākaua appointed a commission “to aid in the development of resources in the Kingdom.” The commissioners toured Hawai‘i island in 1887 and reported thus:

The forests on the Kohala mountains are dying rapidly. The land is mostly for grazing purposes, though on the mountain potatoes of fine quality can be raised in large quantities...The once fertile and populous plain of Waimea looked sterile and desolate when visited by the Commission—a painful contrast to Kohala loko on the other side of the mountain...The plains of Pukapu [Pu‘ukapu] and Waimea are subject to high winds, aggravated by the loss of the sheltering forests of former days...To develop its best resources, efforts must be made to restore the forests and husband the supply of water at their sources to furnish a supply for agriculture purposes.

The contrast between this description and earlier historic accounts suggest the major impact that unrestricted grazing had on the native forest fringe in just a few short decades. The feral cattle population multiplied far beyond expectations and exceeded practical levels of dealing with them. To handle the problem, Kamehameha I hired John Palmer Parker, a capable cattleman, to bring the cattle population under control. Parker began collecting cattle and established the groundwork of what became Parker Ranch in 1847.

Shortly after World War II, the U.S. Department of Agriculture Bureau of Reclamation began a project in the Waimea area called the Lālāmilo Farm Lots. The project was designed to help increase and improve farmers’ production. Beginning in 1946, the project involved:

...rerouting Lanimaumau Stream, construction of a ditch along Māmalahoa Highway fronting Pu‘u Kapu Homesteads (the “Kamuela Stream” drainage) and construction of an irrigation ditch network. This network extended from the source of Lanimaumau, south toward Mānā and then west past the airport, through the race track, and into Lālāmilo Farm Lots. (Butchard & Tomonari-Tuggle, 2003)

Portions of this network are present within the Park Site (Pacific Legacy, Inc., 2010).

Identified Sites

A total of 11 archaeological sites have been identified within and in close proximity to the Park Site. Of the 11 sites, three are newly identified (28140, 28141, 28142) and eight are previously

recorded (8804¹, 8809, 9179, 21861, 21862, 21863, 21864, 21865). All previously recorded sites were relocated with the exception of Site 9179 which is assumed to have been destroyed during the construction of flood control berms in the early 2000s.

All previously identified sites have undergone data recovery investigations, with the exception of Site 8804, where no work had been undertaken. As a result, the latest survey (Pacific Legacy, Inc., 2010) only conducted investigations for Site 8804 and the three newly identified sites (28140, 28141, 28142). A description of these sites is as follows:

- **Site 8804** is a small windbreak shelter or c-shape located along the western edge of the Site, directly behind of the Parker Ranch Headquarters Building. This site had been previously identified by Clark and Kirch (1983) but no formal recordation had been made nor had the site been excavated. The 1983 site tag was relocated on the east side of the shelter. It is comprised of medium to large basalt cobbles situated on top a flat area on a low lying ridge. Overall, the site measures 4.0 m wide and 3.8 meters deep and 0.35 m high. There is evidence of wall tumble on the interior of the shelter likely due to cattle grazing in the area. No other surface features or artifacts were evident on the surface.
- **Site 28140** is a small agricultural terrace located 90 meters south of 8804 and near the top of a north facing ridgeline extending along the southern boundary of the Park. This site consists of the remnant of a single agricultural terrace with lower and upper retaining walls. Overall, this site measures 6.5 x 3.8 m in size with the internal portion of the terrace measuring 2.4 m and the walls average 0.40 m high. The walls are constructed of weathered vesicular basalt cobbles and boulders. This site is in poor condition likely due to cattle and ranching activities. An ATV trail is located just to the west of the site.
- **Site 28141** is located approximately 220 meters east of Site 28140 and consists of a remnant enclosure/agricultural terrace. This site is located along the top of the same ridgeline as Site 28140 and is also located along the southern boundary of the Park. The enclosure measures 6.3 m x 5m and averages 0.30 m in height. The site is composed of weathered basalt cobbles and boulders and is in very poor condition likely due to the area being used for cattle ranching. The interior is covered with scattered cobbles and boulders. This site also incorporates basalt outcropping on the north and west sides. There is some question as to whether this site is located within the project boundary. While in the field, every indication was that this site was along the south boundary and thus it was recorded. Upon completing the field investigations and the GPS information uploaded, the site plotted outside (south) of the project area.
- **Site 28142** is located along the northern boundary of the Park and consists of an *'auwai* (irrigation ditch) (Feature A) and a terrace (Feature B). The site is situated on the

¹ Site numbers are State Inventory of Historic Places (SIHP) numbers and are preceded by 50-10-06-.

northwest side of a small knoll. Feature A measures 16 m long and is approximately 1.0m wide and varies in height between 0.49 and 0.96 m high. The feature incorporates natural outcropping and basalt boulders in its construction. Feature B is approximately 1/3 m south of Feature A and measures 6.5 m long and 1.8 m wide and between 0.30-0.50 m high. Feature B is oriented in a north/south direction and may have acted as a diversion at the bottom of the 'auwai to disperse the water. It is likely that both Features A and B are traditional features that were reused in the 1946 Bureau of Reclamation Project.

Section 13-275-6, HAR, establishes criteria to evaluate the significance of historic sites. For resources to be significant they must possess integrity of location, design, setting, materials, workmanship, feeling, and association, and meet one or more of the following criteria:

Criterion A – Be associated with events that have made a significant contribution to the broad patterns of our history;

Criterion B – Be associated with the lives of persons significant in our past;

Criterion C – Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

Criterion D – Have yielded, or may be likely to yield, information important in prehistory or history.

Criterion E – Have an important value to the Native Hawaiian people or to another ethnic group of the State due to associations with 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, Sites 8804, 28140, 28141, 28142 are considered to be significant under Criterion D, in that they have yielded information important to the prehistory and history of the general Waimea area. These sites help to document agricultural pursuits in the Waimea region during late prehistoric and early historic times. It does not appear that any of these sites are significant under any of the remaining criteria.

POTENTIAL IMPACTS AND MITIGATION MEASURES

The archaeological inventory survey recommends passive preservation, if feasible, for the four sites considered to be significant based on Hawai'i Register Criterion D. If the sites can be preserved or avoided, no further work is needed at any of the sites. Passive preservation means leaving the site alone as is. No additional care or maintenance of the site is required and no permanent fencing or signage is considered necessary. A five meter preservation buffer would be

an acceptable distance around each of the sites to ensure that no work or damage would occur in these areas. Temporary orange plastic construction fencing should be erected around the sites during construction activities to ensure their protection during construction.

Should preservation or avoidance not be possible, further data recovery is recommended for Site 8804. No further work is needed at Sites 28140, 28141, and 28142. The remaining seven sites have previously undergone data recovery investigations therefore no further work is needed at these sites.

Archaeological monitoring is recommended for all ground altering activities (earthwork, trenching, etc.) during construction. The County of Hawai‘i DPR and its contractors will comply with all State and County laws and rules regarding the preservation of archaeological and historic sites. The construction documents will include a provision that should historic sites such as walls, platforms, pavements and mounds, or remains such as artifacts, burials, concentrations of shell or charcoal or artifacts be inadvertently encountered during construction activities, work will cease immediately in the immediate vicinity of the find and the find will be protected. The contractor will immediately contact the State Historic Preservation Division, which will assess the significance of the find and recommend appropriate mitigation measures, if necessary.

4.2 CULTURAL RESOURCES

Scientific Consultant Services Inc. prepared a cultural impact assessment for the Site to identify traditional customary practices within the Site and in the vicinity of the area. The cultural impact assessment was conducted in accordance with the OEQC Guidelines for Assessing Cultural Impacts and includes archival research of Waimea and the surrounding area. Findings of the cultural impact assessment and other relevant information are summarized below. Appendix D contains the complete cultural impact assessment.

Wahi Pana (Legendary Places)

Hawai‘i Island was divided into six *moku* (districts), Hāmākua, Hilo, Puna, Ka‘ū, Kona, and Kohala, representing six separate chiefdoms. The boundaries of the *moku* stayed essentially the same until after the Mahele of 1848, at which time Kohala was divided into separate North and South districts (Kamakau, 1961). The Park Site is located in the South Kohala District, the larger of the two.

The Park Site includes portions of two present-day *ahupua‘a* (land divisions): Waikoloa and Pu‘ukapu. However, in ancient times, the Park Site would have been considered to be within the traditional *ahupua‘a* of Waimea which included the land of Waikoloa (Cordy, 2000).

The literal meaning of Waimea is “reddish water (as from erosion of red soil)” (Pūku‘i, Elbert, & Mo‘okini, 1974). In *‘Ōlelo No‘eau* (Pūku‘i 1983), a book of Hawaiian sayings, Waimea is noted as an area of cool climate and chilling rains:

Hele po‘ala i ka anu o Waimea

Going in a circle in the cold of Waimea.

Said of the person who goes in circles and gets nowhere. Waimea, Hawai‘i, is a cold place and when foggy, it is easy for one unfamiliar with the place to lose his way (#757).

Ka ua Kipu‘upu‘u o Waimea

The Kipu‘upu‘u rain of Waimea.

An expression often used in song of Waimea, Hawai‘i. When Kamehameha organized an army of spear fighters and runners from Waimea, they called themselves Kipu‘upu‘u after the cold rain of their homeland (#1571).

Ke Ahu a Lono, a large stone mound, was regarded as the boundary marker between South Kohala and North Kona (Fornander 1916-20; Cordy 1987). Archival information identified Ke ahu a Lono as a commemorative marker built by the ruler Lonoikamakahiki to commemorate his reconciliation with his friend and premier Kapa‘ihiahilina. Another account of the construction of Ke Ahu a Lono is from *Ka Hōkū o Hawai‘i*, the Hawaiian Language newspaper. J. W.H.I Kihe, a native historian and resident of Pu‘uanahulu, recorded the construction of the *ahu* took place during the period when Lonoikamakahiki and his warriors were preparing for battle against Kamalālāwalu.

This Alter (Ahu) is an Alter of the warrior leaders and warriors of Lonoikamakahiki, built at the time he went to battle with Kamalalawalu, the king of Maui. Kamalalawalu and his forces landed at Kawaihe and began their ascent. This stone altar was built then and is called the Ahu made by Lono to this time (Ke-Ahu-a-Lono)... The Altar is at the boundary between Kona and Kohala, Near the road (alanui) to Kohala, made by Haanio [Jan. 31-Feb. 14, 1924; translated by Maly 1999:14].

‘Oli & Mele (Chants and Songs)

“Hole Waimea i ka Ihe a ka Makani” and the companion ‘oli “Hana Waimea i ka ‘Upena a ka Makani” speak of Waimea and the Kīpu‘upu‘u warriors, a band of warriors whose name is taken from the cold wind of Mauna Kea that blows at Waimea.

Land Commission Awards

During the Mahele, Parker, who had been leasing land from the government, filed a claim for the land with the Board of Commissioners. He was granted two acres of his choice in Royal Grant No. 7, dated January 14, 1847 (Brennan 1974). In 1850, 640 acres of land were granted to Parker’s wife Kipikāne, great granddaughter of Kamehameha I, Land Grant No. 358. These lands include the park site.

As part of the Mahele, one Land Commission Award (LCA 4219) was identified in the vicinity of the Park Site, on the border of Waikoloa and Pu‘ukapu. This is a recorded archaeological site (Site 21861²). The *kuleana* was claimed and awarded to Kaumu who stated he was cultivating two *kula* taro gardens, banana, and had two houses.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Based on the findings of the cultural impact assessment, the Site is not being utilized for cultural purposes. Because there were no cultural activities identified within the Site, creation of the Park will not have adverse effects on cultural practices. The assessment concludes that the Park will not affect the exercise of native Hawaiian rights, or the rights of any ethnic group, related to gathering, access or other customary activities.

4.3 UNEXPLODED ORDNANCE

The area between Waimea and Waikoloa is a former Military Maneuver Area. During World War II, the Navy used part of the area for artillery firing and the remaining area was used for troop maneuvers. The Army Corps of Engineers is leading a project to clear the unexploded ordnance in this area.

The Park Site is within the former Military Maneuver Area.

POTENTIAL IMPACTS AND MITIGATION MEASURES

According to survey data, removal of unexploded ordnance has been completed in the area. The Park Site has been surveyed and the identified unexploded ordnances have been removed.

4.4 ROADWAYS AND TRAFFIC

PB Americas, Inc. prepared a Traffic Impact Analysis Report (TIAR) to evaluate the potential traffic impacts resulting from the creation of Waimea District/Regional Park. The TIAR includes an analysis of existing conditions and projected future conditions both without and with the Park. Key conclusions of the TIAR are summarized below. Appendix E contains the complete TIAR.

Roadways

The following are descriptions of existing roadways in the vicinity of the Park Site.

Māmalahoa Highway - Māmalahoa Highway is a 2-lane undivided roadway with a posted speed limit of 55 mph outside of Waimea town. A speed limit of 35 mph is posted as Māmalahoa highway passes through Waimea town. Māmalahoa Highway from the Lindsey Road intersection to North Hawaii Community Hospital is a 4-lane divided road with a landscaped median.

² Site numbers are State Inventory of Historic Places (SIHP) numbers and are preceded by 50-10-06-.

Māmalahoa Highway in South Kohala generally runs parallel to Queen Ka‘ahumanu Highway and intersects Kawaihae Road in Waimea town.

Kawaihae Road – Kawaihae Road is a rural arterial roadway which provides east-west mobility from coastal North Kohala to Waimea. Its western terminus is at Queen Ka‘ahumanu Highway and it runs west to coastal North Kohala where it becomes Akoni Pule Highway. Approaching to Waimea town, Kawaihae Road becomes Lindsey Road. Kawaihae Road is a 2-lane undivided roadway with a posted speed limit of 35 mph. From west to east, Kawaihae Road increases in elevation from about 300 feet to 2,700 feet. The only signalized intersection along Kawaihae Road is in Waimea town where it intersects with Māmalahoa Highway. All other intersections are unsignalized with stop-sign control on the intersecting roadway approaches.

Ala ‘Ōhi‘a Road – Ala ‘Ōhi‘a Road³ connects with Māmalahoa Highway near the Parker Ranch rodeo grounds, then runs just south of Parker Ranch’s Lua‘i subdivision and shopping center, and reconnects with Māmalahoa Highway near Waimea Civic Center Park. Ala ‘Ōhi‘a Road functions as a bypass road to help relieve traffic through Waimea town and improve traffic flow.

POTENTIAL IMPACTS AND MITIGATION MEASURES

The Waimea District/Regional Park is located south of Ala ‘Ōhi‘a Road. Primary access to the Park will be provided via a new driveway connection to Ala ‘Ōhi‘a Road between the intersections of Māmalahoa Highway and Ka‘omoloā Road. Access to the park will be gated at the park entrance.

Projected Traffic Conditions

The TIAR evaluated two intersections on Ala ‘Ōhi‘a Road (Māmalahoa Highway and Park Access Road intersections) both with and without the Waimea District/Regional Park. Using standard engineering methods, the TIAR analyzed conditions for two forecast periods: 2018 and 2023. In general, it was assumed that 70 percent of the Park traffic on Ala ‘Ōhi‘a Road would be arriving and exiting from the east and 30 percent from the west.

The TIAR concluded that the level of service in 2018 and 2023 at both intersections will operate at acceptable levels both with and without the Park. In addition the TIAR estimated the following traffic counts with the Park:

- By 2018, the park will generate 15 outbound and 41 inbound trips during the AM peak traffic hour and 37 inbound and 102 outbound trips during the PM peak traffic hour; and

³ At the time of the traffic analysis, Ala ‘Ōhi‘a Road (formerly known as the Parker Ranch Connector Road) was not constructed. However, the TIAR assumed that the road would be in place before the construction of the Park. Therefore, the TIAR includes the projected traffic analysis for Ala ‘Ōhi‘a Road.

- By 2023, the park will generate 16 outbound and 42 inbound trips during the AM peak traffic hour and 42 inbound and 107 outbound trips during the PM peak traffic hour.

Overall, the Park will provide adequate vehicle circulation within the vicinity of the Site. The anticipated future traffic conditions with the Park will not warrant additional road improvements to existing roadways, including Ala ‘Ōhi‘a Road. The Park access intersection may be an unsignalized, stop-controlled intersection, with the park access being stop controlled. Although not warranted, exclusive left turn and right turn lanes out of the Park will be provided to reduce delay. Left turn and right turn storage lanes into the park are not warranted.

The TIAR recommends that the Ala ‘Ōhi‘a Road/Park Access Road intersection be monitored when major developments in the region and new roadway connections are constructed that would trigger traffic pattern changes. Improvements should be made when signal, left turn, and right turn warrants are met based on actual counts.

Internal Circulation

The park access road stretches from the access point on Ala ‘Ōhi‘a Road to the proposed youth baseball field at the eastern end. The road is approximately 2,040 feet long. It serves all the recreational facilities along the park’s northern edge, which includes the covered play court, the multi-use community building, and the community gathering/family recreation area. The athletic fields are served by two spur roads which branch off from the proposed access road. One spur road connects the access road at the point between the covered play court and the multi-use community building. The other spur road is located at the area between the youth baseball and the regulation baseball fields.

Parking

The Park will include both paved and unpaved parking. No parking deficiency is anticipated with typical operations at the Park assuming the proposed on-site supply of +/-740 spaces. Subject to consultation with and the approval of the Planning Director, it is anticipated that the majority of the parking lots will be paved. Unpaved parking will be provided along the park access and spur roads, including parallel or angle parking. It is assumed that the unpaved parking will only be graded and grassed. In addition to the designated parking, there are several open areas which may be used as practice fields and overflow parking as needed.

Per the estimated parking requirements, Phase 1 will need approximately 250 to 350 parking spaces, and Phase 2 will need a minimum of 30 to 50 additional parking spaces. This estimate is based on both the proposed uses at the Park and County standards. The actual number of parking spaces will be further determined during the design of park and building facilities. The number of parking spaces will also be reviewed and determined by the Director of the County Planning Department. A parking variance may be sought to: 1) allow less than the minimum number of required paved parking spaces as determined by Hawai‘i County Code; and 2) address the

acceptability of unpaved (graded and/or grassed) parking which will decrease the amount of impervious surface.

4.5 NOISE

The primary source of noise in the vicinity is aircraft flying to and from the Waimea-Kohala Airport to the south of the Site. A field measurement study of aircraft noise at Waimea-Kohala Airport was completed in 1997 as part of the airport Noise Compatibility Program. The study indicated that ambient noise levels around the airport range from 47 to 61 DNL (Day-Night Sound Level). There is an aviation easement over portions of Parker Ranch lands, Department of Hawaiian Home Lands parcels, and privately owned parcels in Waimea Town (Edward K. Noda & Associates, Inc., 1999). Easement rights include the right to cause noise. The flight tracks of noisier jet aircraft typically remain west of the Park Site and are aligned with the airport's single runway.

Other sources of noise include natural sources, such as wind and rain. Waimea is especially known for its strong wind.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Construction activities will inevitably create temporary noise that may have an impact on neighboring properties. These noise impacts are unavoidable, but will be temporary. If necessary, contractors will employ mitigation measures to minimize those temporary noise impacts including the use of mufflers and implementing construction curfew periods. Pursuant to Chapter 11-46, HAR, all construction activities must comply with all community noise controls.

Temporary noise impacts will also be generated after the Park is constructed during the course of regular park maintenance, and community sporting events. These noise disturbances are an unavoidable element of park usage but nonetheless will be intermittent and of short duration.

The Park is not expected to be subject to unacceptable noise levels due to the proximity to the airport. Under Federal Aviation Administration noise compatibility guidelines, recreational uses are acceptable uses within areas above the 60 DNL contour and are usually encouraged, since this tends to preclude future development of noise sensitive uses on the same lands.

4.6 AIR QUALITY

The air quality around the Site is generally excellent year-round. The prevailing northeasterly tradewind flow tends to push any human-made or natural pollutants out to sea. However, the amount of particulates and other air pollutants can significantly increase during periods when the winds shift to a southeasterly direction (B.D. Neal & Associates, 2002). Air flow from this direction carrying volcanic smog (more commonly referred to as vog) over and around the mountain barrier, can lead to an increase in pollution and a decrease in visibility. Sulfur Dioxide

from Kīlauea is the primary pollutant monitored by the Environmental Protection Agency throughout Hawai‘i County (Longo et al, 2010).

POTENTIAL IMPACTS AND MITIGATION MEASURES

No State or Federal air quality standards will be violated due to the construction of the Waimea District/Regional Park.

Short-term impacts that would result from the Park would be the emission of fugitive dust during site preparation and construction. An effective dust control plan will be implemented as necessary. All construction activities will comply with the provisions of Section 11-60.1-33, HAR related to Fugitive Dust. Measures to control dust during various phases of construction include:

- Providing an adequate water source at the site prior to start-up construction activities;
- Irrigating the construction site during periods of drought or high winds and all dry conditions;
- Landscaping and rapid covering of bare areas, including slopes, starting from the initial grading phase;
- Disturbing only the areas of construction that are in the immediate zone of construction to limit the amount of time that the areas will be subject to erosion;
- Providing adequate dust control measures during weekends, after hours, and before daily start-up of construction activities; and
- Installing silt screening in the areas of disturbance.

Long-term negative impacts related to air quality are not expected.

4.7 VISUAL RESOURCES

Waimea is famous for its pastoral character and scenic vistas. Kohala Mountain provides a backdrop of rolling hills covered with verdant pastures. Mauna Kea provides a distant but dramatic mass as it rises steeply above the plateau.

The pu‘u north of Waimea Town have great cultural, historical, and visual importance for the community. The County of Hawai‘i General Plan identifies several of these pu‘u as exceptional natural beauty sites which include Pu‘u La‘ela‘e, Pu‘u Hoku‘ula, and Pu‘uiki. The approximate elevations for these pu‘u are 3,665 feet, 3,377 feet, and 3,768 feet above, respectively.

The Park is characterized by open pasture land dominated by kikuyu grass and low rocky outcrops.

POTENTIAL IMPACTS AND MITIGATION MEASURES

The Waimea District/Regional Park will be partially noticeable from Ala ‘Ōhi‘a Road and will change the appearance of the Site from open grassland to landscaped fields and park facilities. The placement and height of the Park buildings will not obstruct any view planes toward the pu‘u. In addition the Site is located to the very south of Waimea Town away from development.

Lighting requirements in force at the time of building permit application will be applied. In compliance with Section 14-50, Hawai‘i County Code, exterior lighting will be shielded so as to lower the ambient glare caused by unshielded lighting to the astronomical observatories located on Mauna Kea. In addition, night-time construction will be avoided.

4.8 INFRASTRUCTURE AND UTILITIES

4.8.1 Water System

The South Kohala district is supplied by the Waimea Aquifer System, which also supplies the western portion of the Hāmākua district. The system extends from the saddle area between Mauna Kea and Mauna Loa to Waimea and along the western shores at Kawaihae to Puakō. The sustainable yield of the Waimea Aquifer is 24.0 million gallons per day (MGD), and existing water use is 9.173 MGD (Wilson Okamoto Corporation, 2008).

The County of Hawai‘i Department of Water Supply (DWS) is the major purveyor for potable water. DWS maintains an existing 12-inch water line that runs along Māmalahoa Highway to a point approximately 650 feet north of the intersection of Māmalahoa Highway/Ala ‘Ōhi‘a Road intersection. Presently, there are no water transmission lines in the area south of Ala ‘Ōhi‘a Road or within the existing right-of-way.

The State Department of Agriculture (DOA) manages the Waimea Irrigation System which provides non-potable water to active agricultural lands in Waimea. An 18-inch irrigation line is located within Ala ‘Ōhi‘a Road.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Potable water will be supplied by the County Department of Water Supply (DWS), which draws water from a network of groundwater wells. The existing point of connection is 650 feet north of the Māmalahoa Highway/Ala ‘Ōhi‘a Road intersection (see Figure 14).

Depending on the timing of development, a water main will be installed from the Park to either:

1. The existing point of connection on Māmalahoa Highway (650 feet north of Māmalahoa Highway/Ala ‘Ōhi‘a Road intersection), if the Park is constructed before Luala‘i Subdivision Phase 4; or



DATE: 8/5/2013

LEGEND

-  Waimea District / Regional Park
- Existing & Proposed Water Lines**
-  Existing Water Lines
-  Lualai Phase 4 Proposed Water Lines
-  Proposed Waimea Park Off-site Water Lines

FIGURE 14:

Existing and Proposed Potable Water System

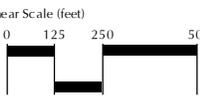
**WAIMEA DISTRICT/
REGIONAL PARK**

County of Hawaii Department of Parks & Recreation Island of Hawaii

North



Linear Scale (feet)




PBR HAWAII
KAPPA SIGMA SIGMA

- Up to the Māmalahoa Highway/Ala ‘Ōhi‘a Road intersection if the Luala‘i Subdivision Phase 4 is developed before the Park, since the Luala‘i Subdivision Phase 4 will need to extend the water line in Māmalahoa Highway to the Māmalahoa Highway/Ala ‘Ōhi‘a Road intersection.

Within the park site, the water main will extend to the covered play court and the multi-use community building to provide adequate fire protection for these two structures. Beyond this area, the water main will provide water service to the three comfort stations and irrigate the play fields.

In a letter dated December 2, 2009, DWS stated that any meter(s) serving the Park will require the installation of a reduced pressure type backflow prevention assembly within five feet of any meter on private property. DWS must inspect and approve the installation prior to commencement of water services. In addition, prior to effecting a water commitment for the park the estimated maximum daily water usage calculations for the park must be submitted to DWS for review and approval. Coordination with DWS is ongoing.

Potable water demand for the proposed Park uses are designed using water consumption assumptions based on similar developments. The estimated water consumption is summarized in Table 1 below:

Table 1: Estimated Potable Water Demand

Usage	Demand (gallons per day)
Covered Play Court	10,000
Multi-Use Community Building	7,500
Comfort Stations (3)	9,000
Fire Flow at Key Buildings ⁴	2,000
Irrigation Water ⁵	42,000

*The potable water demand quantities listed here are estimates provided for planning purposes only.

The State DOA’s Waimea Irrigation System is the primary source of irrigation water for farmers at the state’s Lalamilo Farm Lots and does not have adequate capacity to serve the Park uses. Therefore it will be necessary to use potable water to irrigate the Park sport fields and the limited landscaping around the buildings.

⁴ The fire flow requirement governed in sizing of the water main.

⁵ The total irrigation water consumption is calculated based on the estimated average rate and the estimated total landscaped area.

4.8.2 Wastewater System

No County wastewater system currently services the area south of Ala ‘Ōhi‘a Road.

Waimea Wastewater Company (WWC), a subsidiary of Parker Ranch, operates a private wastewater system in Waimea, which is regulated by the Hawai‘i Public Utilities Commission (PUC). The system is made up of gravity sewers and pump stations. The nearest pump station and sewerage plant to the Site is on Māmalahoa Highway near the Lālāmilo Farm Road intersection. The pump station collects wastewater from the Waimea Shopping Center and Lua‘i Subdivision Phase 1, 2, and 3. The wastewater line runs along Māmalahoa Highway. An 8-inch lateral line is located within the Ala ‘Ōhi‘a Road right-of-way from Māmalahoa Highway to Waikani Street. This line is proposed to ultimately serve Lua‘i Subdivision Phase 4, yet to be constructed.

POTENTIAL IMPACTS AND MITIGATION MEASURES

The Park is proposed to be connected to the Parker Ranch wastewater system via the 8-inch lateral line. However, no formal discussions have taken place with Parker Ranch and the County of Hawai‘i regarding a direct connection to the wastewater system and if there is capacity available to service the wastewater flows from the Park. Once an agreement is reached between the County and Parker Ranch, WWC will amend their service area to include the Park which will require review and approval from the PUC. An engineering and financial analysis will be conducted to ensure the expanded service area would not be detrimental to existing customers.

If the connection is approved, a new 8-inch wastewater line will be installed within Ala ‘Ōhi‘a Road to extend the existing lateral from Waikani Street to the Park. Based on preliminary grading plans, wastewater from the Park’s buildings (covered play court, multi-use community building, and comfort station #1) will gravity flow to the pump station on Māmalahoa Highway.

The location and elevation of comfort stations #2 and #3 will not allow them to be serviced by a gravity flow sewer. Instead, wastewater will be collected on-site using individual wastewater systems (IWS), such as septic tanks with leach fields or setting tanks. The IWS shall be designed to minimize or eliminate infiltration of flood waters into the system and discharge from systems into flood waters. Septic systems shall also be located to avoid impairment to them or contamination from them during flooding. Both gravity sewers and individual wastewater systems will need to be located above the designated base flood elevations to prevent sewer discharge during major storm events.

If the Park is not able to connect to the Parker Ranch wastewater system, wastewater from the covered play court, multi-use community building and comfort station #1 will be serviced by three IWSs. Since the playfields near these facilities are at lower elevations and within the flood plain, open space around these facilities may limit the use of leach fields. If the space required

for leach fields is not available, the use of settling tanks will be examined. The design of these systems will be coordinated with the appropriate agencies.

4.8.3 Drainage System

The Site serves as a detention basin for Kamuela and Lanimaumau Streams. In 1997, the stream channels were diverted toward open pasture land, which now includes the Park Site. Two approximately 10-foot high free standing berms were constructed at the Site as part of the diversion. The design volumes of the basins are approximately 1 million cubic feet (upper basin) and 1.77 million cubic feet (lower basin).

The two berms and the associated culverts and overflows are the major components of the drainage basins but they can be modified and reconfigured as long as the designed capacities of the basins are maintained. The modification of the berm system is a part of the flood plain amendment application which will be reviewed and approved by FEMA.

POTENTIAL IMPACTS AND MITIGATION MEASURES

During 100-year storm events, flooding is expected on all of the sport fields. The detention basins will operate as designed and slowly drain water through the pipes in the berms. It is assumed that there will be no use of the sport fields during major storm events, and proper warning measures will be taken to mitigate any danger caused by deep ponding of water in the basins.

A floodplain amendment will be sought to modify the existing drainage system. The ground elevation will be raised to create a suitable area for the planned buildings. At the same time, certain areas will be excavated to offset the amount of displaced drainage capacity caused by the fill. The overall grading will provide a net increase in drainage storage volume. The design volumes of the basins will increase to approximately 1.93 million cubic feet (upper basin) and 1.96 million cubic feet (lower basin).

The proposed grading maintains the general location of the spillway in the upper basin but moves the location of its pipe outlet to the lower basin further south to avoid conflicting with the proposed sport fields and seating areas above and below the basin. The spillway and outlet pipe of the lower basin will be moved to facilitate directing any overflow/discharge from entering Parker Ranch Support Facilities downstream. The entire area proposed for the ball fields will be graded, some portion is filled and some portion is excavated to create at minimum a 0.5 percent finish slope toward the drain outlet. The two existing outlet pipes will need to be abandoned in place.

Ideally all mass grading proposed for Phase 1 and Phase 2 would be completed during Phase 1 and not just for the first 24 acres; however if grading and fill for the entire 50-acre Site cannot be done in Phase I, grading will be done by phase and the floodplain amendment process will have

to be undertaken twice: once when the grading is completed for Phase 1, and then again when grading is complete for Phase 2. The intent of the proposed mass grading is summarized as follows:

- To maintain or increase the storage volume of the existing drainage detention basins;
- To maintain the general flow pattern through the existing drainage basins;
- To keep all the architectural facilities to a minimum of one foot above the designated flood elevation to conform to Hawai‘i County’s standard;
- To balance the fills with excavations on the project site;
- To adjust the primary drainage flow and avoid conflicting with proposed athletic fields and spectator seating areas; and
- To direct overflow/discharge from entering Parker Ranch building facilities downstream of the lower berm.

Roadway and parking lot drainage shall be designed based on Hawai‘i County’s 10-year storm standard, and the runoff will be disposed by using drywells on the site.

4.8.4 Solid Waste

The County of Hawai‘i Solid Waste Division operates and maintains, either by County personnel or by contracted services, all solid waste collection and disposal facilities on the island. This includes two landfills, twenty-one transfer stations and island wide hauling operations in accordance with local, state and federal guidelines and regulations.

The nearest transfer station to the Park Site is the Waimea Transfer Station, located approximately 1.5 miles from Waimea town, just before the 59-mile marker.

Currently, solid waste is not being generated at the Park Site.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Waste generated by site preparation will primarily consist of green waste from grading, and solid waste during construction. Soil and rocks displaced from grading and clearing will be used as fill within the site as needed. To reduce waste during construction, recycled materials and locally produced products will be used where possible.

After construction, the park will generate solid waste related to park operations and events. To minimize waste, recycling bins will be provided for park users.

Waste that cannot be recycled will be disposed of at the Waimea Transfer Station.

4.8.5 Electrical and Communications System

Electrical power for the South Kohala area is provided by Hawaiian Electric Company (HELCO) and telephone service is provided by Hawaiian Telcom.

As of December 17, 2009 HELCO's system peak load is 198,200 kW, and the total generation system capability is 271,850 kW. The reserve margin is 37 percent. The area is served by the existing 10.0 MVA Lālāmilo electrical substation and a 12.470 kV overhead distribution system along Kawaihae Road and Māmalahoa Highway.

As part of the construction of Ala 'Ōhi'a Road, electrical lines were installed from Māmalahoa Highway to Waikani Street. However, the lines will not be energized until the Luala'i Subdivision Phase 4 is built.

POTENTIAL IMPACTS AND MITIGATION MEASURES

On-site power will need to be provided for the covered play court, the multi-use community building, and the three comfort stations. Field lighting will need to be provided for the football field, soccer field, baseball field, and youth baseball field. The estimated electrical loads for the Park are: 1,100 kVA (Phase 1) and 250 kVA (Phase 2).

Although HELCO has adequate electrical generation to serve the Park's electrical loads, the capacity of the existing substation is not adequate to serve the anticipated load. According to the HELCO letter dated December 17, 2009, a second substation transformer at the existing Kamuela substation, or a new substation, may be required.

Power to the Park is proposed to be routed underground in concrete encased electrical ductlines to minimize future repair and maintenance costs and visual impacts. If Luala'i Phase 4 Subdivision is constructed prior to the Park, the electrical connections can be made underground at the Waikani Street intersection. If the Park is built first, a new distribution system will be required between Lālāmilo substation and the Park Site. Should this option drive up construction costs significantly, the underground distribution system may be changed to an overhead distribution system. After the Park's detailed loading and civil plans are submitted, HELCO will prepare a firm cost statement for the off-site distribution system to connect to the park.

All conduits and light fixtures for playfields within the flood plain will be designed to be submerged during flood conditions. All electrical equipment such as transformers and switch boxes shall be located above the flood elevation. Area lighting shall be provided for all park roadways and parking areas.

Sports field lighting and other similar items usually use underground electrical circuits. In the flood plain, waterproof wire connectors can be specified for use in the underground circuits. In comparison with standard installation, waterproof wire connectors will not significantly increase the cost. The electrical control devices such as panel boards or switch boxes should either be

installed above the flood elevation or if the mounting height is prescribed by American with Disability Act Accessibility Guidelines (ADAAG), these accessories should be installed outside the flood zone.

HELCO recommends measures for energy efficiency and conservation to reduce the maximum electrical demand and energy consumption.

4.9 SOCIO-ECONOMIC CHARACTERISTICS

4.9.1 Population

The overall population of Hawai'i County has exhibited relatively stable growth over the past decade. The U.S. Census reported that the population of Hawai'i County was 185,079 people in 2010, a 24.5 percent increase from the 2000 population of 148,677 people.

While the island population remained relatively stable, the South Kohala population has increased dramatically due to the growth in tourism within the district. The population of South Kohala was 17,627 people in 2010, a 34 percent increase from the 2000 population of 13,131 (U.S. Census Bureau).

The Site is within the U.S. Census Bureau's Waimea Census Designated Place. According to the data, the population for the Waimea Census Designated Place was 9,212 people in 2010, a 31 percent increase from the 2000 population of 7,028 (U.S. Census Bureau).

POTENTIAL IMPACTS AND MITIGATION MEASURES

Waimea District/Regional Park will not affect area population and will not create additional strain on other area facilities. The construction of the Park will provide a recreational amenity for the entire district.

4.9.2 Economy

The South Kohala district includes a wide variety of economic activities, such as tourism, agriculture, ranching, high technology ventures, support services, shipping, and construction. Of these, tourism is the largest industry in the State and its presence in the region is primarily due to the resort projects that have been developed in South Kohala since the 1960s.

POTENTIAL IMPACTS AND MITIGATION MEASURES

The Park will have little impact on the growth of the regional economy, but will provide residents and visitors alike with a much needed recreational amenity. Through its indirect impacts, the Park will contribute more to the diversification of the local economy as well as enhance South Kohala as a support area for regional population growth and visitor industry development.

The park will provide a suitable venue for local teams to host tournaments and league games providing them a chance to fundraise for their organizations via food and concessions and bring more visitor traffic and spending to local businesses.

4.9.3 Environmental Justice

On February 11, 1994, President Clinton signed Executive Order (E.O.) 12898. This E.O. directs federal agencies to make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high adverse human health or environmental effects of its activities on minority and low-income populations.

Each Federal agency must make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health, environmental, economic, and social effects of its programs, policies, and activities on minority and low-income populations. While this EA is not subject to the Federal review process, the notion of environmental justice has been evaluated.

The Site of the Waimea District/Regional Park is located in a predominantly mixed-race neighborhood typical of many in the State. No single cultural or ethnic group in the vicinity of the Site is disproportionately impacted relative to the South Kohala community.

POTENTIAL IMPACTS AND MITIGATION MEASURES

The Park would provide a needed recreational facility for the South Kohala District. The availability of a district/regional park in the immediate vicinity of the Site and neighboring properties is a positive and reassuring public service.

Although several sites were initially evaluated, this Site was not selected because of the neighborhood's "economic status." The Site was chosen as the preferred site based on the following criteria:

- Adjacent to Waimea Town and requires less travel distance.
- Direct access to the planned Parker Ranch equestrian trail.
- Estimated infrastructure and civil improvement costs are the lowest among all of the alternative sites.
- Thought to contain less archaeological resources and historic uses due to previous detention basin construction.
- Wind is not too strong and median annual rainfall is not too low.
- Good parcel configuration and adequate suitable area for future expansion.
- Not within the Lālāmilo Farm Lots buffer area.
- Soil productivity rating is relatively high.
- Not in the airport protection zone and avigation easement.

As such, the notion of environmental justice has been evaluated, and there would be no activity performed that would in any way create discrimination or isolation of any group of people based on the siting or purpose of the Waimea District/Regional Park.

4.10 PUBLIC SERVICES AND FACILITIES

4.10.1 Schools

Public schools in Waimea include Waimea Elementary School (Grades K-5) and Waimea Middle Public Conversion Charter School (Grades 6-8). Both schools are located on Māmalaha Highway near the intersection of Lindsey Road. Total student enrollment for Waimea Elementary and Waimea Middle is 552 and 237, respectively. The Kanu o ka ‘Āina New Century Public Charter School is a Hawaiian-focused, bi-lingual public charter school servicing 236 students in grades K-12 during the 2012-2013 school year. The school’s facilities are located at Hālau Ho‘olako within the Department of Hawaiian Home Lands’ Kuhio Village in Waimea.

Private schools in Waimea include Kamehameha Schools Waimea Preschool, Pūnana Leo o Waimea, Hawai‘i Preparatory Academy (HPA), Parker School, and Waimea Country School. Hawai‘i Preparatory Academy serves students from Kindergarten through grade 12 on two separate campuses. The Upper School is located mauka of Kawaihae Road at its intersection with Kohala Mountain Road. The Lower and Middle Schools are located in Waimea town. The school has boarding facilities for students in grades six through 12. Parker School is located near the intersection of Kawaihae Road and Lindsey Road, and includes grades K through 12. Waimea Country School includes grades K through 6 at the St. James’ Circle campus. There is also a Montessori Pre-School near Opelo Road.

POTENTIAL IMPACTS AND MITIGATION MEASURES

The Waimea District/Regional Park will not generate new residents or introduce new school-aged children to the area. Therefore, no additional demands will be placed on DOE facilities.

Because Waimea does not have its own public high school, facilities traditionally associated with high school athletics are not available locally. The Park will include regulation sized fields for football, soccer, and baseball as well as a covered play court for sports such as volleyball and basketball. The Park’s multi-use community building will provide indoor space to house a variety of leisure classes and youth after school activities. These recreational facilities support school athletic, recreational, educational and artistic programs.

The provision of additional recreation venues is anticipated to have positive impacts on school-age children as it provides greater opportunities for participating in positive, organized sports where coaching and mentorship can be provided and contribute to healthy living and healthy lifestyle. It is also believed that emphasizing recreational opportunities at younger ages leads to

greater development of athletic skills and increases levels of athletic prowess and competitiveness beneficial to high school athletics.

4.10.2 Police, Fire and Medical Services

Police Protection

The Hawai‘i County Police Department, Area II Patrol, South Kohala District provides law enforcement and patrol services for Waimea. A total of 33 sworn officers work in the District (Hawai‘i County Police Department, 2011).

Fire Protection

The Hawai‘i County Fire Department, West Battalion, Station No. 9 provides fire protection and suppression services in Waimea. The Waimea Station is an Engine Company with one engine, a tanker and a medic unit. Backup support is provided by Engine Company No. 14 in South Kohala, which has one engine, one ladder truck, one tanker, a medic unit, helicopter, and fuel truck. At any one time, there are five to six firefighters on duty.

The police station and fire station are both located at the Waimea Civic Center Park on Kamāmalu Street. The Park Site is situated approximately one mile southwest of the Waimea Civic Center Park.

Medical Services

The North Hawaii Community Hospital is a full service acute care hospital located across from the Keck Observatory Headquarters in downtown Waimea. The hospital has 39 beds, 24 hour emergency services, 370 hospital employees of which 145 are medical staff. The hospital serves approximately 30,000 residents and visitors of the northern region of the Hawai‘i Island which includes the districts of South Kohala, North Kohala and parts of Hāmākua and North Kona. The hospital is a non-profit entity that is community owned. In addition to the North Hawai‘i Community Hospital there are numerous holistic and alternative health practitioners in this district.

POTENTIAL IMPACTS AND MITIGATION MEASURES

There may be an occasional and unavoidable demand for police, fire, and medical services associated with the Park, however, it is anticipated that the existing services will not be adversely affected by the Park.

4.10.3 Recreational Facilities

Public parks in Waimea include the Waimea Civic Center Park near Church Row, Church Row Park, Waimea Soccer Field, and Waimea Park at the corner of Lindsey Road and Kawaihae

Road. Waimea Park totals 10.5 acres and serves as the area's recreation center with a community center, playfields and facilities for spectators, tennis courts, restrooms, skate park, outdoor basketball court, and playground. This park is often a rest and picnic stop for travelers. Parking, however, is undefined and restroom facilities are inadequate. Waimea Civic Center Park has an open field used for soccer. Church Row Park is a 2.8-acre passive roadside park across from the Waimea Civic Center Park. Waimea soccer field is located behind the Waimea Center near the police station.

Thelma Parker Gymnasium, a State-owned facility the county utilizes on a restricted/limited basis, was constructed in the 1930's and is one of the older buildings in Waimea. The original exterior has been kept intact while minor upgrades have been completed for the interior. The gym is in constant use by community sports leagues, fitness classes, and community interest activities. During the summer, the gym is the venue for summer fun programs.

Waimea Community Center provides limited recreational opportunities for the area's youth and is primarily a venue for smaller gatherings like birthday and graduation parties.

Ke Ala Kahawai o Waimea is a multi-use pathway that begins at Church Row in Waimea Town, and follows Waikōloa Stream west through town, extending west along Kawaihae Road, and terminates across from the Kamuela View Estates subdivision (County of Hawai'i, 2011). This project is in initial stages of development with only rudimentary trail improvements existing currently.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Existing recreational facilities are inadequate to support the many citizens of the area. The existing gym is old and too small for the wide range of athletic, school, and community needs. The new Waimea District/Regional Park will provide improved and more diverse athletic and recreational opportunities to a larger residential community in Waimea.

District parks, with minimum size of 20 acres, offer diversified types of recreational activities to an entire district and may include facilities for indoor and outdoor sports. Regional parks are generally 50+ acres in size, and provide the same type of facilities as a district park. However, regional parks may offer more facilities and serve a greater geographical region.

Per the land area standards for both district and the regional parks, the proposed Waimea District/Regional Park will be developed in two phases. In the first phase approximately 26 acres will be developed as a district park. For the second phase an additional 24 acres will expand the district park into a regional park. Future expansions beyond 50 acres are possible provided land is available and the funds exist.

To address the community's immediate recreational needs, the first phase of the Park is anticipated to include the following amenities and facilities:

- Covered play court;
- Multi-use community building;
- Community gathering/family recreation area;
- One comfort station;
- Pavilion;
- One regulation football field;
- One regulation rugby field which overlaps with one regulation soccer field;
- One youth baseball field; and
- Multi-use walkway and trail.

The second phase is proposed to include:

- An additional rugby field/soccer field;
- An additional youth baseball field;
- Two regulation baseball fields;
- Extended multi-use walkway and trail;
- Two additional comfort stations; and
- Conversion of covered play court to gymnasium, budget permitting.

However development of the park may be further divided into smaller phases based on demand, available funds, and other factors.

5 LAND USE CONFORMANCE

State of Hawai‘i and Hawai‘i County land use plans, policies, and ordinances relevant to Waimea District/Regional Park are described below.

5.1 STATE OF HAWAI‘I

5.1.1 Chapter 343, Hawai‘i Revised Statutes

Compliance with Chapter 343, HRS is required as described in Section 1.4.

5.1.2 State Land Use Law, Chapter 205, Hawai‘i Revised Statutes

The State Land Use Law (Chapter 205, HRS), establishes the State Land Use Commission (LUC) and authorizes this body to designate all lands in the State into one of four Districts: Urban, Rural, Agricultural, or Conservation.

The Waimea District/Regional Park site is located within the State Agricultural and Urban Districts (Figure 5). Park use is permitted in these State Land Use districts.

5.1.3 Coastal Zone Management Act, Chapter 205A, Hawai‘i Revised Statutes

The Coastal Zone Management Area as defined in Chapter 205A, HRS, includes all the lands of the State. As such, the proposed Waimea District/Regional Park lies within the Coastal Zone Management Area.

The relevant objectives and policies of the Hawai‘i Coastal Zone Management (CZM) Program, along with a detailed discussion of how Waimea District/Regional Park conforms with these objectives and policies, is discussed below.

Recreational Resources

Objective: Provide coastal recreational opportunities accessible to the public.

Policies

- (A) *Improve coordination and funding of coastal recreational planning and management; and*
- (B) *Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:*
 - (i) *Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;*
 - (ii) *Requiring replacement of coastal resources having significant recreational value including, but not limited to surfing sites, fishponds, and sand beaches, when such resources will be unavoidably damaged by development; or requiring*

- reasonable monetary compensation to the State for recreation when replacement is not feasible or desirable;*
- (iii) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;*
 - (iv) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;*
 - (v) Ensuring public recreational uses of county, state, and federally owned or controlled shoreline lands and waters having recreational value consistent with public safety standards and conservation of natural resources;*
 - (vi) Adopting water quality standards and regulating point and nonpoint sources of pollution to protect, and where feasible, restore the recreational value of coastal waters;*
 - (vii) Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing; and*
 - (viii) Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, and county authorities; and crediting such dedication against the requirements of section 46-6;*

Discussion: The Waimea District/Regional Park is not a coastal development, is not located on the coastline, and is not in the SMA; therefore, policies regarding shoreline recreation resources are not applicable; however to protect marine resources for purposes including recreation, the State of Hawai‘i has adopted water quality standards. Generally, these standards will require the submittal and adherence to a National Pollution Discharge Elimination System (NPDES) permit. This permit requires compliance with best management practices during construction to minimize soil erosion into adjacent waterways. The NPDES permit will also include requirements to maintain water quality during operation. A NPDES permit will be required for the Park.

Historic Resources

Objective: *Protect, preserve, and, where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture.*

Policies

- (A) Identify and analyze significant archaeological resources;*
- (B) Maximize information retention through preservation of remains and artifacts or salvage operations; and*

- (C) *Support state goals for protection, restoration, interpretation, and display of historic resources;*

Discussion: The Park will not adversely affect historic resources. The archaeological inventory survey recommends passive preservation, if feasible, for the four archaeological sites found within the Park which are considered to be significant based on Hawai'i Register Criterion D. Should preservation or avoidance not be possible, the archaeologist determined that the mapping, written description, and photography of the sites adequately documents them and no further work or preservation is recommended for Sites 28140 through 28142. Site 8804 is slated for further data recovery.

Scenic and Open Space Resources

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

Policies

- (A) *Identify valued scenic resources in the coastal zone management area;*
- (B) *Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;*
- (C) *Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources; and*
- (D) *Encourage those developments that are not coastal dependent to locate in inland areas;*

Discussion: The proposed Waimea District/Regional Park site will be located inland, away from the shoreline; therefore, it is anticipated that there will be no effect on the quality of the coastal scenic resources.

Coastal Ecosystems

Objective: *Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.*

Policy A: *Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;*

Policy B: *Improve the technical basis for natural resource management;*

Policy C: *Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;*

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

Policy E: Promote water quantity and quality planning and management practices that reflect the tolerance of fresh water and marine ecosystems and maintain and enhance water quality through the development and implementation of point and nonpoint source water pollution control measures.

Discussion: The proposed Waimea District/Regional Park will be located far inland from the coastline. Therefore, it is anticipated that there will be no effect on the quality of the coastal ecosystems.

Economic Uses

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

Policy A: Concentrate coastal dependent development in appropriate areas;

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

Policy C: Direct the location and expansion of coastal dependent developments to areas presently designated and used for such developments and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:

(i) Use of presently designated locations is not feasible;

(ii) Adverse environmental effects are minimized; and

(iii) The development is important to the State's economy.

Discussion: Waimea District/Regional Park is not a coastal dependent development, is not located on the coastline, and is not in the SMA; therefore, these policies are not applicable.

Coastal Hazards

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

Policy A: Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and non-point source pollution hazards;

Policy B: Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and non-point source pollution hazards;

Policy C: Ensure that developments comply with requirements of the Federal Flood Insurance Program; and

Policy D: Prevent coastal flooding from inland projects.

Discussion: The Park sits far inland from the coastline and will not exacerbate any coastal hazards.

Managing Development

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

Policy A: Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;

Policy B: Facilitate timely processing of applications for development permits and resolve overlapping or conflicting permit requirements; and

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

Discussion: The Waimea District/Regional Park is not a coastal development, is not located on the coastline, and is not in the SMA; however, the County DPR held several community meetings and provided opportunity for public input in the course of planning the Park.

Pre-consultation comments were obtained and are reproduced in Appendix A. In addition, this EA discusses potential impacts and mitigation measures of Waimea District/Regional Park and provides an opportunity for input.

Public Participation

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

Policy A: Promote public involvement in coastal zone management processes;

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

Policy C: Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.

Discussion: The Waimea District/Regional Park is not a coastal development, is not located on the coastline, and is not in the SMA; however, the County DPR held several community meetings and provided opportunity for public input in the course of planning the Park.

Pre-consultation comments were obtained and are reproduced in Appendix A. In addition, this EA discusses potential impacts and mitigation measures of Waimea District/Regional Park and provides an opportunity for input.

Beach Protection

Objective: Protect beaches for public use and recreation.

Policy A: Locate new structures inland from the shoreline setback to conserve open space, minimize interference with natural shoreline processes, and minimize loss of improvements due to erosion;

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

Policy C: Minimize the construction of public erosion-protection structures seaward of the shoreline.

Discussion: Waimea District/Regional Park is not a coastal dependent development, is not located on the coastline, and is not in the SMA; therefore, these policies are not applicable.

Marine Resources

Objective: Promote the protection, use, and development of marine and coastal resources to assure their sustainability.

Policy A: Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;

Policy B: Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency;

Policy C: Assert and articulate the interests of the State as a partner with Federal agencies in the sound management of ocean resources within the United States exclusive economic zone;

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

Policy E: Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.

Discussion: The Waimea District/Regional Park is not a coastal development, is not located on the coastline, and is not in the SMA; therefore, policies regarding shoreline recreation resources are not applicable; however to protect marine water quality the Project will be designed and built in compliance with all applicable Federal, State, and County regulations pertaining to stormwater management including Chapter 10 (Erosion and Sedimentation Control) of the Hawai‘i County Code and the DOH NPDES permit program.

5.1.4 Hawai‘i State Plan

The Hawai‘i State Plan (Chapter 226, HRS), establishes a set of goals, objectives and policies that serve as long-range guidelines for the growth and development of the State. Objectives and policies pertinent to the proposed project are as follows:

HRS § 226-21: Objectives and policies for socio-cultural advancement – education.

Objective: Planning for the State's socio-cultural advancement with regard to education shall be directed towards achievement of the objective of the provision of a variety of educational opportunities to enable individuals to fulfill their needs, responsibilities, and aspirations.

Policies:

- (1) Support educational programs and activities that enhance personal development, physical fitness, recreation, and cultural pursuits of all groups.*
- (2) Ensure the provision of adequate and accessible educational services and facilities that are designed to meet individual and community needs.*

- (8) Emphasize quality educational programs in Hawaii's institutions to promote academic excellence.*

Discussion: The Waimea District/Regional Park will provide educational and recreational opportunities for Waimea residents to enable them to fulfill their needs, responsibilities, and aspirations. The Park will support educational programs and activities that enhance personal development, physical fitness, recreation, and cultural pursuits. It is designed to provide an adequate and accessible educational and recreational facility to meet individual and community needs.

HRS § 226-23: Objectives and policies for socio-cultural advancement – leisure.

Objective: Planning for the State's socio-cultural advancement with regard to leisure shall be directed towards the achievement of the objective of the adequate provision of resources to accommodate diverse cultural, artistic, and recreational needs for present and future generations.

Policies:

- (2) Provide a wide range of activities and facilities to fulfill the cultural, artistic, and recreational needs of all diverse and special groups effectively and efficiently.
- (3) Enhance the enjoyment of recreational experiences through safety and security measures, educational opportunities, and improved facility design and maintenance.

- (5) Ensure opportunities for everyone to use and enjoy Hawaii's recreational resources.

Discussion: The Waimea District/Regional Park supports planning for the State's socio-cultural advancement with regard to leisure through the provision of a quality educational and recreational facility meets community needs. The facility will contribute toward fulfilling recreational needs of the Waimea community and enhance the enjoyment of recreational experiences by providing a modern, up-to-date recreational facility.

HRS § 226-26: Objectives and policies for socio-cultural advancement – public safety.

Objectives: Planning for the State's socio-cultural advancement with regard to public safety shall be directed towards the achievement of the following objectives:

- (1) Assurance of public safety and adequate protection of life and property for all people.
- (2) Optimum organizational readiness and capability in all phases of emergency management to maintain the strength, resources, and social and economic well-being of the community in the event of civil disruptions, wars, natural disasters, and other major disturbances.
- (3) Promotion of a sense of community responsibility for the welfare and safety of Hawaii's people.

Policies related to public safety:

- (1) Ensure that public safety programs are effective and responsive to community needs.
- (2) Encourage increased community awareness and participation in public safety programs

Policies related to emergency management:

- (1) Ensure that responsible organizations are in a proper state of readiness to respond to major war-related, natural, or technological disasters and civil disturbances at all times.
- (2) Enhance the coordination between emergency management programs throughout the State.

Discussion: All design and construction will conform to all applicable codes, rules, and regulations to ensure life safety of public uses is not jeopardized. The community center facility and possibly the covered play court may be used as an evacuation or relief site under certain civil emergencies as many park facilities currently are. Parks are generally considered to be safe environments that contribute positively to the welfare of our keiki, kupuna, and families.

5.2 COUNTY OF HAWAI‘I

County-specific land use plans and ordinances pertaining to Waimea District/Regional Park include the General Plan of the County of Hawai‘i, the South Kohala Community Development Plan, and the Hawai‘i County Code.

5.2.1 County of Hawai‘i General Plan

The County of Hawai‘i General Plan is the policy document for the long-range comprehensive development of the Island of Hawai‘i. Among the purposes of the General Plan are to guide the pattern of development in Hawai‘i County and to provide the framework for regulatory decisions and capital improvement projects. The General Plan undergoes a comprehensive review every ten years, with the last review being completed in 2005.

The policy land use map, referred to as the Land Use Pattern Allocation Guide (LUPAG) Map, is intended to guide the direction and quality of future developments in a coordinated and rational manner. The Site is designated as Important Agriculture Lands, Industrial and Low Density Urban (Figure 6).

Specific General Plan goals, policies, and courses of action most applicable to the Park are discussed below.

Flooding and Other Natural Hazards

5.2 GOALS

- (a) *Protect human life.*
- (b) *Prevent damage to man-made improvements.*

5.3 POLICIES

- (l) *Continue to promote public education programs on tsunami, hurricane, storm surge, and flood hazards.*
- (q) *Consider natural hazards in all land use planning and permitting.*

Discussion: The Waimea District/Regional Park is partially within the 100-year floodplain and will serve as a drainage basin. By constructing two berms, two drainage basins were created on the site to retain the drainage overflow from the primary detention/retention basin which is located approximately 1,000 yards upstream from the park site. All primary buildings (excludes dugouts, etc.) in the park will be located outside the floodplain or above flood elevation levels.

Historic Sites

6.2 GOALS

(a) Protect, restore, and enhance the sites, buildings, and objects of significant historical and cultural importance to Hawaii.

6.3 POLICIES

(a) Agencies and organizations, either public or private, pursuing knowledge about historic sites should keep the public apprised of projects.

(c) Require both public and private developers of land to provide historical and archaeological surveys and cultural assessments, where appropriate, prior to the clearing or development of land when there are indications that the land under consideration has historical significance.

(o) Recognize the importance of certain natural features in Hawaiian culture by incorporating the concept of “cultural landscapes” in land use planning.

Discussion: The Park will not adversely affect historic resources. The archaeological inventory survey recommends passive preservation, if feasible, for the four archaeological sites found within the site considered to be significant based on Hawai‘i Register Criterion D. Should preservation or avoidance not be possible, the archaeologist determined that the mapping, written description, and photography of the sites adequately documents them and no further work or preservation is recommended for Sites 28140 through 28142, and therefore no longer significant. Site 8804 is slated for further data recovery.

Natural Beauty

7.2 GOALS

(b) Protect scenic vistas and view planes from becoming obstructed.

(c) Maximize opportunities for present and future generations to appreciate and enjoy natural and scenic beauty.

7.3 POLICIES

(a) Increase public pedestrian access opportunities to scenic places and vistas.

(h) Protect the views of areas endowed with natural beauty by carefully considering the effects of proposed construction during all land use reviews.

(i) Do not allow incompatible construction in areas of natural beauty.

Discussion: Pu‘u La‘ela‘e, Hoku‘ula, and Pu‘uiki are listed natural beauty sites in South Kohala. The Waimea District/Regional Park will be partially visible from Ala ‘Ōhi‘a Road and will change the appearance of the Site from open grassland to landscaped fields and park facilities. The placement and height of the Park buildings will not obstruct any view planes toward the pu‘u as the Site is located to the very south of Waimea Town away from development.

Public Facilities

10.1.2 Goal

(a) Encourage the provision of public facilities that effectively service community and visitor needs and seek ways of improving public service through better and more functional facilities in keeping with the environmental and aesthetic concerns of the community.

10.2.2 Policies (Education)

(b) Encourage combining schoolyards with county parks and allow school facilities for afterschool use by the community for recreational, cultural, and other compatible uses.

Discussion: Waimea District/Regional Park Master Plan will provide the residents of Waimea with a public facility which enhances the quality of life. Waimea currently lacks a comprehensive public recreational facility, and the proposed district/regional park would fill the void.

Recreation

12.2 GOALS

(a) Provide a wide variety of recreational opportunities for the residents and visitors of the County.

(b) Maintain the natural beauty of recreation areas.

(c) Provide a diversity of environments for active and passive pursuits.

12.3 POLICIES

(a) Strive to equitably allocate facility-based parks among the districts relative to population, with public input to determine the locations and types of facilities.

(c) Recreational facilities shall reflect the natural, historic, and cultural character of the area.

(d) The use of land adjoining recreation areas shall be compatible with community values, physical resources, and recreation potential.

(g) Facilities for compatible multiple uses shall be provided.

(j) *Develop local citizen leadership and participation in recreation planning, maintenance, and programming.*

12.4 STANDARDS

(b) *District Parks:*

- *Offer diversified types of recreational activities to an entire district that include indoor and outdoor sports. Minimum size: 10 to 30 acres.*
- *Within a district consisting of several populated communities.*
- *Facilities include: gymnasium with office, storage, restrooms, showers; a center for community and recreational programs; swimming pool (if justifiable); play area and equipment for young children; courts for basketball, tennis, and volleyball; ballfields for soccer, baseball, softball, and football; night lights; and an adequate parking area.*

Discussion: Where the existing community center and gym does not have space for offices, storage, and locker rooms with showers, the Park will remedy these deficiencies by providing a district facility.

5.2.2 South Kohala Community Development Plan

The County of Hawai‘i General Plan authorizes Community Development Plans (CDP) to translate broad General Plan goals, policies and standards as they apply to specific geographic regions on Hawai‘i Island. The CDPs are also intended to serve as a forum for community input into land use, delivery of government services, and other land use issues relating to the CDP area. The Site is located within the South Kohala CDP planning area. The final South Kohala CDP was enacted as a County Ordinance in November, 2008. The South Kohala CDP map shows the existing and proposed land use designations in the vicinity of Waimea Town. A portion of the Park Site is part of the Waimea Town Center Plan area.

In their initial meetings, the South Kohala Steering Committee was asked to prioritize land use issues for the entire district based upon the results of the Community Readiness Process. While the district faces many more issues than those that are listed below, it was necessary to focus on top priority issues to develop actionable plans, for the CDP. Objectives adopted by the Steering Committee relevant to the Park include the following:

Preserve Culture/Sense of Place

1. *Preserve the culture and sense of place of South Kohala communities*

Discussion: The Park will not adversely affect historic resources. The archaeological inventory survey recommends passive preservation, if feasible, for the four archaeological sites found within the site which are considered to be significant based on Hawai‘i Register Criterion D.

Should preservation or avoidance not be possible, the archaeologist determined that the mapping, written description, and photography of the sites adequately documents them and no further work or preservation is recommended for Sites 28140 through 28142, and therefore no longer significant. Site 8804 is slated for further data recovery.

Traffic and Transportation

- 2. Provide for the transportation and circulation needs of the South Kohala Community and for commuters to/from South Kohala.*

Discussion: Waimea District/Regional Park will include a walking/biking trail system to enhance the community’s enjoyment of the natural environment and utilization of recreational facilities offered at the Park. Trails provide an enjoyable, safe, and environmentally sensitive passage for foot travelers and cyclists. Its relatively close proximity to the center of town makes it convenient for most in Waimea Town to access the facilities by automobile or other alternative means.

Housing

- 3. Provide affordable and workforce housing resources for low and moderate income individuals, families, and for those residents of South Kohala with special needs.*

Discussion: While the Waimea District/Regional Park does not provide affordable and workforce housing, it will provide expanded and improved athletic and recreational opportunities for Waimea residents and other surrounding communities in the South Kohala District, which is important because “affordable” and “workforce” housing development projects often do not have the resources to provide for all of the recreational needs of its future residents. The facility will contribute toward fulfilling recreational needs of the Waimea community and enhance the enjoyment of recreational experiences by providing a modern, up-to-date recreational facility.

Emergency Preparedness

- 4. Develop programs and standards that will protect the South Kohala community from natural hazards, including major storms, flooding, tsunami, lava flows, and wildfires*

Discussion: The Site serves as a detention basin for Kamuela and Lanimaumau Streams. During 100-year storm events, the detention basins will operate as designed and slowly drain water through the pipes in the berms. It is assumed that there will be no use of the sport fields during major storm events, and proper warning measures will be taken to mitigate any danger caused by deep ponding of water in the basins. The Park’s buildings, such as the covered play court, multi-use community building, and comfort stations, will be elevated above the flood level.

Environmental Stewardship and Sustainability

5. *Develop guidelines and programs that promote environmental stewardship and the concept of sustainability*

Discussion: Sustainable planning principles have been incorporated throughout the planning and design of the Park. See Section 2.4.4, Sustainable Planning and Design.

5.2.3 County of Hawai'i Zoning

Similar to the State Land Use Districts, the Hawai'i County Code regulates the type and location of development permitted on the island. Hawai'i County zoning designations, Chapter 25 HCC, are more specific in terms of describing permitted land uses. The majority of the Site is zoned A-40a (Agriculture). The northern portion of the Site is zoned RS-10 (Single-Family Residential) (Figure 7).

The RS (Single-Family Residential) district provides for low and medium density residential use, for urban and suburban family life. Section 25-5-3(a)(12) HCC states that public uses and structures, such as Waimea District/Regional Park, are allowed in Single-Family Residential districts provided that the Planning Director has issued plan approval for each use. Section 25-5-3(a)(11) HCC states that neighborhood parks, playgrounds, tennis courts, swimming pools, and similar neighborhood recreational areas and uses are allowed in Single-Family Residential districts. And Section 25-5-3 (b)(8) HCC states that major outdoor amusement and recreation facilities are allowed in Single-Family Residential districts as well. The height limit in the RS district is 35 feet.

The A (Agricultural) district provides for agricultural and very low density agriculturally-based residential use. Section 25-5-72(a)(7), HCC states that parks and similar open area recreational facilities, such as those at Waimea District/Regional Park, are allowed in the Agricultural district provided that the Park facilities are not entirely enclosed. Section 25-5-72 (c)(4), HCC allows for community buildings provided that the planning director has issued plan approval for such use and a special permit is obtained. The height limit in the A district is 45 feet.

5.2.4 Special Management Area

The Park Site is not located within the Special Management Area (SMA).

5.3 APPROVALS AND PERMITS

A listing of anticipated permits and approvals required for Waimea District/Regional Park is presented below:

Table 2: Anticipated Approvals and Permits

Permit/Approval	Responsible Agency
Chapter 343, HRS Compliance	Hawai‘i Parks and Recreation Department Office of Environmental Quality Control
National Pollutant Discharge Elimination System (NPDES) Permit	State Department of Health
Section 401 Water Quality Certification	State Department of Health – Clean Water Branch
Stream Channel Alteration Permit	State Department of Land and Natural Resources – Commission on Water Resource Management
Plan Approval	Hawai‘i Planning Department
Grading/Building Permits	Hawai‘i Department of Public Works
Clean Water Act Section 404	U.S. Army Corps of Engineers
Letter of Map Revision (LOMR)	Federal Emergency Management Agency

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6 ALTERNATIVES

This section identifies and evaluates a range of alternatives that could meet the purpose and need and possibly avoid, reduce, or minimize adverse environmental effects. The reference point to compare alternatives is the “no action” alternative.

6.1 NO ACTION ALTERNATIVE

The primary purpose for the Waimea District/Regional Park, as discussed in Section 2.2, is to improve recreational opportunities for Waimea residents and other surrounding communities in the South Kohala District. Under the “no action” alternative, no additional facilities would be built and the district population would have to rely on existing facilities. The area would not benefit from improved recreational opportunities.

Existing recreational facilities in Waimea are limited and inadequate to support the many citizens of the area. The Waimea Elementary and Intermediate School has a playground and access to Thelma Park Gym during school days. The gym is jointly operated by the County during after school hours. The YMCA in Waimea has a nine-acre park used primarily for soccer. The County’s Waimea Park (10.5 acres) is the area’s recreation center with a community center, playfields and facilities for spectators, tennis courts, restrooms, skate park, outdoor basketball court, and playground. This park is often a rest and picnic stop for travelers. Parking, however, is undefined and restroom facilities are inadequate. Waimea soccer field is located behind the Waimea Center near the police station. The County also maintains a 2.8-acre passive roadside park area in Waimea.

The Waimea District/Regional Park is needed to provide more recreational opportunities to a larger residential community in South Kohala, and to promote public health and enhance quality of life. The park would be accessible to the many residential areas that do not have convenient access to parks.

The park will be used for active recreation activities including organized youth and adult leagues for baseball, soccer, basketball, and volleyball. It will also be used for passive recreation and a variety of leisure classes, community meetings, and cultural events. As a rural community, Waimea lacks many of the commercial recreation outlets found in urban areas. Moreover, because Waimea does not have its own public high school, facilities traditionally associated with high school athletics are not available locally.

With the “no action” alternative the district needs for community recreational facilities would not be met, therefore this alternative has been eliminated.

6.2 ALTERNATIVE SITES

Alternative locations were considered for the Waimea District/Regional Park. PBR HAWAII conducted a site selection study for locating the Waimea District/Regional Park in the vicinity of Waimea Town. Nine possible sites were selected for the study. Table 4 describes the location of each site from west to east.

Table 3: Alternative Sites

Possible Sites	Location	TMK
S-4 (‘Ouli / Kawaihae Road)	North of and cross Kawaihae Road from the Kanehoa Subdivision’s ‘Ouli Street intersection.	(3) 6-2-001:015)
S-3 (Kamuela View Estates / Kawaihae Road)	South of and across Kawaihae Road from the Kamuela View Estates, and south of Kohala View Estates subdivision.	(3) 6-6-001:002)
S-2 (Lālāmilo North)	South of the proposed DHHL’s housing project and adjacent to the northwest corner of the Lālāmilo Farm Lots subdivision.	(3) 6-6-001:002)
S/P-1 (Lālāmilo South)	Southwestern end of the Lālāmilo Farm Lots, west and south of Pu‘u Huluhulu Road.	(3) 6-6-001:002 and (3) 6-8-001:001
P-1 (Lālāmilo East)	West of the Māmalahoa Highway and adjacent to the southern boundary of Lālāmilo Farm Lots.	(3) 6-8-001:001
S/P-2 (Pu‘uopelo East)	East of the Pu‘uopelu, southwest of the ‘Ahuli Circle Subdivision	(3) 6-6-003:006, 010, 011, 003 and (3) 6-6-001:038
P-2 (Waimea Town Center West)	East of the Parker Ranch headquarters, south of the Waimea Town Center, and north of the Waimea-Kohala Airport.	(3) 6-7-001:025 and (3) 6-7-002:017
P-3 (Waimea Town Center East)	South of the Waimea Town Center (Holoholokū Condominiums) and west of DHHL’s Pu‘ukapu Land.	(3) 6-7-001:025
S-5 (Pu‘ukapu)	South of the Māmalahoa Highway and west of the Pu‘ukapu Reservoir.	(3) 6-4-003:016

The nine sites were evaluated based on the following criteria: 1) location; 2) land ownership; 3) access and connectivity; 4) size and configuration; 5) land use regulations; 6) environmental characteristics; and 7) availability of infrastructure and development costs.

The Site Selection Study process evaluated the potential park sites based on the evaluation criteria and made a recommendation of four leading candidate sites (provided below in order of overall ranking):

- Site P-2 (Waimea Town Center West)
- Site P-1 (Lālāmilo East)
- Site S-2 (Lālāmilo North)
- Site S/P-2 (Pu‘uopelo East)

The County Parks Department presented the findings and preliminary recommendations at a public meeting which was held on November 24, 2008 at Waimea Community Center. At the meeting, DPR asked for additional community input and comments and a questionnaire survey was distributed to seek more comments. After the meeting, community could continue to provide additional comments in writing via email or through the questionnaire survey post on Waimea Community Association website until December 5, 2008.

Based on community feedback, Site P-2 (Waimea Town Center West), the Site subject to this environmental assessment, was chosen as the preferred site for the Waimea District/Regional Park. Reasons to why this site was preferred include:

- Adjacent to Waimea Town and requires less travel distance.
- Direct access to the planned Parker Ranch equestrian trail.
- Estimated infrastructure and civil improvement costs are the lowest among all of the alternative sites.
- Thought to contain less archaeological resources and historic uses due to previous detention basin construction.
- Wind is not too strong and Median Annual Rainfall is not too low.
- Good parcel configuration and adequate suitable area for future expansion.
- Not within the Lālāmilo Farm Lots buffer area.
- Soil productivity rating is relatively high.
- Not in the airport protection zone and aviation easement.

6.3 ALTERNATIVE DESIGNS

Alternative design concept plans were prepared for the Park and presented at a Key Stakeholder Meeting held on July 1, 2009 and the WCA community meeting held on July 9 2009 at Waimea. The presentations were followed by an open discussion with attendees who shared their comments, questions, ideas, and suggestions for improving and refining the development program. After the meetings, the community was asked to continually provide comments in writing via e-mail.

To further refine the community preferred conceptual plan, a two-day park planning workshop was held on August 15 and 16, 2009. At the workshops, the planning team presented background information and the preliminary development program and draft concept plan options. In addition to the development program, issues relating to phasing, financing, security, maintenance, and operation were also discussed and evaluated with the planning team and DPR officials.

Four conceptual park plan alternatives were developed as a result of the workshops. The consultant team synthesized the previously proposed conceptual plan options and the four conceptual plans developed by community design groups at the workshops to come up with the community preferred conceptual plan. Community members attending the workshops found that the community preferred conceptual plan was consistent with the community's vision for the Waimea District/Regional Park.

After the community planning workshop, the consultant team further refined the Community Preferred Conceptual Plan and prepared the Final Master Plan as shown in Figure 1.

7 FINDINGS AND DETERMINATION

To determine whether the implementation of the Waimea District/Regional Park may have a significant impact on the physical and human environment, all phases and expected consequences of the proposed project have been evaluated, including potential primary, secondary, short-range, long-range, and cumulative impacts. Based on this evaluation, the Proposing Agency (County of Hawai'i Department of Parks and Recreation) anticipates issuing a Finding of No Significant Impact (FONSI). The supporting rationale for this finding is presented in this chapter.

7.1 SIGNIFICANCE CRITERIA

The discussion below evaluates the significance of the Park's impacts based upon the Significance Criteria set forth in Hawaii Administrative Rules section 11-200-12.

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

Discussion: The Park will not result in an irrevocable commitment to loss or destruction of any natural or cultural resources. The Park Site is an open grassed field dominated by introduced plant species. The Site does not provide unique habitat and no Federal or State of Hawai'i listed threatened, endangered, or candidate plant or animal species will be disturbed. It is possible that endangered seabirds may fly over the Site between April and December. Lights will be shielded to minimize adverse impacts to seabirds and night-flying birds.

The Park has been the subject of archaeological and cultural studies conducted in and around the Site. Both studies reveal the absence of any resource potentially subject to irrevocable loss as a result of construction.

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

Discussion: The Park will not curtail the range of beneficial uses of the environment. The Park will largely remain as open space used for recreational purposes. Given the shortage of publicly accessible recreational facilities in Waimea, the Park will ensure that the community will be given the opportunity to enjoy the park facilities in the long-term future.

- (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;*

Discussion: The Park is consistent with the environmental policies established in Chapter 344, HRS, which seek to "encourage productive and enjoyable harmony between people and their environment, promote efforts which will prevent or eliminate damage to the environment and

biosphere and stimulate the health and welfare of humanity, and enrich the understanding of the ecological systems and natural resources important to the people of Hawaii.”

The Park master plan recommendations are consistent with and promote the following Chapter 344 guidelines:

Parks, recreation, and open space

- (A) Establish, preserve and maintain scenic, historic, cultural, park and recreation areas, including the shorelines, for public recreational, educational, and scientific uses;
- (C) Promote open space in view of its natural beauty not only as a natural resource but as an ennobling, living environment for its people.

Energy

- (A) Encourage the efficient use of energy resources.

Community life and housing

- (A) Foster lifestyles compatible with the environment; preserve the variety of lifestyles traditional to Hawaii through the design and maintenance of neighborhoods which reflect the culture and mores of the community;
- (B) Develop communities which provide a sense of identity and social satisfaction in harmony with the environment and provide internal opportunities for shopping, employment, education, and recreation;
- (C) Encourage the reduction of environmental pollution which may degrade a community;
- (D) Foster safe, sanitary, and decent homes;

Education and culture

- (A) Foster culture and the arts and promote their linkage to the enhancement of the environment;

Citizen participation

- (B) Provide for expanding citizen participation in the decision making process so it continually embraces more citizens and more issues.

(4) *Substantially affects the economic or social welfare of the community or State;*

Discussion: The Waimea District/Regional Park will have a positive impact on the economic and social welfare of the Waimea community by expanding and enhancing active and passive recreational opportunities. The multi-use community building is a much needed venue for organized activities, programs and services. The Park is intended to be a gathering place for families, and will help promote a sense of community among local residents.

(5) *Substantially affects public health;*

Discussion: The Park will have a positive impact on public health by providing more opportunities for indoor and outdoor recreation, exercise, and enjoyment of nature. Park facilities provide a broad range of venues for recreation and exercise for all ages, gender and levels of activity. In addition to the covered play court and sports fields, other low physical impact recreational opportunities promoting public health include bicycle and walking paths. The enhanced open space will be available for passive enjoyment.

Construction-related impact to air quality and noise will be temporary, and far outweighed by the Park's long-term health benefits. The Park's recreational facilities will promote exercise and a healthy lifestyle. The eventual build out of the Waimea District/Regional Park will include a covered play court that can be used in inclement weather. The inclusion of various sports fields will provide additional recreational facilities for the community and is expected to positively affect public health.

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

Discussion: Waimea District/Regional Park will not affect area population and will not create additional strain on other area facilities. The Park is a response to an increase in Waimea's population that has resulted in unmet demand for recreational opportunities. The Park will increase water, wastewater and electrical demand. This will be mitigated through appropriate infrastructure upgrades, use of energy saving fixtures, and incorporation of sustainable and green concepts wherever possible.

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

Discussion: The Park will not substantially degrade environmental quality. Construction-period impacts related to noise and air quality will be temporary and short-term, and will be minimized and mitigated to avoid environmental degradation.

Implementation of the master plan recommendations will enhance environmental quality in the long run.

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

Discussion: The Park is not part of a larger project, nor does it commit the State or County to any other larger actions, and will not generate any additional actions having a cumulative effect on the environment. The Park is directly supported and endorsed by the County and State government and the citizens of the South Kohala region.

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

Discussion: No rare, threatened or endangered species or its habitat will be impacted by the Park. A biological survey of the Park Site did identify any plant or animal species currently listed, or proposed for listing under either the Federal or State of Hawaii endangered species statutes.

Park lighting will comply with County lighting regulations intended to minimize adverse impact to seabirds and night-flying birds that may fly over the Site, including the Newell's shearwater.

- (10) *Detrimentially affects air or water quality or ambient noise levels;*

Discussion: No Federal or State air quality standards are anticipated to be violated during or after the construction of the Waimea District/Regional Park. The only anticipated issues related to air quality would be during construction; however, construction activities would be temporary. Long-term negative impacts related to air quality are not expected.

No State or Federal water quality standards are anticipated to be violated during or after the construction of the Waimea District/Regional Park.

Construction activities will inevitably create temporary noise impacts. If necessary contractors will employ mitigation measures to minimize noise including the use of mufflers and implementing construction curfew periods. Pursuant to Chapter 11-46, Hawai'i Administrative Rules, all construction activities must comply with all community noise controls.

Temporary noise will also be generated during the course of regular operations and events. These noise disturbances are an unavoidable element of park use but nonetheless will be intermittent and of short duration.

- (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, fresh water, or coastal waters;*

Discussion: The Park Site does not lie in an environmentally sensitive area such as a tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, freshwater or coastal waters. However, portions of the Park are within the AE flood zone, a special flood hazard area that would be inundated by a flood with a 1% chance of occurrence in any given year. All of the

Park buildings such as the play court, multi-use community building, and comfort stations will be located outside of Zone AE or designed with finished floor elevations above the designated base flood elevation plus an additional height of at least one foot.

In addition, because the majority of the Site serves as a detention basin, the current drainage function and capacity will be maintained throughout the entire development process. The requirements of Hawai'i County Code Chapter 27, Flood Plain Management will be followed to ensure that there is no rise in base flood elevation and no adverse impact to the flood plain due to these improvements.

(12) *Substantially affects scenic vistas and view planes identified in County or State plans or studies; or,*

Discussion: The Park will not impact scenic vistas and view planes identified in County or State plans or studies. The County of Hawai'i General Plan identifies several pu'u north of Waimea Town as exceptional natural beauty sites which include Pu'u La'ela'e, Pu'u Hoku'ula, and Pu'uiki. The Park's building will be low scale and will not obstruct any view planes toward the pu'u. Rather, it will preserve view planes by remaining largely as open space.

(13) *Requires substantial energy consumption.*

Discussion: The Park will not require substantial energy consumption. Energy resources will be consumed during the construction of the Park. The proposed buildings such as the play court, multi-use community building, comfort stations, and newly landscaped areas will increase water, electrical and waste water demand. The County will work with the appropriate utility providers to ensure that adequate service is available to the Park.

7.2 ANTICIPATED DETERMINATION

Pursuant to Chapter 343, HRS, approving authority, the County of Hawai'i Department of Parks and Recreation anticipates issuing a Finding of No Significant Impact (FONSI) for this environmental assessment. This finding is founded on the basis of impacts and mitigation measures examined in this document, public comments received during the pre-consultation and public review phases, and analyzed under the above criteria.

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8 CONSULTATION

8.1 INDIVIDUALS AND ORGANIZATIONS CONSULTED WITH PRIOR TO THE EA PROCESS

In the course of planning for the Waimea District/Regional Park, community meetings were held and pre-consultation letters were mailed to solicit comments to be addressed in the EA.

8.1.1 Community Meetings

Community involvement is critical in the planning process to reach a general consensus for Waimea District/Regional Park. A total of seven community meetings were held at Waimea beginning with meetings for the Site Selection Study and ending with a workshop and follow up meetings for the final Master Plan. The objectives of the community meetings were to meet with members of the community, present findings and pertinent data, discuss the planning progress, and solicit input at each key planning phase.

Announcements for the community meetings were published in both printed and online internet editions of local newspapers including West Hawai'i Today and North Hawai'i News. Invitations and meeting reminder notices were also e-mailed to community members and the representatives of local sports organizations.

In addition, two community questionnaire surveys were distributed through the Waimea Community Association's (WCA) website. The first questionnaire was tailored for collecting feedback on the recommended park sites during the Site Selection Study and the second assessed the community's recreational needs.

Site Selection Study

- November 6, 2008 – WCA Meeting at Parker School
 - Overview of the Master Plan Planning Process
 - Overview of the Site Selection Study Progress
- November 19, 2008 – Draft Report Distribution for Waimea District Park Builders Review / Comment
- November 24, 2008 – Community Meeting at Waimea Community Center
 - Present the Site Assessment Findings and Recommendation
 - Public Comments and Input
- November 25, 2008 to December 1, 2008 – Additional Public Comments Period, Questionnaire Survey
- From December 2008 to May 2009 – Final Site Selection Study

Recreation Needs and Preliminary Program

- June 16 to 25, 2009 - Recreational Facilities Survey and Park Development Program
- July 1, 2009 – Key Stakeholder Meeting to Review Findings of Survey
- July 9, 2009 – Community Meeting (WCA) – Preliminary Development Program

Master Plan

- August 15 and 16, 2009 – 2-Day Planning Workshop – Refined Development Program and Preferred Conceptual Plan
- September 22, 2009 – Community Meeting – Schematic Master Plan
- October 27, 2009 – Community Meeting – Draft Master Plan
- Community Members in attendance:
 - Anne E. Field-Gomes
 - Bets & Frank Lawrence
 - Betty Hannah
 - Bob Fitzgerald
 - Bob Hunter
 - Brent Callihan
 - Carol Buck
 - Celeste Bell
 - Chris Toafili
 - Chris Wiesmueller-Hastings
 - Dane Maikui
 - Daniel I. Gomez
 - Darryl Wise
 - Donna Yoshizumi
 - Down & Mary Kitchen
 - Earl Yamamoto
 - Fran Tabor
 - Herb Grabell
 - Jack Shoop
 - Jason Macy
 - Jason Walaskay
 - Jay West
 - Jennie Fernandez
 - John Buck
 - Jon-Paul & Kim Mangarin
 - Judy Frazier
 - Julia Simmons
 - Kainoa Hodson
 - Kalae Kawamura
 - Kihei Soli Niheu
 - Kris Martin
 - Kurt Klimt
 - Lacey Lindsey
 - Laura Monaham
 - Lena Oakes
 - Linda West
 - Lorna Muramoto
 - Mara Paio
 - Marc Melton
 - Mark Lo
 - Martiva Tude
 - Mel & Page Macy
 - Mel Paio
 - Melvin Kapule
 - Merryanne Stone
 - Micah Kamohoalii
 - Michelle Medeiros
 - Nancy Alvord
 - Patricia Galdeira
 - Pete Hoffmann
 - Phillip Galdeira
 - Pua Correa Richard Nakano
 - Rick West
 - Robin Inaba
 - Robyn Hafner
 - Roger Harris
 - Ron Delacruz
 - Sam Murray
 - Sherm Warner
 - Sidnie Zari
 - Tom Martin
 - Tomas Krasuski
 - Tracy Cosier
 - Val Hanohano
 - Victoria Missien
 - Wally Kojima

8.1.2 Pre-Assessment Consultation

A pre-assessment consultation was conducted from October through December 2009 prior to preparation of the Draft EA. The purpose of the pre-assessment consultation is to consult with agencies, organizations and individuals with technical expertise, or an interest or will be affected by the proposed project. This process is part of the scoping process for the Draft EA. Comments and input received during this period are used to identify environmental issues and concerns to be addressed in the Draft EA, which in turn will undergo a 30-day public comment period.

As part of the early consultation process, the following agencies and organizations were sent pre-assessment consultation letters. Notices were also sent to individuals who attended community meetings and others who were recommended or who requested information on the project. The organizations and individuals were encouraged to distribute the information to their members, friends and neighbors. Copies of the written comments and responses are reproduced in Appendix A.

State of Hawai'i

- Department of Agriculture
- Department of Business, Economic Development & Tourism
- Department of Hawaiian Homelands
- Department of Health-Environmental Planning Office
- Office of Environmental Quality Control
- Department of Land and Natural Resources
- Department of Land and Natural Resources- State Historic Preservation Division
- Department of Transportation
- Office of Hawaiian Affairs

Federal

- U.S. Army Corps of Engineers – Regulatory Branch
- U.S. Fish and Wildlife Service

County of Hawai'i

- Fire Department
- Department of Planning
- Department of Parks & Recreation
- Police Department
- Department of Environmental Management
- Department of Public Works
- Department of Water Supply
- Office of Housing and Community Development
- Hawai'i County Council

Private Organizations & Individuals

- Hawaiian Electric Company
- Parker Ranch
- Waimea Community Association
- Waimea Park Builder Group
- West Hawaii Little League
- Hawaii Volcano Soccer Club
- Kanu o ka 'Āina Charter School
- Waimea Homestead Association

9 REFERENCES

- Associated Press. (2007, August 15). *Flossie downgraded again after swiping Hawaii*. Retrieved September 17, 2007, from <http://www.msnbe.msn.com/id/20228092>
- B.D. Neal & Associates. (2002). *Air Quality Study for the Proposed Department of Hawaiian Home Lands Lālāmiilo Project*. Department of Hawaiian Home Lands.
- Bergin, B. (2004). *Loyal to the Land: the Legendary Parker Ranch 750-1950*. Honolulu, Hawaii: University of Hawaii Press.
- Branch, S. o. (2008). *2006 State of Hawaii Water Quality Monitoring and Assessment Report*. Honolulu.
- Burtchard, G. C., & Tomonari-Tuggle, M. J. (2004). *Agriculture on Leeward Hawai'i Island: The Waimea Agricultural System Reconsidered* (Vol. 9).
- Butchard, G. C., & Tomonari-Tuggle, M. J. (2003). *Seeking Waimea's Past: Archaeological Data Recovery at Waimea Town Center, Kamuela-Waimea, South Kohala, Hawai'i Island (DRAFT)*. Kapolei: On file at the State Historic Preservation Division Library.
- Clark, J., & Kirch, P. (1983). *Archaeological Investigations of the Mudlane-Waimea-Kawaihae Road Corridor, Island of Hawai'i: An Interdisciplinary Study of an Environmental Transect*. Bishop Museum, Department of Anthropology. Honolulu: Prepared for: State of Hawai'i, Department of Transportation.
- Cordy, R. H. (2000). *Exalted Sits the Chief: The Ancient History of Hawai'i Island*. Honolulu, Hawai'i: Mutual Publishing.
- County of Hawai'i. (2011). *Ke Ala Kahawai o Waimea Final Environmental Assessment*. Department of Parks and Recreation. Honolulu: State Office of Environmental Quality Control.
- County of Hawai'i. (Current). *County of Hawai'i Data Book*.
- David, R. E. (2000). *Waimea Trails and Greenways Avian and Mammalian Surveys*. Prepared for: AECOS Consultants and Gerald park Consulting.
- David, R. E. (2005). *A survey of Avian and Terrestrial Mammalian Species for the Waimea Bypass Highway: Hawai'i: Belt Road, Mud Lane to Parker Ranch Racetrack, South Kohala District, Island of Hawai'i*. Prepared for: Akinaka & Associates, Inc and State of Hawai'i Department of Transportation, Highways Division.
- David, R. E. (2006). *A survey of Avian and Terrestrial mammalian Species for the Māmalahoa Highway to Kawaihae Road Connector Project, South Kohala District, Island of*

- Hawai'i*. Prepared for: Belt Collins Hawaii, Inc. and the County of Hawai'i, Department of Transportation.
- David, R. E. (2009). *Avian and Terrestrial Mammalian Species Surveys Conducted for the Kawaihae Road Bypass, South Kohala District, Island of Hawai'i*. Prepared for: Edward K. Noda and Associates, Inc. and the State of Hawai'i, Department of Transportation, Highways Division.
- David, R. E. (2009). *Queen Ka'ahumanu Highway / Kawaihae Road Intersection Improvement Project #HWY-H-01-08, Biological Surveys*. Prepared for: State of Hawai'i, Department of Transportation, Highways Division.
- Edward K. Noda & Associates, Inc. (1999). *Final Environmental Assessment Waimea-Kohala Airport Master Plan and Noise Compatibility Program*. Prepared for the Department of Transportation Airports Division.
- Ellis, W. (1963). *Journal of William Ellis: Narrative of a Tour of Hawai'i, or Owhyhee; with Remarks on the History, Traditions, Manners, Customs and Language of the Inhabitants of the Sandwich Islands*. Honolulu: Advertising Publishing Co., Ltd.
- Giambelluca, T., Chen, Q., Frazier, A., Price, J., Chen, Y.-L., Chu, P.-S., . . . Delparte, D. (2012). (Bull. Amer. Meteor. Soc.) doi:10.1175/BAMS-D-11-00228.1
- Hawai'i County Police Department. (2011). *Annual Report Fiscal Year 2010-2011*. Hilo: Prepared for: Hawai'i County Police Commission and Mayor William Kenoi.
- Hurricane Shelter Criteria Committee. (2005). *Report of Recommended Statewide Public Hurricane Shelter Criteria*. Report to State Legislature.
- Juvik, S. P., & Juvik, J. (1998). *Atlas of Hawai'i* (3rd ed.). Honolulu, Hawaii: University of Hawaii Press.
- Kamakau, S. (1961). *Ruling Chiefs of Hawaii*. Honolulu, Hawaii: The Kamehameha Schools Press.
- Longo et al, B. (2010). An Indoor Air Quality Assessment for Vulnerable Populations Exposed to Volcanic Fog From Kilauea Volcano. *Family Community Health*, vol. 33, no. 1, pp. 21-31.
- Macdonald, G. A., Abbott, A. T., & Peterson, F. L. (1983). *Volcanoes in the Sea, The Geology of Hawaii* (2nd ed.). Honolulu, Hawaii: University of Hawaii Press.
- Martin & Chock, Inc. (2010). *County of Hawaii Multi-Hazard Mitigation Plan*. Prepared for County of Hawaii Civil Defense Agency.

- Pacific Legacy, Inc. (2010). *Draft Archaeological Inventory Survey for the Proposed Waimea District/Regional Park, Pu'ukapu Ahupua'a, District of South Kohala, Island of Hawai'i [TMK: 3-6-7-001:025 and 3-6-7-002:017 and 063]*. Prepared for: PBR Hawai'i.
- Pūku'i, M. K., Elbert, S. H., & Mo'okini, E. T. (1974). *Place Names of Hawaii*. Honolulu, Hawaii: University of Hawaii Press.
- Rana Biological Consulting, Inc. & AECOS Consultants. (2009). *Biological Surveys Conducted for the Proposed Waimea District/Regional Park, south Kohala District, Island of Hawai'i*. Prepared for: PBR Hawaii and Associates Inc.
- State of Hawaii. (2012). *2008/2010 State of Hawaii Water Quality Monitoring and Assessment Report*. Department of Health, Clean Water Branch, Honolulu.
- Sutton, A., & Elias, T. (2002). Twenty years of continuous gas release of Kilauea: effusive lessons in a volatile time [abstract]. *EOS*, 83(47).
- U.S. Census Bureau. (2010). *2010 Census*.
- USDA Soil Conservation Service. (1973, January 2). *Soil Survey of the Island of Hawai'i, State of Hawai'i*. Retrieved from Natural Resources Conservation Service, United States Department of Agriculture.
- USGS. (1997, July 18). *Volcanic and Seismic Hazards on the Island of Hawaii: Volcanic Hazards*. Retrieved January 5, 2011, from U.S. Geological Survey: <http://pubs.usgs.gov/gip/hazards.html>
- Wilson Okamoto Corporation. (2008). *Hawaii Water Plan Water Resource Protection Plan*. Prepared for the State of Hawaii, Department of Land and Natural Resources, Commission on Water Resource Management.

O:\Job25\2506.11 Waimea District Park MP\EA\DEA\DEA Waimea District Regional Park.docx

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Appendix **A**

CONSULTATION

PRE- CONSULTATION COMMENTS AND RESPONSES

Agencies/Organizations/Individuals	Pre-Consultation Sent	Comment Date
STATE		
Department of Agriculture	Yes	-
DBEDT	Yes	-
Department of Hawaiian Home Lands	Yes	11-17-09
Department of Health	Yes	-
Department of Land and Natural Resources	Yes	11-30-09
DLNR - SHPD	Yes	11-30-09 12-10-09
Department of Transportation	Yes	12-03-09
Office of Hawaiian Affairs	Yes	-
Office of Environmental Quality Control	Yes	11-06-09
FEDERAL		
U.S. Army Corps of Engineers	Yes	11-16-09
U.S. Fish and Wildlife Service	Yes	12-07-09
COUNTY		
Department of Environmental Management	Yes	11-13-09
Department of Parks and Recreation	Yes	-
Department of Public Works	Yes	12-09-09
Department of Water Supply	Yes	12-02-09
Fire Department	Yes	-
Office of Housing and Community Development	Yes	11-05-09
Planning Department	Yes	12-03-09
Police Department	Yes	11-20-09
Hawai'i County Council	Yes	-
PRIVATE ORGANIZATIONS / INDIVIDUALS		
Parker Ranch	Yes	-
Hawaiian Electric Light Company	Yes	12-17-09
Waimea Community Association	Yes	-
Waimea Park Builder Group	Yes	-
West Hawai'i Little League	Yes	-
Hawai'i Volcano Soccer Club	Yes	-
Kanu o ka 'Āina Charter School	Yes	-
Waimea Homestead Association	Yes	-

LINDA LINGLE
GOVERNOR
STATE OF HAWAII



KAULANA H. R. PARK
CHAIRMAN
HAWAIIAN HOMES COMMISSION

ANITA S. WONG
DEPUTY TO THE CHAIRMAN

ROBERT J. HALL
EXECUTIVE ASSISTANT

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS

P.O. BOX 1879
HONOLULU, HAWAII 96805

November 17, 2009

Mr. Tom Schnell, AICP
PBR Hawaii & Associates, Inc.
1001 Bishop Street
ASB Tower, Suite 650
Honolulu, Hawai'i 96813-3484

Subject: Pre-consultation for Waimea District/Regional Park
Waimea, Hawai'i, TMK: (3) 6-7-001:25, (3) 6-7-002:17
and (3) 6-7-002:63

Aloha Mr. Schnell,

Thank you for the opportunity to provide pre-consultation comments prior to the Draft Environmental Assessment (DEA) for the proposed Waimea District Park project. The Department of Hawaiian Home Lands (DHHL) owns approximately 12,198 acres in Waimea, Hawai'i that includes Pu'ukapu 1 (10,979 acres), Pu'ukapu 2 (493 acres), Pu'ukapu 3 (476 acres), and Lālāmilo (250 acres). The DHHL's properties all surround the proposed project area.

As major landowners engaged in our own planning processes, it is our responsibility to participate and plan appropriately for the larger region. It is our priority to ensure that DHHL's plans are as consistent as possible with other plans in the area.

Please consider the following comments on your proposed project:

1. We are excited that the Waimea District/Regional Park is becoming a reality in the region. Once completed, we hope that there will be a greater focus on the Neighborhood Park in Pu'ukapu that was a community identified Priority Project in our Regional Plan for Lālāmilo/Pu'ukapu which was approved by the Hawaiian Homes Commission in December 2008.

Mr. Tom Schnell
November 17, 2009
Page 2

2. Please consult with the Waimea Homestead Association Inc. and Kanu o Ka 'Āina Charter School who may have programs that will be directly affected by the proposed project.

We thank you for the opportunity to comment on the project. We will continue, as a surrounding landowner, to do what we can to assist in your planning efforts. If you have any questions, please contact Kaleo Manuel at our Planning Office at 620-9485.

Aloha and mahalo,

A handwritten signature in black ink, appearing to read "Kaulana H.R. Park". The signature is fluid and cursive, with the first name being the most prominent.

Kaulana H.R. Park, Chairman
Hawaiian Homes Commission



PBR HAWAII

& ASSOCIATES, INC.

August 2, 2013

PRINCIPALS

THOMAS S. WITTEN, ASLA
President

R. STAN DUNCAN, ASLA
Executive Vice-President

RUSSELL Y. I. CHUNG, FASLA, LEED® AP BD+C
Executive Vice-President

VINCENT SHIGEKUNI
Vice-President

GRANT T. MURAKAMI, AICP, LEED® AP BD+C
Vice-President

W. FRANK BRANDT, FASLA
Chairman Emeritus

ASSOCIATES

TOM SCHNELL, AICP
Senior Associate

RAYMOND T. HIGA, ASLA
Senior Associate

KIMI MIKAMI YUEN, LEED® AP BD+C
Senior Associate

SCOTT ALIKA ABRIGO, LEED® AP BD+C
Managing Director - Kapolei

ROY TAKEMOTO
Managing Director - Hilo

SCOTT MURAKAMI, ASLA, LEED® AP
Associate

DACHENG DONG, LEED® AP
Associate

MARC SHIMATSU, ASLA
Associate

MICHAEL SHIBATA, AICP
Associate

CATIE CULLISON, AICP
Associate

HONOLULU OFFICE

1001 Bishop Street, Suite 650
Honolulu, Hawai'i 96813-3484
Tel: (808) 521-5631
Fax: (808) 523-1402
E-mail: sysadmin@pbrhawaii.com

KAPOLEI OFFICE

1001 Kamokila Boulevard
Kapolei Building, Suite 313
Kapolei, Hawai'i 96707-2005
Tel: (808) 521-5631
Fax: (808) 535-3163

HILO OFFICE

1719 Haleloke Street
Hilo, Hawai'i 96720-1553
Tel/Cel: (808) 315-6878

Ms. Jobie Masagatani, Chairman
State of Hawai'i
Department of Hawaiian Home Lands
P.O. Box 1879
Honolulu, Hawai'i 96805

**SUBJECT: PRE-CONSULTATION FOR WAIMEA DISTRICT/REGIONAL PARK,
LOCATED AT WAIMEA, SOUTH KŌHALA, HAWAI'I, TMK: (3) 6-7-
001:025 (portion), (3) 6-7-002:017 (portion) and (3) 6-7-002:063 (portion)**

Dear Ms. Masagatani,

As a planning consultant for the County of Hawai'i Department of Parks and Recreation, PBR HAWAII is preparing a Draft Environmental Assessment (EA) for the Waimea District/Regional Park. We sent a request for pre-consultation comments to the Department of Hawaiian Home Lands (DHHL) in October 2009 as part of the scoping process. DHHL provided comments in the attached letter dated November 17, 2009.

We acknowledge that DHHL is a regional landowner with approximately 12,198 acres in Waimea, Hawai'i including Pu'ukapu 1, Pu'ukapu 2, Pu'ukapu 3, and Lālānilo. We understand that the Waimea District/Regional Park and other planned neighborhood parks in the area will provide recreational benefits to DHHL's neighboring properties.

As requested, we sent pre-consultation letters to the Waimea Homestead Association Inc. and Kanu o ka 'Āina Charter School to review programs that may be directly affected by the creation of Waimea District/Regional Park. We have not received a response to date. We will send copies of the Draft EA to these organizations with a request for comments.

We appreciate DHHL's participation in the environmental review process. DHHL's letter will be included in the Draft EA. A copy of the Draft EA will be sent to you. We expect that the public comment period on the Draft EA will begin in September 2013. You will have an opportunity to provide comments on the Waimea District/Regional Park Draft EA during the public comment period.

Sincerely,

PBR HAWAII

Tammy Keli'i Kapali
Planner

cc: County of Hawai'i Department of Parks and Recreation

Attachment: DHHL Comment Letter (11-17-2009)

O:\Job25\2506.11 Waimea District Park MP\EA\Pre-Consultation\Responses\DHHL.docx

LINDA LINGLE
GOVERNOR OF HAWAII



LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

November 30, 2009

PBR Hawaii & Associates, Inc.
1001 Bishop Street Suite 650
Honolulu, Hawaii 96813

Attention: Mr. Tom Schnell, AICP

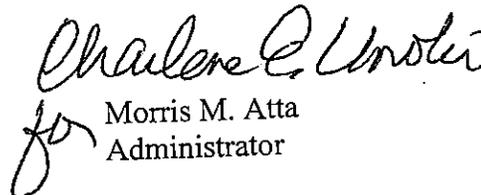
Ladies and Gentlemen:

Subject: Pre-Consultation for Waimea District/Regional Park

Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources' (DLNR), Land Division distributed or made available a copy of your report pertaining to the subject matter to DLNR Divisions for their review and comment.

Other than the comments from Division of State Parks, Division of Forestry & Wildlife, Land Division-Hawaii District, Engineering Division, Commission on Water Resource Management, the Department of Land and Natural Resources has no other comments to offer on the subject matter. Should you have any questions, please feel free to call our office at 587-0433. Thank you.

Sincerely,


for Morris M. Atta
Administrator

LINDA LINGLE
GOVERNOR OF HAWAII



LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

November 9, 2009

MEMORANDUM

TO:

DLNR Agencies:

- Div. of Aquatic Resources
- Div. of Boating & Ocean Recreation
- Engineering Division
- Div. of Forestry & Wildlife
- Div. of State Parks
- Commission on Water Resource Management
- Office of Conservation & Coastal Lands
- Land Division -Hawaii District
- Historic Preservation

RECEIVED
COMMISSION ON WATER
RESOURCE MANAGEMENT
2009 NOV 10 AM 10:17

cc:

TO:

FROM:

for Morris M. Atta

SUBJECT: Pre-Consultation for Waimea District/Regional Park

LOCATION: Island of Hawaii

APPLICANT: PBR Hawaii & Associates, Inc. on behalf of County of Hawaii, Dept of Parks & Recreation

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by November 27, 2009.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

- We have no objections.
- We have no comments.
- Comments are attached.

Signed:

Date:

11.12.09

LINDA LINGLE
GOVERNOR OF HAWAII



LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

November 9, 2009

MEMORANDUM

TO:

DLNR Agencies:

- Div. of Aquatic Resources
- Div. of Boating & Ocean Recreation
- Engineering Division
- Div. of Forestry & Wildlife
- Div. of State Parks
- Commission on Water Resource Management
- Office of Conservation & Coastal Lands
- Land Division -Hawaii District
- Historic Preservation

FROM:

for Morris M. Atta *Chalene*

SUBJECT: Pre-Consultation for Waimea District/Regional Park

LOCATION: Island of Hawaii

APPLICANT: PBR Hawaii & Associates, Inc. on behalf of County of Hawaii, Dept of Parks & Recreation

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by November 27, 2009.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

- We have no objections.
- We have no comments.
- Comments are attached.

Signed: *Paul J Conry*
Date: NOV 12 2009

**PAUL J. CONRY, ADMINISTRATOR
DIVISION OF FORESTRY AND WILDLIFE**

RECEIVED
LAND DIVISION
2009 NOV 13 P 3:13
DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

LINDA LINGLE
GOVERNOR OF HAWAII



LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

November 9, 2009

2009 NOV 12 P 12:24

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2009 NOV 18 A 10:11
DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

MEMORANDUM

- TO: **DLNR Agencies:**
- Div. of Aquatic Resources
 - Div. of Boating & Ocean Recreation
 - Engineering Division
 - Div. of Forestry & Wildlife
 - Div. of State Parks
 - Commission on Water Resource Management
 - Office of Conservation & Coastal Lands
 - Land Division - Hawaii District
 - Historic Preservation

FROM: *for* Morris M. Atta *Maalene*
 SUBJECT: Pre-Consultation for Waimea District/Regional Park
 LOCATION: Island of Hawaii
 APPLICANT: PBR Hawaii & Associates, Inc. on behalf of County of Hawaii, Dept of Parks & Recreation

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by November 27, 2009.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

- We have no objections.
- We have no comments.
- Comments are attached.

Signed: *[Signature]*

Date: 11.17.09

53451

Laura H. Thielen
Chairperson
Board of Land and Natural Resources
Commission on Water Resource Management

Linda Lingle
Governor of Hawaii



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

RECEIVED
STATE PARKS DIV

'09 NOV 12 AM 10:30

November 9, 2009

DEPT OF LAND &
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NATURAL RESOURCES
STATE OF HAWAII

NOV 19 AM 10:19

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LAND DIVISION

MEMORANDUM

- TO: DLNR Agencies:
- Div. of Aquatic Resources
 - Div. of Boating & Ocean Recreation
 - Engineering Division
 - Div. of Forestry & Wildlife
 - Div. of State Parks
 - Commission on Water Resource Management
 - Office of Conservation & Coastal Lands
 - Land Division -Hawaii District
 - Historic Preservation

FROM: *for* Morris M. Atta *Maatene*

SUBJECT: Pre-Consultation for Waimea District/Regional Park

LOCATION: Island of Hawaii

APPLICANT: PBR Hawaii & Associates, Inc. on behalf of County of Hawaii, Dept of Parks & Recreation

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by November 27, 2009.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

- We have no objections.
- We have no comments.
- Comments are attached.

Signed: *[Signature]*

Date: *11/12/09*

LINDA LINGLE
GOVERNOR OF HAWAII



LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

November 9, 2009

MEMORANDUM

- TO: **DLNR Agencies:**
- Div. of Aquatic Resources
 - ~~Div. of Boating & Ocean Recreation~~
 - Engineering Division
 - ~~Div. of Forestry & Wildlife~~
 - Div. of State Parks
 - Commission on Water Resource Management
 - Office of Conservation & Coastal Lands
 - Land Division -Hawaii District
 - Historic Preservation

FROM: *for* Morris M. Atta *Maalene*
 SUBJECT: Pre-Consultation for Waimea District/Regional Park
 LOCATION: Island of Hawaii
 APPLICANT: PBR Hawaii & Associates, Inc. on behalf of County of Hawaii, Dept of Parks & Recreation

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by November 27, 2009.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

- We have no objections.
- We have no comments.
- Comments are attached.

Signed: *[Signature]*
 Date: 11/19/09

RECEIVED
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 DEPT. OF LAND &
 NATURAL RESOURCES
 STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/MorrisAtta
Ref.:PreConWaimeaDistrictPark
Hawaii.460

COMMENTS

- () We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone ____.
- (X) **Please take note that based on the map that you have provided the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone X. The Flood Insurance Program does not have any regulations for developments within Flood Zone X.**
- () Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is ____.
- () Please note that the project must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol Tyau-Beam, of the Department of Land and Natural Resources, Engineering Division at (808) 587-0267.

Please be advised that 44CFR indicates the minimum standards set forth by the NFIP. Your Community's local flood ordinance may prove to be more restrictive and thus take precedence over the minimum NFIP standards. If there are questions regarding the local flood ordinances, please contact the applicable County NFIP Coordinators below:

- () Mr. Robert Sumitomo at (808) 768-8097 or Mr. Mario Siu Li at (808) 768-8098 of the City and County of Honolulu, Department of Planning and Permitting.
- () Mr. Frank DeMarco at (808) 961-8042 of the County of Hawaii, Department of Public Works.
- () Mr. Francis Cerizo at (808) 270-7771 of the County of Maui, Department of Planning.
- () Mr. Mario Antonio at (808) 241-6620 of the County of Kauai, Department of Public Works.

- () The applicant should include project water demands and infrastructure required to meet water demands. Please note that the implementation of any State-sponsored projects requiring water service from the Honolulu Board of Water Supply system must first obtain water allocation credits from the Engineering Division before it can receive a building permit and/or water meter.
- () The applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update.

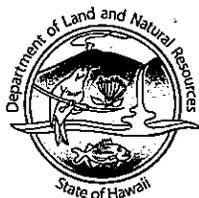
- () Additional Comments: _____

- () Other: _____

Should you have any questions, please call Ms. Suzie S. Agraan of the Planning Branch at 587-0258.

Signed: 
CARY S. CHANG ACTING CHIEF ENGINEER

Date: 11/19/09



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

December 15, 2009

PBR Hawaii & Associates, Inc.
1001 Bishop Street Suite 650
Honolulu, Hawaii 96813

Attention: Mr. Tom Schnell, AICP

Ladies and Gentlemen:

Subject: Pre-Consultation for Waimea District/Regional Park

Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources' (DLNR), Land Division distributed or made available a copy of your report pertaining to the subject matter to Historic Preservation Division for their review and comment.

The Department of Land and Natural Resources has no other comments to offer on the subject matter. Should you have any questions, please feel free to call our office at 587-0433. Thank you.

Sincerely,

A handwritten signature in black ink, appearing to read "Morris M. Atta".

 Morris M. Atta
Administrator

LINDA LINGLE
GOVERNOR OF HAWAII



RECEIVED
LAND DIVISION



2009 DEC 14 P 2:51

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII
STATE HISTORIC PRESERVATION DIVISION
1000 KAPOLEI BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

RUSSELL Y. TSUJI
FIRST DEPUTY

KEN C. KAWAHARA
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

December 10, 2009

LOG NO: 2009.4088
DOC NO: 0912MD06
Archaeology

MEMORANDUM

TO: Morris M. Atta
DLNR Land Division

FROM: Nancy McMahon, Deputy SHPO/State Archaeologist and Historic Preservation Manager
State Historic Preservation Division *Nancy A. McMahon*

SUBJECT: **Chapter 6E-8 Historic Preservation Review –
Pre-Consultation for Waimea District/Regional Park
Waikoloa Ahupua`a, South Kohala District, Island of Hawaii
TMKs: (3) 6-7-001:025, 6-7-002:017 & 063**

Thank you for the opportunity to comment on the aforementioned project, which we received on November 12, 2009. We understand you had wished for comments by November 27, 2009; we apologize for the delay in our reply. The following is the information we provided to PBR Hawaii regarding this same project (*Log No. 2009.4070, Doc No. 0911MD30*).

Recent activities in neighboring parcels in Waikoloa have encountered an extensive cultural layer of artifacts in the vicinity of the Parker Ranch connector road. Because of these recent discoveries, which included human remains, we urge that careful consideration of impacts to historic properties be considered in planning the park. To the extent that the area(s) impacted have not previously been subject to archaeological study/testing we suggest that this would be a beneficial part of the planning process.

If you have any questions or comments about this letter please contact Morgan Davis at (808) 933-7650 or via email to: morgan.e.davis@hawaii.gov.



PBR HAWAII

& ASSOCIATES, INC.

August 2, 2013

PRINCIPALS

THOMAS S. WITTEN, ASLA
President

R. STAN DUNCAN, ASLA
Executive Vice-President

RUSSELL Y. I. CHUNG, FASLA, LEED®AP BD+C
Executive Vice-President

VINCENT SHIGEKUNI
Vice-President

GRANT T. MURAKAMI, AICP, LEED®AP BD+C
Vice-President

W. FRANK BRANDT, FASLA
Chairman Emeritus

Mr. Russell Y. Tsuji, Land Administrator
State of Hawai'i
Department of Land and Natural Resources - Land Division
1151 Punchbowl Street, Room 220
Honolulu, Hawai'i 96813

**SUBJECT: PRE-CONSULTATION FOR WAIMEA DISTRICT/REGIONAL PARK,
LOCATED AT WAIMEA, SOUTH KŌHALA, HAWAI'I, TMK: (3) 6-7-
001:025 (portion), (3) 6-7-002:017 (portion) and (3) 6-7-002:063 (portion)**

ASSOCIATES

TOM SCHNELL, AICP
Senior Associate

RAYMOND T. HIGA, ASLA
Senior Associate

KIMI MIKAMI YUEN, LEED®AP BD+C
Senior Associate

SCOTT ALIKA ABRIGO, LEED®AP BD+C
Managing Director - Kapolei

ROY TAKEMOTO
Managing Director - Hilo

SCOTT MURAKAMI, ASLA, LEED®AP
Associate

DACHENG DONG, LEED®AP
Associate

MARC SHIMATSU, ASLA
Associate

MICHAEL SHIBATA, AICP
Associate

CATIE CULLISON, AICP
Associate

Dear Mr. Tsuji,

As a planning consultant for the County of Hawai'i Department of Parks and Recreation, PBR HAWAII is preparing a Draft Environmental Assessment (EA) for the Waimea District/Regional Park. We sent a request for pre-consultation comments to the Department of Land and Natural Resources (DLNR) in October 2009 as part of the scoping process. DLNR provided comments in the attached letters dated November 30, 2009 and December 15, 2009.

We note that the Division of Aquatic Resources, Division of State Parks, Commission on Water Resource Management, Division of Forestry and Wildlife, and the Land Division – Hawai'i District had no comments.

Engineering Division

We note that a portion of the park site is located in Flood Zone X, where the Flood Insurance Program does not have regulations for developments. However, the majority of the park is located in Zone AE, or within the 100-year floodplain. According to Hawai'i County Code, Chapter 27 (Floodplain management), park recreational/sport fields and parking areas are permitted uses in the floodplain. However, the Park's buildings must be located outside of Zone AE or designed with finished floor elevations above the designated base flood elevation plus an additional height of at least one foot or receive a variance. The Park's buildings such as the play court, multi-use community building, and comfort stations will be in compliance with Chapter 27, Hawai'i County Code.

Historic Preservation Division

We understand that extensive cultural resources and artifacts were discovered in the vicinity of Ala 'Ōhi'a Road (formerly known as the Parker Ranch connector road). The Waimea District/Regional Park is located south of the roadway. Primary access to the park will be provided via a new driveway connection to Ala 'Ōhi'a Road between the intersections of Māmalahoa Highway and Ka'omoloā Road.

An archaeological inventory survey was conducted for the Park and will be included in the Draft EA. The archaeological inventory survey was transmitted to the Historic Preservation Division on June 7, 2010 for review. We have not received a response to date.

HONOLULU OFFICE
1001 Bishop Street, Suite 650
Honolulu, Hawai'i 96813-3484
Tel: (808) 521-5631
Fax: (808) 523-1402
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printed on recycled paper

Mr. Russell Y. Tsuji

SUBJECT:PRE-CONSULTATION FOR WAIMEA DISTRICT/REGIONAL PARK, LOCATED AT WAIMEA, SOUTH KŌHALA, HAWAI'I, TMK: (3) 6-7-001:025 (portion), (3) 6-7-002:017 (portion) and (3) 6-7-002:063 (portion)

August 2, 2013

Page 2 of 2

We appreciate DLNR's participation in the environmental review process. DLNR's letters will be included in the Draft EA. A copy of the Draft EA will be sent to you. We expect that the public comment period on the Draft EA will begin in September 2013. You will have an opportunity to provide comments on the Waimea District/Regional Park Draft EA during the public comment period.

Sincerely,

PBR HAWAII



Tammy Keli'i Kapali
Planner

cc: County of Hawai'i Department of Parks and Recreation

Attachments: DLNR Comment Letters (11-30-2009; 12-15-2009)

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

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

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

RUSSELL Y. TSUIJI
FIRST DEPUTY

KEN C. KAWAHARA
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
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COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

November 30, 2009

Tom Schnell, AICP Senior Associate
PBR Hawaii
Via email to: tschnell@pbrhawaii.com

LOG NO: 2009.4070
DOC NO: 0911MD30
Archaeology

Dear Mr. Schnell:

**SUBJECT: Chapter 6E-8 Historic Preservation Review –
Pre-consultation for Waimea District/Regional Park
Waikoloa Ahupua`a, South Kohala District, Island of Hawaii
TMKs: (3) 6-7-001:025, 6-7-002:017 & 063**

Thank you for the opportunity to comment on the aforementioned project, which we received on November 3, 2009. You had requested comments by November 30, 2009 on an upcoming EA related to this project.

Recent activities in neighboring parcels in Waikoloa have encountered an extensive cultural layer of artifacts in the vicinity of the Parker Ranch connector road. Because of these recent discoveries, which included human remains, we urge that careful consideration of impacts to historic properties be considered in planning the park. To the extent that the area(s) impacted have not previously been subject to archaeological study/testing we suggest that this would be a beneficial part of the planning process.

If you have any questions or comments about this letter please contact Morgan Davis at (808) 933-7650 or via email to: morgan.e.davis@hawaii.gov.

Aloha,

A handwritten signature in cursive script that reads "Nancy A. McMahon".

Nancy McMahon, Deputy SHPO/State Archaeologist
and Historic Preservation Manager
State Historic Preservation Division

Cc:
Robert A. Fitzgerald, Director
County of Hawaii Department of Parks and Recreation
101 Pauahi Street, Suite 6
Hilo, Hawaii 96720



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August 2, 2013

Ms. Nicki Thompson, Interim Administrator
State Historic Preservation Division
Kakuhihewa Building, Suite 555
601 Kamokila Boulevard
Kapolei, HI 96707

**SUBJECT: PRE-CONSULTATION FOR WAIMEA DISTRICT/REGIONAL PARK,
LOCATED AT WAIMEA, SOUTH KŌHALA, HAWAI'I, TMK: (3) 6-7-
001:025 (portion), (3) 6-7-002:017 (portion) and (3) 6-7-002:063 (portion)**

Dear Ms. Thompson,

As a planning consultant for the County of Hawai'i Department of Parks and Recreation, PBR HAWAII is preparing a Draft Environmental Assessment (EA) for the Waimea District/Regional Park. We sent a request for pre-consultation comments to the State Historic Preservation Division (SHPD) in October 2009 as part of the scoping process. SHPD provided comments in the attached letter (LOG NO. 2009.4070; DOC NO. 0911MD30) dated November 30, 2009.

We understand that extensive cultural resources and artifacts were discovered in the vicinity of Ala 'Ōhi'a Road (formerly known as the Parker Ranch connector road). The Waimea District/Regional Park is located south of the roadway. Primary access to the park will be provided via a new driveway connection to Ala 'Ōhi'a Road between the intersections of Māmalahoa Highway and Ka'omoloā Road. The Draft EA will include an archaeological inventory survey to address potential impacts related to archaeological and historic resources.

We appreciate SHPD's participation in the environmental review process. SHPD's letter will be included in the Draft EA. A copy of the Draft EA will be sent to you. We expect that the public comment period on the Draft EA will begin in September 2013. You will have an opportunity to provide comments on the Waimea District/Regional Park Draft EA during the public comment period.

Sincerely,

PBR HAWAII

Tammy Keli'i Kapali
Planner

cc: County of Hawai'i Department of Parks and Recreation

Attachment: SHPD Comment Letter (LOG NO. 2009.4070; DOC NO. 0911MD30)

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LINDA LINGLE
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DIRECTOR

Deputy Directors
MICHAEL D. FORMBY
FRANCIS PAUL KEENO
BRIAN H. SEKIGUCHI
JIRO A. SUMADA

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

IN REPLY REFER TO:

STP 8.3462

December 3, 2009

Mr. Tom Schnell, AICP
Senior Associate
PBR HAWAII and Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

Dear Mr. Schnell:

Subject: Waimea District/Regional Park
Pre-Consultation for Draft Environmental Assessment (DEA)
TMK: 6-7-001: 25, 6-7-002: 17 and 6-7-002: 63

Thank you for requesting the State Department of Transportation's (DOT) review of the subject Hawaii County Department of Parks and Recreation project.

DOT understands that subject project proposes to develop a new regional/district 45-acre park for Waimea. The project site is located south of Waimea Town and north of Waimea-Kohala Airport. Access to the park will be from a roadway once referred to as a "Mini Waimea Bypass" that connects to Hawaii Belt Road (Route 19) in Waimea Town and to Mamalahoa Highway (Route 190) near the Parker Ranch Headquarters.

Given the potential impacts to DOT transportation facilities, Waimea-Kohala Airport and the State highway, Mamalahoa Highway, the following comments should be addressed in the DEA.

1. The developer should submit a Federal Aviation Administration (FAA) Form 7460-1 "Notice of Proposed Construction or Alteration" for any light poles or objects that may be a hazard to navigation. In addition, a FAA Form 7460-1 should be submitted for any tall equipment, such as cranes, that may be used during construction. This form can be accessed on the internet at <https://www.oceaa.faa.gov/oceaa/external/portal.jsp>.
2. If any radio frequencies are required for communications, then this may also be submitted on the Form 7460-1.
3. Dust mitigation (watering) during construction will be required to minimize impact to nearby Waimea-Kohala Airport.

Mr. Tom Schnell, AICP
Page 2
December 3, 2009

STP 8.3462

4. Lighting at the proposed park may need to recognize sensitivity of Mauna Kea observatory's concerns with outdoor light pollution.
5. DOT Highways Division requests that a traffic report be prepared and submitted for their review. Highways Division is concerned with the impacts that park traffic may have on Mamalahoa Highway (Route 190), even if it is at a point under Hawaii County jurisdiction.
6. The park's proximity to the proposed Waimea Bypass raises potential Section 4(f) concerns that may detrimentally impact DOT's proposed roadway project. The DEA should appropriately address this concern and ensure that any proposed park does not jeopardize the future construction of this much needed roadway project.
7. DOT Highways Division reserves further comment until the DEA and traffic report are available for review.

DOT appreciates the opportunity to provide comments. If there are any questions, please contact Mr. David Shimokawa of the DOT Statewide Transportation Planning Office at telephone number (808) 587-2356.

Very truly yours,

A handwritten signature in black ink, appearing to read 'BM', with a long horizontal flourish extending to the right.

BRENNON T. MORIOKA, Ph.D., P.E.
Director of Transportation



PBR HAWAII

& ASSOCIATES, INC.

August 2, 2013

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Mr. Glen Okimoto, Director
State of Hawai'i
Department of Transportation
869 Punchbowl Street
Honolulu, HI 96813-5097

**SUBJECT: PRE-CONSULTATION FOR WAIMEA DISTRICT/REGIONAL PARK,
LOCATED AT WAIMEA, SOUTH KŌHALA, HAWAII, TMK: (3) 6-7-
001:025 (portion), (3) 6-7-002:017 (portion) and (3) 6-7-002:063 (portion)**

Dear Mr. Okimoto,

As a planning consultant for the County of Hawai'i Department of Parks and Recreation, PBR HAWAII is preparing a Draft Environmental Assessment (EA) for the Waimea District/Regional Park. We sent a request for pre-consultation comments to the State Department of Transportation (DOT) in October 2009 as part of the scoping process. DOT provided comments in the attached letter (STP 8.3462) dated December 3, 2009. Below are our responses to DOT's comments.

1. **Navigation Hazards.** A Federal Aviation Administration (FAA) Form 7460-1 "Notice of Proposed Construction or Alteration" will be submitted for any objects that may be a hazard to navigation.
2. **Radio frequencies.** If warranted, radio frequencies will be included in Form 7460-1.
3. **Dust mitigation.** All construction activities will comply with the provisions of Section 11-60.1-33, Hawaii Administrative Rules related to Fugitive Dust.
4. **Exterior Lighting.** Lighting requirements in force at the time of building permit application shall be applied. In compliance with Section 14-50, Hawaii County Code, exterior lights will be shielded so as to mitigate the effects of ambient glare on the astronomical observatories located on Mauna Kea.
5. **Traffic Report.** The Draft EA will include a Traffic Impact Analysis Report which will discuss potential traffic impacts on Māmalahoa Highway.
6. **Ala 'Ōhi'a Road (formerly known as Waimea Bypass).** Since our request for pre-consultation in 2009, the Ala 'Ōhi'a Road has been constructed. The Waimea District/Regional Park is located south of the roadway. Primary access to the park will be provided via a new driveway connection to Ala 'Ōhi'a Road between the intersections of Kalei'ohu Street and Waikani Street.

We appreciate DOT's participation in the environmental review process. DOT's letter will be included in the Draft EA. A copy of the Draft EA will be sent to you. We expect that the public comment period on the Draft EA will begin in September 2013. You will have an opportunity to provide comments on the Waimea District/Regional Park Draft EA during the public comment period.

Sincerely,

PBR HAWAII

Tammy Keli'i Kapali
Planner

cc: County of Hawai'i Department of Parks and Recreation

Attachment: DOT Comment Letter (STP 8.3462)

LINDA LINGLE
Governor of Hawai'i



KATHERINE PUANA KEALOHA
Director

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

Telephone (808) 586-4185
Facsimile (808) 586-4186
Electronic Mail: oeqc@doh.hawaii.gov

Department of Health
235 South Beretania Street
Leiopapa A Kamehameha, Suite 702
Honolulu, Hawai'i 96813

November 6, 2009

Tom Schnell, AICP
PBR Hawai'i & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawai'i 96813-3484

Subject: PRE-CONSULTATION FOR WAIMEA DISTRICT/REGIONAL PARK,
WAIMEA, HAWAII'I, TMK: (3) 6-7-001:25, (3) 6-7-002:17 and (3) 6-7-002:63

Dear Mr. Schnell:

Thank you for your pre-consultation letter, asking for comments on the subject project. The Office of Environmental Quality Control offers these comments:

1. This link will provide you a copy of the OEQC checklist to assist you with the draft document:
[http://oeqc.doh.hawaii.gov/Shared%20Documents/Environmental_Assessment_PrepKit/DEA-FEA-Checklist.pdf](http://oeqc.doh.hawaii.gov/Shared%20Documents/Environmental_Assessment_PrepKit/DEA-<u>FEA-Checklist.pdf</u>)
2. The OEQC website (<http://hawaii.gov/health/environmental/oeqc/index.html/>) contains very useful links to relevant information regarding Chapter 343, Hawai'i Revised Statutes, rules, and procedures with respect to submittal requirements for your document.

Feel free to contact Herman Tuiolosega at (808) 586-4185 if you have further questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Katherine Puana Kealoha".

KATHERINE PUANA KEALOHA
Director



PBR HAWAII

& ASSOCIATES, INC.

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Hilo, Hawai'i 96720-1553
Tel/Cel: (808) 315-6878

August 2, 2013

Ms. Genevieve Salmonson, Interim Director
State Department of Health
Office of Environmental Quality Control
235 South Beretania Street
Leiopapa A Kamehameha, Suite 702
Honolulu, HI 96813

**SUBJECT: PRE-CONSULTATION FOR WAIMEA DISTRICT/REGIONAL PARK,
LOCATED AT WAIMEA, SOUTH KŌHALA, HAWAI'I, TMK: (3) 6-7-
001:025 (portion), (3) 6-7-002:017 (portion) and (3) 6-7-002:063 (portion)**

Dear Ms. Salmonson,

As a planning consultant for the County of Hawai'i Department of Parks and Recreation, PBR HAWAII is preparing a Draft Environmental Assessment (EA) for the Waimea District/Regional Park. We sent a request for pre-consultation comments to the Office of Environmental Quality Control (OEQC) in October 2009 as part of the scoping process. The OEQC provided comments in the attached letter dated November 6, 2009.

In response to your comments we reviewed OEQC's checklist and information on OEQC's website in preparation of the Draft EA. In addition, we reviewed OEQC's *Guidebook for the Hawaii State Environmental Review Process*.

We appreciate OEQC's participation in the environmental review process. OEQC's letter will be included in the Draft EA. We expect that the public comment period on the Draft EA will begin in September 2013. OEQC will have an opportunity to provide comments on the Waimea District/Regional Park Draft EA during the public comment period.

Sincerely,

PBR HAWAII

Tammy Keli'i Kapali
Planner

cc: County of Hawai'i Department of Parks and Recreation

Attachment: OEQC Comment Letter (11-6-2009)

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DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, HONOLULU DISTRICT
FORT SHAFTER, HAWAII 96858-5440

REPLY TO
ATTENTION OF:

November 16, 2009

Regulatory Branch

File No. POH-2009-00328

Tom Schnell, AICP
PBR Hawaii & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawai'i 96813-3484

Dear Mr. Schnell:

We have received your letter, submitted on behalf of the County of Hawai'i Department of Parks and Recreation, requesting a determination as to whether or not a Department of the Army (DA) permit is required for a planned Waimea District/Regional Park on a 45-acre site near Waimea, County of Hawai'i, Hawai'i (TMKs: (3) 6-7-001:25, (3) 6-7-002:17 and (3) 6-7-002:63)). We have reviewed your proposal pursuant to Section 10 of the Rivers and Harbors Act of 1899 (Section 10) and Section 404 of the Clean Water Act (Section 404). We have determined that a DA permit is not required for proposed work located at this location.

Section 10 requires that a DA permit be obtained for certain structures or work in or affecting navigable waters of the United States (U.S.), prior to conducting the work (33 U.S.C. 403). Section 404 requires that a DA permit be obtained for the discharge of dredged and/or fill material into waters of the U.S., including wetlands and navigable waters of the U.S, prior to conducting the work (33 U.S.C. 1344). Because there are no navigable or other identified waters of the US, a DA permit is not required. Other state and local regulations may still apply.

Thank you for giving us the opportunity to review this proposal and for your cooperation with our regulatory program. Please be advised you can provide comments on your experience with the Honolulu District Regulatory Branch by accessing our web-based customer survey form at <http://per2.nwp.usace.army.mil/survey.html>.

Should you have any questions, please contact Mr. Robert Deroche of my staff at (808) 438-2039, by facsimile at (808) 438-4060, or by Email at robert.d.deroche2@usace.army.mil. Please refer to File No. POH-2009-00328 in all future communications with this office regarding this or other projects at this location.

Sincerely,

George P. Young, P.E.
Chief, Regulatory Branch



PBR HAWAII

& ASSOCIATES, INC.

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August 2, 2013

George P. Young, P.E., Chief
U.S. Army Corps of Engineers
Honolulu District
Regulatory Branch
Fort Shafter, Hawai'i 96858-5540

**SUBJECT: PRE-CONSULTATION FOR WAIMEA DISTRICT/REGIONAL PARK,
LOCATED AT WAIMEA, SOUTH KŌHALA, HAWAI'I, TMK: (3) 6-7-
001:025 (portion), (3) 6-7-002:017 (portion) and (3) 6-7-002:063 (portion)**

Dear Mr. Young,

As a planning consultant for the County of Hawai'i Department of Parks and Recreation, PBR HAWAII is preparing a Draft Environmental Assessment (EA) for the Waimea District/Regional Park. We sent a request for pre-consultation comments to your agency in October 2009 as part of the scoping process. We received your comment letter (POH-2009-00328) dated November 16, 2009 (attached).

We understand that there are no navigable or other identified waters of the U.S. in the vicinity of the Waimea District/Regional Park and therefore a Department of the Army permit is not required for the park location. We acknowledge that other state and local regulations may apply.

We appreciate your participation in the environmental review process. Your letter will be included in the Draft EA. A copy of the Draft EA will be sent to you. We expect that the public comment period on the Draft EA will begin in September 2013. You will have an opportunity to provide comments on the Waimea District/Regional Park Draft EA during the public comment period.

Sincerely,

PBR HAWAII

Tammy Keli'i Kapali
Planner

cc: County of Hawai'i Department of Parks and Recreation

Attachment: POH-2009-00328

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United States Department of the Interior



FISH AND WILDLIFE SERVICE
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122, Box 50088
Honolulu, Hawaii 96850

DEC 07 2009

In Reply Refer To:
2010-TA-0047

Mr. Tom Schnell, AICP
PBR Hawaii and Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

Subject: Early Consultation Request for the Proposed Waimea District/Regional Park,
Waimea, Hawaii

Dear Mr. Schnell:

We received your letter on November 3, 2009, requesting early coordination on a proposed project by the County of Hawaii Department of Parks and Recreation to develop a new district/regional park for Waimea, island of Hawaii [TMK: (3) 6-7-001:25, (3) 6-7-002:17, (3) 6-7-002:63]. The proposed park encompasses 45 acres (18 hectares) and includes the construction of a community and recreational center, swimming pool, playground, fields for soccer, softball, baseball and football, associated parking, spectator facilities and restrooms.

Based on information in our files, including data compiled by the Hawaii Biodiversity and Mapping Program, and the Hawaii GAP Program, the federally endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*) and the Blackburn's sphinx moth (*Manduca blackburni*) may occur in the project vicinity. We offer the following recommendations as potential issues to be reviewed and addressed in the Draft Environmental Assessment (DEA).

Hawaiian hoary bats roost in both exotic and native woody vegetation and leave their young unattended in "nursery" trees and shrubs when they forage. If trees or shrubs suitable for bat roosting are cleared during the bat breeding season (April to August), there is a risk that young bats could inadvertently be harmed or killed. To minimize impacts to the endangered Hawaiian hoary bat, woody plants greater than 15 feet (4.6 meters) tall will not be removed or trimmed during the bat birthing and pup rearing season (May 15 through August 15).

Adult Blackburn's sphinx moth feeds on nectar from native plants including beach morning glory (*Ipomoea pes-caprae*), iliee (*Plumbago zeylanica*), maiapilo (*Capparis sandwichiana*), and the larvae are known to feed upon non-native tree tobacco (*Nicotiana glauca*) and the native aiea

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IN AMERICA 

(*Nothocestrum breviflorum*). All of these species may occur on the project site. We recommend a qualified botanist survey the site for the presence of Blackburn's sphinx moth host plants.

Outdoor lighting, such as street lights and sports field lights, can adversely impact listed and migratory seabird species protected under the Endangered Species Act of 1973 (16 U.S.C. 1531 *et seq.*), as amended, and the Migratory Bird Treaty Act [16 U.S.C. 703-712]. Night lighting poses a significant threat to fledgling federally protected seabirds such as the Hawaiian petrel (*Pterodroma sandwichensis*) and the Newell's shearwater (*Puffinus auricularis newelli*). Seabirds fly at night and are attracted to artificially-lighted areas which can result in disorientation and subsequent fallout due to exhaustion or collision with objects such as utility lines, guy wires, and towers that protrude above the vegetation layer. Any increase in the use of night-time lighting, particularly during each year's peak fallout period (September 15 through December 15), could result in seabird injury or mortality. Once grounded, they are vulnerable to predators or often struck by vehicles along roadways. Potential impacts to seabirds could be minimized by shielding outdoor lights associated with the project to the maximum extent possible, minimizing night-time construction, and providing all project staff and residents with information about seabird fallout. All lights, including street lights, should be shielded so the bulb can only be seen from below and use the lowest wattage bulbs possible. The DEA should address all potential impacts to listed seabirds and outline conservation measures to minimize these impacts.

If you have any questions regarding this letter, please contact Dr. Jeff Zimpfer, Fish and Wildlife Biologist, Consultation and Technical Assistance Program (phone: 808-792-9431; email: jeff_zimpfer@fws.gov).

Sincerely,



for Loyal Mehrhoff
Field Supervisor



PBR HAWAII & ASSOCIATES, INC.

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August 2, 2013

Loyal Mehrhoff
U.S. Department of the Interior
Fish and Wildlife Service
P.O. Box 50088
Honolulu, HI 96850

**SUBJECT: PRE-CONSULTATION FOR WAIMEA DISTRICT/REGIONAL PARK,
LOCATED AT WAIMEA, SOUTH KŌHALA, HAWAI'I, TMK: (3) 6-7-
001:025 (portion), (3) 6-7-002:017 (portion) and (3) 6-7-002:063 (portion)**

Dear Mr. Mehroff,

As a planning consultant for the County of Hawai'i Department of Parks and Recreation, PBR HAWAII is preparing a Draft Environmental Assessment (EA) for the Waimea District/Regional Park. We sent a request for pre-consultation comments to your agency in October 2009 as part of the scoping process. We received your comment letter (2010-TA-0047) dated December 7, 2009 (attached). Below are our responses to your comments.

Thank you for providing information on the Hawaiian hoary bat (*Lasiurus cinereus semotus*) and the Blackburn's sphinx moth (*Manduca blackburni*). We note that based on information in your files individuals of these species may occur in the vicinity of Waimea District/Regional Park. The Draft EA will include a biological survey which will discuss potential impacts and mitigation measures related to botanical and wildlife resources.

To minimize the threat of disorientation or downing of migratory birds such as the Hawaiian Petrel (*Pterodroma sandwichensis*) and Newell's Shearwaters (*Puffinus auricularis newelli*), which may over-fly portions of the park, all exterior park lighting will be shielded in compliance with Section 14-50, Hawaii County Code. In addition, lighting requirements in force at the time of building permit application will be applied.

We appreciate your participation in the environmental review process. Your letter will be included in the Draft EA. A copy of the Draft EA will be sent to you. We expect that the public comment period on the Draft EA will begin in September 2013. You will have an opportunity to provide comments on the Waimea District/Regional Park Draft EA during the public comment period.

Sincerely,

PBR HAWAII

Tammy Keli'i Kapali
Planner

cc: County of Hawai'i Department of Parks and Recreation

Attachment: 2010-TA-0047



William P. Kenoi
Mayor

William T. Takaba
Managing Director

Lono A. Tyson
Director

Ivan M. Torigoe
Deputy Director

County of Hawai'i
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
25 Aupuni Street • Hilo, Hawai'i 96720
(808) 961-8083 • Fax (808) 961-8086
http://co.hawaii.hi.us/directory/dir_envmng.htm

November 13, 2009

PBR HAWAII & ASSOCIATES, INC.
1001 Bishop Street
ASB Tower, Suite 650
Honolulu, HI 96813-3484

Attention: Tom Schnell, AICP
Senior Associate

RE: Pre-Consultation for Waimea District/Regional Park, Waimea, Hawai'i
TMK: 6-7-001:25, 6-7-002:17 and 6-7-002:63

Dear Mr. Schnell,

We have no comments to offer on the subject sale.

Thank you for allowing us to review and comment on this project.

Best Regards and Aloha,


Lono A. Tyson
DIRECTOR

18733 R



PBR HAWAII

& ASSOCIATES, INC.

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Vice-President

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Chairman Emeritus

August 2, 2013

Ms. Dora Beck, P.E., Acting Director
County of Hawai'i
Department of Environmental Management
25 Aupuni Street
Hilo, HI 96720

**SUBJECT: PRE-CONSULTATION FOR WAIMEA DISTRICT/REGIONAL PARK,
LOCATED AT WAIMEA, SOUTH KŌHALA, HAWAI'I, TMK: (3) 6-7-
001:025 (portion), (3) 6-7-002:017 (portion) and (3) 6-7-002:063 (portion)**

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Associate

MICHAEL SHIBATA, AICP
Associate

CATIE CULLISON, AICP
Associate

Dear Ms. Beck,

As a planning consultant for the County of Hawai'i Department of Parks and Recreation, PBR HAWAII is preparing a Draft Environmental Assessment (EA) for the Waimea District/Regional Park. We sent a request for pre-consultation comments to the Department of Environmental Management (DEM) in October 2009 as part of the scoping process. We received DEM's comment letter dated November 13, 2009 (attached).

We appreciate DEM's participation in the environmental review process. DEM's letter will be included in the Draft EA. A copy of the Draft EA will be sent to you. We expect that the public comment period on the Draft EA will begin in September 2013. You will have an opportunity to provide comments on the Waimea District/Regional Park Draft EA during the public comment period.

Sincerely,

PBR HAWAII

Tammy Keli'i Kapali
Planner

cc: County of Hawai'i Department of Parks and Recreation

Attachment: DEM Comment Letter (11-13-2009)

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printed on recycled paper

William P. Kenoi
Mayor



Warren H. W. Lee
Director

William T. Takaba
Managing Director

County of Hawai'i
DEPARTMENT OF PUBLIC WORKS

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www.co.hawaii.hi.us

December 9, 2009

Mr. Tom Schell, AICP, Senior Associate
PBR Hawaii & Associates, Inc.
1001 Bishop St., Ste. 650
Honolulu, HI 96813-3484

Subject: Pre-Consultation for Waimea District / Regional Park
Waimea, Hawaii
TMK: 6-7-001:025, 6-7-002:017 & 6-7-002:063

We received the subject pre-consultation and have the following comments regarding impacts to private and County facilities.

1. According to the site location map attached to your request, the park footprint is partially located within Zone AE on the Flood Insurance Rate Map. Please note that in 2005 a Letter of Map revision was issued for alterations to Lanimaumau Stream in the project area. The Letter of Map Revision (LOMR) was issued under Case Number 05-09-238P. Please address possible impact and proposed mitigation to the existing drainage facilities. A flood study, and submittal for comment by the Federal Emergency Management Agency, may be required prior to alterations to the AE flood zone or watercourse.
2. A traffic impact analysis should be provided with the EA.

If you have any questions, please contact Kiran Emler of our Kona office at 327-3530.

A handwritten signature in black ink, appearing to read "Galen M. Kuba".

Galen M. Kuba, Division Chief
Engineering Division

cc: DPW ENG-HILO
County of Hawaii, Department of Parks and Recreation



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August 2, 2013

Ms. Nicki Thompson, Interim Administrator
State Historic Preservation Division
Kakuhihewa Building, Suite 555
601 Kamokila Boulevard
Kapolei, HI 96707

**SUBJECT: PRE-CONSULTATION FOR WAIMEA DISTRICT/REGIONAL PARK,
LOCATED AT WAIMEA, SOUTH KŌHALA, HAWAI'I, TMK: (3) 6-7-
001:025 (portion), (3) 6-7-002:017 (portion) and (3) 6-7-002:063 (portion)**

Dear Ms. Thompson,

As a planning consultant for the County of Hawai'i Department of Parks and Recreation, PBR HAWAII is preparing a Draft Environmental Assessment (EA) for the Waimea District/Regional Park. We sent a request for pre-consultation comments to the State Historic Preservation Division (SHPD) in October 2009 as part of the scoping process. SHPD provided comments in the attached letter (LOG NO. 2009.4070; DOC NO. 0911MD30) dated November 30, 2009.

We understand that extensive cultural resources and artifacts were discovered in the vicinity of Ala 'Ōhi'a Road (formerly known as the Parker Ranch connector road). The Waimea District/Regional Park is located south of the roadway. Primary access to the park will be provided via a new driveway connection to Ala 'Ōhi'a Road between the intersections of Māmalahoa Highway and Ka'omoloā Road. The Draft EA will include an archaeological inventory survey to address potential impacts related to archaeological and historic resources.

We appreciate SHPD's participation in the environmental review process. SHPD's letter will be included in the Draft EA. A copy of the Draft EA will be sent to you. We expect that the public comment period on the Draft EA will begin in September 2013. You will have an opportunity to provide comments on the Waimea District/Regional Park Draft EA during the public comment period.

Sincerely,

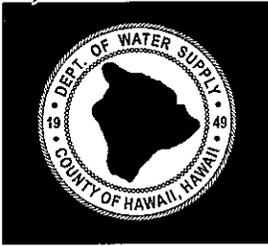
PBR HAWAII

Tammy Keli'i Kapali
Planner

cc: County of Hawai'i Department of Parks and Recreation

Attachment: SHPD Comment Letter (LOG NO. 2009.4070; DOC NO. 0911MD30)

O:\Job25\2506.11 Waimea District Park MP\EA\Pre-Consultation\Responses\SHPD.docx



DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAI'I

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

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

December 2, 2009

Mr. Tom Schnell, AICP
PBR Hawai'i & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, HI 96813-3484

**PRE-ENVIRONMENTAL ASSESSMENT CONSULTATION
WAIMEA DISTRICT/REGIONAL PARK
TAX MAP KEY 6-7-001:025, 6-7-002:017, AND 063**

We have reviewed the subject Pre-Environmental Assessment Consultation and have the following comments.

Water is available from an existing 8-inch waterline within Māmalahoa Highway fronting Tax Map Key 6-7-002:017. Please be informed that water availability in the area, which is subject to change without notice, allows for up to a maximum of 50 units of water per pre-existing lot record. Each unit of water is equal to an average daily usage of 400 gallons.

The Department has no objection to the proposed Waimea District/Regional Park, subject to the applicant understanding and accepting the following conditions:

1. Prior to effecting a water commitment for the project, the Department requests that the applicant submit estimated maximum daily water usage calculations for the project, prepared by a professional engineer licensed in the State of Hawai'i, for review and approval. The water usage calculations should include the total estimated maximum daily water usage in gallons per day and the estimated peak flow in gallons per minute (GPM).

Please note that the previously paid facilities charges and/or historical water use through the existing services to the subject parcels will be evaluated during review of the calculations to determine if water can be made available for the proposed project.

2. The applicant may be required to extend a water main to front the proposed project entrance; the size of which will be dependent on fire protection requirements and the water usage calculations provided per Item No. 1 above.
3. The proposed land use will require the installation of a reduced pressure type backflow prevention assembly within five (5) feet of the meter(s) serving the project, on private property. The installation of the backflow prevention assembly(s) must be inspected and approved by the Department before water service can be activated.
4. Subject to other agencies' requirements to construct improvements within the road right-of-way fronting the property affected by the proposed development, the applicant shall be responsible for the relocation and adjustment of the Department's affected water system facilities, should they be necessary.

... Water, Our Most Precious Resource ... Ka Wai A Kāne ...

The Department of Water Supply is an Equal Opportunity provider and employer.

Mr. Tom Schnell, AICP
Page 2
December 2, 2009

5. Please be informed that the existing 8-inch waterline within Māmalahoa Highway is capable of providing a theoretical fire-flow of 1,565 GPM. We recommend that the applicant contact the Fire Department for any fire protection requirements or alternatives.

Should there be any questions, you may 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:dfg



PBR HAWAII

& ASSOCIATES, INC.

August 2, 2013

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Mr. Quirino Antonio, Manager
County of Hawai'i
Department of Water Supply
345 Kekūanaō'a Street, Suite 20
Hilo, Hawai'i 96720

**SUBJECT: PRE-CONSULTATION FOR WAIMEA DISTRICT/REGIONAL PARK,
LOCATED AT WAIMEA, SOUTH KŌHALA, HAWAI'I, TMK: (3) 6-7-
001:025 (portion), (3) 6-7-002:017 (portion) and (3) 6-7-002:063 (portion)**

Dear Mr. Antonio,

As a planning consultant for the County of Hawai'i Department of Parks and Recreation, PBR HAWAII is preparing a Draft Environmental Assessment (EA) for the Waimea District/Regional Park. We sent a request for pre-consultation comments to the Department of Water Supply (DWS) in October 2009 as part of the scoping process. DWS provided comments in the attached letter dated December 2, 2009. Below are our responses to DWS's comments.

Thank you for the information regarding water availability in the area. We note that this is subject to change without notice.

We acknowledge that DPW has no objections to the Waimea District/Regional Park subject to understanding and acceptance of the following conditions:

1. Estimated maximum daily water usage calculations for the park will be submitted to DWS for review and approval prior to receiving a water commitment.
2. The water main will be extended to front the park site entrance, if warranted.
3. Before activating water service, a backflow prevention assembly will be installed for inspection and approval.
4. Should the Department's water facilities be affected, relocation and adjustment will be provided.
5. We will consult with the County Fire Department for any fire protection requirements or alternatives to the existing fire-flow capacity.

We appreciate DWS's participation in the environmental assessment process. DWS's letter will be included in the Draft EA. A copy of the Draft EA will be sent to you. We expect that the public comment period on the Draft EA will start in February 2013. You will have an opportunity to provide comments on the Waimea District/Regional Park Draft EA during the public comment period.

Sincerely,

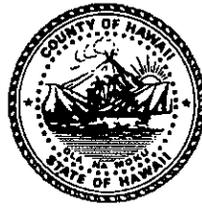
PBR HAWAII


Tammy Keli'i Kapali
Planner

cc: County of Hawai'i Department of Parks and Recreation

Attachment: DWS Comment Letter (12-2-2009)

William P. Kenoi
Mayor



Stephen J. Arnett
Housing Administrator

County of Hawaii
OFFICE OF HOUSING AND
COMMUNITY DEVELOPMENT

50 Wailuku Drive • Hilo, Hawai'i 96720-2456
V/TT (808) 961-8379 • FAX (808) 961-8685

November 5, 2009

Tom Schnell, AICP
PBR Hawaii & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawai'i 96813-3484

Subject: PRE-CONSULTATION FOR WAIMEA DISTRICT/REGIONAL PARK
TMK: (3) 6-7-001:025, 6-7-002:017 & 6-7-002:063

The Office of Housing and Community Development has reviewed your letter and materials dated October 30, 2009 and does not anticipate any impact to our housing programs/projects.

Thank you for the opportunity to comment.

If you have any questions or concerns, please contact Alan Rudo at (808) 961-8379.

for 
Stephen J. Arnett
Housing Administrator





PBR HAWAII

& ASSOCIATES, INC.

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August 2, 2013

Stephen J. Arnett, Housing Administrator
County of Hawai'i
Office of Housing and Community Development
50 Wailuku Drive
Hilo, Hawai'i 96720-2456

**SUBJECT: PRE-CONSULTATION FOR WAIMEA DISTRICT/REGIONAL PARK,
LOCATED AT WAIMEA, SOUTH KŌHALA, HAWAI'I, TMK: (3) 6-7-
001:025 (portion), (3) 6-7-002:017 (portion) and (3) 6-7-002:063 (portion)**

Dear Mr. Arnett,

As a planning consultant for the County of Hawai'i Department of Parks and Recreation, PBR HAWAII is preparing a Draft Environmental Assessment (EA) for the Waimea District/Regional Park. We sent a request for pre-consultation comments to the Office of Housing and Community Development (OHCD) in October 2009 as part of the scoping process. We received your comment letter dated November 5, 2009 (attached).

In response to your comments we acknowledge that OHCD does not anticipate any impacts to housing programs or projects with the creation of the Waimea District/Regional Park.

We appreciate your participation in the environmental review process. Your letter will be included in the Draft EA. A copy of the Draft EA will be sent to you. We expect that the public comment period on the Draft EA will begin in September 2013. You will have an opportunity to provide comments on the Waimea District/Regional Park Draft EA during the public comment period.

Sincerely,

PBR HAWAII

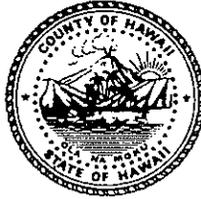

Tammy Keli'i Kapali
Planner

cc: County of Hawai'i Department of Parks and Recreation

Attachment: OHCD Comment Letter (11-5-2009)

O:\Job25\2506.11 Waimea District Park MP\EA\Pre-Consultation\Responses\OHCD.docx

William P. Kenoi
Mayor



BJ Leithead Todd
Director

Margaret K. Masunaga
Deputy

County of Hawai'i

PLANNING DEPARTMENT

Aupuni Center • 101 Pauahi Street, Suite 3 • Hilo, Hawai'i 96720
Phone (808) 961-8288 • Fax (808) 961-8742

December 3, 2009

Mr. Tom Schnell
PBR Hawai'i & Associates, Inc.
1001 Bishop Street
Suite 650
Honolulu, Hawai'i 96813-3484

Dear Mr. Schnell:

SUBJECT: Early Consultation for Environmental Assessment
Landowner: Parker Land Trust
Project: Waimea District/ Regional Park
TMK: (3) 6-7-001:025, (3) 6-7-002:017, and (3) 6-7-002:063;
Waikoloa and Pu'ukapu, South Kohala, Hawai'i

Thank you for your letter dated October 30, 2009, requesting comments from this office regarding the preparation of an Environmental Assessment.

The subject properties, TMK: (3) 6-7-001:025 and (3) 6-7-002:017, are zoned A-40a (Agricultural-40 acre minimum lot size) and are situated within the State Land Use Agricultural District. In addition, the subject property, TMK (3) 6-7-002:063, is zoned RS-10 (Single-Family Residential) and is located within the State Land Use Urban District. The subject properties are not within the Special Management Area (SMA).

The Environmental Assessment should address the potential traffic impacts to the existing Māmalahoa Highway and the proposed Parker Ranch Connector Road, with a projected completion date of May 2010.

Please note that according to our files and the County of Hawai'i Department of Parks and Recreation, the proposed site for the district/regional park has not yet been conveyed and/ or dedicated. We recommend that the Environmental Assessment not proceed until the conveyance of the subject properties.

We have no further comments to offer, at this time. However, please keep us informed and provide our department with a copy of the Final Environmental Assessment for our records.

Mr. Tom Schnell
PBR Hawai'i & Associates, Inc.
Page 2
December 3, 2009

If you have any further questions or if you need further assistance, please feel free to contact this office.

Sincerely,

A handwritten signature in black ink, appearing to read "BJ Leithead Todd". The signature is written in a cursive, flowing style.

BJ LEITHEAD TODD
Planning Director

BJM:cs
P:\wpwin60\Bethany\EA-EIS Review\preconsultdraft\eaWaimeaDistrictPark.doc



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& ASSOCIATES, INC.

August 2, 2013

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Mr. Duane Kanuha, Director
County of Hawai'i
Planning Department
Aupuni Center
101 Pauahi Street, Suite 3
Hilo, HI 96720

**SUBJECT: PRE-CONSULTATION FOR WAIMEA DISTRICT/REGIONAL PARK,
LOCATED AT WAIMEA, SOUTH KŌHALA, HAWAI'I, TMK: (3) 6-7-
001:025 (portion), (3) 6-7-002:017 (portion) and (3) 6-7-002:063 (portion)**

Dear Mr. Duane Kanuha,

As a planning consultant for the County of Hawai'i Department of Parks and Recreation, PBR HAWAII is preparing a Draft Environmental Assessment (EA) for the Waimea District/Regional Park. We sent a request for pre-consultation comments to the Planning Department in October 2009 as part of the scoping process. The Planning Department provided comments in the attached letter dated November 5, 2009.

Thank you for confirming that TMK: (3) 6-7-001:025 and (3) 6-7-002:017, is zoned A-40a (Agricultural-40 acre minimum lot size) situated within the State Land Use Agricultural District and TMK (3) 6-7-002:063 is zoned RS-10 (Single-Family Residential) situated in the State Land Use Urban District. We note that the park site is located outside the Special Management Area.

The Draft EA will include a Traffic Impact Analysis Report which will discuss potential traffic impacts on Māmalahoa Highway. Since our request for pre-consultation in 2009, the Ala 'Ōhi'a Road (formerly known as the Parker Ranch Connector Road) has been constructed. The Waimea District/Regional Park is located south of the roadway. Primary access to the park will be provided via a new driveway connection to Ala 'Ōhi'a Road between the intersections of Māmalahoa Highway and Ka'omoloā Road.

We acknowledge that the park site has not yet been conveyed and/or dedicated. Conveyance will be complete prior to any construction of the park.

We appreciate the Planning Department's participation in the environmental review process. The Planning Department's letter will be included in the Draft EA. A copy of the Draft EA will be sent to you. We expect that the public comment period on the Draft EA will begin in September 2013. You will have an opportunity to provide comments on the Waimea District/Regional Park Draft EA during the public comment period.

Sincerely,

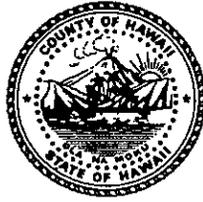
PBR HAWAII

Tammy Keli'i Kapali
Planner

cc: County of Hawai'i Department of Parks and Recreation

Attachment: Planning Department Comment Letter (11-5-2009)

William P. Kenoi
Mayor



Harry S. Kubojiri
Police Chief

Paul K. Ferreira
Deputy Police Chief

County of Hawai'i

POLICE DEPARTMENT

349 Kapi'olani Street • Hilo, Hawai'i 96720-3998
(808) 935-3311 • Fax (808) 961-2389

November 20, 2009

Mr. Tom Schnell, AICP
Senior Associate
PBR Hawaii & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, HI 96813

Dear Mr. Schnell:

RE: Pre-Consultation for Waimea District/Regional Park
Waimea, Hawai'i
Tax Map Key: (3) 6-7-001:25, (3) 6-7-002:17 and (3) 6-7-002:63

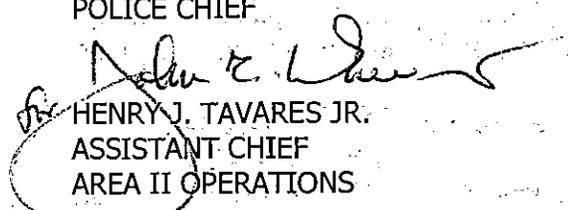
Staff has reviewed the pre-consultation correspondence for the Waimea District/Regional Park and had the following comments:

- Given the location of the park the ingress/egress appears to be through the Parker Ranch connector road currently under construction which will impact traffic along that connector road as well as at the intersection with Route 190.
- Traffic signalization at the intersection with Route 190 should be a consideration for this project to ease the flow off traffic out of the park and out of town.

Thank you for the opportunity to comment. Should you have any questions, please contact Captain James Sanborn, the South Kohala District Commander, at 887-3080.

Sincerely,

HARRY S. KUBOJIRI
POLICE CHIEF


HENRY J. TAVARES JR.
ASSISTANT CHIEF
AREA II OPERATIONS

JNS:dmv
RS0900981



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August 2, 2013

Harry Kubojiri, Police Chief
County of Hawai'i
Police Department
349 Kapi'olani Street
Hilo, HI 96720

**SUBJECT: PRE-CONSULTATION FOR WAIMEA DISTRICT/REGIONAL PARK,
LOCATED AT WAIMEA, SOUTH KŌHALA, HAWAI'I, TMK: (3) 6-7-
001:025 (portion), (3) 6-7-002:017 (portion) and (3) 6-7-002:063 (portion)**

Dear Chief Kubojiri,

As a planning consultant for the County of Hawai'i Department of Parks and Recreation, PBR HAWAII is preparing a Draft Environmental Assessment (EA) for the Waimea District/Regional Park. We sent a request for pre-consultation comments to the Police Department in October 2009 as part of the scoping process. We received your comment letter dated November 20, 2009 (attached).

In response to your comments the Draft EA will include a Traffic Impact Analysis Report which will discuss potential traffic impacts on Māmalahoa Highway (Route 190). Since our request for pre-consultation in 2009, the Ala 'Ōhi'a Road (formerly known as the Parker Ranch Connector Road) has been constructed. The Waimea District/Regional Park is located south of the roadway. Primary access to the park will be provided via a new driveway connection to Ala 'Ōhi'a Road between the intersections of Māmalahoa Highway and Ka'omoloā Road. Traffic analysis for this connection will be included in the Draft EA.

We appreciate your participation in the environmental review process. Your letter will be included in the Draft EA. A copy of the Draft EA will be sent to you. We expect that the public comment period on the Draft EA will begin in September 2013. You will have an opportunity to provide comments on the Waimea District/Regional Park Draft EA during the public comment period.

Sincerely,

PBR HAWAII



Tammy Kelli Kapali
Planner

cc: County of Hawai'i Department of Parks and Recreation

Attachment: Police Department Comment Letter (11-20-2009)

O:\Job25\2506.11 Waimea District Park MP\EA\Pre-Consultation\Responses\Police Dept.docx

EIS



December 17, 2009

Tom Schnell, AICP
PBR Hawaii & Associates, Inc.
1001 Bishop Street - Suite 650
Honolulu, HI 96813-3484

Dear Mr. Schnell:

**Re: Waimea District/Regional Park
Waimea, Hawaii
TMK: (3) 6-7-001:25 and -002:17 & 63**

Thank you for the opportunity to comment on the pre-consultation documents for the above-referenced project. HELCO will be able to provide electrical service to the proposed development in South Kohala. A detailed analysis will be performed after receipt of the consultant's detailed design drawings and estimated load. HELCO summarized its comments as follows:

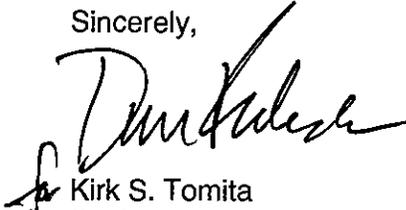
- (1) General Capacity. HELCO's current system peak load is 198,200 kW, and our total generation system capability is 271,850 kW. Our reserve margin is 37% and has adequate generation to serve the subject project.
- (2) Electrical Substation. The area is served by our existing 10.0 MVA Lalamilo electrical substation and a 12,470 volt overhead distribution system along Kawaihae Road and Mamalahoa Highway. The capacity of our existing substation is not adequate to serve the anticipated load. A second substation transformer at our existing Kamuela Substation, or a new substation, may be required.
- (3) Electrical Distribution System. A new 12,470 volt overhead distribution system will be required between the Lalamilo Substation and the proposed development. After the development's detailed loading and civil plans are submitted, HELCO will prepare a firm cost statement for the off-site distribution system to connect to the development.
- (4) Energy Efficiency & Conservation Programs. HELCO recommends measures for energy efficiency and conservation to reduce the maximum electrical demand and energy consumption. For questions or information about available programs, the developer may call HELCO's Customer Service Department (935-1171).

Tom Schnell, AICP
December 17, 2009
Page Two

The developer is encouraged to open a service request with HELCO's Engineering Department as soon as practicable to ensure timely electrical facility installation. To start this process and to ensure HELCO's continuing input, I suggest dealing directly with Hal Kamigaki, Planning Division (969-0322/p896-8120) or with Tom Cummins, Manager (969-0321).

Thank you again for the opportunity to comment.

Sincerely,

A handwritten signature in black ink, appearing to read "Kirk S. Tomita". The signature is written in a cursive style with a large initial "K".

Kirk S. Tomita
Senior Environmental Scientist

cc: Ms. Katherine P. Kealoha (OEQC)
H. Kamigaki/T. Cummins





PBR HAWAII

& ASSOCIATES, INC.

August 2, 2013

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Tel/Cel: (808) 315-6878

Kirk S. Tomita, Senior Environmental Specialist
Hawaiian Electric Company, Inc.
P.O. Box 2750
Honolulu, HI 96840-0001

**SUBJECT: PRE-CONSULTATION FOR WAIMEA DISTRICT/REGIONAL PARK,
LOCATED AT WAIMEA, SOUTH KÖHALA, HAWAI'I, TMK: (3) 6-7-
001:025 (portion), (3) 6-7-002:017 (portion) and (3) 6-7-002:063 (portion)**

Dear Mr. Tomita,

As a planning consultant for the County of Hawai'i Department of Parks and Recreation, PBR HAWAII is preparing a Draft Environmental Assessment (EA) for the Waimea District/Regional Park. We sent a request for pre-consultation comments to Hawaiian Electric Company Inc. (HELCO) in October 2009 as part of the scoping process. We received your comment letter dated December 17, 2009 (attached). Below are our responses to your comments.

1. **General Capacity.** We understand that HELCO has adequate generation to serve the park site.
2. **Electrical Substation.** We understand that the capacity of the Lālāmilo substation is not adequate to serve the anticipated load and that a second substation transformer at the Kamuela substation or a new substation may be required.
3. **Electrical Distribution System.** We note that a new 12,470 volt overhead distribution system will be required between the Lālāmilo substation and the park site. Detailed loading and civil plans will be submitted to HELCO.
4. **Energy Efficiency & Conservation Programs.** Energy efficiency and conservation measures will be implemented to reduce the maximum electrical demand and energy consumption.

To ensure timely electrical facility installation, we will open a service request with HELCO's Engineering Department as soon as practicable.

We appreciate your participation in the environmental review process. Your letter will be included in the Draft EA. We will send you a copy of the Draft EA when it is available. We expect that the public comment period on the Draft EA will begin in September 2013. You will have an opportunity to provide comments on the Waimea District/Regional Park Draft EA during the public comment period.

Sincerely,

PBR HAWAII


Tammy Keli'i Kapali
Planner

cc: County of Hawai'i Department of Parks and Recreation

Attachment: HELCO Comment Letter (12-17-2009)

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Appendix **B**

BIOLOGICAL SURVEYS

Biological Surveys Conducted for the Proposed Waimea District/Regional Park, South Kohala District, Island of Hawai‘i.

Prepared by:

Reginald E. David
Rana Biological Consulting, Inc.
P.O. Box 1371
Kailua-Kona, Hawai‘i 96745

&

Eric Guinther
AECOS Consultants
45-309 Akimala Pl.
Kāne‘ohe, Hawai‘i 96744

Prepared for:

PBR Hawaii and Associates Inc.
1001 Bishop Street
ASB Tower, Suite 650
Honolulu, Hawaii 96813

November 3, 2009

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Table 1. Checklist of Plant Species Observed on the Waimea District/Regional Park Site 7
Table 2. Avian Species Detected Waimea District/Regional Park Site 10

Introduction

The County of Hawai‘i’s Department of Parks and Recreation is planning on developing a new District/Regional Park in Waimea Town, in the district of South Kohala. The property proposed for the park is identified as portions of Tax Map Keys: (3)6-7-001:025, (3)6-7-002:017 and (3)-6-7-002:063 (Figure 1).

The proposed Waimea District/Regional Park Master Plan is being developed in two phases. In the first phase approximately 28 acres of land will be developed as a district park. For the second phase an additional 22+ acres will expand the district park into a regional park.

To address the community’s immediate recreational needs, the park’s first phase will include:

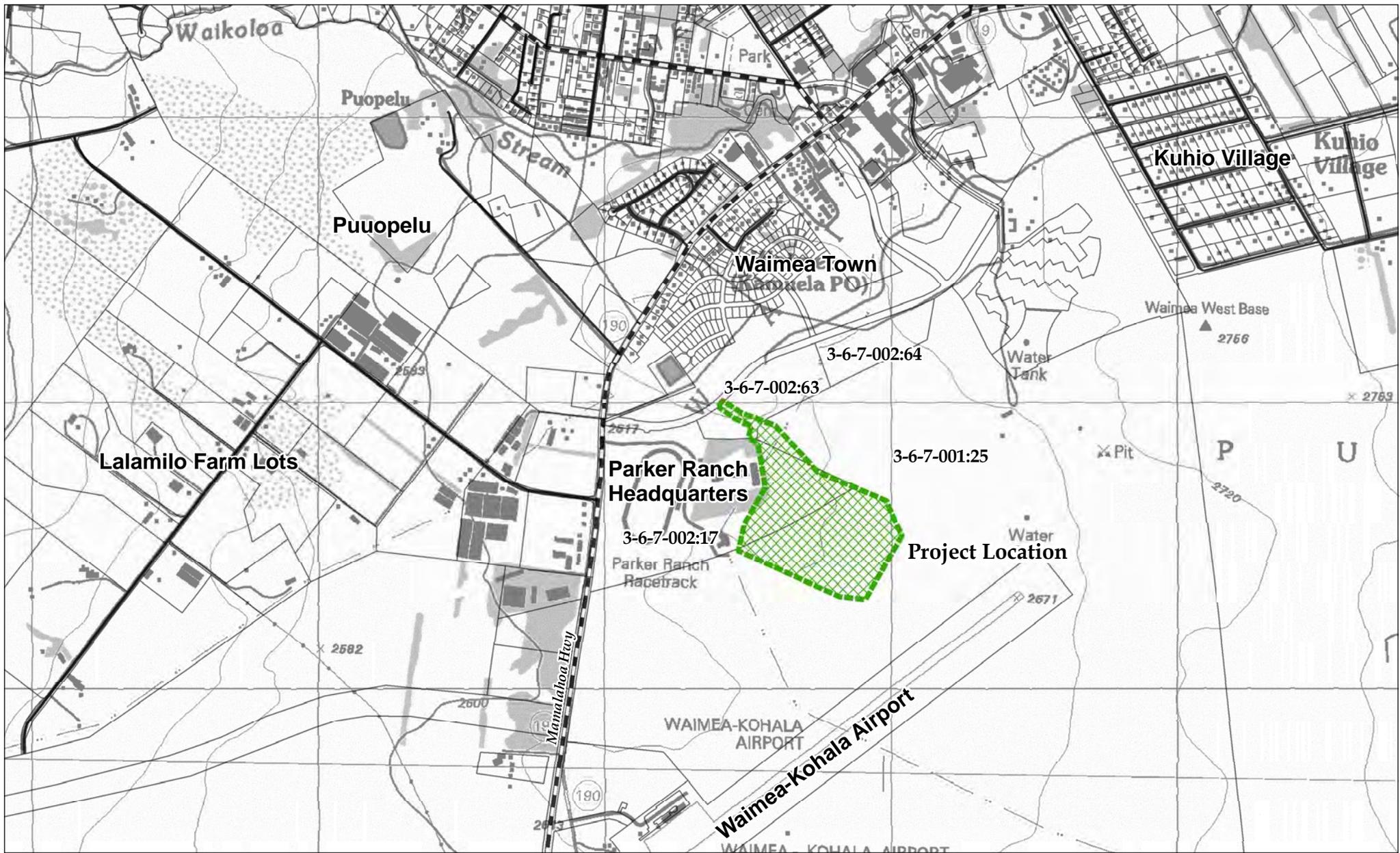
- A community gymnasium
- A multi-purpose community building
- A community gathering/family recreation area
- One regulation football field,
- One rugby field/soccer field,
- One regulation-size baseball field
- One youth baseball field
- A multi-use walkway and trail
- Comfort stations

The second phase is proposed to include:

- An additional rugby field/soccer field
- An additional youth baseball field
- An additional regulation-size baseball field
- An extended multi-use walkway and trail
- Additional comfort stations

The primary purpose of the surveys was to determine if there were any botanical, avian or mammalian species currently listed or proposed for listing as endangered or threatened, under either the federal or the State of Hawai‘i’s endangered species programs on, or within the immediate vicinity of the proposed project site as depicted on Figure 1. Federal and State of Hawai‘i listed species status follows species identified in the following referenced documents (Division of Land and Natural Resources (DLNR) 1998, Federal Register 2005, U. S. Fish & Wildlife Service (USFWS) 2005, 2009). Fieldwork was conducted on October 22, 2009.

Avian phylogenetic order and nomenclature follows *The American Ornithologists’ Union Check-list of North American Birds 7th Edition* (American Ornithologists’ Union 1998), and the 42nd through the 49th supplements to *Check-list of North American Birds* (American Ornithologists’ Union 2000; Banks et al. 2002, 2003, 2004, 2005, 2006, 2007, 2008, Chesser et al., 2009). 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. 1974).



Legend

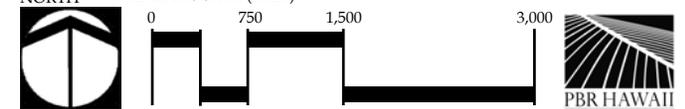
-  Proposed Waimea District / Regional Park
-  Major Roads

Site Location Map

Waimea District / Regional Park

Hawaii County Department of Parks and Recreation
NORTH LINEAR SCALE (FEET)

ISLAND OF HAWAII



Source: State GIS Database

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

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.

General Site and Project Description

The project site and access road corridor cover approximately 45-acres of land on Parker Ranch in Waimea, South Kohala District, Island of Hawai‘i (Figure 1). The site is located immediately east of the Parker Ranch Headquarters, and northwest of the Waimea-Kohala Airport (Figure 1).

The project site gently slopes from east to west, from an elevation of ~ 2,670-feet (810-meters), above mean sea level (ASL), at the south-eastern corner of the project site, down to an elevation of ~ 2630-feet (800-meters) ASL in the detention basin behind the Parker Ranch Headquarters. Although the site is generally flat, it is a broad drainage swale, lined on both sides with low, rocky outcrops. Two raised soil berms constructed to form stormwater detention basins cross the swale (Figure 2, 3). Vegetation on the site is best described as active pasture, dominated by grasses (mostly Kikuyu grass).



Figure 2 – Project site, looking from east-to-west, showing flat terrain and dry Kikuyu grass vegetation



Figure 3 – Western most berm and storm water detention basin. The open pastureland is broken by a copse of eucalyptus trees on the left

Botanical Survey Methods

The botanical survey was undertaken on October 22, 2009 utilizing a wandering transect that traversed most of the subject parcel. The route of the botanical survey was recorded by GPS as the survey progressed. The survey was conducted in the dry season and therefore some plants typical of this site, especially annuals, were likely not observed, or seen present as non-living stems that could not be identified. At such highly disturbed sites utilized as pastures in this area, missed species due to seasonal constraints are likely to be introduced (non-native) weedy species. For a few specimens not recognized in the field, photographs were taken and/or material was collected for identification in the laboratory.

Botanical Survey Results

A plant checklist (Table 1) was compiled from field observations, with entries arranged alphabetically under plant family names (standard practice). Included in the list are scientific name, common name, and status (whether native or non-native) for each species observed on the property. Species status given in **bold** indicates a plant of some interest to the Hawaiian Islands flora.

Table 1 - Checklist of Plant Species Observed on the Waimea District/Regional Park Site

<i>Species listed by family</i>	<i>Common name</i>	Status	Abundance	Notes
FLOWERING PLANTS				
DICOTYLEDONES				
AMARANTHACEAE				
<i>Amaranthus spinosus</i> L.	spiny amaranth	Nat	R2	
ANACARDIACEAE				
<i>Schinus terebinthefolius</i> Raddi	Christmas berry	Nat	R	
ASTERACEAE (COMPOSITAE)				
<i>Hypochoeris glabra</i> L.	smooth cat's ear	Nat	U2	
<i>Pluchia carolinensis</i> (Jacq.) G. Don	sourbush	Nat	R	
<i>Senecio madagascariensis</i> Poir.	---	Nat	C	
<i>Sonchus oleraceus</i> L.	sow thistle	Nat	U	
BRASSICACEAE				
<i>Lepidium cf. virginicum</i> L.	pepperwort	Nat	R2	2
CACTACEAE				
<i>Opuntia ficus-indica</i> (L.) Mill.	<i>panini</i>	Nat	R	
CARYOPHYLLACEAE				
<i>Polycarpon tetraphyllum</i> (L.) L.	---	Nat	R	
CHENOPODIACEAE				
<i>Chenopodium carinatum</i> R.Br.	---	Nat	R	
<i>Chenopodium cf. murale</i> L.	lamb's quarters	Nat	R	2
EUPHORBIACEAE				
<i>Ricinus communis</i> L.	castor bean	Nat	U1	
FABACEAE				
<i>Acacia mearnsii</i> De Wild.	black wattle	Nat	R	2
<i>Medicago cf. polymorpha</i>	bur clover	Nat		2
<i>Vicia cf. sativa</i> L.	common vetch	Nat		2
MALVACEAE				
<i>Abutilon grandifolium</i> (Willd.) Sweet	hairy abutilon	Nat	R	
<i>Sida fallax</i> Wallp.	'ilima	Ind	--	1
<i>Sida cf. rhombifolia</i> L.	---	Nat	U	2
MYRTACEAE				
<i>Eucalyptus cf. botryoides</i>	bangalay	Nat.	U2	2
OXALIDACEAE				
<i>Oxalis corniculata</i> L.	'ihi'ai	Ind	R	
PLANTAGINACEAE				
<i>Plantago lanceolata</i> L.	narrow-leaf plantain	Nat	U2	

Table 1 continued

<i>Species listed by family</i>	<i>Common name</i>	Status	Abundance	Notes
<i>Plantago major</i> L.	broad-leaf plantain	Nat	R	
PORTULACACEAE				
<i>Portulaca oleraceus</i> L.	pigweed	Nat	U	
PRIMULACEAE				
<i>Anagallis arvensis</i> L.	scarlet pimpernel	Nat	R	
VERBENACEAE				
<i>Verbena litoralis</i> Kunth	<i>owi</i>	Nat	R	
MONCOTYLEDONES				
POACEAE				
<i>Cynodon dactylon</i> (L.) Pers.	Bermuda grass	Nat	R3	
<i>Digitaria ciliaris</i> (Retz.) Koeler	Henry's crabgrass	Nat	R1	
<i>Pennisetum cladestinum</i> Chiov.	kikuyu grass	Nat	AA	
<i>Sporobolus</i> sp.	dropseed	Nat	R1	

Legend to Table 1

STATUS = distributional status for the Hawaiian Islands:

Ind = indigenous; native to Hawaii, but not unique to the Hawaiian Islands.

Nat = naturalized, exotic, plant introduced to the Hawaiian Islands since the arrival of Cook Expedition in 1778, and well-established outside of cultivation.

Pol. = Polynesian introduction before 1778.

ABUNDANCE = occurrence ratings for plants by area:

R - Rare seen in only one or perhaps two locations.

U - Uncommon- seen at most in several locations

O - Occasional seen with some regularity

C - Common observed numerous times during the survey

A - Abundant found in large numbers; may be locally dominant.

AA - Very abundant abundant and dominant; defining species for vegetation type.

Numbers following an occurrence rating indicate clusters within the survey area. The ratings above provide an estimate of the likelihood of encountering a species within the specified survey area; numbers modify this where abundance, tends to be greater than the occurrence rating:

1 - several plants present in each location

2 - many plants present in each location

3 - locally abundant

NOTES:

<1> Noted as common just outside of project area.

<2> Specimens encountered lacked fruit or flowers; determination uncertain.

In addition to identifying the plants present within the study site, qualitative estimates of plant abundance were made. These are coded in the table as explained in the Legend to Table 1 and apply to observations made during the present survey. For some species, a two-level system of abundance is used: the letter-number codes indicating species that have a limited distribution (e.g., found in only one small area of the property), but present there in numbers exceeding just a few individuals. For example, an abundance rating of "R" indicates a plant encountered only once or twice during the entire survey. An "R2" indicates a plant encountered in just one or two places, but with several to many individuals present. An "R3" would be a plant seldom encountered (i.e., rare), but locally abundant in one or more of the locations where it was encountered.

The vegetation at this site is overwhelmingly dominated by pasture grasses, reflecting the present use as pasturage for horses and cattle. Only one species of grass, Kikuyu (*Pennisetum clandestinum*), was recognizable across the site, except in a rocky area where *Digitaria ciliaris* was present in small numbers. It is likely that other pasture grasses occur on the site, although in low abundance relative to Kikuyu. In all, only 28 plant species were recorded during the survey. The only native species was 'ihi'ai (*Oxalis corniculata*), which may be an early Polynesian introduction rather than an indigenous species. The native 'ilima (*Sida fallax*) was abundant in the eucalyptus copse just outside the project area. Most of the variety of plant species was seen to be associated with 1) rocky outcrops that line the sides of the drainage swale, and 2) the lowest parts of the detention basins where standing water in the previous wet season encouraged an extensive growth of weedy herbs. No plant species currently listed, or proposed for listing under either the federal or State of Hawai'i endangered species statutes was detected during the course of this survey.

Avian Survey Methods

Five avian count stations were located approximately 300-meter apart within the park site and proposed access roadway. Eight-minute point counts were made at each of the five 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 08:00 a.m. and 10:00 a.m., the peak of daily bird activity. Additionally, the zoologist walked the site in a similar fashion as the botanist did, to ensure that no additional species or habitats not encountered during the time dependant avian counts were present on the site.

Avian Survey Results

A total of 198 individual birds of 11 different species, representing eight separate families, were recorded during station counts (Table 2). Two of the species recorded, Pacific Golden-Plover (*Pluvialis fulva*), and Ruddy Turnstone (*Arenaria interpres*) are native species. Both of these are indigenous migratory shorebird species that nest in the high Arctic during the late spring and summer months, returning to Hawaii and the Tropical Pacific to spend the fall and winter months each year. They usually leave Hawai'i for their trip back to the Arctic in late April or the very early part of May. The remaining nine avian species detected are all considered to be alien to the Hawaiian Islands. No avian species currently listed, or proposed for listing under either the federal or State of Hawai'i endangered species statutes was detected during the course of this survey.

Avian diversity was extremely low, though in keeping with the xeric habitat present within the project area. Two species Sky Lark (*Alauda arvensis*), and Pacific Golden-Plover, accounted for 74 percent of the total number of birds detected. The most common avian species recorded was Sky Lark, which accounted for 56 percent of the total number of individual birds recorded. An average of 40 individual birds were recorded per station count.

Table 2 - Avian Species Detected Waimea District/Regional Park Site

<i>Common Name</i>	<i>Scientific Name</i>	<i>ST</i>	<i>RA</i>
GALLIFORMES			
PHASIANIDAE - Pheasants & Partridges			
Phasianinae - Pheasants & Allies			
Gray Francolin	<i>Francolinus pondicerianus</i>	A	1.00
Erckel's Francolin	<i>Francolinus erckelii</i>	A	0.20
Ring-necked Pheasant	<i>Phasianus colchicus</i>	A	0.40
CHARADRIIFORMES			
CHARADRIIDAE - Lapwings & Plovers			
Pacific Golden-Plover	<i>Pluvialis fulva</i>	IM	7.00
SCOLOPACIDAE - Sandpipers, Phalaropes & Allies			
Scolopacinae - Sandpipers & Allies			
Ruddy Turnstone	<i>Arenaria interpres</i>	IM	2.60
COLUMBIFORMES			
COLUMBIDAE - Pigeons & Doves			
Spotted Dove	<i>Streptopelia chinensis</i>	A	0.20
Zebra Dove	<i>Geopelia striata</i>	A	1.80
PASSERIFORMES			
ALAUDIDAE - Larks			
Sky Lark	<i>Alauda arvensis</i>	A	22.20
STURNIDAE - Starlings			
Common Myna	<i>Acridotheres tristis</i>	A	0.40
FRINGILLIDAE - Fringilline And Cardueline Finches & Allies			
Carduelinae - Carduline Finches			
House Finch	<i>Carpodacus mexicanus</i>	A	2.80
PASSERIDAE - Old World Sparrows			
House Sparrow	<i>Passer domesticus</i>	A	1.00

KEY TO TABLE 2

ST	Status
A	Alien Species
IM	Indigenous Migratory Species
RA	Relative Abundance – number of individual birds detected divided by the number of stations (5)

Mammalian Survey Methods

All terrestrial mammals currently found on the Island of Hawai'i are alien species, with the exception of the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*), or 'ōpe'ape'a as it is known locally. 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.

Mammalian Survey Results

A total of four mammalian species were detected during the course of this survey. Eight horses (*Equus c. caballus*) were present within the project site, as was one calf (*Bos taurus*). A lone dog (*Canis f. familiaris*) was present within the Parker Ranch maintenance facility, which wandered into the pasture briefly while we were on the property. A small flock of domestic sheep (*Ovis aries*) was seen in pasture adjacent to the project site. Additionally, tracks, scat and sign of horse, cattle and dog were encountered at numerous locations within the study site. Skeletal remains of three cows were also encountered, and dogs were heard barking from both north and west of the subject property.

Discussion

Botanical Resources

Present use of the site as pasture and detention basins has encouraged the development of a flora dominated by Kikuyu grass, low growing herbs associated with pastures at this elevation, and certain ruderal species capable of taking advantage of the muddy ground left in low areas behind the detention berms. The latter shows no affinity to wetland flora, indicating that wetness remains for only a limited time after major storms: long enough to encourage herbaceous weeds, but not long enough to alter soil characteristics.

The flora present on the site is of no value from the perspective of native botanical resources. It can be anticipated that a survey conducted during a wetter time of the year will reveal more species of plants than those listed in Table 1. These “missing” species will likely be annuals developing from the soil seed bank. These species would not be native endemics having protected status. No species currently listed, or proposed for listing under either the US Federal or the State of Hawai‘i endangered species programs were detected during the course of this survey.

Avian Resources

The findings of this survey are consistent with the extremely xeric nature of the habitat that was present on the site at the time of this survey, and with the results of at least four other avian surveys conducted on lands located in close proximity to the site in the recent past (David 2000a, 2005, 2006, 2009a).

During the course of this survey a total of 11 different avian species were recorded during the time spent within the project area (Table 2). Two of the species recorded, Pacific Golden-Plover and Ruddy Turnstone are native species. Both of these species are indigenous migratory shorebird species that nest in the high Arctic during the late spring and summer months, returning to Hawaii and the Tropical Pacific to spend the fall and winter months each year. The remaining nine avian species detected are considered to be alien to the Hawaiian Islands (Table 2). No species currently

listed, or proposed for listing under either the US Federal or the State of Hawai'i endangered species programs were detected during the course of this survey.

Avian diversity was extremely low, though in keeping with the xeric habitat present within the project area. Two species Sky Lark, and Pacific Golden-Plover, accounted for 74 percent of the total number of birds detected. The most common avian species recorded was Sky Lark, which accounted for 56 percent of the total number of individual birds recorded.

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 (Banko 1980a, 1980b, Harrison 1990, Day et al. 2003a). Recent surveys using ornithological radar have recorded these species flying inland from Kawaihae (Day et al. 2003a).

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). Hawaiian Petrels were first listed as an endangered species by the USFWS 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 (U.S. Fish & Wildlife Service 1983, Simons and Hodges 1998, Ainley et al. 2001, Hue 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, Sincok 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 or close to the proposed project site for either of these pelagic seabird species.

Mammalian Resources

The findings of the survey of mammalian species are consistent with the extremely xeric nature of the habitat that was present on the site at the time of this survey, and the current use of the property for cattle and horse pasturage. The survey results also are consistent with the results of at least four other faunal surveys conducted on lands located in close proximity to the site in the recent past (David 2000a, 2005, 2006, 2009a).

Although not detected during the course of this survey, it is possible that Hawaiian hoary bats over-fly portions of the site on a seasonal basis, as bats have been documented in the greater Waimea area on a seasonal basis (Jacobs 1994, David 2000a, 2009c). There is no suitable Hawaiian hoary bat roosting habitat present within, or close to the subject property as can be readily seen in figures 2 and 3.

Although no rodents were detected during the course of this survey it is probable that the four established alien rodents known from the Island of Hawai'i roof rat (*Rattus r. rattus*), Norway rat (*Rattus norvegicus*), Polynesian rat (*Rattus exulans hawaiiensis*), and European house mice (*Mus musculus domesticus*), use resources on the project site on a seasonal basis.

All of the other mammalian species recorded during the course of this survey are commonly occurring species on farmland, pasturage and the grasslands present in the general project area. All of these mammals are considered alien to the Hawaiian Islands, and none are protected under either state or the federal endangered species statutes.

Potential Impacts to Protected Species

Given the nature of the highly disturbed alien dominated grassland present on the site and the findings of these surveys it is not expected that the development and operation of the proposed Waimea District/Regional Park will result in deleterious impacts to native botanical, avian or mammalian species.

Botanical Resources

No botanical species having or deserving of protective status were found, and none is expected to occur at the site. Thus, the proposed project is not expected to result in any deleterious impacts to rare or listed botanical resources.

Hawaiian Petrel and Newell's Shearwater

The principal potential impact that construction and operation of the proposed Waimea District/Regional Park poses to Hawaiian Petrels and Newell's Shearwaters is the increased threat that birds will be downed after becoming disoriented by lights associated with the project during the nesting season.

The two main areas that outdoor lighting could pose a threat to these nocturnally flying seabirds is if, 1) during construction it is deemed expedient, or necessary to conduct nighttime

construction activities, 2) streetlights or outdoor facility lights that may be installed as a component of the athletic fields.

Hawaiian Hoary Bat

As previously discussed, it is possible that Hawaiian hoary bats over-fly portions of the site on a seasonal basis. They may also forage for volant insects over portions of the project area on a seasonal basis, though the xeric nature of the habitat present and the lack of dense vegetation within the site likely means that there is little in the way of food resources that might attract a bat to the area.

Currently there is no suitable bat roosting habitat within the project site, so it is unlikely that the clearing, grubbing construction and operation of the Park will result in deleterious impacts to this listed species. It is possible that following build-out of the facilities, planting of ornamental landscaping and the installation of irrigation and lights that bats may be attracted to volant insects will also be attracted to the vegetation, water and lighting.

Recommendations

We recommend the use of appropriate dryland native plant species in the landscaping of the support areas of the park. The use of native xeric plant species will help propagate native species and will likely result in lower maintenance and irrigation costs.

If nighttime construction activity, be it actual construction activity, or equipment maintenance is proposed during the construction phases of the project, all associated lights should be shielded, and when large flood/work lights are used they should be placed on poles that are high enough to allow the lights to be pointed directly at the ground.

If streetlights or outdoor athletic or facility lighting is installed in conjunction with the Park, it is recommended that lights be shielded to reduce the potential for interactions of nocturnally flying Hawaiian Petrels and Newell's Shearwaters with external lights and man-made structures (Reed et al. 1985, Telfer et al. 1987). This minimization measure would serve the dual purpose of minimizing the threat of disorientation and downing of Hawaiian Petrels and Newell's Shearwaters, while at the same time complying with the Hawaii County Code § 14 – 50 *et seq.* which requires the shielding of exterior lights so as to lower the ambient glare caused by unshielded lighting to the astronomical observatories located on Mauna Kea.

Glossary:

Alien – Introduced to Hawai‘i by humans

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

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

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

Nocturnal – Night-time, after dark

‘Ōpe‘ape‘a – Hawaiian hoary bat

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

Phylogenetic – The evolutionary order that organisms are arranged by

Ruderal – Disturbed, rocky, rubbishy areas, such as old agricultural fields and rock piles

Sign – Biological term referring tracks, scat, rubbing, odor, marks, nests, and other signs created by animals by which their presence may be detected

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

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

Xeric - Extremely dry conditions or habitat

ASL – Above mean sea level

DLNR – Hawaii State Department of Land & Natural Resources

TMK – Tax Map Key

USFWS – United State Fish & Wildlife Service

Literature Cited:

- Ainley, D. G, R. Podolsky, L. Deforest, G. Spencer, and N. Nur. 2001. The Status and Population Trends of the Newell's Shearwater on Kaua'i: Insights from Modeling, *In: Scott, J. M, S. Conant, and C. Van Riper III (editors) Evolution, Ecology, Conservation, and Management of Hawaiian Birds: A Vanishing Avifauna*. Studies in Avian Biology No. 22:. Cooper's Ornithological Society, Allen Press, Lawrence, Kansas. (Pg. 108-123)
- American Ornithologist's Union. 1998. *Check-list of North American Birds*. 7th edition. AOU. Washington D.C. 829pp.
- _____. 2000. Forty-second supplement to the American Ornithologist's Union *Check-list of North American Birds*. *Auk* 117:847-858.
- Banks, R. C., C. Cicero, J. L. Dunn, A. W. Kratter, P. C. Rasmussen, J. V. Remsen, Jr., J. D. Rising, and D. F. Stotz. 2002. Forty-third supplement to the American Ornithologist's Union *Check-list of North American Birds*. *Auk* 119:897-906.
- _____. 2003 Forty-fourth supplement to the American Ornithologist's Union *Check-list of North American Birds*. *Auk* 120:923-931.
- _____. 2004 Forty-fifth supplement to the American Ornithologist's Union *Check-list of North American Birds*. *Auk* 121:985-995.
- _____. 2005 Forty-sixth supplement to the American Ornithologist's Union *Check-list of North American Birds*. *Auk* 122:1031-1031.
- _____. 2006 Forty-seventh supplement to the American Ornithologist's Union *Check-list of North American Birds*. *Auk* 123:926-936.
- Banks, R. C., C. R. Terry Chesser, C. Cicero, J. L. Dunn, A. W. Kratter, I. J. Lovette, P. C. Rasmussen, J. V. Remsen, Jr., J. D. Rising, and D. F. Stotz. 2007 Forty-eighth supplement to the American Ornithologist Union *Check-list of North American Birds*. *Auk* 124:1109-1115.
- Banks, R. C., C. R. Terry Chesser, C. Cicero, J. L. Dunn, A. W. Kratter, I. J. Lovette, P. C. Rasmussen, J. V. Remsen, Jr., J. D. Rising, and D. F. Stotz, and K. Winker. 2008 Forty-ninth supplement to the American Ornithologist Union *Check-list of North American Birds*. *Auk* 125:758-768.
- Chesser, R. T., R. C. Banks, F. K. Barker, C. Cicero, J. L. Dunn, A. W. Kratter, I. J. Lovette, P. C. Rasmussen, J. V. Remsen, Jr., J. D. Rising, and D. F. Stotz, and K. Winker. 2009. Fiftieth supplement to the American Ornithologist Union *Check-list of North American Birds*. *Auk* 126:1-10.
- Banko, W. E. 1980a. Population Histories- Species Accounts Seabirds: Hawaiian Dark-rumped Petrel ('Ua'u). Cooperative National Park Resources Studies Unit, University of Hawaii at Manoa, Department of Botany, Technical Report #5B.
- _____. 1980b. Population Histories- Species Accounts Seabirds: Newell's Shearwater

-
- (‘A‘o). Cooperative National Park Resources Studies Unit, University of Hawaii at Manoa, Department of Botany, Technical Report #5A.
- Banko, P. C., R. E. David, J. D. Jacobi, and W. E. Banko. 2001. Conservation Status and Recovery Strategies for Endemic Hawaiian Birds, *In: : Scott, J. M, S. Conant, and C. Van Riper III (editors) Evolution, Ecology, Conservation, and Management of Hawaiian Birds: A Vanishing Avifauna*. Studies in Avian Biology No. 22. Cooper’s Ornithological Society, Allen Press, Lawrence, Kansas (Pg. 359-376).
- Cooper, B. A. and R. E. David. 1995. Radar and Visual Surveys of Seabirds in the HELCO SSP Unit 71, Puna, Hawaii, During July 1995. Prepared for R. M. Towill Corporation & Hawaii Electric Light Co.
- Cooper, B.A., R.E. David, and R.J. Blaha. 1995. Radar and Visual Surveys of Endangered Seabirds and Bats in the Pohakuloa Training Area, Hawai‘i, During Summer 1995. Prepared for R.M. Towill Corporation and the U.S. Army Corps of Engineers, Pacific Division (POD).
- Cooper, B. A and R. H. Day. 1998. Summer Behavior and Mortality of Dark-rumped Petrels and Newells’ Shearwaters at Power Lines on Kauai. *Colonial Waterbirds*, 21 (1): 11-19.
- David, R. E. 2000. Waimea Trails and Greenways Avian and Mammalian Surveys. Prepared for: AECOS Consultants, and Gerald Park Consulting.
- _____. 2005. A Survey of Avian and Terrestrial Mammalian Species for the Waimea Bypass Highway: Hawai‘i: Belt Road, Mud Lane to Parker Ranch Racetrack, South Kohala District, Island of Hawai‘i. Prepared for: Akinaka & Associates, Inc and State of Hawai‘i Department of Transportation, Highways Division (HDOT).
- _____. 2006. A Survey of Avian and Terrestrial Mammalian Species for the Māmalahoa Highway to Kawaihae Road Connector Project, South Kohala District, Island of Hawai‘i. Prepared for Belt Collins Hawaii, Inc. and the County of Hawai‘i, Department of Transportation.
- _____. 2009a. Queen Ka‘ahumanu Highway / Kawaihae Road Intersection Improvement Project #HWY-H-01-08, Biological Surveys. Prepared for: State of Hawai‘i, Department of Transportation, Highways Division.
- _____. 2009b. Avian and Terrestrial Mammalian Species Surveys Conducted for the Kawaihae Road Bypass, South Kohala District, Island of Hawai‘i. Prepared for: Edward K. Noda and Associates, Inc., and The State of Hawai‘i, Department of Transportation, Highways Division
- _____. 2009c. Unpublished Field Notes – Island of Hawai‘i: 1985-2009.
- Day, R. H., B. Cooper, and R. J. Blaha. 2003a. Movement Patterns of Hawaiian Petrels and Newell’s Shearwaters on the Island of Hawai‘i. *Pacific Science*, 57, 2:147-159.
- Day, R. H., B. Cooper, and T. C. Telfer. 2003b. Decline of Townsend’s (Newell’s Shearwaters
-

-
- (*Puffinus auricularis newelli*) on Kauai, Hawaii. *The Auk* 120: 669-679.
- Department of Land and Natural Resources. (DLNR). 1998. Indigenous Wildlife, Endangered and Threatened Wildlife and Plants, and Introduced Wild Birds. Department of Land and Natural Resources. State of Hawaii. Administrative Rule §13-134-1 through §13-134-10, dated March 02, 1998.
- Federal Register. 1967. Department of the Interior, Fish and Wildlife Service, Endangered and Threatened Wildlife and Plants. Appendix D – United States List of Endangered Native Fish and Wildlife; *Federal Register*, 32 (March 11, 1967) : 4001.
- _____. 1975. Department of the Interior, Fish and Wildlife Service, List of Endangered and Threatened Fauna. *Federal Register*, 40 No. 205 (September 25, 1975): 44149-44151.
- _____. 2005. Department of the Interior, Fish and Wildlife Service, 50 CFR 17. Endangered and Threatened Wildlife and Plants. Review of Species That Are Candidates or Proposed for Listing as Endangered or Threatened; Annual Notice of Findings on Resubmitted Petition; Annual Description of Progress on Listing Actions. *Federal Register*, 70 No. 90 (Wednesday, May 11, 2005): 24870-24934.
- Hadley, T. H. 1961. Shearwater calamity on Kauai. *Elepaio* 21:60.
- Harrison, C. S. 1990. *Seabirds of Hawaii: Natural History and Conservation*. Cornell University Press, Ithica, N.Y. 249 pp.
- Henshaw, H.W. 1902. *Complete list of birds of the Hawaiian Possessions with notes on their habits*. Thrum, Honolulu. 146 pp.
- Hue, D., C. Glidden, J. Lippert, L. Schnell, J. MacIvor and J. Meisler. 2001. Habitat Use and Limiting Factors in a Population of Hawaiian Dark-rumped Petrels on Mauna Loa, Hawai'i. , in: : Scott, J. M, S. Conant, and C. Van Riper III (editors) *Evolution, Ecology, Conservation, and Management of Hawaiian Birds: A Vanishing Avifauna*. Studies in Avian Biology No. 22. Cooper's Ornithological Society, Allen Press, Lawrence, Kansas (Pg. 234-242).
- Jacobs, D. S. 1994. Distribution and Abundance of the Endangered Hawaiian Hoary Bat, *Lasiurus cinereus semotus*, on the Island of Hawai'i. *Pacific Science*, Vol. 48, No. 2: 193-200.
- Podolsky, R., D.G. Ainley, G. Spencer, L. de Forest, and N. Nur. 1998. "Mortality of Newell's Shearwaters Caused by Collisions with Urban Structures on Kaua'i". *Colonial Waterbirds* 21:20-34.
- Pukui, M. K., S. H. Elbert, and E. T. Mookini. 1974. *Place Names of Hawaii*. University of Hawaii Press. Honolulu, Hawai'i. 289 pp.
- Reed, J. R., J. L Sincock, and J. P. Hailman 1985. Light Attraction in Endangered Procellariiform Birds: Reduction by Shielding Upward Radiation. *Auk* 102: 377-383.
- Simons, T. R., and C. N. Hodges. 1998. Dark-rumped Petrel (*Pterodroma phaeopygia*). In A.
-

-
- Poole and F. Gill (editors). The Birds of North America, No. 345. The Academy of Natural Sciences, Philadelphia, PA. and the American Ornithologists Union, Washington, D.C.
- Sincock, J. L. 1981. Saving the Newell 's Shearwater. Pages 76-78 in Proceedings of the Hawaii Forestry and Wildlife Conference, 2-4 October 1980. Department of Land and Natural Resources State of Hawaii, Honolulu.
- Telfer, T. C. 1979. Successful Newell's Shearwater Salvage on Kauai. 'Elepaio 39:71
- Telfer, T. C. , J. L. Sincock, G. V. Byrd, and J. R. Reed. 1987. Attraction of Hawaiian seabirds to lights: Conservation efforts and effects of moon phase. Wildlife Society Bulletin 15:406-413.
- Tomich, P.Q. 1986. *Mammals in Hawaii*. Bishop Museum Press. Honolulu, Hawaii. 37 pp.
- U.S. Fish & Wildlife Service (USFWS) 1983. Hawaiian Dark-Rumped Petrel & Newell's Manx Shearwater Recovery Plan. USFWS, Portland, Oregon. February 1983.
- _____. 2005. Endangered and Threatened Wildlife and Plants. 50CFR 17:11 and 17:12 (Tuesday, November 1, 2005).
- _____. 2009. USFWS Threatened and Endangered Species System (TESS), online at http://ecos.fws.gov/tess_public/StartTESS.do
- Wagner, W.L., D.R Herbst, and S.H. Sohmer. 1990. *Manual of the Flowering Plants of Hawai'i*. University of Hawaii Press, Honolulu, Hawaii 1854 pp.
- Wagner, W.L. and D.R. Herbst. 1999. *Supplement to the Manual of the flowering plants of Hawai'i*, pp. 1855-1918. In: Wagner, W.L., D.R. Herbst, and S.H. Sohmer, Manual of the flowering plants of Hawai'i. Revised edition. 2 vols. University of Hawaii Press and Bishop Museum Press, Honolulu.
- Wilson, S. B., and A. H. Evans. 1890-1899. *Aves Hawaiiensis: The birds of the Sandwich Islands*. R. H. Porter, London.

Appendix **C**

ARCHEOLOGICAL INVENTORY SURVEY

DRAFT

ARCHAEOLOGICAL INVENTORY SURVEY
FOR THE PROPOSED
WAIMEA DISTRICT/REGIONAL PARK,
PU'UKAPU AHUPUA'A,
DISTRICT OF SOUTH KOHALA
ISLAND OF HAWAI'I

[TMK: 3-6-7-001:025 and
3-6-7-002:017 and 063]



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DRAFT

**ARCHAEOLOGICAL INVENTORY SURVEY
FOR THE PROPOSED
WAIMEA DISTRICT/REGIONAL PARK,
PU‘UKAPU AHUPUA‘A,
DISTRICT OF SOUTH KOHALA
ISLAND OF HAWAI‘I**

**[TMK: 3-6-7-001:025 and
3-6-7-002:017 and 063]**

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May 2010

ABSTRACT

At the request of PBR Hawai'i, Pacific Legacy, Inc., has completed an archaeological inventory survey for the proposed Waimea District/Regional Park, in the *ahupua'a* of Pu'ukapu, in the district of South Kohala, on the island of Hawai'i (TMK: 3-6-7-001:025 and -002:017 and 063). The survey was conducted between 30 November and 3 December, 2009. The investigations were under the overall supervision of Rowland Reeve, M.A., with James McIntosh, B.A. serving as project director and Reid Yamasato, B.A. assisting in the field.

A 100% pedestrian surface survey was completed over the entire project area (approximately 55 acres). The project area includes active pastureland with vegetation consisting entirely of grass, less than 6 inches in height, allowing excellent visibility. Spacing between archaeologists was between 25-35 meters.

The surface survey relocated a previously identified but unrecorded windbreak shelter (Site 50-10-06-8804), a recorded and test excavated wall (Site 50-10-06-8809), and identified three previously unknown archaeological sites. The three newly identified sites consisted of a small agricultural terrace (50-10-06-28140), a small enclosure remnant (50-10-06-28141) and a short section of an *'auwai* (irrigation ditch) with an adjoining terrace (50-10-06-28142). In addition, we also relocated five previously identified sites that have undergone data recovery, thus no work or recording was undertaken at these sites (Site 50-10-01-1861 through 21865).

Subsurface testing was performed during the investigation. A total of 10 backhoe trenches were excavated with eight trenches distributed throughout the project area focusing on the larger undisturbed areas. These trenches failed to identify any subsurface cultural deposits or resources. Two additional backhoe trenches were excavated within the newly identified sites (50-10-06-28140 and 28142). A controlled test unit was hand excavated at Site 50-10-06-8804 and a shovel test was excavated at Site 50-10-06-28141.

All four sites within the project area were assessed as significant for their information content (Criterion D) and were recommended for passive preservation. However, if passive preservation is not feasible, further data recovery excavations are recommended for only one site (Site 50-10-06-8804, a small C-shape shelter). No further work is recommended for the remaining sites.

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Frontispiece: GPS recording at Site 50-10-06-28140.

1.0 INTRODUCTION

Pacific Legacy, Inc., under contract to PBR Hawai'i, has completed an archaeological inventory survey for the proposed Waimea District/Regional Park, in Waimea, *ahupua'a* of Pu'ukapu, district of South Kohala, on the island of Hawai'i (TMK: 3-6-7-001:025 and -002:017) (Figures 1 and 2). The survey was conducted between 30 November and 3 December 2009. The investigations were under the overall supervision of Rowland Reeve, M.A., with James McIntosh, B.A. serving as project director and Reid Yamasato, B.A. assisting in the field.

1.1 PROJECT LOCATION AND ENVIRONMENT

Two large flood control berms dominate nearly the entire western half of the project area. These berms were constructed by Parker Ranch in the early to mid 2000s. The berms were constructed of soil excavated on site. The berms are presently covered with kukuyu grass (*Pennisetum clandestinum*).

Soils within the project area are belonging to the Waimea Series (WMC). The Waimea series consists of well-drained very fine sandy loams that formed in volcanic ash. These soils are gently sloping to moderately steep... (Sato et. al. 1973:53-54, 98). The land is relatively level with some low outcrop hills.

The temperature is cool, ranging from 70° to 40° Fahrenheit, with night temperatures in the winter months occasionally dropping below freezing. The rain gauge station in nearby Waimea recorded a mean annual rainfall of 1,023 mm (40.3 inches) for the 75 year period between 1891 and 1966 (Basic Water Resources Data 1970:73).

Much of the project area is open pasture land covered by a relatively dense carpet of kukuyu grass. Windbreaks of eucalyptus (*Eucalyptus sp.*), black wattle (*Acacia mearnsii*), and silk oak (*Grevillea robusta*) are present in the vicinity. Its early historic vegetation pattern was probably a mix of cultivated fields and grasslands blending in to relatively open 'ōhi'a forest. Though later historic land practices have obscured most evidence of such early cultivation, land court and other documents speak of traditional agriculture being practiced in the area. An 1830 description of the nearby Waikoloa settlement may give some idea of the ecology of the area in the early post-contact period. "...[at] Waikoloa ... there is evidence of still more rain, as vegetation of all kinds indigenous to the islands is in abundance and always green. The grass is high and thick and trees grow to the height of from 20 to fifty feet" (Andrews et al. 1830:4). An engraving of the Waimea settlement in the mid 1800s made from a drawing by Edward Bailey (presently in the collection of the Honolulu Academy of Arts) shows houses set in a relatively treeless plain. The contrast between these descriptions suggests the major impact that unrestricted grazing had on the native forest fringe in just a few short decades.

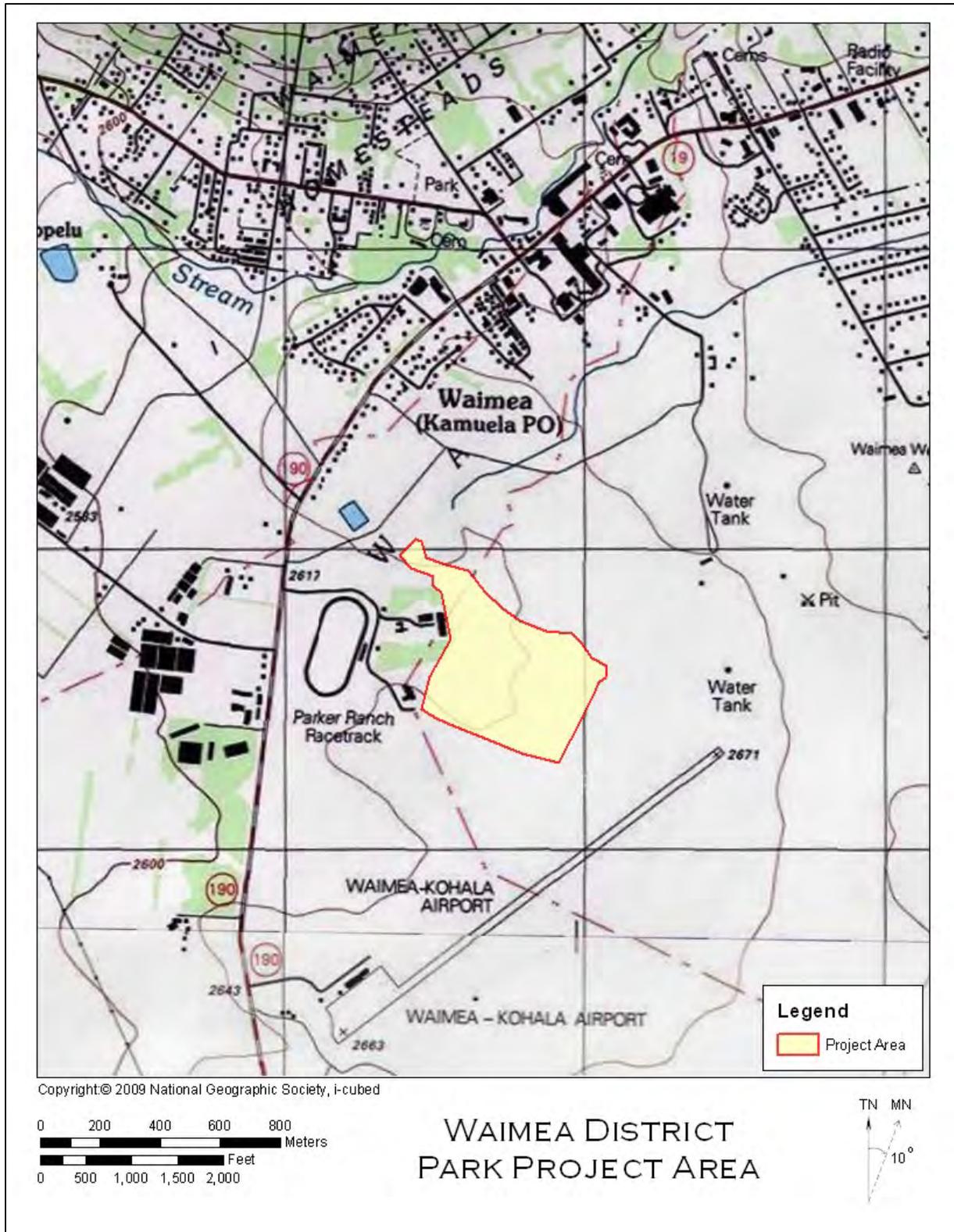


Figure 1. Project location map on Kamuela Quad (courtesy National Geographic 2009).

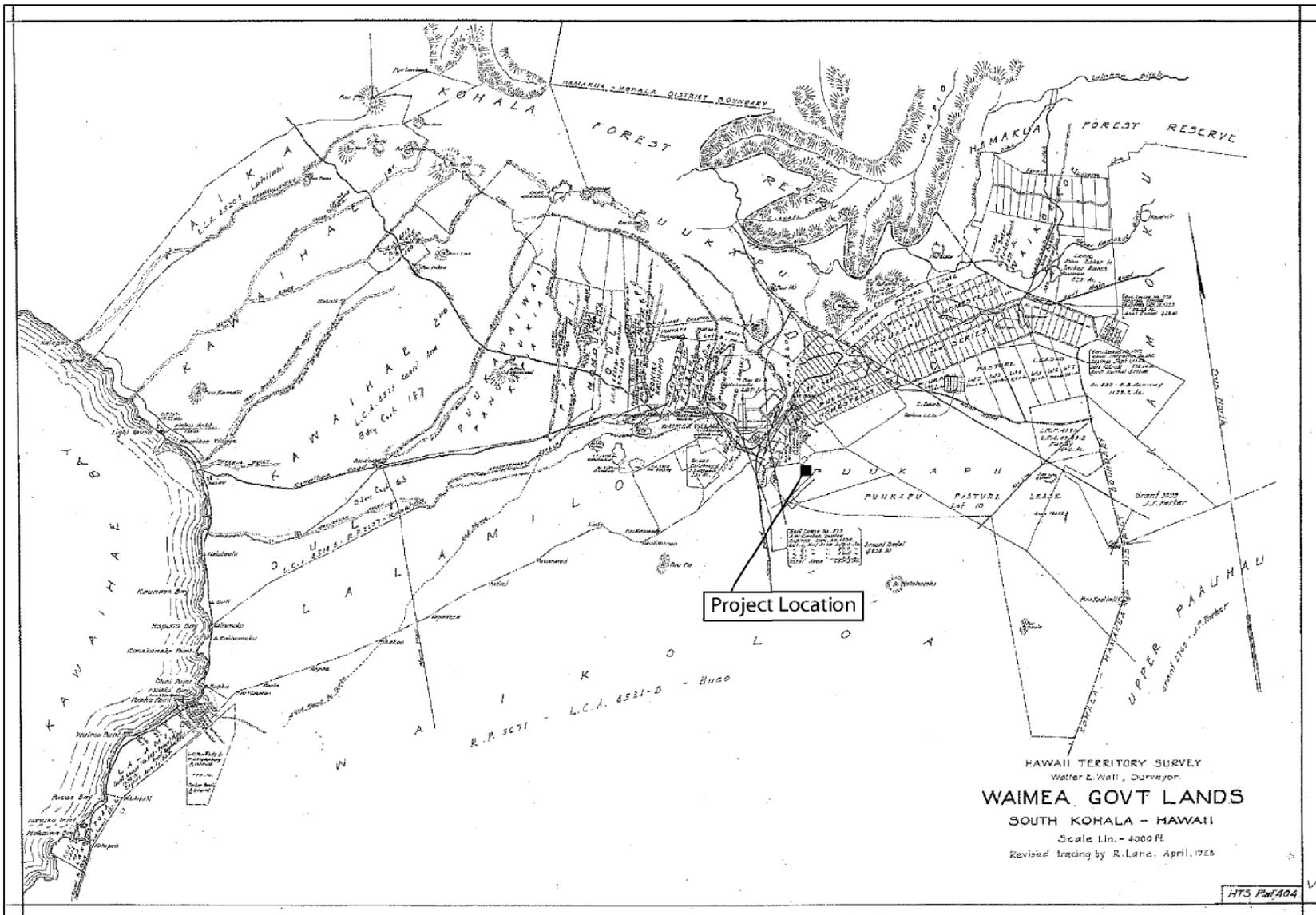


Figure 2. Project location shown on a 1928 Government Survey Map.

DRAFT – Archaeological Inventory Survey
 Waimea District/Regional Park, Pu‘u Kapu
 South Kohala, Island of Hawai‘i
 March 2010

2.0 METHODS

A 100% pedestrian surface survey was completed over the entire project area (approximately 55 acres). The project area includes active pastureland with vegetation consisting entirely of grass, less than 6 inches in height, allowing excellent visibility. Spacing between archaeologists was between 25-35 meters. The perimeter of the project area was surveyed first in a counter clockwise direction to first establish the project boundaries. Then sweeps moving in a north-south direction were conducted across the project area.

When an archaeological site was located, it was recorded using professional standards. A GPS location was taken at each site (Garmin GPS map 60CSx0) as well as recorded with a Thales Mobile Mapper. Each site was mapped with a tape and compass and digitally photographed.

Previously identified sites were noted and plotted with a GPS location. With the exception of Site 50-10-06-8804 (where no work had been undertaken), all other relocated sites had undergone data recovery investigation. As a result, no other work was performed at these sites (50-10-06-21861 thru 21865). Further, Site 50-10-06-9179 could not be relocated and is assumed to have been destroyed during the construction of flood control berms.

Subsurface testing was conducted at each of the newly identified sites either with a mechanical backhoe, shovel test, or controlled excavation. Backhoe trenches were distributed throughout the project area. Emphasis was placed on obtaining stratigraphic information and attempting to identify subsurface cultural deposits.

A shovel test was placed at one site (50-10-06-28141). All soil from the shovel test was screened through 1/8" screen. Further, a controlled test unit was excavated at Site 50-10-06-8804. All material from the unit was screened and recorded. Emphasis was placed on identifying the use of each site and attempting to recover datable material to establish a chronology of each site.

3.0 HISTORIC BACKGROUND

3.1 GENERAL BACKGROUND

Early residents of the area were centered near Pu‘ukapu located further to the east where Lālākea Stream comes out of the hills before flowing eastward toward Hāmākua. Perambulator’s description of this stream states that it, “descends at the North-east extremity of Waimea near Pu‘ukapu, it is small, but seldom fails; it divides into two small rivulets, one running easterly toward Hāmākua, is soon lost in the swampy woods, the other, westerly along the plain” (Perambulator 1836, 9/10:2). Perambulator does not give a name to the stream he describes, which seems to combine elements of both Lālākea and Lanimaumau. An 1830 map, however, definitely shows the Pu‘ukapu stream running east as far as the Hāmākua trail (Andrews et al. 1830). In historic times the upper course of Lālākea Stream was much altered by the digging of reservoirs, sugar cane ditches and flumes.

The observations of Reverends Bishop, Goodrich and Thurston, as recorded by Ellis, and the report of the missionary committee provide us with our earliest detailed descriptions of settlement patterns and land use in the Waimea area. Although they were writing roughly 50 years after initial Western contact, their descriptions of the Waimea settlements provide us with indications of what life may have been like in the traditional period.

In 1823, a small party of Protestant missionaries made up of Asa Thurston, Artemas Bishop, Joseph Goodrich, and visiting English missionary William Ellis, made a tour of the island of Hawai‘i with a view to establishing mission stations there. The group spent 2 months making a circuit of the island, beginning in Kailua, Kona and traveling counter-clockwise around the coast. When the party reached the settlement of Kapulena in the district of Hāmākua they decided to separate, with Ellis and Thurston traveling on to Waipi‘o and around the tip of North Kohala, while Bishop and Goodrich crossed inland to Waimea and then down to Kawaihae. In his journal, William Ellis provides a second hand account of Bishop and Goodrich’s trip.

About noon they reached the valley of Waimea, lying at the foot of Mouna-Kea [Mauna Kea], on the northwest side. Here a number of villages appeared on each side of the path, surrounded with plantations, in which plantains, sugar-cane, and taro, were seen growing unusually large. At 4 p.m. they obtained a view of the ocean, and kept on their way towards Towaihae [Kawaihae] (Ellis 1963:253).

It is evident from Ellis’ account that in the early 1800s the Waimea area was extensively cultivated and well populated. Bishop and Goodrich noted settlements on both sides of the trail. They observed fields containing *mai‘a* (banana), *kō* (sugar cane), and *kalo* (taro). As they continued down toward Kawaihae, however, the settled areas gave way to vacant lands where they found “no houses.”

During his travels, Ellis not only recorded his observations of traditional Hawaiian culture, he also noted evidence of the changes that were rapidly taking place in Hawaiian society. While he and his companions were at Kawaihae, Ellis witnesses the effect that the trade in sandalwood (*'iliahī*) was having on the residents of upland Waimea.

Before daylight on the 22d, we were roused by vast multitudes of people passing through the district from Waimea with sandal-wood, which had been cut in the adjacent mountains for Karaimoku [chief Kalanimoku], by the people of Waimea, and which the people of Kohala, as far as the north point, had been ordered to bring down to his storehouse on the beach [at Kawaihae], for the purpose of its being shipped to Oahu. There were between two and three thousand men, carrying each from one to six pieces of sandal wood, according to their size and weight. It was generally tied on their backs by bands made of *ti* leaves, passed over the shoulders and under the arms, and fastened across their breast. When they had deposited the wood at the storehouse, they departed to their respective homes. (Ellis 1963:397)

Not long after the four missionaries reunited at the coastal settlement of Kawaihae, Rev. Thurston made a trip inland to see for himself the territory his companions had passed through.

About five p.m. Mr. Thurston set out on a visit to the inland district of Waimea, having been furnished with a guide by Mr. Young. It was dark when he reached Ouli, a place belonging to the latter, where he put up for the night.

After worship with the people, on the morning of the 26th, Mr. Thurston walked on to Kalaloa, the residence of the chief of Waimea, Kumuokapiki (Stump of Cabbage). Leaving Kalaloa, he walked on to Waiakea, from thence to Waikalua, Pukalani, and Puukapu, which is sixteen or eighteen miles from the sea-shore, and is the last village in the district of Waimea. At these places he addressed the people.

The soil over which he had traveled was fertile, well watered, and capable of sustaining many thousand inhabitants. In his walks he had numbered 220 houses, and the present population is probably between eleven and twelve hundred. (Ellis 1963:289)

Thurston spent the first night of his journey in the *ahupua'a* of 'Ōuli, which had been given to John Young by Kamehameha in appreciation of his role as military adviser during the chief's wars of conquest. Ellis states that Thurston "put up for the night" in 'Ōuli, which suggests that he spent the night in some form of dwelling rather than spreading his blanket "on the ground" and sleeping "comfortably in the open air" as his companions had done previously. It is difficult to say exactly where Thurston might have spent the night. The old road from Kawaihae first touches the *ahupua'a* of 'Ōuli at Pu'uianako. From there it runs along the northern boundary of the *ahupua'a* until it reaches 'Ōuli Gulch, a stretch of a little over four miles. The road then crosses the *ahupua'a* to its eastern boundary at Lanikepu Stream, roughly another half mile. The spot at which Thurston spent his first night may have been anywhere

along this stretch. It is evident from Ellis' description, however, that there was at least some form of settlement in 'Ōuli, for in the morning before his departure Thurston worshipped "with the people."

Early that second day Thurston arrived at the westernmost of Waimea's five major settlements. These settlements appear to have clustered along the Kawaihae-Waimea-Waipio trail. Between them they contained about 220 houses and held a population of somewhere between eleven and twelve hundred.

In February of 1830, Dr. Gerrit P. Judd, returned to Waimea. He brought with him a sizeable party including his family, Rev. and Mrs. Ruggles, and the Ka'awaloa chiefess Kapi'olani, one of the most fervent chiefly supporters of the newly founded Christian church. Prior to their arrival they had consulted with high chief Kuakini (referred to by the missionaries as Governor Adams) who was the brother of Kamehameha's favorite wife Ka'ahumanu. In 1812, Kuakini had succeeded John Young as the governor of Hawai'i Island. He remained as governor until his death in 1844. Judd notes in his report to the American Board of Commissioners for Foreign Missions in Boston (dated Aug. 19, 1830) that Kuakini, "gave orders for four native houses to be build free of expense for our accommodation" (Judd 1911: Letter V).

Traveling up the coast by canoe from Kona, the missionary party spent a night at John Young's residence in Kawaihae before setting off for Waimea.

Feb. 26. Our party is now increased to 113, -- 43 having joined us at Kawaihae. We began to move before sunrise in order to avoid the extreme heat of the sun; our road was only a narrow footpath, which for the first two miles led through an uneven and rocky country, that gradually became more smooth and verdant as we proceeded. About five miles from Kawaihae we came to a running stream [probably Keanu'i'omanō Stream]; here the people had provided refreshments of baked hog, kalo, potatoes, etc., of which the natives partook freely. The remaining part of our way was through a more level country covered with grass, bushes, etc., as described in the return of the deputation [the missionary committee of 1830]. We arrived at Aalii [Keaalii] about ½ past 12. This place affording the best house in the district, we took up our abode here for the present; it was, however, too small to accommodate us and all our baggage. A small but comfortable house was put up immediately for Kapiolani (Judd 1911: Letter V).

3.2 TRADITIONAL AGRICULTURE IN EARLY HISTORIC TIMES

The various historic accounts mentioned above sketch a surprisingly detailed picture of agriculture as it was practiced in the *kula* of upland Waimea. Although these sources date from a period after Western contact, they can be used to suggest traditional land use patterns. Even the earliest written descriptions we have of Waimea refer to the area's extensive cultivation and the quality of its crops. Menzies' Hawaiian guides took great pains to assure him that the uplands were "very fertile and numerously inhabited" (Menzies 1920:55-56, as cited in Clark

and Kirch 1983:45). The naturalist himself saw the end product of this cultivation being carried down to the coast. "I could readily believe the truth of these assertions, from the number of people I met loaded with produce of their plantations and bringing it down to the water side to market" (Menzies 1920:55-56, as cited in Clark and Kirch 1983:45). The missionaries Bishop and Goodrich remarked that when they reached the valley of Waimea, "a number of villages appeared on each side of the path, surrounded with plantations, in which plantains, sugar-cane, and taro, were seen growing unusually large" (Ellis 1963:253). The missionary committee of 1830 noted the presence of "upland kalo and potatoes" at Keaalii (Andrews et al. 1830:2). Bingham also saw fields of "kalo, sugar-cane, bananas" (Bingham 1969:374). Lyons added to this list "the *wauke*, of wh. [which] kappa is made" (Doyle 1945: 63). It was this mix of crops: *kalo* (taro, *Colocasia esculenta*), *'uala* (sweet potato, *Ipomoea batatas*), *kō* (sugar cane, *Saccharum officinarum*), *mai'a* (banana, various species) and *wauke* (paper mulberry, *Broussonetia papyrifera*), that would have been traditionally grown. Individual fields of dryland *kalo* and *'uala* would have been separated by windbreaks of *kō* or *mai'a* and served to reduce evapo-transpiration and help the soil retain moisture.

One of the best means by which to gain an understanding of the workings of a traditional dry-land agricultural complex, such as the one in Waimea, is to examine the Hawaiian words used to describe its various components. The basic element of a dry-land agricultural system was the individual plot of land or plantation. *Kīhāpai* was the name for a plot of land within an *'ili* that was cultivated by a family for its own use. The produce of the *kīhāpai* belonged to the *'ohana* (extended family) that lived on and worked the land. An *'ili* might also contain a *kō'ele*, an area of cultivation whose produce was set aside for the *ali'i* (chief). Although the *kō'ele* was cultivated by the *maka'āinana* (common people) dwelling on the land, all that it produced belonged to the *ali'i*. The *haku one* was a similar plot whose produce were reserved for the *konohiki* (overseer or headman of the *ahupua'a*) (Handy et al. 1972:50). The nineteenth century scholar Nathaniel B. Emerson, in a footnote to the writings of Hawaiian historian David Malo, described this system of agricultural tribute by stating that, "A peasant, for instance, had six *taro* patches; the *ali'i* appropriated the best one for himself, and that was called *kō'ele*. The *konohiki*, or *haku-āina*, took another for himself and that was called *haku-one*" (Malo 1971:18).

The surveyor C. J. Lyons, writing in 1875, defined a *kīhāpai* as "a dry land patch demarked by ridges of small stones, earth or weeds" (quoted in Handy et al. 1972:51). The ridges that delineated dry-land fields were known as *iwi* (bones), *iwi kuamo'o* (backbones) or *iwi 'āina* (bones of the land). The Boundary Commission Book for Hawai'i defines *iwi 'āina* as "a ridge of small stones which the natives formed in clearing their potato and kalo patches" (Boundary Commission Book, Volume A: 164). In their book, *Native Planters in Old Hawai'i: Their Life, Lore, and Environment*, Handy et al. (1972) state that,

Iwi (bone) or iwi kuamo'o (backbone) was the term applied to the line of rocks and refuse thrown up along the side of mo'o 'aina [long strips of arable land within an 'ili, normally associated with wet taro cultivation] or kihapai in clearing. These iwi 'aina demarked the boundaries of plantations and arable holdings, and hence were also called palena, or bounds. They were not mere rubbish heaps, but, for example on Hawaii,

served for planting sugar cane round about the field of dry taro in upland Kona, Ka‘u, and Kohala” (Handy et al. 1972:51).

Historic sources indicate that windbreaks of sugar cane, banana, ti, and *wauke* were planted along the *iwi kuamo‘o* to protect the intervening fields of dry-land taro and sweet potato from the heavy trade winds. The Hawaiian writer Samuel Kamakau described how sugar cane was traditionally planted, “The red and the striped sugar canes made a handsome showing at cultivated plots, *kīhāpai*. Much cane was planted at *kīhāpai* of sweet potato, dry taro and *wauke*, and on the banks of *lo‘i* taro patches; and fields of cultivated plants were beautified by planting cane along their banks and borders” (Kamakau 1976:39).

Early sources also suggest that the *kula* land of Waimea was not uniformly carpeted in fields. Some form of crop rotation appears to have been practiced, with fields being allowed to lie fallow for a time. Hiram Bingham indicates this when he speaks of “...alternate plots of shrubbery, grass, kalo, sugar cane, bananas, flowering bushes, and wild vines ...partly covered with grass of spontaneous growth” (Bingham 1969:374). In his article “Land Matters in Hawaii,” surveyor J. Curtis Lyons, who grew up in Waimea, states that, “In dry or *kula* lands...soil has to remain fallow for years between crops” (Lyons 1875:1(5), 135).

A good summation of the crops grown in the Waimea area and the pattern of cultivation can be found in testimony taken in 1907 from an elderly Hawaiian living in Waimea. He indicated that:

...all the territory planted in cane on Waikoloa [this is the roughly 250 acre tract known as Lihū‘e that was leased by Chinese in the early 1830s for use as a sugar plantation] and continuing down to said hill or mound [Pu‘u Huluhulu], was all in cultivation in ancient times, being planted by the natives with bananas, sweet potatoes, sugar cane, and dry land taro. The bananas and sugar cane were the crops requiring water. Sweet potatoes, as a general thing, grow without any water other than the rains.... The land was not all taken up uniformly in planting, but they would plant in available places, where the water in the ditch could reach and run.... People would not live on their farms, but would live in small villages which were scattered throughout this territory, going thence to work their various farms (Carter Case 1915:1295-1303; B. Nakamura, pers. comm. as quoted in Reeve 1983:235).

Shortly after World War II, the U.S. Department of Agriculture Bureau of Reclamation began a project in the Waimea area, a project called the Lālāmilo Farm Lots. The project was designed to help increase and improve farmers’ production. Beginning in 1946, the project involved:

...rerouting Lanimaumau Stream, construction of a ditch along Māmalahoa Highway fronting Pu‘u Kapu Homesteads (the “Kamuēla Stream” drainage) and construction of an irrigation ditch network. This network extended from the source of Lanimaumau, south toward Mānā and then west past the airport, through the race track, and into Lālāmilo Farm Lots (Burtchard and Tomonari Tuggle 2003: 42).

It is portions of this network that are present within the current project area.

4.0 PREVIOUS ARCHAEOLOGY

Two previous archaeological studies have taken place in the vicinity of the proposed Waimea District/Regional Park. The first of these investigations was undertaken in the late 1970s and early 1980s along the corridor of the proposed but never completed Waimea to Kawaihae Road (Clark and Kirch 1983). Following an initial surface survey to identify any archaeological sites located within the corridor (Barrera and Kelly 1974), a program of data recovery excavations was conducted at selected sites (Clark and Kirch 1983).

The limits of the proposed road corridor cover a major portion of the Waimea District/Regional Park project area (Figure 3). The only archaeological remains found at that time within the proposed park site were the remnants of a badly disturbed walled field shelter or c-shape (Site 50-10-06-8804) and a discontinuous historic cattle wall (Site 50-10-06-8809). While Site 8804 was not recorded, Site 8809 was recorded and excavated. The wall measured ca. 675 m long and 90-100 cm wide. Test excavations indicated the wall was constructed in the 19th century (Clark and Kirch 1983:283). This wall still exists in the project area and extends to the east and west of the project area.

The second investigation was conducted in the early 2000s and involved the archaeological survey and data recovery of sites within the 390 acre Waimea Town Center project area located just to the north of the proposed park (Burtchard and Tomonari-Tuggle 2003 and 2004). The southern portion of the Town Center project area overlaps the boundaries of the proposed Waimea District/Regional Park. Approximately a third of the proposed Park project area was covered by this investigation (Figure 3). The Waimea District/Regional Park survey identified a total of four sites within the main Waimea District/Regional Park project area and two sites within the entry corridor.

In 2009, IARII was conducting archaeological monitoring at the nearby Parker Ranch Extension Road/Pukalani Extension roadways. During the monitoring, they uncovered previously unidentified pits (possible postholes) and hearths along with traditional Hawaiian artifacts in areas where there were no surface structures (personal communication from T. Reith to James McIntosh on 3 May 2010). This indicates that archaeological deposits are present in this area of Waimea even with an absence of surface archaeological sites.

4.1 SITES PREVIOUSLY IDENTIFIED IN PROJECT AREA

These sites include the remnant stone foundation walls of a sizeable enclosure that may mark the site of a historic period residential complex (Site 50-10-06-21861). This site was also an identified *kuleana* property that is listed in 1840s Māhele documents as having contained a banana plantation, four dryland taro gardens, and two houses. In addition, the survey identified and excavated an irrigation ditch constructed in the 1940s (Site 50-10-06-9179 Local N), a surface scatter of historic material (Site 50-10-06-21863) two buried cultural deposits dating from the historic period (Sites 50-10-06-21862 and 21864), and one buried cultural deposit dating from the pre-Contact period (Site 50-10-06-21865). These last three sites were discovered through backhoe trenching and selective test excavations. The historic occupation scatter and buried deposits are all located near the crest of low outcrop knolls or on raised ridges. Also re-

located was Site 50-10-06-8809, a historic cattle wall. Site 50-10-06-9179 underwent data recovery excavations and was subsequently destroyed during flood-control soil berm construction (Burtchard and Tomonari-Tuggle 2001).

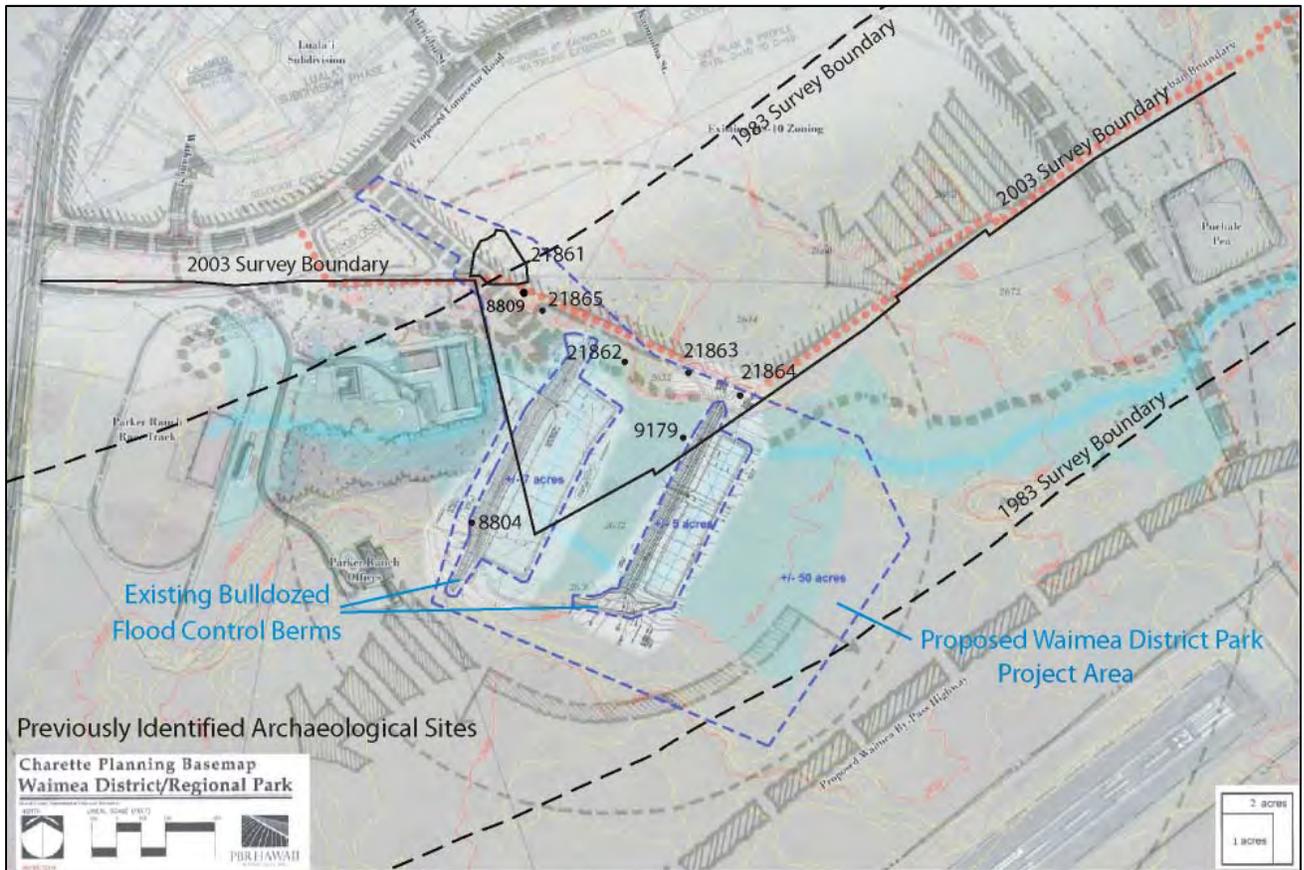


Figure 3. Map showing project location with previously identified sites and former investigations (Map courtesy of PBR Hawai‘i).

Since the last phase of the Waimea Town Center archaeological investigations consisted of data recovery and the report was subsequently approved by the State Historic Preservation Division (Letter dated 14 July 2004: see Appendix A), no further work is needed at these sites. Sites that have undergone data recovery require no further work since data recovery is a form of mitigation and impacts that may occur at a site would no longer be damaging.

5.0 FIELD INVESTIGATIONS

5.1 SURVEY RESULTS

The project area consisted of a relatively flat open area with a low rising ridges to the north and south (Figure 4). The entire area was covered with kukuyu grass (*Pennisetum clandestinum*). The central portion of the project area is a flat and open span which had been substantially modified by excavation and construction of two large soil berms. The existing bulldozed berms (shown in Figure 3), were constructed in the mid-2000s and act as earthen flood control berms. The bulldozing involved in the construction of these berms impacted substantial portions of the project area. The construction activities of the two berms and adjacent area have destroyed any archaeological evidence that may have been present.

The surface survey relocated seven previously identified sites (Sites -8804, -8809, -21861, -21862, -21863, -21864, and -21865 and three previously unidentified archaeological sites (Sites -28140, -28141, and -28142) (Figure 5). The three newly identified sites consisted of a small agricultural terrace (-28140), a small enclosure remnant (-28141) and a short section of an 'auwai (irrigation ditch) with an adjoining terrace (-28142). Site 50-10-06-28140 and 50-10-06-28141 are located near the southern project area boundary and Site 50-10-06-28142 is located near the northern project area boundary. Each of these three sites is on the periphery of the project area and is located on the sides of a ridge or a knoll.

In addition, five previously identified sites were also relocated (Site 50-10-06-21861 through 21865). These sites have undergone data recovery (Burtchard and Tomonari-Tuggle 2003), thus no work or recording was undertaken at these sites. Presented below are detailed site descriptions of the single identified but not recorded archaeological site (-8804) and the three newly identified sites(-27140, -28141, -28142).

5.2 SITE DESCRIPTIONS

5.2.1 Site 50-10-06-8804

Site 50-10-06-8804 is a small windbreak shelter or c-shape located along the western edge of the project area, directly behind of the Parker Ranch Headquarters Building (Figure 6). This site had been previously identified by Clark and Kirch (1983) but no formal recordation had been made nor had the site been excavated. The 1983 site tag was relocated on the east side of the shelter. It is comprised medium to large basalt cobbles situated on top a flat area on a low lying ridge. Overall, the site measures 4.0 m wide and 3.8 meters deep and 0.35 m high (Figure 7). There is evidence of wall tumble on the interior of the shelter likely due to cattle grazing in the area. No other surface features or artifacts were evident on the surface. A large flood control berm is located 35 meters to the northeast of the site. Its construction had no impact on Site 50-10-06-8804.



Figure 4. Overview of the project area looking northeast.

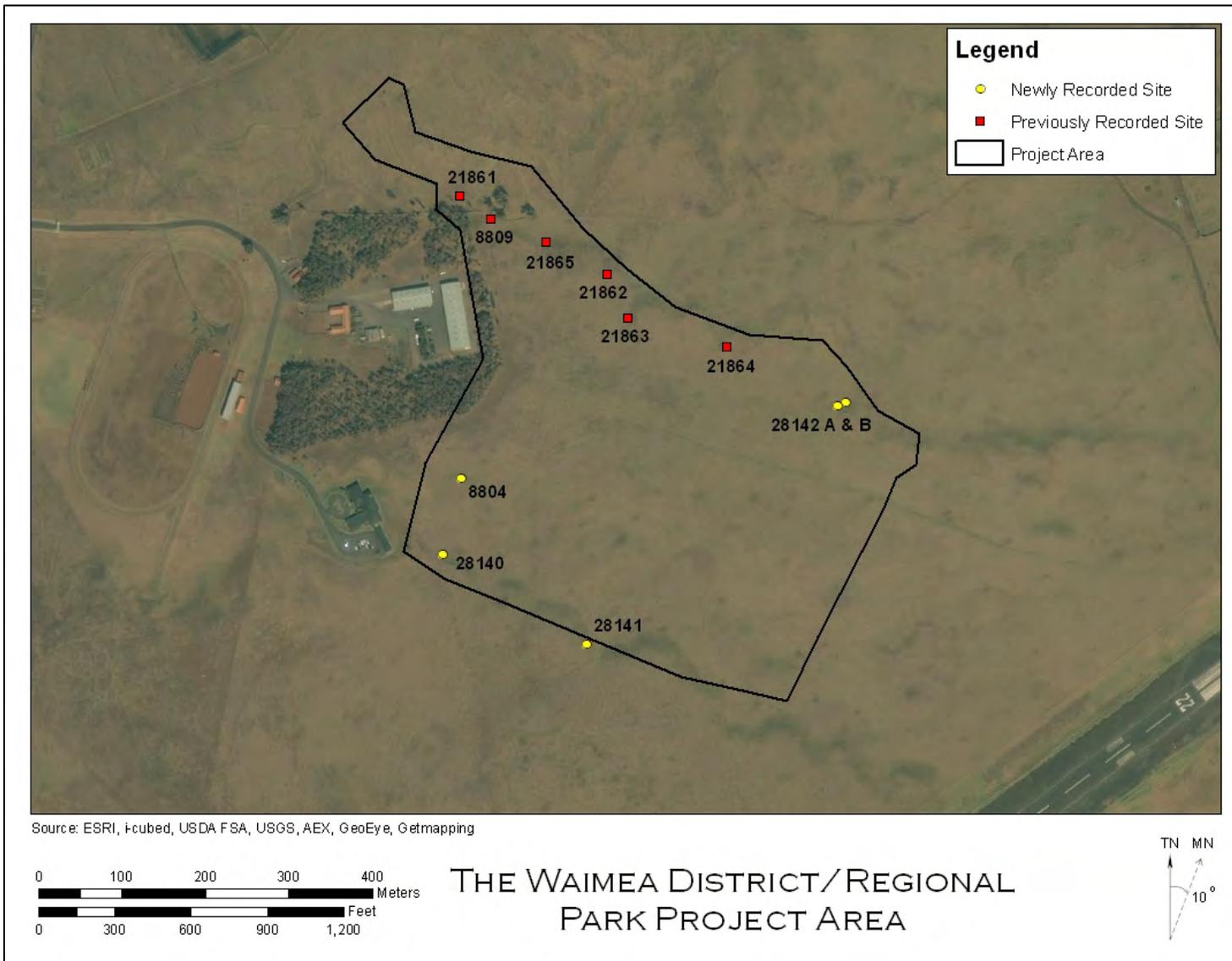


Figure 5. Aerial photograph showing locations of identified sites within project area.



Figure 6. Site 50-10-06-8804, a low wind shelter, located on the southwest corner of the project area (Note: flood control berm on right of photo; view to N).

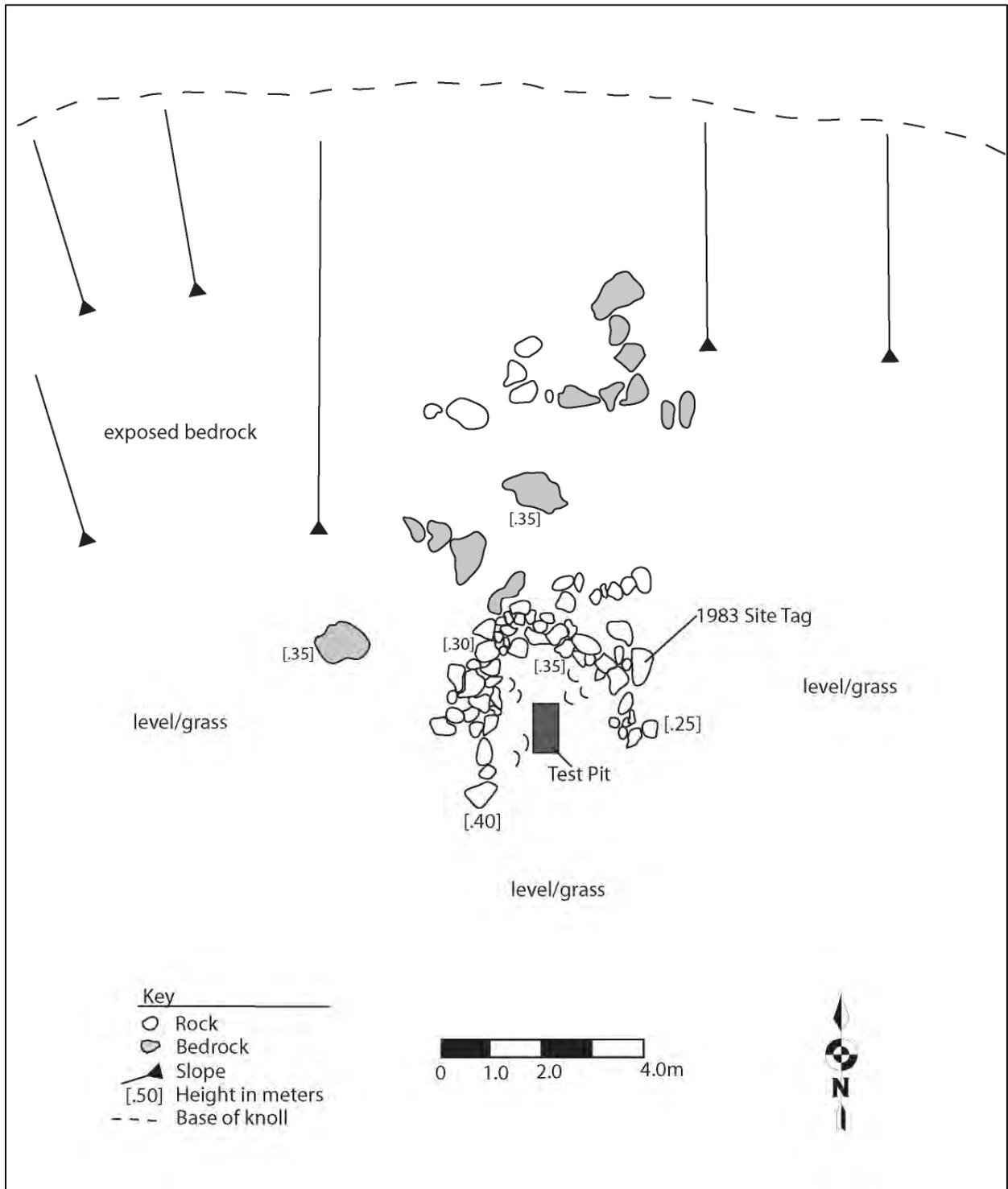


Figure 7. Planview map of Site 50-10-06-8804.

5.2.2 Site 50-10-06-28140

Site 50-10-06-28140 is small agricultural terrace located 90 meters south of Site 50-10-06-8804 and near the top of a north facing ridgeline extending along the southern boundary of the project area (Figure 8). This site consists of the remnant of a single agricultural terrace with lower and upper retaining walls. Overall, this site measures 6.5 x 3.8 m in size with the internal portion of the terrace measuring 2.4 m and the walls average 0.40 m high (Figure 9). The walls are constructed of weathered vesicular basalt cobbles and boulders. This site is in poor condition likely due to cattle and ranching activities. An ATV trail is located just to the west of the site.



Figure 8. Site 50-10-06-28140, a remnant agricultural terrace (view to SW).

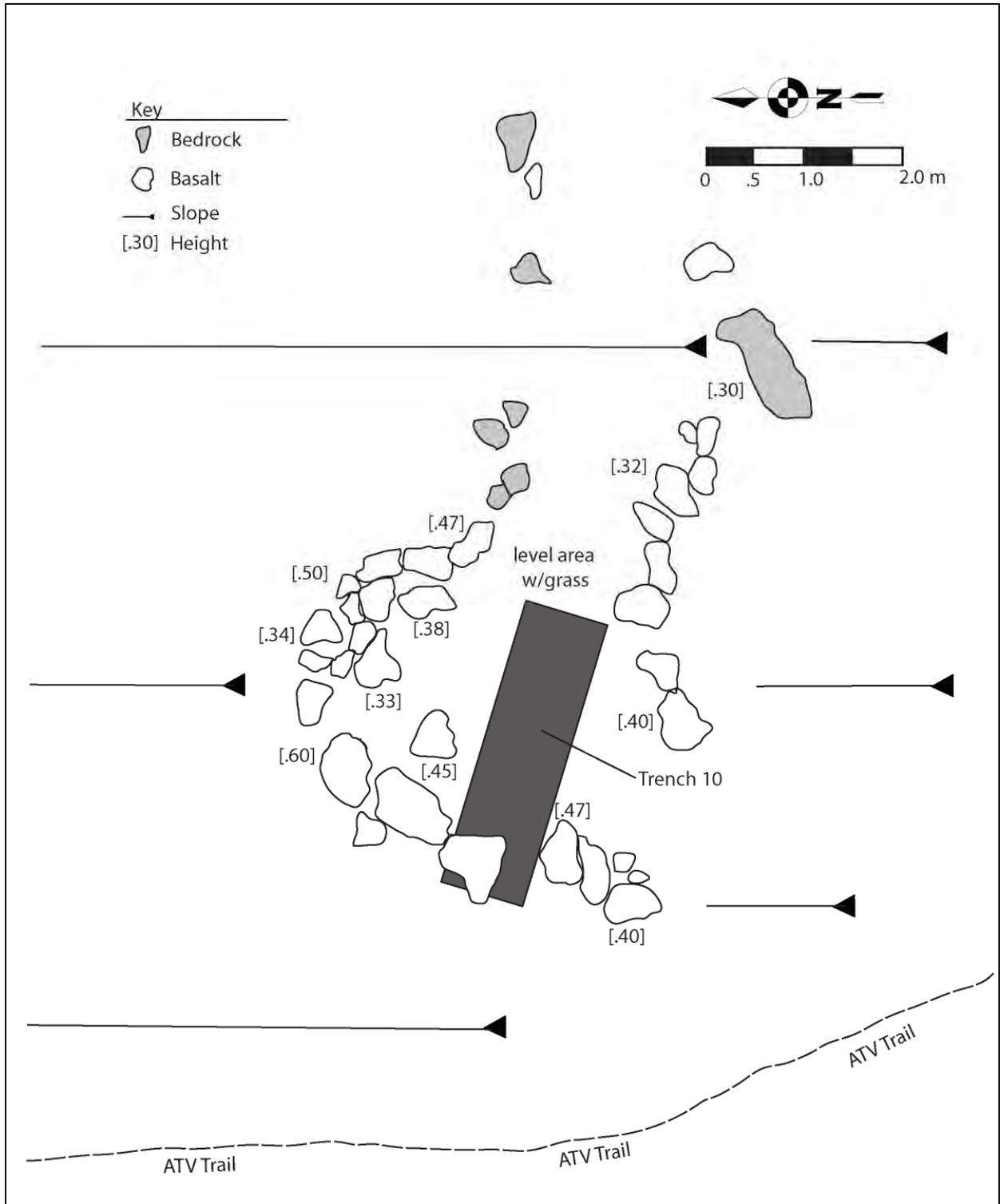


Figure 9. Planview map of Site 50-10-06-28140.

5.2.3 Site 50-10-06-28141

Site 50-10-06-28141 is located approximately 220 meters east of Site 50-10-06-28140 and consists of a remnant enclosure/agricultural terrace (Figure 10). This site is located along the top of the same ridgeline as Site 50-10-06-28140 and is also located along the southern project area boundary. The enclosure measures 6.3 m x 5m and averages 0.30 m in height. The site is composed of weathered basalt cobbles and boulders and is in very poor condition likely due to the area being used for cattle ranching. The interior is covered with scattered cobbles and boulders. This site also incorporates basalt outcropping on the north and west sides. A single shovel test pit was excavated at this site (Figure 11).

There is some question as to whether this site is located within the project boundary. While in the field, every indication was that this site was along the south boundary and thus it was recorded. Upon completing the field investigations and the GPS information uploaded, the site plotted outside (south) of the project area.

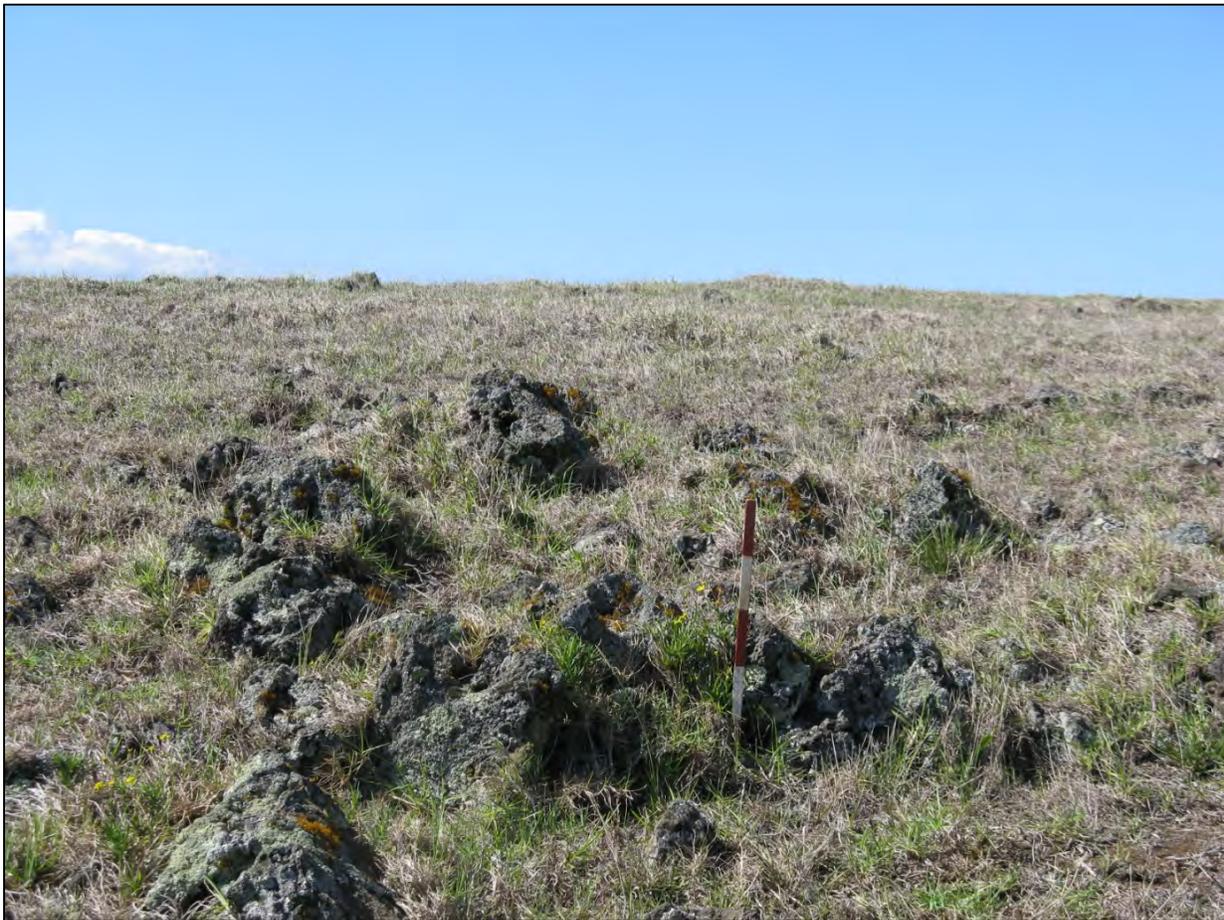


Figure 10. Site 50-10-06-28141, a small enclosure remnant located on the south side of the project area (view to S).

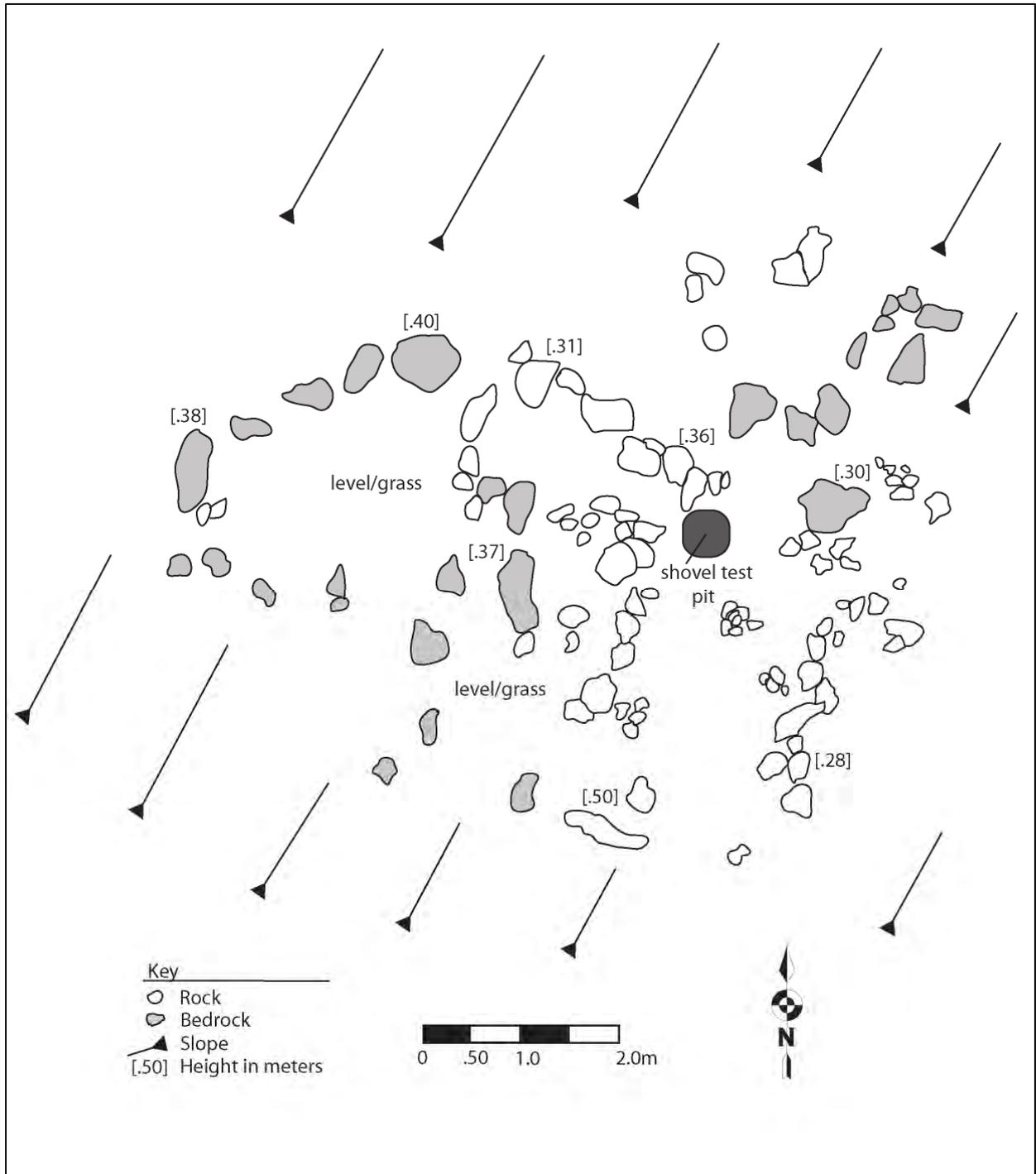


Figure 11. Planview map of Site 50-10-06-28141.

5.2.4 Site 50-10-06-28142

Site 50-10-06-28142 is located along the northern project boundary and consists of an *'auwai* (irrigation ditch) (Feature A) and a terrace (Feature B). The feature is situated on the northwest side of a small knoll (Figure 12). Feature A measures 16 m long and is approximately 1.0m wide and varies in height between 0.49 and 0.96 m high. The feature incorporates natural outcropping and basalt boulders in its construction. A backhoe trench was excavated within this feature (Figure 13).

Feature B is approximately 1/3 m south of Feature A and measures 6.5 m long and 1.8 m wide and between 0.30-0.50 m high. Feature B is oriented in a north/south direction and may have acted as a diversion at the bottom of the *'auwai* to disperse the water. It is likely that both Features A and B are traditional features that were reused in the 1946 Bureau of Reclamation Project. Site 50-10-06-28142 is also in the same vicinity as Site 50-10-06-9179 Loc. N, an irrigation ditch constructed for the Bureau of Reclamation Project (Burtchard and Tomonari-Tuggle 2003: D-63).



Figure 12. Site 50-10-06-28142, *'auwai* (irrigation ditch) located on the north boundary of the project area (view to SW).

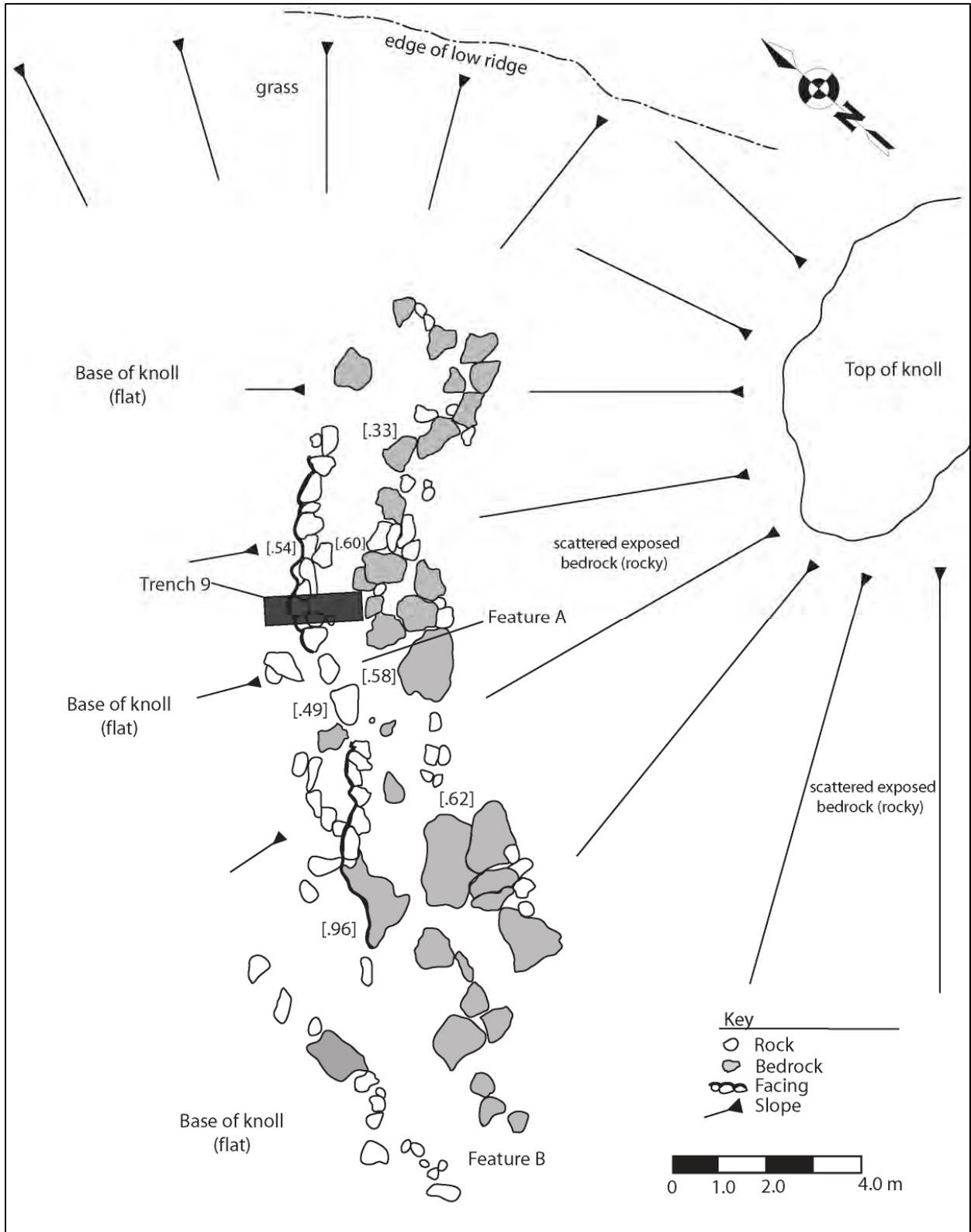


Figure 13. Planview of Site 50-10-06-28142.

5.3 EXCAVATION RESULTS

Subsurface testing was conducted as part of the current investigations. A series of 10 backhoe trenches were excavated during the project (Figure 14). Eight of the trenches were distributed throughout the project area focusing on the larger undisturbed areas. The remaining two backhoe trenches were excavated within the newly identified sites (50-10-06-28140 and 28142). A controlled test unit was hand excavated at Site 50-10-06-8804 and a shovel test was excavated at Site 50-10-06-28141.

5.3.1 Backhoe Excavations

With the exception of Trench 9 excavated at Site 50-10-28142, no other excavation identified and any subsurface features, or cultural material. The results (primarily stratigraphic descriptions) are presented below (note: cmbs = centimeters below surface).

Trench 1

I	0-20 cmbs	Dark brown (10YR 3/3) silt loam; medium grain; slightly sticky, plastic; abrupt smooth boundary; rootlets.
II	20-80 cmbs	Strong brown (7.5YR 4/6) silt; fine grain; non-sticky, non-plastic; abrupt smooth boundary.
III	75-130 + cmbs	Yellowish brown (10YR 5/6) silt; medium rounded grains; non-sticky, non-plastic; contained contains saprolitic rock.

Trench 2

I	0-18 cmbs	Dark brown (10YR 3/3) silt loam; medium grain; slightly sticky, plastic; abrupt smooth boundary; abundant rootlets.
II	10-85 cmbs	Strong brown (7.5YR 4/6) silt; weak structure; non-sticky, non-plastic; abrupt smooth boundary.
III	79-130 cmbs	Yellowish brown (10YR 5/6) silt; weak, fine rounded grains; non-sticky, non-plastic; abrupt smooth boundary; contained numerous decaying stones, weathered bedrock.
IV	120-125 + cmbs	Dark yellowish brown (10YR 4/4) bedrock; no structure; non-sticky, non-plastic; breaks apart under pressure.

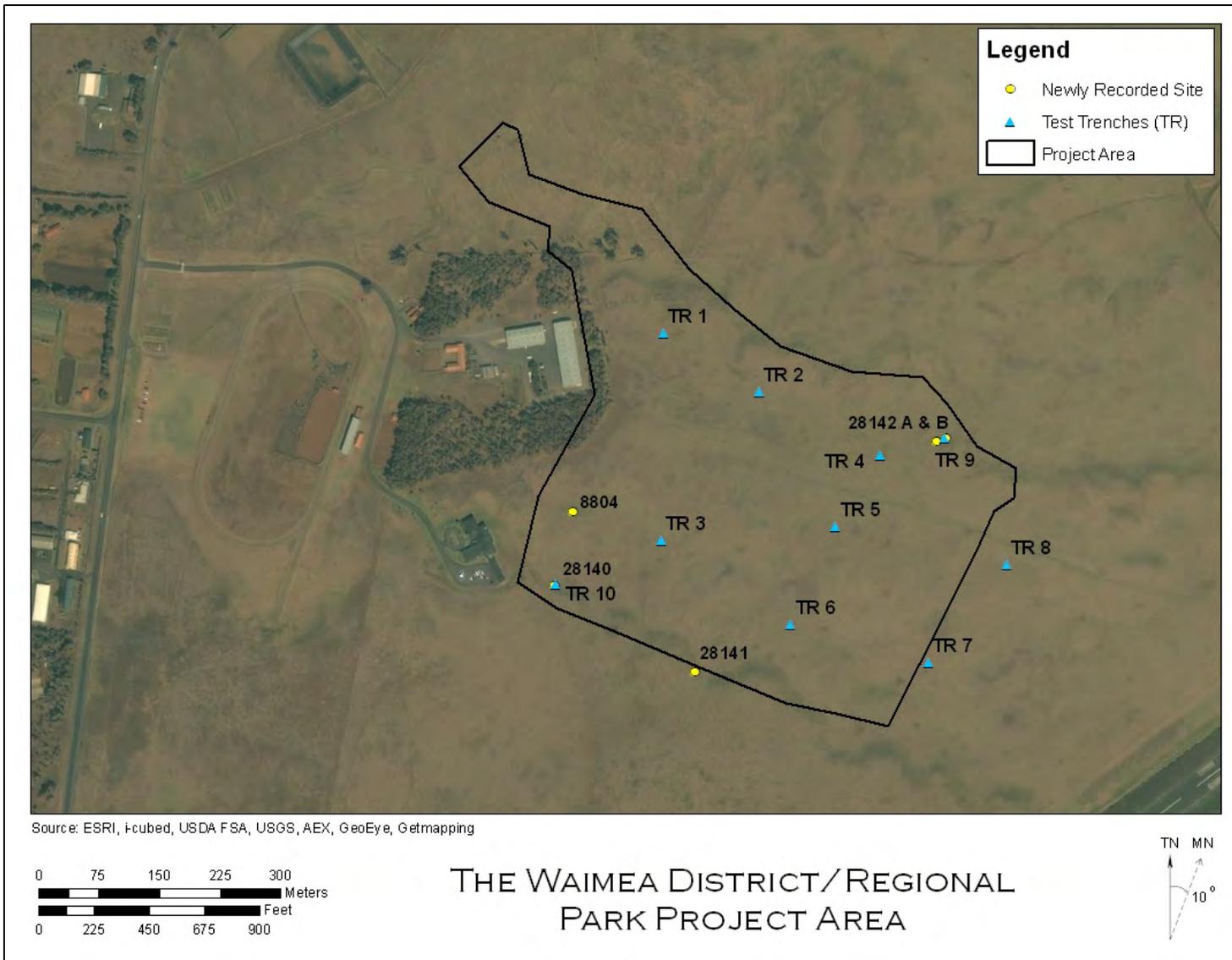


Figure 14. Location of Test Trenches and newly identified sites within the project area.

Trench 3

I	0-12 cmbs	Strong brown (7.5YR 4/6) silt loam; fine grain; slightly sticky, slightly plastic; abrupt smooth boundary; roots.
II	12-125 + cmbs	Dark yellowish brown (10YR 4/4) silt; Fine to coarse structure; non-sticky, non-plastic; rock outcropping layer is rock with some silt mixed.



Figure 15. Photo showing Trench 3, West Wall.

Trench 4

I	0-60 cmbs	Dark brown (10YR 3/3) silt loam; medium grain; slightly sticky, plastic; abrupt smooth boundary; abundant rootlets.
II	37-120 cmbs	Strong brown (7.5YR 4/6) silt; weak structure; non-sticky, non-plastic; abrupt smooth boundary.
III	110-160 cmbs	Yellowish brown (10YR 5/6) silt; weak, fine rounded grains; non-sticky, non-plastic; abrupt smooth boundary; contained numerous decaying stones, weathered bedrock.
IV	155-173 + cmbs	Dark yellowish brown (10YR 4/4) silt; weak, fine crumb; non-sticky, non-plastic; contains decaying rock.

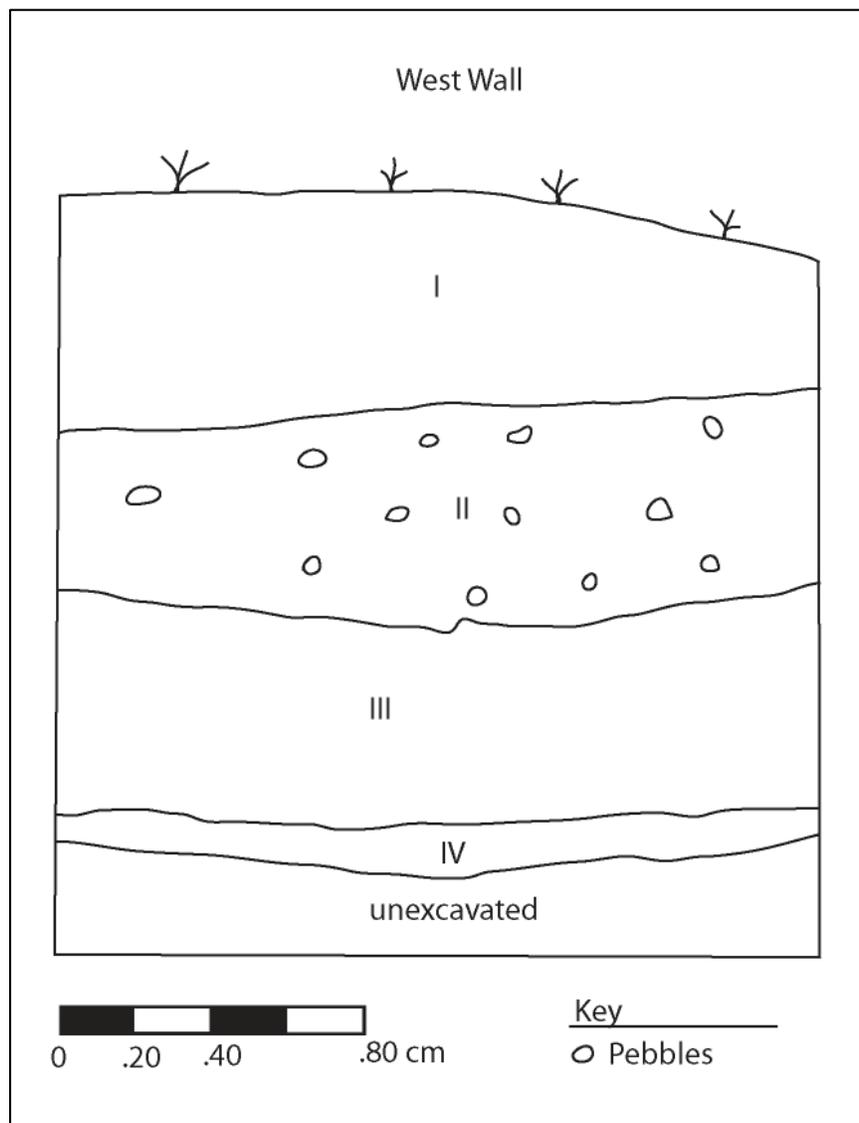


Figure 16. Trench 4, West Wall profile.

Trench 5

I	0-37 cmbs	Dark brown (10YR3/3) silt; fine to very fine; non-sticky, non-plastic; abrupt smooth boundary; contains abundant rootlets.
II	35-70 cmbs	Dark brown (10YR3/3) silt; fine to very fine; non-sticky, non-plastic; clear smooth boundary; contains decaying stones and less rootlets abundant rootlets.
III	70-90 cmbs	Very dark gray (2.5Y3/1) sand; coarse, non-sticky, non-plastic; abrupt smooth boundary; volcanic sand.
IV	90-150 cmbs	Dark yellowish brown (10YR 4/3) silt; weak, blocky; non-sticky, non-plastic; abrupt smooth boundary; lithified silt.
V	145-168+ cmbs	Dark yellowish brown (10YR 4/4) silt; fine structure; non-sticky, non-plastic.

Trench 6

I	0-25 cmbs	Dark yellowish brown (10YR3/4) silt; fine structure; non-sticky, non-plastic; abrupt smooth boundary.
II	20-50 cmbs	Dark yellowish brown (10YR4/6) silt; very fine structure; non-sticky, non-plastic; abrupt smooth boundary.
III	47-150+ cmbs	Dark yellowish brown (10YR4/4) silt; fine; non-sticky, non-plastic; contains decaying rock.

Trench 7

I	0-25 cmbs	Dark yellowish brown (10YR3/4) silt; very fine; non-sticky, non-plastic; abrupt smooth boundary.
II	20-32 cmbs	Dark grayish brown (10YR4/2) silt; very fine; non-sticky, non-plastic; abrupt smooth boundary; contains some ash.
III	30-112 cmbs	Dark yellowish brown (10YR3/6) silt; very fine; non-sticky, non-plastic; clear smooth boundary.
IV	100-138+ cmbs	Dark yellow brown (10YR4/4) silt; fine crumb; non-sticky, non-plastic; contains decaying rock.

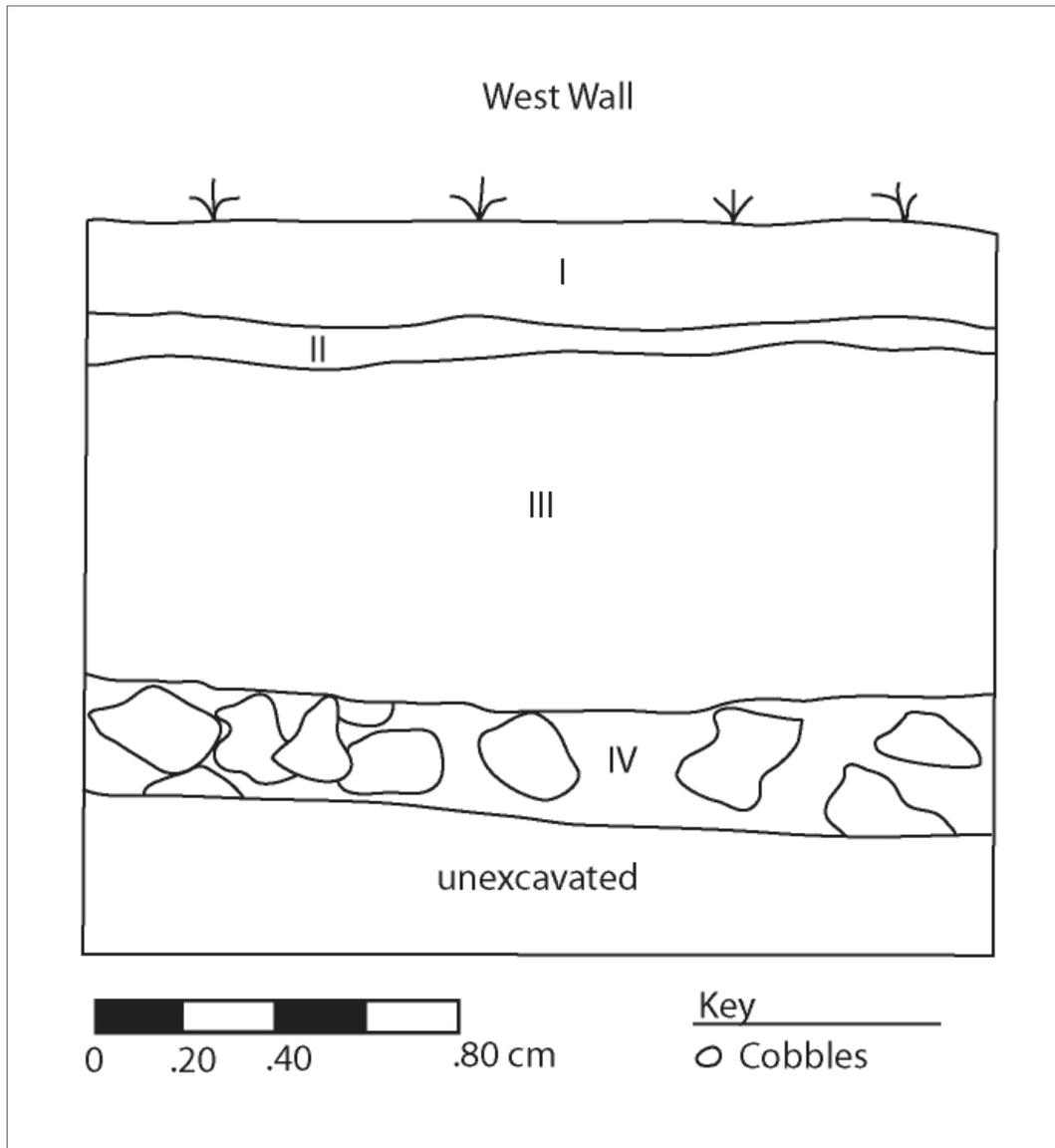


Figure 17. Trench 7, West Wall profile.

Trench 8

I	0-20 cmbs	Dark Brown (10YR 3/3) silt; fine to medium grain; non-sticky, non-plastic; abrupt smooth boundary, abundant rootlets.
II	18-5 cmbs	Strong Brown (7.5YR 4/6) silt; very fine grain; non-sticky, non-plastic; gradual boundary.
III	42-115 cmbs	Yellowish brown (10YR 5/6) silt; very fine grain; slightly sticky, non-plastic; abrupt smooth boundary with few rounded waterworn stones.
IV	85-150 + cmbs	Black (7.5YR 2.5/1) sand, slightly cemented, platy; non-sticky, non-plastic.



Figure 18. Trench 8, West Wall.

Trench 9, Site 50-10-06-28142

I/la	0-15 cmbs	Dark brown (10YR3/3) silt loam; fine to medium grain; non-sticky, non-plastic; abrupt smooth boundary; contains few rocks; brown and clear bottle glass fragments.
II	10-27 cmbs	Dark yellowish brown (10YR3/6) silt; very fine grain; non-sticky, non-plastic; abrupt smooth boundary; contains no rocks.
III	20-55+ cmbs	Dark yellowish brown (10YR3/6) silt; very fine, platy; non-sticky, non-plastic; contains decaying rocks.



Figure 19. Trench 9 ('auwai).

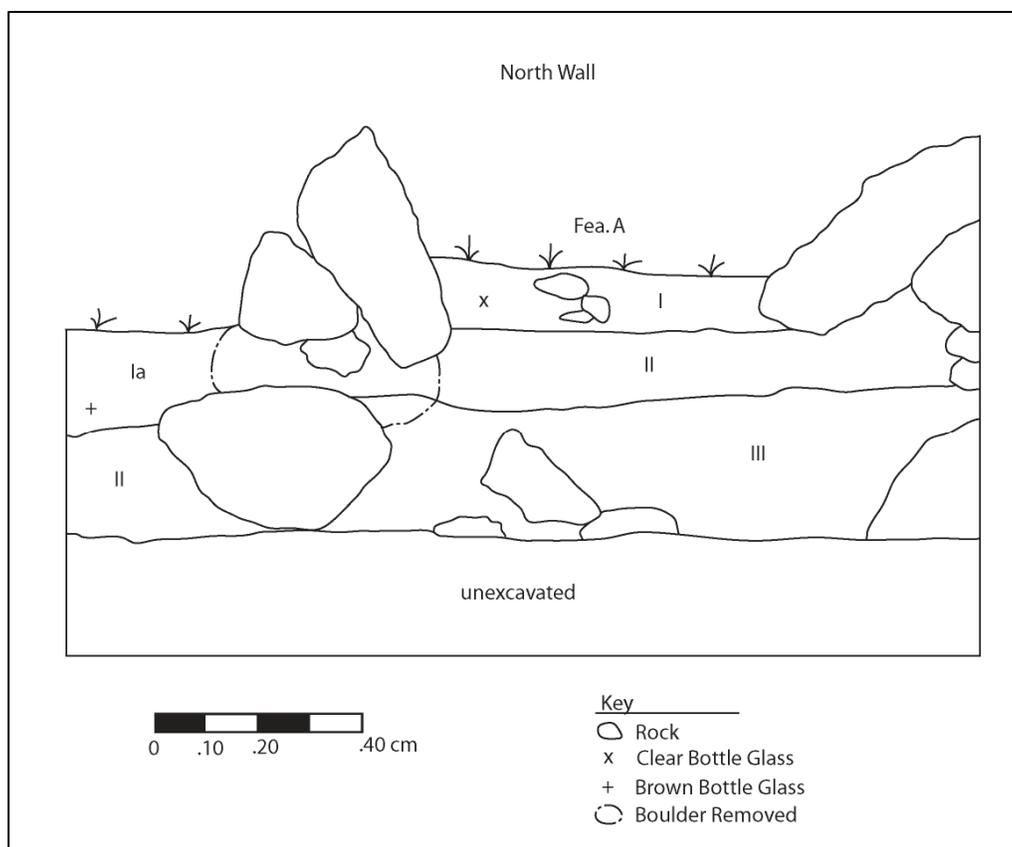


Figure 20. Profile of Trench 9 excavated at Site 50-10-06-28142.

Three bottle glass fragments were recovered during trenching in Site -28142. Two brown/amber bottle glass fragments (a base and neck) were collected during profiling from outside of Feature A. The base fragment contains a common mark at the bottom, the circle and diamond embossing (also referred to as the “Diamond O-I”) and the number “3” to the left of the diamond (Figure 20). This bottle was manufactured by Owens Illinois Glass Company, and the number “3” is the plant number which in this case, represents Huntington, West Virginia plant that operated between 1930 and 1971. The bottles with this particular Diamond O-I pattern was produced between 1929 and 1954 (Lockhart 2004).

The third fragment was recovered from Layer I within Feature A. It is a clear soda bottle fragment (at least a two-piece mold, machine made) containing a body seam and embossed with the letters RET on the shoulder (Figure 21). It is likely that this was a soda bottle and the RET is all that remains from the phrase “No Return” which was embossed on the sides of bottles.

The stratigraphy recorded during testing indicated that the ‘*auwai*’ was used for a very short time. There was no clear concave pattern indicating water flow through the feature likewise there were no charcoal or organic vestiges that might be observed. It seems reasonable that this feature was abandoned not long after its construction.



Figure 21. Brown bottle glass fragments recovered during excavations outside of feature.



Figure 22. Clear glass bottle fragment recovered from within Feature A during excavations.

Trench 10, Site 50-10-06-28140

I	0-21 cmbs	Dark yellowish brown (10YR3/6) silt; very fine grain; non-sticky, non-plastic; abrupt smooth boundary.
II	18-60 cmbs	Olive brown (2.5Y4/4) silt; very fine grain; non-sticky, non-plastic; abrupt smooth boundary; contains few decaying rocks.
III	55-95+ cmbs	Light olive brown (2.5Y5/6) silt; fine grain; non-sticky, non-plastic; abundant decaying boulders.



Figure 23. Trench 10, south wall.

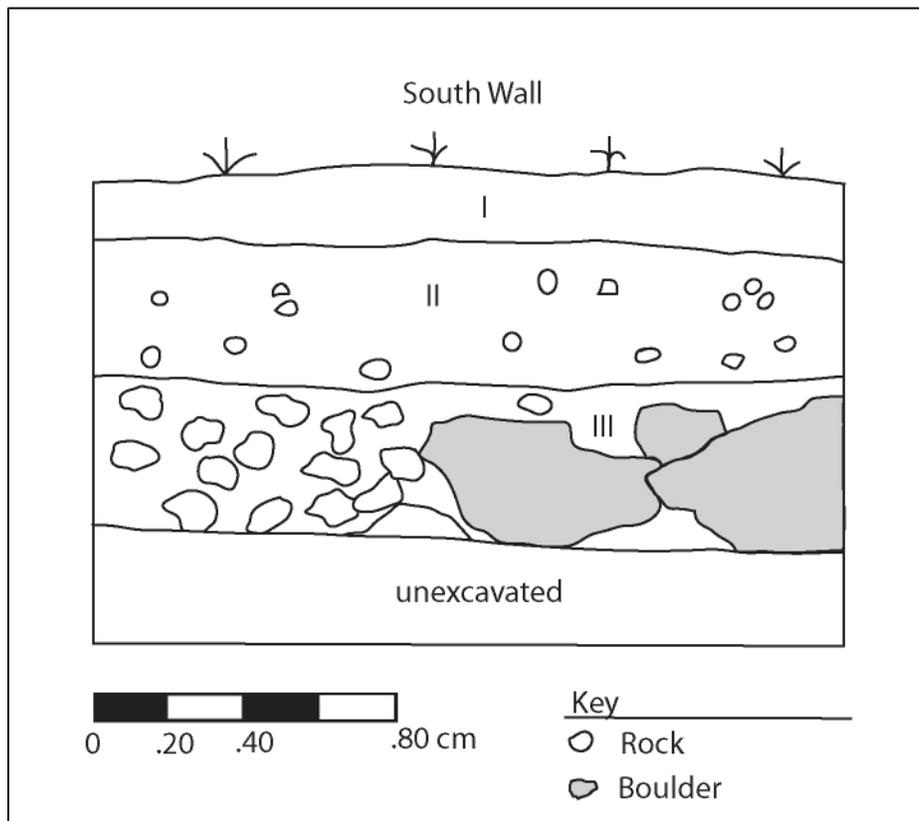


Figure 24. Profile of Trench 10, Site 50-10-06-28140.

The backhoe trench in Site -28140 uncovered abundant basalt rock in Layer II and cobbles and boulders within Layer III, No subsurface features, artifacts or midden was observed during testing. It is probable that this site was used for traditionally for dryland agriculture and abandoned during the Historic Period.

5.3.2 Shovel Test Pit, Site 50-10-06-28141

A single shovel test pit was excavated in Site 50-10-06-28141. The shovel test failed to identify any subsurface features or recover any artifacts or midden. It is likely that this site was used traditionally for dryland agriculture and abandoned during the Historic Period.

I	0-25 cmbs	Dark yellowish brown (10YR3/6) silt; very fine grain; non-sticky, non-plastic; abrupt boundary.
II	17-30 cmbs	Dark yellowish brown (10YR3/6) silt; very fine grain; non-sticky, non-plastic; abrupt boundary; contains decaying rocks.



Figure 25. Shovel Test Pit excavated at Site 50-10-06-28141 (view to W).

5.3.3 Controlled Excavation, Site 50-10-06-8804

A 0.5 x 1.0 m test pit was excavated in Site 50-10-06-8804. The controlled excavation failed to identify any subsurface features, midden or artifacts. The test unit was terminated after 0.25 cm because of the presence of bedrock. The shallow deposition is likely due to the strong trade winds that blow across the Waimea Plains making it unlikely that soil would be built up on the knoll where this site is located. The lack of feature, midden and artifacts indicates that this site was utilized as a short term shelter to protect one from the elements and not meant as a long term habitation.

I	0-16 cmbs	Dark yellowish brown (10YR3/6) silt; very fine grain; non-sticky, non-plastic; abrupt gradual boundary.
II	9-25 + cmbs	Dark yellowish brown (10YR3/6) silt; very fine grain; non-sticky, non-plastic; contains bedrock.

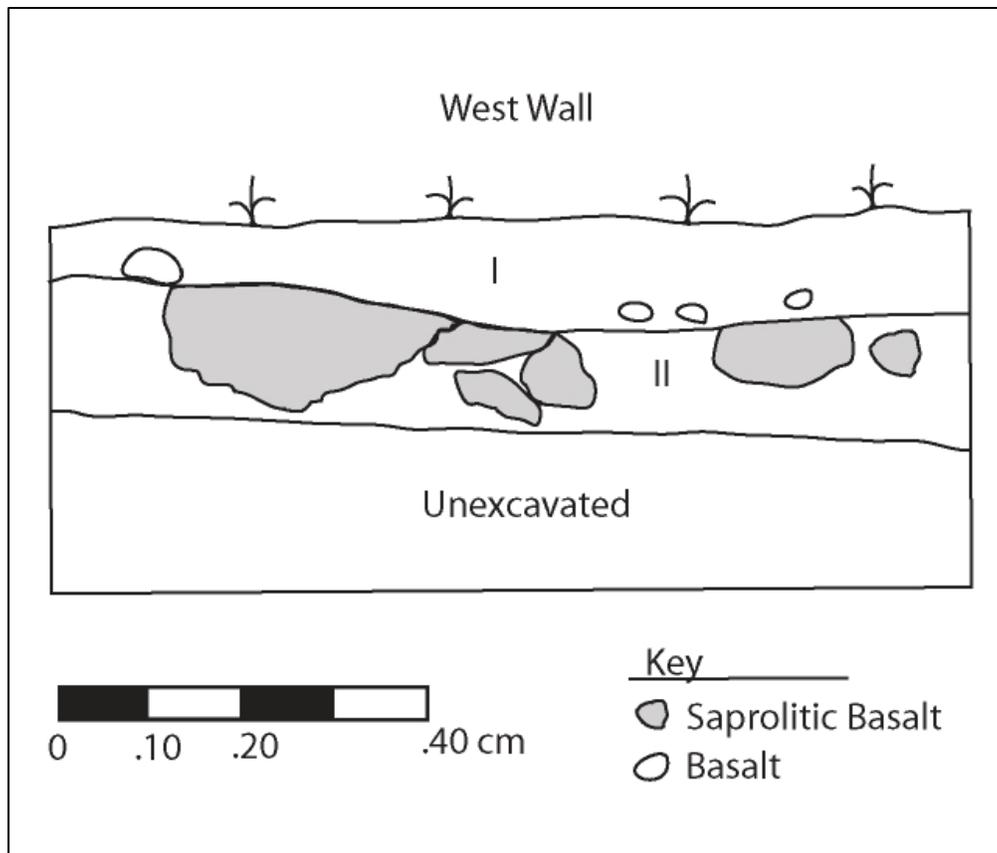


Figure 26. Profile of controlled excavation unit at Site 50-10-06-8804.



Figure 27. Photo showing base of excavation at Site 50-10-06-8804.

6.0 SIGNIFICANCE

The National Historic Preservation Act of 1966 (as amended) authorizes the Secretary of Interior to expand and maintain a National Register of Historic Places (NRHP) that contains a listing of districts, sites, buildings, structures and objects significant in American history, architecture, archaeology, engineering and culture. A property may be listed in the NRHP if it meets criteria for evaluation defined at 36 CFR §60.4:

The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and

- (a) That are associated with events that have made a significant contribution to the broad patterns of our history; or
- (b) That are associated with the lives of persons significant in our past; or
- (c) That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- (d) That have yielded, or may be likely to yield, information important in prehistory or history.

The State of Hawaii recognizes the above criteria under HRS §13-275-6, and has also added a fifth significance criterion to the evaluation process:

- (e) That have an important value to the Native Hawaiian people or to another ethnic group of the State due to associations with 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.

The four sites recorded in the project area appear to be significant under Criterion D, in that they have yielded information important to the prehistory and history of the general Waimea area (Table 1). These sites help to document agricultural pursuits in the Waimea region during late prehistoric and early historic times. It does not appear that any of these sites are significant under any of the remaining criteria.

Table 1. Site Significance

Site Number	Significant Yes/No	Criterion	Condition
8804	Yes	D	Fair
28140	Yes	D	Fair
28141	Yes	D	Poor
28142	Yes	D	Good

7.0 SUMMARY AND DISCUSSION

Under contract to PBR Hawai'i, Pacific Legacy, Inc., has completed an archaeological inventory survey for the proposed Waimea District/Regional Park, *ahupua'a* of Pu'ukapu, district of South Kohala, on the island of Hawai'i (TMK: 3-6-7-001: 025 and -002: 017 and 063). The survey was conducted between 30 November and 3 December 2009. The investigations were under the overall supervision of Rowland Reeve, M.A., with James McIntosh, B.A. serving as project director and Reid Yamasato, B.A. assisting in the field.

A 100% pedestrian surface survey was completed over the entire project area (approximately 55 acres). The project area includes active pastureland with vegetation consisting entirely of grass, less than 6 inches in height, allowing excellent visibility. Spacing between archaeologists was between 25-35 meters.

The surface survey relocated a previously identified windbreak shelter (Site 50-10-06-8804), and identified three previously unknown archaeological sites. The three newly identified sites consisted of a small agricultural terrace (Site 50-10-06-28140), a small enclosure/terrace remnant (Site 50-10-06-28141) and a short section of an historic *'auwai* (irrigation ditch) with an adjoining terrace (Site 50-10-06-28142). All sites, including those previously identified sites were noted and plotted with a GPS location. With the exception of Site 50-10-06-8804 (where no work had been undertaken), all other relocated sites had undergone data recovery investigations. As a result, no other work was performed at these sites (50-10-06, 8809, 50-10-06-21861 through 21865). Further, Site 50-10-06-9179 Loc. N could not be relocated and is assumed to have been destroyed during the construction of flood control berms in the early twenty-first century.

The central portion of the project area is a flat and open span which had been substantially modified by excavation and construction of two large soil berms. The existing bulldozed berms, was constructed in the mid-2000s and act as earthen flood control. The bulldozing involved in the construction of these berms has impacted substantial portions of the project area. The construction activities of the two berms and adjacent area have destroyed any archaeological evidence that may have been present. Site 50-10-06-9179 (Loc. N) reported to be an irrigation ditch within the current project area could not be re-located and is presumed to have been destroyed by the berm construction. This site had previously undergone data recovery and was deemed "not significant" by Burtchard and Tomonari-Tuggle (2003).

Subsurface testing was conducted at each of the newly identified sites either with a mechanical backhoe, shovel test, or controlled excavation. Backhoe trenches were distributed throughout the project area. Emphasis was placed on obtaining stratigraphic information and attempting to identify subsurface cultural deposits. Ten backhoe trenches were excavated with eight trenches spaced throughout the project area focusing on the larger undisturbed areas. These trenches failed to identify any subsurface cultural deposits or resources. Instead, the trench excavations uncovered fine sand and silt like sediments in conjunction with severely weathered basalt and saprolitic boulders present throughout much of the area.

Two additional backhoe trenches were excavated within the newly identified sites (50-10-06-28140 and 28142). While nothing was uncovered at Site 50-10-06-28140, historic bottle glass was recovered from Site 50-10-06-28142.

The bottle glass found in Site 50-10-06-28142 was from the uppermost layer at this site (Layer I and I-A) and at the earliest dates to about 1930. However, the *'auwai* appears to have been constructed prior to the deposition of this layer. It does not appear that this water transportation feature was intensively used. It appears that use was very short lived, and it seems likely that it dates to the early historic period.

A controlled test unit was hand excavated at Site 50-10-06-8804 and a shovel test was excavated at Site 50-10-06-28141. The excavation proved to be very shallow with bedrock extending across nearly the entire unit 0.25 cm below surface. No subsurface cultural deposits or artifacts were recovered at either site.

8.0 RECOMMENDATIONS

The four sites recorded during the current investigations (Sites 50-10-06-8804 and 28140-28142) are all assessed as significant under Criterion D. It is recommended that passive preservation of the four sites be undertaken, if feasible. Passive Preservation is defined as simply, leaving the sites alone as is. No additional care or maintenance of the site is required; likewise, no permanent fencing or signage is considered necessary. The layout and design of the planned Waimea District/Regional Park is not known to Pacific Legacy at this time; however, it appears that the sites can/may be avoided during construction of the park. Seeing as all of the sites are somewhat on the periphery of the project area, they may be able to be passively preserved depending on the layout and design of the park. A preservation buffer of five meters would be an acceptable distance around each of the sites to ensure that no work or damage would occur in these areas. This buffer should be considered a permanent “non-build” area. Temporary orange plastic construction fencing should be erected around the sites during construction activities to ensure their protection during construction. If the sites can be preserved or avoided, no further work is recommended at any of these sites.

Should preservation/avoidance not be possible; it is recommended that no further work be performed at Sites 50-10-06-28140 and 50-10-06-28141. These agricultural terraces have been photographed, mapped and tested and there is nothing to indicate more information could be obtained from additional work at these sites. Further, there is a question as to whether Site 50-10-06-28141 is in the project area or just outside. A professional surveyor should record the location of this site whether it is impacted or not during the project.

No further work is recommended at Site 50-10-06-28142. Test excavations identified its apparent historic construction. The limited use and short time span of the site was also documented in the stratigraphy and artifacts recovered. This site has also been photographed and mapped, thus, no further work is recommended at this site.

Data recovery is recommended at Site 50-10-06-8804, the small C-shape shelter. Although test excavation failed to identify any subsurface features or artifacts, it would be prudent to further excavate this site should preservation or avoidance not be possible.

Archaeological monitoring is recommended for all ground altering activities (earth moving, trenching, etc.) conducted during the project. Although the sites are on the periphery of the project area and there is a very low probability of encountering subsurface cultural deposits, activities within the low flat area of the property could still uncover cultural deposits as evidenced by recent findings in the Waimea area (Reith Personal Communication to James McIntosh of 3 May 2010).

9.0 REFERENCES

- Andrews, Lorrin, Jonathan S. Green, Levi Chamberlain and Gerrit P. Judd
1830 Committee Report on the District of Waimea. The Missionary Committee Report of 1830 printed in the "Minutes of the General Meeting of the Sandwich Island Mission" for 1830, Lāhainā, January 9 1830, p. 20. A typescript of the original mission station report entitled "Committee report on the district of Waimea, as possible site for a health resort for missionaries" is on file in the Hawaiian Mission Children's Society Library, Honolulu. Page numbers cited in the text relate to this typescript.
- Bailey, Edward
n.d. "View of Waimea." Copper plate engraving dated ca. 1836-1844. Presently in the collection of the Honolulu Academy of Arts (Accession Number 25,778). A gift of Mrs. John Dominis Holt in 1995. An additional copy may be in the collection of the B. P. Bishop Museum. The engraving is reproduced in Barrera and Kelly 1974:Figure 28.
- Barrera, William and Marion Kelly
1974 Archaeological and Historical Surveys of the Waimea to Kawaihae Road Corridor: Island of Hawai'i. Hawaiian Historic Preservation Report 74-1. Department of Anthropology, B. P. Bishop Museum, Honolulu.
- Barrère, Dorothy
1983 "Notes on the Lands of Waimea and Kawaihae." Report 2 in Jeffrey T. Clark and Patrick V. Kirch *Archaeological Investigations of the Mudlane-Waimea-Kawaihae Road Corridor, Island of Hawai'i: An Interdisciplinary Study of an Environmental Transect*. Report prepared for the Department of Transportation, State of Hawai'i, Departmental Report 83-1. Department of Anthropology, B. P. Bishop Museum, Honolulu. Bishop Museum Department of Anthropology Departmental Report Series 83-1, Honolulu.
- Basic Water Resources Data
1970 An Inventory of Basic Water Resources Data, Island of Hawai'i. Report R34, Division of Water and Land Development, Department of Land and Natural Resources, State of Hawai'i, Honolulu.
- Bergin, Dr. Billy
2004 *Loyal to the Land: The Legendary Parker Ranch, 750-1950*. University of Hawai'i Press, Honolulu.
- Bingham, Hiram
1969 *A Residence of Twenty-One Years in the Sandwich Islands*. Praeger Publishers, New York. The State Historic Preservation Division Library, Kapolei.

Boundary Commission Books

n.d. These five volumes of statements and testimony regarding land boundaries presented before the Board of Commissioners for Boundaries are preserved on microfilm in the Archives of the State of Hawai‘i.

Burtchard, Greg C. and Myra J. Tomonari Tuggle

2003 “Seeking Waimea’s Past: Archaeological Data Recovery at Waimea Town Center, Kamuela-Waimea, South Kohala, Hawai‘i Island (DRAFT).” On file at the State Historic Preservation Division Library, Kapolei.

2004 “Agriculture on Leeward Hawai‘i Island: The Waimea Agricultural System Reconsidered”. *Hawaiian Archaeology* Vol. 9, pp. 50-73.

Carter Case

1915 A. W. Carter, Trustee, Parker Ranch vs. Territory of Hawai‘i. Transcript of testimony on file at the Hawai‘i State Archives, Attorney General Case File No. 2311.

Clark, Jeffrey and Patrick Kirch eds.

1983 *Archaeological Investigations of the Mudlane-Waimea-Kawaihae Road Corridor, Island of Hawai‘i: An Interdisciplinary Study of an Environmental Transect.* Department of Anthropology, B. P. Bishop Museum prepared for Department of Transportation, State of Hawai‘i. Bishop Museum Department of Anthropology Departmental Report Series 83-1, Honolulu.

Doyle, Emma Lyons

1945 *Makua Laiana: The Story of Lorenzo Lyons.* Advertiser Publishing Co., Ltd., Honolulu.

Ellis, William

1963 *Journal of William Ellis: Narrative of a Tour of Hawai‘i, or Owhyhee; with Remarks on the History, Traditions, Manners, Customs and Language of the Inhabitants of the Sandwich Islands.* Advertiser Publishing Co., Ltd., Honolulu.

Handy, E. S. Craighill, Elizabeth Green Handy and Mary Kawena Pukui

1972 *Native Planters in Old Hawai‘i, Their Life, Lore, and Environment.* Bernice P. Bishop Museum Bulletin 233, Bishop Museum Press, Honolulu.

Hawai‘i Holomua

1893 “Explanation of Land History,” an article published in the May 13, 1893 edition of the Hawaiian language newspaper Hawai‘i Holomua. A translation by Mary Kawena Pukui is contained in the Hawaiian Ethnographic Notes file at the Bernice P. Bishop Museum Archives.

Hawaiian Gazette

1867 “In the Matter of the Dispute of the Boundary of Waikoloa....” In *The Hawaiian Gazette*, Vol. 3, No. 6, February 27, 1867.

Hawaiian Reports

- 1917 "Alfred W. Carter, Trustee v. Territory of Hawai'i." 24: 47-71. Supreme Court of Hawai'i.
- 1919 Hawai'i Reports. Cases decided in the Supreme Court of the Territory of Hawai'i, Vol. 24, Case No. 959, pp. 47-70. Honolulu Star-Bulletin Ltd., Honolulu.

Judd, Gerrit P.

- 1911 Fragments II, Family Records House of Judd: The Letters of Dr. Gerrit P. Judd 1827-1872, Preserved in the Archives of the A.B.C.F.M. Boston. Paradise of the Pacific Print, Honolulu. The letter quoted from in the text is Letter V. It is referenced as Vol. 68, Letter 127, 12 pp. ms.

Kamakau, Samuel

- 1976 Nā Hana a ka Po'e Kāhiko: The Works of the People of Old. Bernice P. Bishop Museum Special Publication 61, Bishop Museum Press, Honolulu.

Lockhart, Bill

- 2004 The Dating Game: Owens-Illinois Glass Company. Bottles and Extras 15 (3): 24-27. This article also available on this site at:
http://www.sha.org/bottle/pdf/OwensIII_BLockhart.pdf

Lyons, Curtis J.

- 1875 "Land Matters in Hawai'i." The Islander Vol. 1, Nos. 1-33:119. Honolulu.
- 1902 "A Missionary Field On Hawai'i" an article published in the newspaper The Friend, September 1902, pages 5-6.

Malo, David

- 1971 Hawaiian Antiquities. Translated by Nathaniel B. Emerson. Bishop Museum Special Publication 2, Honolulu, Bishop Museum Press.

Menzies, Archibald

- 1920 Hawai'i Nei 128 Years Ago. W. F. Wilson, Honolulu.

Nakamura, Barry

- 1981 Historical Study of Waimea and Kawaihae, Kohala, Hawai'i. Manuscript in Department of Anthropology, B. P. Bishop Museum, Honolulu.

Native Register

- n.d. "Native Register of Kuleana Claims Recorded by the Board of Commissioners to Quiet Land Titles in the Hawaiian Islands." Manuscript on file at the Hawai'i State Archives.

Native Testimony

n.d. "Native Testimony Recorded by the Board of Commissioners to Quiet Land Titles in the Hawaiian Islands." Manuscript on file at the Hawai'i State Archives.

Perambulator

1836 Waimea." Included under "Communications" in the Sandwich Islands Gazette, issues for September 10, 17, and 24, 1836.

Reeve, Rowland B.

1983 "Archaeological Investigations in Section 3." Report 6 in Jeffrey T. Clark and Patrick V. Kirch Archaeological Investigations of the Mudlane-Waimea-Kawaihae Road Corridor, Island of Hawai'i: An Interdisciplinary Study of an Environmental Transect. Department of Anthropology, B. P. Bishop Museum prepared for Department of Transportation, State of Hawai'i. Bishop Museum Department of Anthropology Departmental Report Series 83-1, Honolulu.

Reith, Tim

Personal Communication with James McIntosh on May 3, 2010.

Sato, H. H., W. Ikeda, R. Paeth, R. Smythe, and M. Takehiro, Jr.

1973 Soil Survey of the Island of Hawai'i, State of Hawai'i. United States Department of Agriculture, Soil Conservation Service, Washington.

APPENDIX A

**SHPD ACCEPTANCE LETTER
OF IARII REPORT**

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

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

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

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

YVONNE Y. IZU
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

July 14, 2004

Dr. J. Stephen Athens
IARII
2081 Young Street
Honolulu, HI 96826-2231

Log No. 2004.0982
Doc No. 0403PM10

Dear Dr. Athens:

**SUBJECT: Chapter 6E-42 Historic Preservation Review of a Draft Report: "Seeking Waimea's Past: Archaeological Data Recovery at Waimea Town Center, Kamuela-Waimea, South Kohala, Hawaii Island" (Burtchard and Tomonari-Tuggle 2003)
Waimea, South Kohala, Hawaii Island
TMK: (3) 6-7-02:14, 17, 34, 40 and 48**

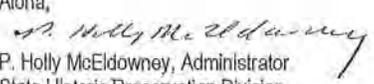
Thank you for the opportunity to review and comment on the above referenced report, received in our office November 24, 2003. We apologize for our late review and any inconvenience to you and your client, Parker Ranch Foundation Trust.

We are aware that the completion of this report was a major endeavor that involved the participation of a number of your former and current staff over a number of years. The final product is a very well produced report that in our estimation is a major contribution to an understanding of the defining characteristics and developmental history of the "Waimea Agricultural System" as it is currently conceived. The report contains one of the most informative and meaningful discussions of environmental characteristics and constraints on traditional Hawaiian agriculture we have seen in an inventory survey report. The Vancouver and Ellis accounts suggest that the effects of the Little Ice Age on local agriculture may not have been as severe as what is portrayed in the report, however. The report also contains an especially good analysis of the radiocarbon dates for the Waimea area, including some of the more common problems in the collection of samples and failure to analyze the context and reliability of the results.

The report has clearly fulfilled the scope of work in the approved data recovery plan for this project and thus meets with our approval. We have a few minor comments (see Attachment) which the authors can address if they wish to do so. We will not require any revisions given the lateness of our review, which we sincerely regret.

If you should have any questions about this project please contact our Hawaii Island archaeologist, MaryAnne Maigret, at 327-3690.

Aloha,


P. Holly McEldowney, Administrator
State Historic Preservation Division

PM: sky

c. Chris Yuen, County of Hawaii Planning Department
Kai Emler, County of Hawaii Department of Public Works

Appendix **D**

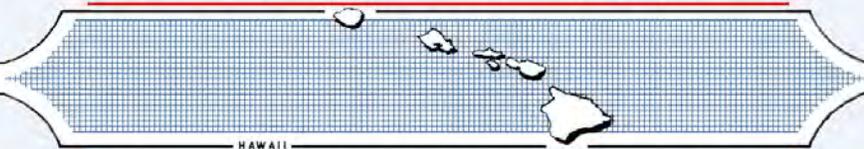
CULTURAL IMPACT ASSESSMENT

**A CULTURAL IMPACT ASSESSMENT
OF APPROXIMATELY 50 ACRES
IN SOUTH KOHALA DISTRICT,
UPLANDS OF PU`U KAPU AND WAIKOLOA
HAWAII ISLAND, HAWAII**
[TMK 6-07-002: 17 por., 6-07-002:063 por., 6-07-001:025 por.]

Prepared By:
Leann McGerty, B.A.
and
Robert L. Spear, Ph.D.
February 2010
DRAFT

Prepared For:
PBR Hawaii
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

SCIENTIFIC CONSULTANT SERVICES Inc.



711 Kapiolani Blvd. Suite 975 Honolulu, Hawaii 96813

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INTRODUCTION

At the request of PBR Hawaii, Scientific Consultant Services, Inc. (SCS) conducted a Cultural Impact Assessment, of approximately 50 acres (TMK: 6-07-002:017 por., 6-07-001:025 por., 6-7-002:063 por.) located in the uplands Pu`u Kapu and Waikoloa Ahupua`a, South Kohala District, Hawai`i Island (Figures 1 and 2). In documents submitted by PBR Hawaii, the project proposed the development of a Waimea District Regional Park.

The Constitution of the State of Hawai`i clearly states the duty of the State and its agencies is to preserve, protect, and prevent interference with the traditional and customary rights of native Hawaiians. Article XII, Section 7 requires the State to “protect all rights, customarily and traditionally exercised for subsistence, cultural and religious purposes and possessed by *ahupua`a* tenants who are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778” (2000). In spite of the establishment of the foreign concept of private ownership and western-style government, Kamehameha III (Kauikeaouli) preserved the peoples traditional right to subsistence. As a result in 1850, the Hawaiian Government confirmed the traditional access rights to native Hawaiian *ahupua`a* tenants to gather specific natural resources for customary uses from undeveloped private property and waterways under the Hawaiian Revised Statutes (HRS) 7-1. In 1992, the State of Hawai`i Supreme Court, reaffirmed HRS 7-1 and expanded it to include, “native Hawaiian rights...may extend beyond the *ahupua`a* in which a native Hawaiian resides where such rights have been customarily and traditionally exercised in this manner” (Pele Defense Fund v. Paty, 73 Haw.578, 1992).

Act 50, enacted by the Legislature of the State of Hawaii (2000) with House Bill 2895, relating to Environmental Impact Statements, proposes that:

...there is a need to clarify that the preparation of environmental assessments or environmental impact statements should identify and address effects on Hawaii’s culture, and traditional and customary rights... [H.B. NO. 2895].

Act 50 requires state agencies and other developers to assess the effects of proposed land use or shore line developments on the “cultural practices of the community and State” as part of the HRS Chapter 343 environmental review process (2001). Its purpose has broadened, “to promote and protect cultural beliefs, practices and resources of native Hawaiians [and] other ethnic groups, and it also amends the definition of ‘significant effect’ to be re-defined as “the sum of effects on the quality of the environment including actions that are...contrary to the

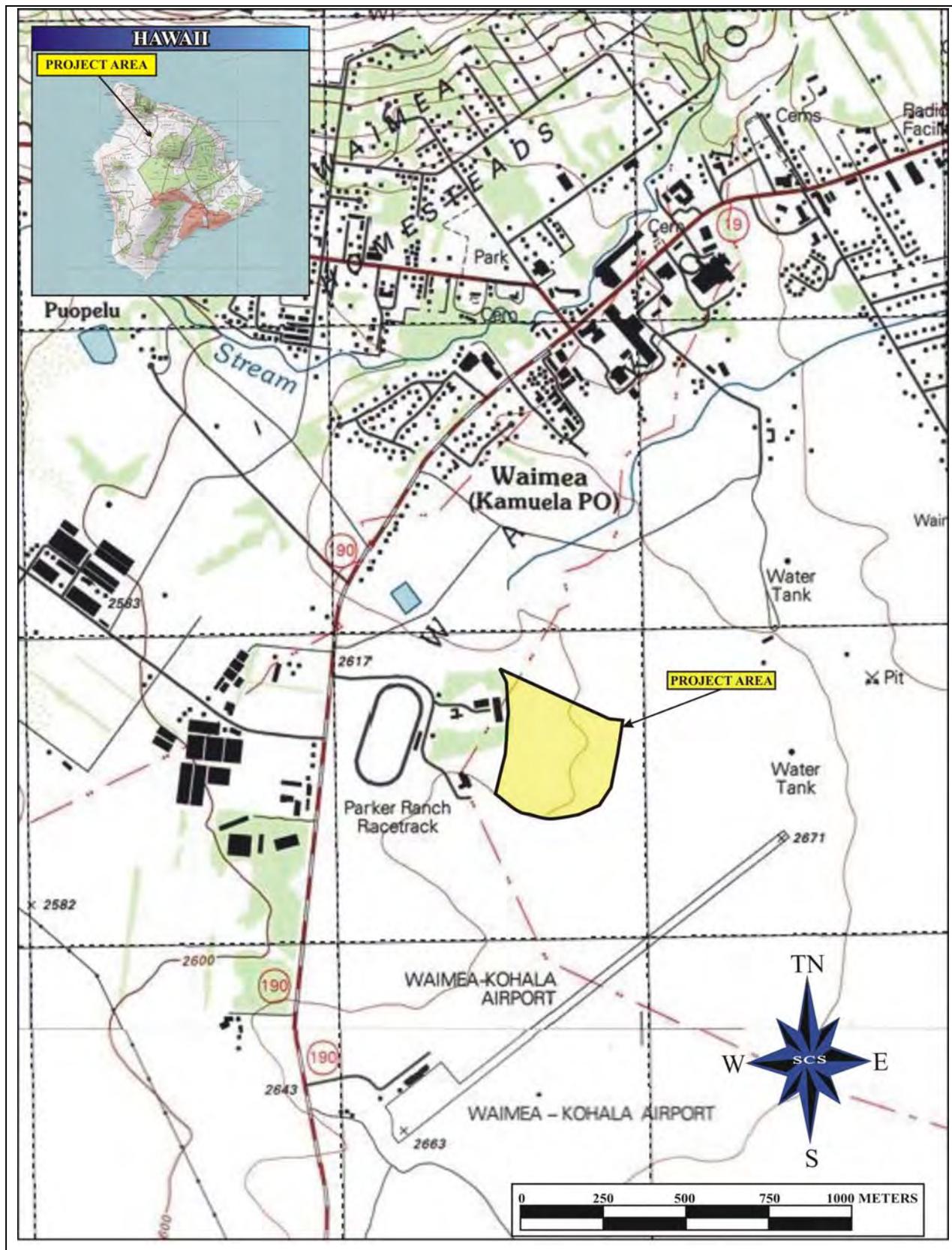


Figure 1: USGS Quadrangle Map Showing Project Area.

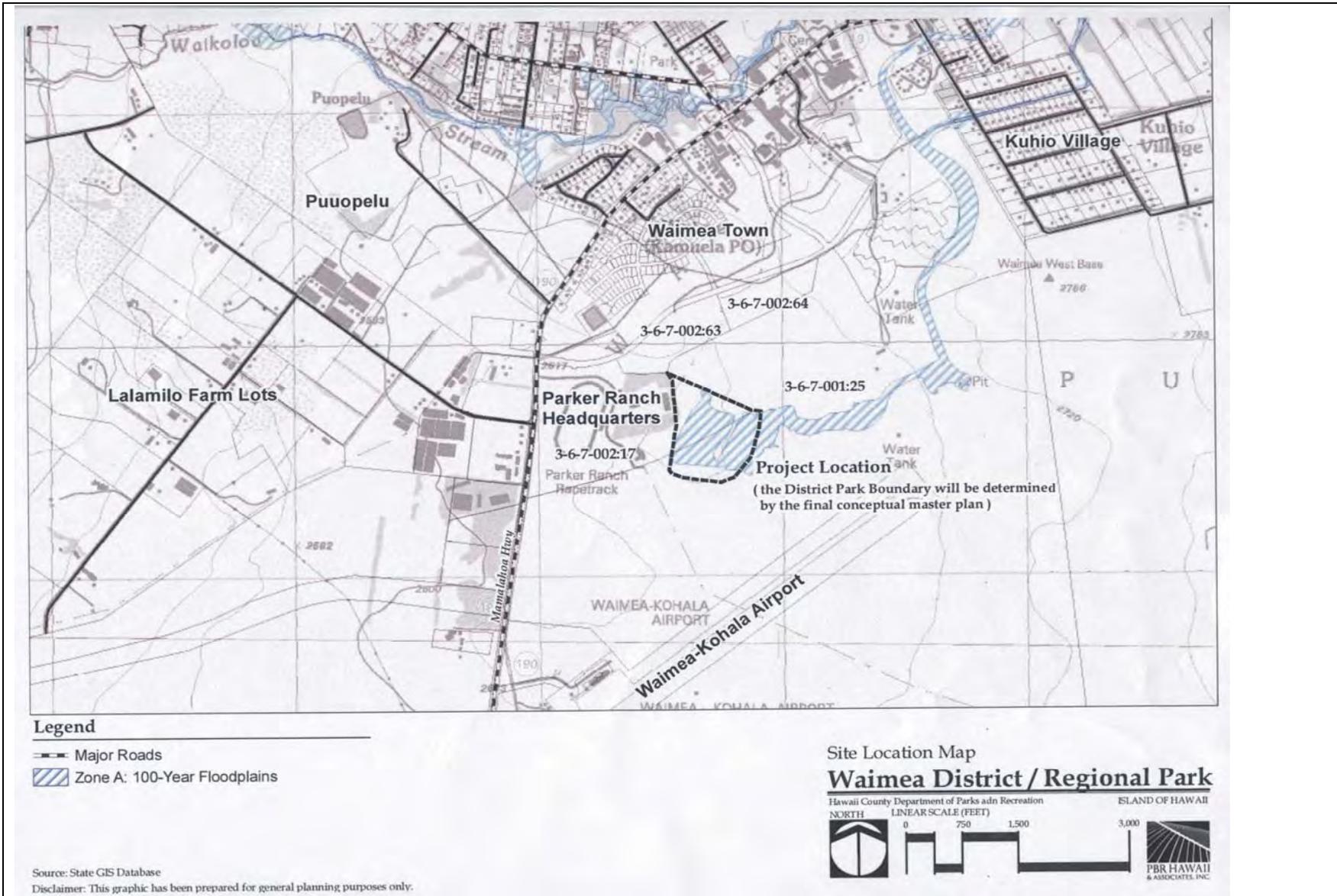


Figure 2: Map Showing Project Area.

State's environmental policies...or adversely affect the economic welfare, social welfare, or cultural practices of the community and State" (H.B. 2895, Act 50, 2000).

Thus, Act 50 requires an assessment of cultural practices to be included in the Environmental Assessments and the Environmental Impact Statements, and to be taken into consideration during the planning process. The concept of geographical expansion is recognized by using, as an example, "the broad geographical area, e.g. district or *ahupua`a*" (OEQC 1997). It was decided that the process should identify 'anthropological' cultural practices, rather than 'social' cultural practices. For example, *limu* (edible seaweed) gathering would be considered an anthropological cultural practice, while a modern-day marathon would be considered a social cultural practice.

The purpose of a Cultural Impact Assessment is to identify the possibility of any cultural resources associated with different Ethnic groups within a project area, and then assessing the potential for impacts on these resources from the proposed project. The CIA is not intended to be a document of in depth archival-historical land research or a record of oral family histories unless they contain information about specific cultural resources that might be impacted by a proposed project. Cultural resources cover a broad range of categories and may include values, rights, beliefs, objects, records, properties, and stories associated with the project area (H.B. 2895, Act 50, 2000).

According to the Guidelines for Assessing Cultural Impacts established by the Hawaii State Office of Environmental Quality Control (OEQC 1997):

The types of cultural practices and beliefs subject to assessment may include subsistence, commercial, residential, agricultural, access-related, recreational, and religions and spiritual customs. The types of cultural resources subject to assessment may include traditional cultural properties or other types of historic sites, both manmade and natural, which support such cultural beliefs.

The meaning of "traditional" was explained in *National Register Bulletin*:

"Traditional" in this context refers to those beliefs, customs, and practices of a living community of people that have been passed down through the generations', usually orally or through practice. The traditional cultural significance of a historic property, then is significance derived from the role the property plays in a community's historically rooted beliefs, customs, and practices. . . . [Parker and King 1990:1]

METHODOLOGY

This Cultural Impact Assessment was prepared in accordance with the methodology and content protocol provided in the Guidelines for Assessing Cultural Impacts (OEQC 1997). In outlining the “Cultural Impact Assessment Methodology”, the OEQC stated:

...information may be obtained through scoping, community meetings, ethnographic interviews and oral histories... (1997).

The report contains archival and documentary research, as well as communication with organizations having knowledge of the project area, its cultural resources, and its practices and beliefs. This Cultural Impact Assessment was prepared in accordance with the methodology and content protocol provided in the Guidelines for Assessing Cultural Impacts (OEQC 1997). The assessment concerning cultural impacts should address, but not be limited to, the following matters:

- (1) a discussion of the methods applied and results of consultation with individuals and organizations identified by the preparer as being familiar with cultural practices and features associated with the project area, including any constraints or limitations which might have affected the quality of the information obtained;
- (2) a description of methods adopted by the preparer to identify, locate, and select the persons interviewed, including a discussion of the level of effort undertaken;
- (3) ethnographic and oral history interview procedures, including the circumstances under which the interviews were conducted, and any constraints or limitations which might have affected the quality of the information obtained;
- (4) biographical information concerning the individuals and organizations consulted, their particular expertise, and their historical and genealogical relationship to the project area, as well as information concerning the persons submitting information or interviewed, their particular knowledge and cultural expertise, if any, and their historical and genealogical relationship to the project area;
- (5) a discussion concerning historical and cultural source materials consulted, the institutions and repositories searched, and the level of effort undertaken, as well as the particular perspective of the authors, if appropriate, any opposing views, and any other relevant constraints, limitations or biases;
- (6) a discussion concerning the cultural resources, practices and beliefs identified, and for the resources and practices, their location within the broad geographical area in which the proposed action is located, as well as their direct or indirect significance or connection to the project site;

- (7) a discussion concerning the nature of the cultural practices and beliefs, and the significance of the cultural resources within the project area, affected directly or indirectly by the proposed project;
- (8) an explanation of confidential information that has been withheld from public disclosure in the assessment;
- (9) a discussion concerning any conflicting information in regard to identified cultural resources, practices and beliefs;
- (10) an analysis of the potential effect of any proposed physical alteration on cultural resources, practices or beliefs; the potential of the proposed action to isolate cultural resources, practices or beliefs from their setting; and the potential of the proposed action to introduce elements which may alter the setting in which cultural practices take place, and;
- (11) the inclusion of bibliography of references, and attached records of interviews, which were allowed to be disclosed.

Based on the inclusion of the above information, assessments of the potential effects on cultural resources in the project area and recommendations for mitigation of these effects can be proposed.

ARCHIVAL RESEARCH

Archival research focused on a historical documentary study involving both published and unpublished sources. These included legendary accounts of native and early foreign writers; early historical journals and narratives; historic maps and land records such as Land Commission Awards, Royal Patent Grants, and Boundary Commission records; historic accounts, and previous archaeological project reports.

INTERVIEW METHODOLOGY

Interviews are conducted in accordance with Federal and State laws and guidelines when knowledgeable individuals are able to identify cultural resources in, or in close proximity to the project area. If they have knowledge of traditional stories, practices and beliefs associated with a project area or if they know of historical properties within the project area, they are sought for additional consultation and interviews. Individuals who have particular knowledge of traditions passed down from preceding generations and a personal familiarity with the project area are invited to share their relevant information concerning particular cultural resources. Often people are recommended for their expertise, and indeed, organizations, such as Hawaiian Civic Clubs, the Island Branch of Office of Hawaiian Affairs, historical societies, Island Trail clubs, and

Planning Commissions are depended upon for their recommendations of suitable informants. These groups are invited to contribute their input, and suggest further avenues of inquiry, as well as specific individuals to interview. No interviews were conducted for the present project as there were no responses from any of the contacted organizations and/or individuals.

If knowledgeable individuals are identified, personal interviews are sometimes taped and then transcribed. These draft transcripts are returned to each of the participants for their review and comments. After corrections are made, each individual signs a release form, making the information available for this study. When telephone interviews occur, a summary of the information is often sent for correction and approval, or dictated by the informant and then incorporated into the document. If no cultural resource information is forthcoming and no knowledgeable informants are suggested for further inquiry, interviews are not conducted.

In this case, letters briefly outlining the development plans along with maps of the project area were sent to individuals and organizations whose jurisdiction includes knowledge of the area with an invitation for consultation (Appendix A). Consultation was sought from Ms. Phyllis Cayan, History and Culture Branch Chief for SHPD; Ruby McDonald, Coordinator of the Kona branch of the Office of Hawaiian Affairs; and the Waimea Hawaiian Civic Club; Leningrad Elarinoff, Waimea District Representative on the HIBC; Ronald Dela Cruz on the Hawai'i Island Burial Council; Kepa Maly of Kumu Pono Associates; Clement Junior Kanuha; Dr. K. Kahakalau; Reggie Lee; Hugh Lovell and two emails were sent to Mr. Keawe Vredenburg and Dr. W. Bergin of Waimea.

In addition, a Cultural Impact Assessment Notice was published on October 7, 8, and 11, 2009 in *The Honolulu Advertiser*, *West Hawaii Today* on October 14, 2009, and in the November issue of the OHA newspaper, *Na Wai Ola* (Appendix B). These notices requested information of cultural resources or activities in the area of the proposed project, gave the TMK number (TMK: 6-07-002:17 por., 6-07-001:025 por., 6-7-002:063 por.) and where to respond with information. Based on the responses, and if cultural resources are identified, an assessment of the potential effects on cultural resources in the project area and recommendations for mitigation of these effects can be proposed.

PROJECT AREA AND VICINITY

The project area is located south of Waimea Town in the at over 2,500 feet above mean sea level. At this elevation, the cooler weather and verdant grass lands created ideal pasture for livestock. The property is to the east of the Mamalahoa Highway and the Parker Ranch

Racetrack and Headquarters, and north of the Waimea-Kohala Airport (Figure 3). The boundaries of the traditional land units and their exact status, has changed over time. The project area appears to be within both Waikoloa and Pu`u Kapu Ahupua`a, and the present edge of Waimea Town. All the land in the vicinity, including the project area, was a part of Parker Ranch.

CULTURAL HISTORICAL CONTEXT

Most of the southern slope of Mauna Loa is located in rain shadow of Mauna Kea and is one of the driest regions in West Hawai`i. The 30-inch rainfall line does not occur until seven to 10 miles from the coast near the present Waimea Town and project area (Cordy 2000:23). This area was the only leeward Kohala land with perennial streams which were modified for upland agriculture in the pre-Contact time period. Waikoloa Stream originates in the Kohala Mountains but meanders through Lālāmilo and `Ōuli Ahupua`a, bypassing the present lands of Waikoloa completely. It eventually joins with Kanu`i`omanō Stream, forming Wai`ula`ula Stream, which continues to the shore. The stream may have been perennial in the past (*ibid.*:309). Lālākea Stream originates in the hills of Pu`u Kapu and extends eastward toward Hāmākua.

`Anaeho`omalu, once politically a part of Waikoloa, was a narrow strip of land extending about three kilometers along the coast and included approximately 800 acres of land. Past eruptions of *a`a* and *pahoehoe* from Mauna Loa coursed to the sea forming collapsed lava bubbles and tubes. Fresh water from springs along the coast, formed brackish ponds and behind the beach surrounding `Anaeho`omalu Bay are two fishponds, Ku`uali`i and Kahapapa which contain several species of shrimp and fish. According to Rev. William Ellis in 1823, settlements were dispersed along the coast with clusters of *hale* at Kalāhuipua`a and Kapalaoa (1969).



Figure 3: Project Location Map.

Although descriptions of the landscape in the lower elevations are similar to that of present day, the environment in the higher elevations may have been notably different than it is today. Open forests of *māmane* (*Sophora chrysophylla*) and *naio* (*Myoporum sandwicense*) grew in uplands and *`ōhi`a* (*Metrosideros polymorpha*) were prevalent in the elevations where rainfall was greater than 20 inches annually, which may have occurred at a lower elevation than today (Cuddihy and Stone 1990). The rainfall gradient may have shifted as loss of forest by harvesting native Hawaiians during prehistory and destruction of the habitat by herds of wild cattle, starting with their introduction by Vancouver in the 1790s, took its toll on the environment. The forest represented the upper boundary of the dry grasslands and was illustrated on an 1867 map surveyed by Kaelemakule (Land Survey Office, Honolulu).

In the early 1800s, Charles Wilkes described the environment:

the tradewind is exceedingly strong, bringing with it a mist toward sunset. It rushes furiously down between the mountains which bound the valley of Waimea and become very dangerous to shipping in the bay. It is called by the natives *mumuku* and is foretold by them by an illuminated streak that is seen far inland. This is believed to be caused by a reflection of the twilight on the mist that always accompanies the *mumuku*...[Wilkes 1845 (4):217].

But shortly afterwards, it was said that the cattle destroying the forest had also changed the *mumuku* [the strong wind on the coast]. It had been so strong that the natives always lashed canoes to the rocks, stakes, or trees at Kawaihae [Doyle 1953].

Albert Lyons, the son of Reverend Lorenzo Lyons, lived in the vicinity of present day Waimea Town and stated that it was a common thing to "...hear some aged native chanting old-time *olis*" and the "...rhythmic thud of tapa beating" as late as 1832. He wrote of the "*ua ki puu puu* of Waimea" (the rain that raises the goose flesh) and recorded the Waimea plateau was still covered with *`ōhi`a* forests (Brennan 1974.:65).

But by the mid-1800s, it was recorded:

It is in the memory of many foreigners now living there, when the whole of these plains [Waimea area] were covered with a thick wood, to the very edge of the slope. Where now hardly a tree is to be seen for miles, we were informed by an old resident, that twenty-five years ago he lost himself with his team in the weeds. He also stated that at that time there was far more rain at Waimea than there is now, which indeed might be readily inferred, as clearing the land has been almost entirely effected by the cattle...At the present time the vapors and rain which are brought across the plain by the trade winds, are generally dissipated between Waimea Village and Lihue...But when twenty-five or thirty years ago, woods extended over the whole plain and to the very edge of it, close on to this debatable ground-and when rain was in consequence more frequent over this district, the vapors and cold moist atmosphere, instead of being dissipated near

Waimea Village, would necessarily have more frequently extended to the debatable ground...(Sandwich Island Monthly Magazine, February 1856:44-47).

Land testimony in the mid-1800s describes the majority of Waikoloa as grasslands and differentiates between an annual and a perennial grassland region. According to the Boundary Commission Book for Hawai`i, the basalt rock wall called the “Wall of Kauikamoa” divided the less fertile annual from the cultivated, wetter (perennial) upland region (Vol.A, 6, 10). This man-made wall, extended east-west near Pu`u Huluhulu.

In 1892, William Alexander passed through the Waiki`i-Kilohana region to the east of the project area and reported that the forests which formerly grew in the area were gone (Alexander 1892:col.1).

The ancient forests here, as at Waimea, have been nearly exterminated, but a fine grove of mamane trees still survives at the Auwaiakeakua Ranch. The Manienie grass is gradually spreading and will in time add immensely to the value of the land.

PAST POLITICAL BOUNDARIES

Hawai`i Island was divided into six districts (*moku*), Hamakua, Hilo, Puna, Ka`ā, Kona, and Kohala, representing six separate chiefdoms. The recognition in the 16th century of Liloa as paramount chief by the ruling *ali`i* of these districts, was the beginning of a dynasty which governed Hawai`i Island, and eventually all the islands, through historic times. The boundaries of the *moku* stayed essentially the same until after the Great Mahele of 1848, at which time Kohala was divided into separate North and South districts (Kamakau 1961:1; Barrère 1983:25, 26).

By the time of Kamehameha I, there were approximately 600 *ahupua`a* on the Island of Hawai`i (Cordy 2000:31). Other land units were the *`ili`āina*, or *`ili*. The *`ili`āina`ili* were smaller land divisions next to importance to the *ahupua`a* and were administered by the chief who controlled the *ahupua`a* in which it was located (*Ibid.*:33; Lucas 1995:40). The *`ili kūpono* were wholly independent of the *ahupua`a* and were subservient directly to the king (Lucas 1995:40). By 1812, Waimea was an especially large *ahupua`a* in the district of Kōhala, that included Waikoloa, but Pu`u Kapu was still a separate *ahupua`a* (Cordy 2000). In the traditional past, Waimea had been called the land of Waiauaia and had most recently been given to the Chief Ke`eaumoku who often resided at Kawaihae on the coast. It is surmised that was given to him as a source of food supplies for when he and his entourage visited from Waip`o. On his death, his son inherited the land of Waiauaia, who in turn passed it to his younger brother, John Adams Kuakini, governor of Hawai`i Island from 1820 to 1844 (Barrère in Clark and Kirch 1983).

The definitions of various land terms became confused from island to island and when Waimea became known as an *ahupua`a*, Waikoloa, previously an *`okana* of Waimea, became an *`ili `āina* and Pu`u Kapu remained an *ahupua`a*.

Originally, `Anaeho`omalua and Kalāhuipua`a were a part of Waikoloa. However, when Kamehameha I gave Waikoloa to his foreign advisor Isaac Davis, he kept `Anaeho`omalua and Kalāhuipua`a and their fishponds as *`ili kūpono* (Cordy 2000). In 1812, Waikoloa formed a portion of the east end of upland Waimea bordered by Pu`u Kapu.

An 1867 survey map produced Kaelemakule, shows a boundary line just below Pu`u Makahalau, above which the lands belong to the King. This included most of the project area in the *ahupua`a* of Pu`ukapu and those lands further east, Pukalani, Noho`aina, Kuku`i`ula, and Paulama that had also been withheld from Davis ((Barrère in Clark and Kirch 1983).

REGIONAL LAND USE

In pre-Contact Hawai`i there were primarily two types of agriculture, wetland and dryland, both of which are dependent upon geography. The hot, dry, inhospitable bareness of Waikoloa grasslands, did not define its traditional cultural value. Its wealth lay in the marine and lithic resources that were featured along the coast and inland on old a`a lava flows. Major fishpond complexes, such as those located at `Anaeho`omalua and Kalāhuipua`a, were created from the anchialine pools (tidal ponds) containing brackish water, from the water lens, as well as receiving percolation from fresh water springs along the shoreline. The large ponds were controlled by the ruling chief or his overlord. At western contact, many small bays and shallow reef areas in northern Kona and southern Kohala had been converted into fishponds by the addition of enclosing rock walls. Settlement along the coastal lands clustered around the fishponds and anchialine ponds (Cordy 2000). It appeared that some lowland cultivation was conducted along the coast and in gulches such as Wai`ula`ula, however, as this was mentioned in the boundary testimonies (Vol. B, 64, 74).

Evidence of plant material identified in coastal cave sites coupled with the general infeasibility of shoreline agriculture suggests “extensive prehistoric contacts” with upland gardens in the vicinity of Waimea (Kirch 1975; Hommon 1982). Kirch (1975) maintained that “...a pattern of upland residence in the vicinity of what is now Waimea Town and agricultural activity, with repeated intermittent occupation of coastal sites in order to exploit marine resources (principally protein), would be a maximizing strategy in the West Hawai`i ecosystem.”

Abundant food sources, found in the marine environment and fishpond complexes and exchange with upland gardens, helped to sustain other specialized activities, such as tending the salt works and fishponds. The rough a`a lava flows provided material for tools, such as abraders, that could be exchanged for upland commodities allowing a more permanent population. Cave shelters for temporary occupation associated with quarry and workshop activities may have begun around A.D. 1400 through A.D 1800. Abrader production included the reduction of the quarried scoria into block-like shapes.

In his journal, Archibald Menzies, the naturalist on Vancouver's voyage in the 1790s described the terrain from the coast, inland:

I traveled a few miles back...through the most barren scorching country I have ever walked over, composed of scorious dregs and black porous rocks, interspersed with dreary caverns and deep ravines...The herbs and grasses which the soil produced in the rainy seasons were now mostly in the shriveled state, thinly scattered and by no means sufficient to cover the surface from the sun's powerful heat, so that I met with few plants in flower in this excursion. . . A little higher up, however, than I had time to penetrate, I saw in the verge of the woods several fine plantations, and my guides took great pains to inform me that the inland country was very fertile and numerously inhabited [Menzies 1920:55].

In the uplands near Waimea, occupation likely began during the 13th through 15th centuries (Clark and Kirch 1983:288). Agricultural intensification continued into the early historic period with the expansion of plots under cultivation and more frequent permanent occupation. Waimea was the only leeward section of Kohala containing perennial streams and was easily employed for agriculture (Cordy 2000:23).

While traveling from Hilo to Kawaihae in 1823, Mr. Bishop and Goodrich passed through Waimea Valley, which was described by Rev. Ellis:

About noon they reached the valley of Waimea, lying at the foot of Mouna-Kea, on the north-west side. Here a number of villages appeared on each side of the path, surrounded with plantations, in which plantains, sugar cane, and taro were seen growing unusually large [Ellis 1969:354].

A dryland field system, supplemented by an irrigation system of wide-basin canals allowing water to flow through and seep into the soil, was identified in Waimea (Cordy 2000). The swale lands, located to the west of the project area extended from the stream flats down to

around the elevation of Pu`u Pā. Six major canal systems carried water to these gardens which were interspersed with mounds and other agricultural features. They consisted of rectilinear fields with terrace facings or low-ridged walls (see Cordy 2000 for Field System illustrations and information). Near the present airport, were low stone ridges marking field areas that were fed by two canals exiting the Waikoloa Stream. An intensive form of prehistoric agriculture referred to as “supplemental irrigation” combined irrigated pond field and dryland field-system cultivation (Clark and Kirch 1983). Both permanent and temporary residential structures are scattered on the knolls and ridges overlooking, and on the leeward sides of swales.

[D]own to said hill or mound [Pu`u Huluhulu], was all in cultivation in ancient times, being planted by the natives with bananas, sweet potatoes, sugar cane, and dry land taro...The land was not all taken up uniformly in planting, but they would plant in available places where the water in the ditch could reach and run [1901 elder Hawaiian’s testimony, Cater Case].

Scattered amongst the agricultural fields on knolls and ridges were house sites, temporary habitations, and field shelters for activities including work shops for volcanic glass and basalt tools (Clark and Kirch 1983:288; Cordy 2000:311). People lived in small villages and worked on their various farms (Carter Case 1915:1295-1303). Produce from the extensively cultivated upland region was exchanged with the coastal inhabitants. This pattern is also seen further north along leeward Kohala in Lapakahi where small communities existed along the arid coast but tended gardens in the upland (*kula*) region (Moffat and Fitzpatrick 1995:70). In the upland `ōhi`a and *māmane* forests, bird catchers were able to obtain feathers and further into the Saddle, `ua`u (*Pterodroma phaeopygia*), *nēnē* (*Nesochen sandvicensis*), and *kōloa* (*Anas wyvilliana*) were hunted for meat.

WAHI PANA, LEGENDS AND MO`OLELO

Ke Ahu a Lono was a large stone mound with a concrete survey marker that was inscribed “Keahualono” and was thought to possibly be an *ahupua`a* shrine where annual taxes or tribute were placed during the Makahiki period (Barrera 1971). Archival information identified Ke ahua Lono as a commemorative marker built by the ruler Lonoikamakhiki to commemorate his reconciliation with his friend and premier Kapa`ihiahilina, placing it in the A.D. 1600s and, in the 1800s, it was regarded as the boundary marker between South Kohala and North Kona (Fornander 1916-20; Cordy 1987). Recent oral histories and continued archaeological work seems to have confirmed this feature as the *ahupua`a* shrine for this part of Waikoloa (Cordy 2000:231).

Another account of the construction of Ke Ahu A Lono is from *Ka Hōkū o Hawai'i*, the Hawaiian Language newspaper. J. W.H.I Kihe, a native historian and resident of Pu`uanahulu, recorded the construction of the *ahu* took place during the period when Lonoikamakahiki and his warriors were preparing for battle against Kamalālāwalu.

This Alter (Ahu) is an Alter of the warrior leaders and warriors of Lonoikamakahiki, built at the time he went to battle with Kamalalawalu, the king of Maui. Kamalalawalu and his forces landed at Kawaihe and began their ascent. This stone altar was built then and is called the Ahu made by Lono to this time (Ke-Ahu-a-Lono)... The Altar is at the boundary between Kona and Kohala, Near the road (*alanui*) to Kohala, made by Haanio [Jan. 31-Feb. 14, 1924; translated by Maly 1999:14].

Hi`iaka i ka`alei on the coast of `Anaeho`omalū on the border of Pu`uanahulu and `Anaeho`omalū, has been identified as a small *heiau*. This shrine was located by Emerson in 1880 and referred to it as the “old alter sacred to Hiiaka” Map is reference Reg. 824. (Emerson No. 3 Fieldbook).

Kanikū and Kanimoe were two *mo`o* (water-spirits with lizard bodies) who took the form of beautiful women in ancient times. Their home was the huge coastal pond of Wainānālī`i, in Pu`uanahulu. It was said that the width of the pond was about 1.5 miles and its length was about 2 miles or more. Houses for the pond guards were built on the walls (*kuapā*) and there were several sluice gates (*mākāhā*). The a`a lava flow that covered the pond became known as the Kanikū flow. Kanikū and Kanimoe were turned into stone and their bodies remain in the middle of the *a`a*, lying side by side (Maly n.d.).

It is recorded that a *heiau* for women was founded and dedicated by high chiefess Hoapiliahae in Waimea (Doyle 1953:42-43). It was tended by young virgins in the cool sanctity of the highland forest. Here they “...performed the sacred ceremonies, learning also the science of healing so that they might eventually minister to others” (*Ibid.*). The children of Hoapiliahae were named for the five rains of the *heiau*.

A *heiau* stood on a ridge built “...by the great Akua Makuakua who has come from far off Kahiki. (*Ibid.*). He would watch the rainbows from the hillside “... and there found the beautiful which were sacred to her to give birth. While there, a *kapu* was proclaimed in her honor “...down across the plains to whatever place a stone happened to stop rolling when started above by her servants”, was considered forbidden ground (*Ibid.*). At night, Wao would change her servants into stones to guard the land. During the day, they returned to their human form (*Ibid.*).

Along the coast, Puakō, Kālāhuipua`a, `Anaeho`omalu, and Kapalaoa, a land section above `Anaeho`omalu Bay, were also noted in legends and stories. The famous dog Pupualenalena lived at Puakō. He would accomplish the most difficult of tasks asked of him. The fisherman he lived with would allow him all the fish he could eat in exchange for `awa that Pupualenalena would steal from a large field belonging to Hākau, high chief of Hawai`i island. The dog was caught in Hākau's fields in Waipi`o Valley and was condemned to death along with his master. However, Pupualenalena cleverly stole a shell trumpet belonging to the spirits living in Waipi`o, for which he and his master were rewarded by Hākau with a piece of land (Fornander 1916-1920 (4):558-560).

WESTERN CONTACT

At 18th century western contact, there were several small fishing villages along the leeward coast *makai* of the project area. Larger settlements were located at Kawaihae, Puakō, Kālāhuipua`a, and `Anaeho`omalu.

Although primarily a fishing village, Kawaihae was used as an anchorage and houses extended north along the beach and rock shoreline adjacent to the Alaloa trail on the *makai* side (Barrère 1983:30, Cordy 2000:348). It had been a royal center and oral histories report visits from such *ali`i`ai moku* as Lonoikamakahiki, Alapa`inui, Keawe`ōpala, and Kamehameha. Trails extended from Kawaihae to the uplands, where the project area is located, and where there were three major settlements within two miles apart located at Keaalii (on the *kula* of Waimea), Waikoloa, and Pu`ukapu (Barrère in Clark and Kirch 1983:30). Upland settlements with their agricultural advantages supplied produce to the coastal settlements. Menzies witnessed this exchange in 1792, after having been told by his native guides that many lived and worked in the uplands:

Indeed, I could readily believe the truth of these assertions, from the number of people I met loaded with the produce of their plantations and bringing it down to the water side to market, for the consumption was now great, not only by the ship, but by the concourse of people which curiosity brought into the vicinity of the bay [Menzies 1920:56].

By the beginning of the 19th century, Kamehameha I had brought all the main Hawaiian Islands under his control either through military campaigns or negotiation. As was traditional, he distributed the conquered lands (*`āina panala`au*) to his supporters. John Young and Isaac Davis, sailors who had become two of his advisors and who had participated in Kamehameha's campaigns were rewarded with various lands on O`ahu and Hawai`i. This meant that on their

death, all the land they held was to revert to the *Mo`i* (king). Issac Davis received a large, relatively unproductive portion of Waikoloa referred to as the “*pili*” lands. Waikoloa had previously been under the control of the Waimea chiefs, a descendant of whom (Kaha`anapilo) had married George Hū`eu, a son of Issac Davis (Barrère 1983:28).

Pu`u Kapu was given to Kalnimokū, who was Kamehameha’s *kalaimoku* (prime minister). It would appear that `ili āina to the east (Pukalani, Noho`aina, and Paulama) were independent of Pu`u Kapu, as they were given, by Kamehameha to others. At some point, these lands were absorbed into Pu`u Kapu and all became Crown lands when Kalanimokū`s heir, Kekau`onohi gave up the land

THE MAHELE

Immense changes began to occur to Hawaiian traditional society with the intrusion of foreign lifestyles, first introduced on January 19, 1778 with the arrival, of Capt. James Cook on Kaua`i.

In the 1840s, traditional land tenure shifted drastically with the introduction of private land ownership based on western law. While it is a complex issue, many scholars believe that in order to protect Hawaiian sovereignty from foreign powers, Kamehameha III was forced to establish laws changing the traditional Hawaiian society to that of a market economy (Daws 1968:111; Kuykendall Vol. I, 1938:145 footnote 47, 152, 165-6, 170; Kame`eleihiwa 1992:169-70, 176; Kelly 1983:45, 1998).

Among other things, the foreigners demanded private ownership of land to secure their island investments (Kuykendall Vol. I, 1938:138, 145, 178, 184, 202, 206, 271; Kame`eleihiwa 1992:178). The Great Māhele of 1848 divided Hawaiian lands between the king, the chiefs, the government, and began the process of private ownership of lands. Once lands were thus made available and private ownership was instituted, the *maka`ānana* (commoners), if they had been made aware of the procedures, were able to claim the plots on which they had been cultivating and living. These claims, however, could not include any previously cultivated or presently fallow land, `okipu`u, stream fisheries, or many other resources traditionally necessary for survival (Kelly 1983, Kame`eleihiwa 1992:295, Kirch and Sahlins 1992). This land division, called the Māhele, was primarily enacted and commenced in 1848. The subsequently awarded parcels were called Land Commission Awards (LCAs). If occupation could be established through the testimony of two witnesses, the petitioners were awarded the claimed LCA and issued a Royal Patent after which they could then take possession of the property (Chinen

1961:16). One LCA (04219) was identified in the vicinity of the project area, on the border of Waikoloa and Pu`u Kapu. This is a recorded archaeological site (50-10-06-21861). The *kuleana* was claimed and awarded to Kaumu and was in the `ili of Kaikoloa. Kaumu stated he was cultivating two *kula* taro gardens, banana, and had two houses.

The exact status and boundary of Waikoloa and Waimea seems confused during the Mahele. Waikoloa was referred to as an `ili of Waimea Ahupua`a in testimony during the 1840s and on early survey maps. John Papa I`i listed Waimea as a *kalana* within the `Apana (section or district) of Kohala (I`i in Clark and Kirch 1983). In 1865 the witnesses called to testify regarding the boundaries between Waimea and Wakoloa, used inconsistent land terms to define them:

Waimea is an ahupuaa of Waimea, which is a kalana with eight divisions (Ehu)
Waikoloa is an ili of Waimea ahupuaa; Waimea is an Okana (Kanehailua),
[Boundary Commission Book No. 1 pp.6-12].

George Hu`eu, son of Isaac Davis, referred to the family's land of Waikoloa as an `ili (*`ili kūpono*) within the *kalana* of Waimea. To confuse the matters even more, both Crown lands and Davis' land were referred to as Waikoloa during the Māhele. This led to a dispute which was finally resolved by an agreement to name those lands belonging to the crown Lālāmilo (Barrère in Clark and Kirch 1983). George Hū`eu received Waikoloa lands in 1865 as an un-surveyed LCA. After disagreements with the local Board of Commissioners for Boundaries as to the actual perimeters of the parcel, the property was finally surveyed and mapped in 1867 by J.S. Kaelemakule according to the testimony of Davis' early witnesses (Clark and Kirch 1983:28).

Kamehameha gave Pu`ukapu Ahupua`a to Kalanimoku, his *kalaimoku* (prime minister). Originally, three *`ili āina* (Nohoina, Paulama, and Pukalani) may have been independent of Pu`u Kapu, having been given by Kamehameha to others. However, Kalanimoku received all of these lands as Pu`u Kapu Ahupua`a and, after his death his neice, Kekau`onohi, held the title. During the Mahele, she relinquished it and Pu`u Kapu reverted to Crown Lands (Barrère in Clark and Kirch 1983).

WESTERN EXPLOITATION AND RANCHING PARKER RANCH

By 1820, cattle left by Vancouver in 1794, had multiplied (due to the *kapu* of Kamehameha I) to herds containing at least 1, 600 head (Clark and Kirch 1983:30). Ellis

traveled through the region in 1823 and referred to “immense herds” of cattle in the Waimea area (Ellis 1969 :402).

John Palmer Parker, settled permanently in Hawai`i in 1815 and, with permission from Kamehameha I, became the first man to hunt the king’s cattle, helping to supply hides for both local and foreign consumption (Brennan 1974:37-40). Parker established himself on land given him by the king in Niuli`i, Kohala, where he began planting taro and vegetables with which he provisioned the many ships arriving at Kawaihae. His marriage to Chiefess Kipikane (Keliikipikaneokaolohaka), a granddaughter of Kamehameha, would bring more land under his control. Horses, introduced to the Big Island in 1803 by Capt. Richard Cleveland, had also been allowed to run wild on the slopes of Mauna Kea. Eventually, many were caught, trained, and put to work rounding up the wild cattle for market (*Ibid.*). While traveling to the top of Mauna Kea in 1823, Rev. Asa Thurston camped with John Parker who was successfully hunting wild cattle, salting the meat, and transporting it to Kawaihae in barrels to provision ships (Ellis 1969:402). It is recorded that in by 1846, there were approximately 25,000 wild and 10,000 tame cattle on the Big Island. In 1840, 5,000 hides were marketed and between the years of 1845 and 1884, approximately 2,000 hides were exported annually, making this a lucrative endeavor for Parker (*Ibid.*:56).

Until the Māhele, wild cattle was considered property of the government. Parker had established a tame herd of cattle in the Waiki`i area and in 1835, under the aegis of a new king, Kauikeaouli (Kamehameha III), Parker moved his family to Mānā, at the inland village of Waimea, and began seriously improving his cattle herds with imported stock. The cattle was driven down through Waikoloa to Kawaihae and Puakō from where it was shipped to market.

During the Māhele, Parker who had been leasing land from the government, filed a claim for land with the Board of Commissioners to Quiet Land Titles. He was granted two acres of his choice (for \$10) in Royal Grant No. 7, dated January 14, 1847 (Brennan 1974:80). In 1850, 640 acres of land were granted to Parker’s wife Kipikane, by Kamehameha III (Land Grant No. 358; *Ibid.*:87). The project area is part of the Parker Ranch lands. In 1858, Parker purchased the entire *ahupua`a* of Pa`auhau and, in the late 1800s, he leased land in Kawaihae and Waikoloa (Wellmon 1969:154, 164, 173). John Palmer Parker died in 1868, leaving the ranch under the care of his only surviving son, John Parker II.

Although cattle ranching was thriving, the land was not. In 1876, King Kalākaua appointed a commission “to aid in the development of resources in the Kingdom” (Act of September 25, 1876). The commissioners toured Hawai`i island in 1887 and reported:

...The forests on the Kohala mountains are dying rapidly. The land is mostly for grazing purposes, though on the mountain potatoes of fine quality can be raised in large quantities...The once fertile and populous plain of Waimea looked sterile and desolate when visited by the Commission—a painful contrast to Kohala loko on the other side of the mountain. . . The plains of Pukapu and Waimea are subject to high winds, aggravated by the loss of the sheltering forests of former days...To develop its best resources, efforts must be made to restore the forests and husband the supply of water at their sources to furnish a supply for agricultural purposes... .[*Pacific Commercial Advertiser* May 5, 1877]

Ranch lands called Līhu`e in Lālāmilo were taken over by Parker Ranch in 1878 (Doyle 1953:223). Eventually, John Parker’s ranch would be one of the largest privately-owned cattle ranch with 150,000 acres of land and 30,000 head of Angus and Charolais beef cattle.

WAIMEA TOWN

The town of Waimea, north of the project area, grew up around the activities of the early hunting of cattle for their beef, tallow and skins to be sold to the whalers. Soon there all types of settlers, including were blacksmiths, tanners, sawyers, imported cowboys who would teach the locals how to ride and rope the wild cattle, the young families of the workers, a general store, and missionaries. A quiet time arrived for Waimea after Governor Kuakini placed a *kapu* on killing wild cattle in 1841 and serious ranching began. However, as the ranch expanded, so did the town until it has become a tourist destination with complete modern amenities and a community of residents not necessarily connected to ranching activities.

WWII ERA

Approximately 91,000 acres of Parker Ranch land were used by the military from 1942 to 1945. The Army and Marines stationed some 30,000 to 50,000 men in Waimea, some training for the attack on Iwo Jima. Tents and Quonset huts were located south of Waimea Town at Camp Tarawa, named after an island in the Marshal Islands. A firing range for artillery practice was set up and a dirt road for tank travel extended between Kawaihae and Pu`u Ke`eke`e (Brennan 1974:164). The old wagon road Connecting Waimea to the Humu`ula area became the Saddle road, constructed by the Civilian Conservation Corps in 1943 and Waimea Town burgeoned to meet the new demands for entertainment for the troops. Camp Tarawa consisted of tents, Quonset huts, wooden structures, and roads covering approximately 465 acres and was

located directly to the northwest and north of the project area on both sides of Māmalahoa Highway (Nees and Williams 2000).

CIA INQUIRY RESPONSE

The “level of effort undertaken” to identify potential effect by a project to cultural resources, places or beliefs (OEQC 1997) has not been officially defined and is left up to the investigator. A good faith effort can mean contacting agencies by letter, interviewing people who may be affected by the project or who know its history, research identifying sensitive areas and previous land use, holding meetings in which the public is invited to testify, notifying the community through the media, and other appropriate strategies based on the type of project being proposed and its impact potential. Sending inquiring letters to organizations concerning development of a piece of property that has already been totally impacted by previous activity and is located in an already developed industrial area may be a “good faith effort”. However, when many factors need to be considered, such as in coastal or mountain development, a good faith effort might mean an entirely different level of research activity.

In the case of the present parcel, letters of inquiry were sent to organizations whose expertise would include the project area. Consultation was sought from Ms. Phyllis Cayan, History and Culture Branch Chief for SHPD; Ruby McDonald, Coordinator of the Kona branch of the Office of Hawaiian Affairs; and the Waimea Hawaiian Civic Club; Leningrad Elarinoff, Waimea District Representative on the HIBC; Ronald Delacruz on the Hawai`i Island Burial Council; Kepa Maly of Kumu Pono Associates; Clement Junior Kanuha; Dr. K. Kahakalau; Reggie Lee; Hugh Lovell and two emails were sent to Mr. Keawe Vredenburg and Dr. W. Bergin of Waimea.

A Cultural Impact Assessment Notice was published on October 7, 8, and 11, 2009 in *The Honolulu Advertiser*, *West Hawaii Today* on October 14, 2009, and in the November issue of the OHA newspaper, *Na Wai Ola*. These notices requested information of cultural resources or activities in the area of the proposed project, gave the TMK number and where to respond with information. There were no responses to the published notices.

Historical and cultural source materials were extensively used and can be found listed in the References Cited portion of the report. Such scholars as I`i, Kamakau, Beckwith, Chinen, Kame`eleihiwa, Fornander, Kuykendall, Kelly, Handy and Handy, Puku`i and Elbert, Thrum, Sterling, and Cordy have contributed, and continue to contribute to our knowledge and

understanding of Hawai`i, past and present. The works of these and other authors were consulted and incorporated in the report where appropriate. Land use document research was supplied by the Waihona `Aina 2010 Data base.

A 2009 Archaeological Inventory Survey was conducted within the project area and its vicinity (McIntosh *et al.*:2010). The study re-identified one archaeological site (a windbreak shelter) and three new sites (an agricultural terrace, a small enclosure remnant, and a short section of an `auwai with an adjoining terrace).

Archaeology deals with material remains, and although cultural beliefs are often reflected through some sort of architecture, like *heiau*, or *ko`a*, there are many examples of cultural associations still important to the community with no physical structures to mark their significance. One such place, *Ulukukui O Lanikāula*, located on Moloka`i, is considered an extremely sacred spot. Another might be Kīlauea and Halema`uma`u, home of Pele. These places have become important sites supporting a traditional belief system still held by the many peoples of Hawai`i. They contain no identified archaeological features, however they are highly meaningful “...because of [their] association with cultural practices or beliefs of a living community . . .” (King 2003:3).

As suggested in the “Guidelines for Accessing Cultural Impacts” (OEQC 1997), CIAs may incorporate personal interviews, as well as organizational information of cultural practices and features associated with a project area. As the project area had been used for cattle, it was suggested that contact be made with an employee of the ranch to further investigate the possibility of ongoing cultural activities in the area. Mr. Brandi Beudet of the Parker Ranch was familiar with the project area and stated that it had been used for pasture and had been partially excavated by machine to contain water overflow during heavy rains. He did not know of any cultural activities in the area that would be impacted by park construction.

As stated above, Consultation was sought from Ms. Phyllis Cayan, History and Culture Branch Chief for SHPD; Ruby McDonald, Coordinator of the Kona branch of the Office of Hawaiian Affairs; and the Waimea Hawaiian Civic Club; Leningrad Elarinoff, Waimea District Representative on the HIBC; Ronald Dela Cruz on the Hawai`i Island Burial Council; Kepa Maly of Kumu Pono Associates; Clement Junior Kanuha; Dr. K. Kahakalau; Reggie Lee and two emails were sent to Mr. Keawe Vredenburg and Dr. W. Bergin of Waimea of the Kona branch of the Office of Hawaiian Affairs; and the Waimea Hawaiian Civic Club. Several of the above contacts were suggested by Ms. Cayan. Keawe Vredenburg responded by email but no specific

cultural activities could be identified within the project area. Besides Ms Cayan and Mr. Vredenburg, there were no responses to the letter inquiries.

In addition, a Cultural Impact Assessment Notice was published on October 7, 8, and 11, 2009 in *The Honolulu Advertiser*, *West Hawaii Today* on October 14, 2009, and in the November issue of the OHA newspaper, *Na Wai Ola*. These notices requested information of cultural resources or activities in the area of the proposed project, gave the TMK number (TMK: 6-07-002:17 por., 6-07-001:025 por., 6-7-002:063 por.) and where to respond with information. There was no response from the notice.

Analysis of the potential effect of the project on cultural resources, practices or beliefs, its potential to isolate cultural resources, practices or beliefs from their setting, and the potential of the project to introduce elements which may alter the setting in which cultural practices take place is a requirement of the OEQC (No. 10, 1997). To our knowledge, the project area has not been used for traditional cultural purposes within recent times. The visual impact of the proposed Waimea District Park from surrounding vantage points, e.g. the highway, mountains, and coast is minimal.

CULTURAL ASSESSMEMNT

Based on, no additional suggestions or information from the contacted organizations, and negative results of the archival research, it is reasonable to conclude that, pursuant to Act 50, the exercise of native Hawaiian rights, or any ethnic group, related to gathering, access or other customary activities will not be affected by development activities on a portion of the parcel. Because there were no cultural activities identified within the project area, there are no adverse effects.

REFERENCES CITED

Alexander, W.D.

1892 The Ascent of Mauna Kea. *Hawaiian Gazette* 20 September 7.

Barrera, William Jr.

1971 *Anaeho`omalu: An Hawaiian Oasis*. Pacific Anthropological Records No. 15, Dept. Of Anthropology, Bishop Museum. Honolulu.

Barrère, Dorothy

1983 "Notes of the lands of Waimea and Kawaihae". In: *Archaeological Investigations of the Mudlane-Waimea-Kawaihae Road Corridor, Island of Hawai`i*. Jeffery Clark and Patrick Kirch (eds). Dept. Of Anthropology, Report 83-1. Bishop Museum.

Boundary Commission Books

Microfilm at University of Hawaii at Hilo Library.

Brennen, Joseph

1974 *The Parker Ranch of Hawaii: The Saga of a Ranch and a Dynasty*. The John Day Company. New York.

Cahill, Emmett

1999 *The Life and Times of John Young*. Island Heritage. Hawaii.

Chinen, Jon

1961 Original Land Titles in Hawaii. Copyright 1961 Jon Jitsuzo Chinen. Library of Congress Catalogue Card No. 61-17314.

Clark, Jeffrey T. and Patrick V. Kirch

1983 *Archaeological Investigations of the Mudlane-Waimea-Kawaihae Road Corridor, Island of Hawai`i*. Report 83-1. Dept. of Anthropology. B.P. Museum. Honolulu.

- Cordy, Ross H.
 1987 *ʻAnaehoʻomalūʻs Ahupuaʻa Altar Ke Ahu A Lono (HA-EI-63): An Archaeological & Archival Overview, South Kohala, Hawaiʻi.* Dept. of Land and Natural Resources. Historic Sites Section.
- 2000 *Exalted Sits the Chief: The Ancient History of Hawaiʻi Island.* Mutual Publishing. Honolulu.
- Cuddihy, L.W. and Charles P. Stone
 1990 *Alteration of Native Hawaiian Vegetation: Effects of Humans, Their Activities and Introductions.* University of Hawaiʻi Cooperative National Park Resources. Honolulu.
- Daws, G.
 1982 *Shoal of Time: History of the Hawaiian Islands.* University of Hawaiʻi Press. Honolulu.
- Doyle, Emma Lyons
 1953 *Makua Laiana, The Story of Lorenzo Lyons.* Honolulu. Advertiser Publishing co.
- Ellis, William
 1969 *Polynesian Researches.* Charles E. Tuttle Company. Tokyo, Japan.
- Fornander, Abraham
 1916-
 1920 *Fornander Collection of Hawaiian Antiquities and Folk-Lore.* Bishop Museum Memoirs, 4-6. Bishop Museum Press, Honolulu.
- Hommon, R.
 1982 *Archaeological Data Recovery at Site 342, Kalahuipuaa.* Science Management, Inc. Unpublished Report. Prepared for Mauna Lani Resorts.
- Kamakau, Samuel
 1961 *Ruling Chiefs of Hawaii.* The Kamehameha Schools Press. Honolulu.
- Kameʻeleihiwa, Lilikalā
 1992 *Native Land and Foreign Desires: Pehea La E Pono Ai?* Bishop Museum Press. Honolulu.
- Kelly, Marion
 1983 *Nā Māla o Kona: Gardens of Kona.* Dept. of Anthropology Report Series 83-2. Bishop Museum. Honolulu.
- 1998 "Gunboat Diplomacy, Sandalwood Lust and National Debt." In *Ka Wai Ola o OHA*, Vol. 15, No. 4, April 1998.

- King, Thomas
2003 *Places that Count*. Rowen & Littlefield Publishers, Inc. Walnut Creek.
- Kirch, Patrick V.
1975 *Preliminary Report on Phase II Archaeological Investigations at Kalahu`ipua`a, South Kohala, Hawaii Island, Dept. Of Anthropology, B.P. Bishop Museum*. Prepared for Mauna Loa Land, Inc.
- Kirch, Patrick V. and Marshall Sahlins
1992 *Anahulu*. Vol. 1 and 2. University of Chicago Press. Chicago.
- Kuykendall, R.S.
1938 *The Hawaiian Kingdom*. Vol. 1. University of Hawai`i Press. Honolulu.
- Lucas, Paul F. Nahoia
1995 *A Dictionary of Hawaiian Legal Land-terms*. Native Hawaiian Legal Corporation. University of Hawai`i Committee for the Preservation and Study of Hawaiian Language, Art and Culture.. University of Hawai`i Press.
- Lyons, C.J.
1875 "Land Matters in Hawaii". *The Islander*, Vol. I. Honolulu.
- Macrae, James
1972 *With Lord Byron at the Sandwich Islands in 1825: Being Extracts from the MS Diary of James Macrae, Scottish Botanist*. Reprinted. Petroglyph Press, Hilo, Hawai`i. Originally published in 1922.
- Maly, Kepā
n.d. *Pu`uwa`awa`a and Pu`uanahulu (Nāpu`u), at Kekeha-Kona, Hawai`i*. Prepared for Pu`uanahulu `Ohana. Kamuela, Hawai`i.
- McIntosh, James, Rowland Reeve, and Paul Cleghorn
2010 *Archaeological Inventory Survey for the Proposed Waimea District Park, Pu`u Kapu Ahupua`a, District of South Kohala, Island of Hawai`i*. Prepared for PBR Hawai`i.
- Menzies, Archibald
1920 *Hawaii Nei 128 Years Ago*. (ed.) W.F. Wilson. New Freedom Publishers. Honolulu.
- Moffat, Riley M. and Gary L. Fitzpatrick
1995 *Surveying the Māhele*. An Editions Limited Book. Hong Kong.
- Nees, Richard and Scott Williams
2000 *Archaeological Investigations for Defense Environmental Restoration Program for Formerly Used Defense Sites, Waikoloa Maneuver Area (Formerly Camp*

Tarawa), Waikoloa, Island of Hawai`i, Hawai`i. Prepared for U.S. Army Engineer District, Honolulu Corps of Engineers. On File SHPD.

OEQC (Hawaii State Office of Environmental Quality Control)

1997 "Guidelines for Assessing Cultural Impacts." Adopted by the Environmental Council, November 1997

Parker, Patricia and Thomas King

1990 Guidelines for Evaluating and Documenting Traditional Cultural Properties. *National Register Bulletin*. No. 38. U.S. Department of the Interior, National Park Service.

Waihona `Aina 2010 Data Base. Kailua.

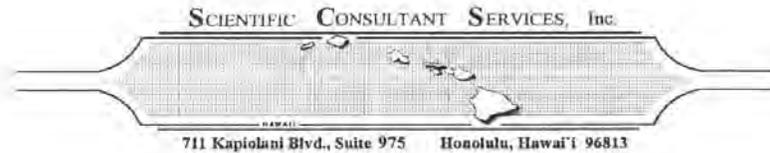
Wellmon, B.

1969 The Parker Ranch: A History. Ph.D. dissertation, Texas Christian University. University Microfilms.

Wilkes, Charles

1845 *U.S. Exploring Expedition*. Narrative...1838-1842. Vols. 1-5 and Atlas. Philadelphia. Lea & Blanchard.

APPENDIX A: CONSULTATION REQUEST FORMS



Dr. William Bergin
pbergin@hawaii.rr.net
Waimea, HI

November 10, 2009

Dear Dr. Bergin:

Scientific Consultant Services, Inc. (SCS) has been contracted by PBR Hawaii, to conduct a Cultural Impact Assessment (CIA) of approximately 22 acres in Waikoloa, South Kohala District, Hawai'i Island [TMK:6-7-002;17 por]. According to documents supplied by PBR Hawaii, the project proposes the development of Waimea District Park. SCS has been asked to assess the probability of impacting cultural values and rights within the project area and its vicinity. According to the *Guidelines for Assessing Cultural Impacts* (Office of Environmental Quality Control, Nov. 1997):

The types of cultural practices and beliefs subject to assessment may include subsistence, commercial, residential, agricultural, access-related, recreational, and religious and spiritual customs... The types of cultural resources subject to assessment may include traditional cultural properties or other types of historic sites, both man made and natural which support such cultural beliefs...

We are asking you for any information that might assist us in gathering knowledge of traditional activities, or traditional rights that might be impacted by development of the property. The results of our assessments rely greatly on the assistance and response of individuals and organizations such as yours. Enclosed are maps showing the proposed project area. Please contact me at our SCS Honolulu office at (808) 597-1182; my cell phone, 225-2355; or home, (808) 637-9539, with any information or recommendations concerning this Cultural Impact Assessment.

Sincerely yours,

Leann McGerty,
Senior Archaeologist
Enclosures (2)



Phyllis Coochie Cayan, History and Culture Branch Chief
C/O State Historic Preservation Division
601 Kamokila Blvd. Room 555
Kapolei, Hawai'i 96707

October 2, 2009

Dear Ms. Cayan:

Scientific Consultant Services, Inc. (SCS) has been contracted by PBR Hawaii, to conduct a Cultural Impact Assessment (CIA) of approximately 22 acres in Waikoloa, South Kohala District, Hawai'i Island [TMK:6-7-002:17 por]. According to documents supplied by PBR Hawaii, the project proposes the development of Waimea District Park. SCS has been asked to assess the probability of impacting cultural values and rights within the project area and its vicinity. According to the *Guidelines for Assessing Cultural Impacts* (Office of Environmental Quality Control, Nov. 1997):

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Sincerely yours,

Leann McGerty,
Senior Archaeologist
Enclosures (2)



Mr. Ronald Dela Cruz
Hawai'i Island Burial Council
P.O. Box 1357
Waimea, HI 96743

October 2, 2009

Dear Mr. Dela Cruz:

Scientific Consultant Services, Inc. (SCS) has been contracted by PBR Hawaii, to conduct a Cultural Impact Assessment (CIA) of approximately 22 acres in Waikoloa, South Kohala District, Hawai'i Island [TMK:6-7-002:17 por]. According to documents supplied by PBR Hawaii, the project proposes the development of Waimea District Park. SCS has been asked to assess the probability of impacting cultural values and rights within the project area and its vicinity. According to the *Guidelines for Assessing Cultural Impacts* (Office of Environmental Quality Control, Nov. 1997):

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Sincerely yours,

Leann McGerty,
Senior Archaeologist
Enclosures (2)

Ph: 808-597-1182 SCS... SERVING ALL YOUR ARCHAEOLOGICAL NEEDS Fax: 808-597-1193

Neighbor Island Offices • Hawai'i Island • Maui • Kauai



Waimea Hawaiian Civic Club
P. O. Box 6305
Kamuela, HI 96743

October 2, 2009

Dear Members:

Scientific Consultant Services, Inc. (SCS) has been contracted by PBR Hawaii, to conduct a Cultural Impact Assessment (CIA) of approximately 22 acres in Waikoloa, South Kohala District, Hawai'i Island [TMK:6-7-002:17 por]. According to documents supplied by PBR Hawaii, the project proposes the development of Waimea District Park. SCS has been asked to assess the probability of impacting cultural values and rights within the project area and its vicinity. According to the *Guidelines for Assessing Cultural Impacts* (Office of Environmental Quality Control, Nov, 1997);

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Sincerely yours,


Leann McGerty,
Senior Archaeologist
Enclosures (2)

Ph: 808-597-1182 / SCS... SERVING ALL YOUR ARCHAEOLOGICAL NEEDS Fax: 808-597-1193

Neighbor Island Offices • Hawai'i Island • Maui • Kaua'i



Ruby McDonald
c/o Office of Hawaiian Affairs
75-5706 Hanama Place
Suite 107
Kailua, HI 96740

October 2, 2009

Dear Ms. McDonald:

Scientific Consultant Services, Inc. (SCS) has been contracted by PBR Hawaii, to conduct a Cultural Impact Assessment (CIA) of approximately 22 acres in Waikoloa, South Kohala District, Hawai'i Island [TMK:6-7-002:17 por]. According to documents supplied by PBR Hawaii, the project proposes the development of Waimea District Park. SCS has been asked to assess the probability of impacting cultural values and rights within the project area and its vicinity. According to the *Guidelines for Assessing Cultural Impacts* (Office of Environmental Quality Control, Nov. 1997):

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Sincerely yours,

Leann McGerty,
Senior Archaeologist
Enclosures (2)

PH: 808-597-1182 / SCS... SERVING ALL YOUR ARCHAEOLOGICAL NEEDS / FAX: 808-597-1193

Neighbor Island Offices • Hawai'i Island • Maui • Kaua'i



Mr. Hugh Lovell
Agricultural Research Specialist
Research Corporation, University of Hawai'i
Waimea, HI 96743
Pih52@yahoo.com

October 2, 2009

Dear Mr. Lovell:

Scientific Consultant Services, Inc. (SCS) has been contracted by PBR Hawaii, to conduct a Cultural Impact Assessment (CIA) of approximately 22 acres in Waikoloa, South Kohala District, Hawai'i Island [TMK:6-7-002:17 por]. According to documents supplied by PBR Hawaii, the project proposes the development of Waimea District Park. SCS has been asked to assess the probability of impacting cultural values and rights within the project area and its vicinity. According to the *Guidelines for Assessing Cultural Impacts* (Office of Environmental Quality Control, Nov. 1997):

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Sincerely yours,

Leann McGerty,
Senior Archaeologist
Enclosures (2)



Mr. Kepa Maly
Kumu Pono Associates
554 Keonaona Street
Hilo, Hawai'i 96720

November 5, 2009

Dear Mr. Maly

Scientific Consultant Services, Inc. (SCS) has been contracted by PBR Hawaii, to conduct a Cultural Impact Assessment (CIA) of approximately 22 acres in Waikoloa, South Kohala District, Hawai'i Island [TMK:6-7-002:17 por]. According to documents supplied by PBR Hawaii, the project proposes the development of Waimea District Park. SCS has been asked to assess the probability of impacting cultural values and rights within the project area and its vicinity. According to the *Guidelines for Assessing Cultural Impacts* (Office of Environmental Quality Control, Nov. 1997):

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Sincerely yours,

Leann McGerty,
Senior Archaeologist
Enclosures (2)



Clement Junior Kanuha
73-4387 Kala'oa Street
Kona, Hawai'i 96740

November 5, 2009

Dear Mr. Kanuha:

Scientific Consultant Services, Inc. (SCS) has been contracted by PBR Hawaii, to conduct a Cultural Impact Assessment (CIA) of approximately 22 acres in Waikoloa, South Kohala District, Hawai'i Island [TMK:6-7-002:17 por]. According to documents supplied by PBR Hawaii, the project proposes the development of Waimea District Park. SCS has been asked to assess the probability of impacting cultural values and rights within the project area and its vicinity. According to the *Guidelines for Assessing Cultural Impacts* (Office of Environmental Quality Control, Nov. 1997):

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Sincerely yours,

Leann McGerty,
Senior Archaeologist
Enclosures (2)



Mr. Reggie Lee
c/o Clement Junior Kanuha
73-4387 Kala'oa Street
Kona, Hawai'i 96740

November 5, 2009

Dear Mr. Lee:

Scientific Consultant Services, Inc. (SCS) has been contracted by PBR Hawaii, to conduct a Cultural Impact Assessment (CIA) of approximately 22 acres in Waikoloa, South Kohala District, Hawai'i Island [TMK:6-7-002:17 por]. According to documents supplied by PBR Hawaii, the project proposes the development of Waimea District Park. SCS has been asked to assess the probability of impacting cultural values and rights within the project area and its vicinity. According to the *Guidelines for Assessing Cultural Impacts* (Office of Environmental Quality Control, Nov. 1997):

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Sincerely yours,

Leann McGerty,
Senior Archaeologist
Enclosures (2)

Ph: 808-597-1182 / SCS... SERVING ALL YOUR ARCHAEOLOGICAL NEEDS / Fax: 808-597-1193

Neighbor Island Offices • Hawai'i Island • Maui • Kaua'i



Dr. Kū Kahakalau
P.O. Box 398
Kamuela, HI 96743

November 5, 2009

Dear Dr. Kahakalau:

Scientific Consultant Services, Inc. (SCS) has been contracted by PBR Hawaii, to conduct a Cultural Impact Assessment (CIA) of approximately 22 acres in Waikoloa, South Kohala District, Hawai'i Island [TMK:6-7-002:17 por]. According to documents supplied by PBR Hawaii, the project proposes the development of Waimea District Park. SCS has been asked to assess the probability of impacting cultural values and rights within the project area and its vicinity. According to the *Guidelines for Assessing Cultural Impacts* (Office of Environmental Quality Control, Nov. 1997):

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Sincerely yours,

Leann McGerty,
Senior Archaeologist
Enclosures (2)



Mr. Leningrad Elarionoff
Hawai'i Island Burial Council
P.O. Box 1737
Waimea, HI 96743

November 5, 2009

Dear Mr. Elarionoff:

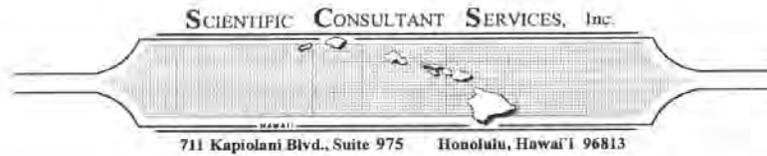
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Sincerely yours,

Leann McGerty,
Senior Archaeologist
Enclosures (2)



Mr. Keawe Vredenburg
keaweehu@hawaii.rr.com

November 6, 2009

Scientific Consultant Services, Inc. (SCS) has been contracted by PBR Hawaii, to conduct a Cultural Impact Assessment (CIA) of approximately 22 acres in Waikoloa, South Kohala District, Hawai'i Island [TMK:6-7-002:17 por]. According to documents supplied by PBR Hawaii, the project proposes the development of Waimea District Park. SCS has been asked to assess the probability of impacting cultural values and rights within the project area and its vicinity. According to the *Guidelines for Assessing Cultural Impacts* (Office of Environmental Quality Control, Nov. 1997):

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Sincerely yours,

Leann McGerty,
Senior Archaeologist
Enclosures (2)

APPENDIX B: LEGAL NOTICE

The Honolulu Advertiser
 605 KAPIOLANI BLVD
 HONOLULU, HI 96813

LEGAL ADVERTISING

10/02/09 04:31 PM

CLASSIFIED (808) 525-7420
 FAX: (808) 525-5448

Please note: Check your ad the FIRST day it appears in the paper.
 The Honolulu Advertiser will not be responsible for errors after the first insertion of any advertisement.

2

Account Information				Ad Information			
Name:	SCIENTIFIC CONSULTANT SERVICES			Ad ID:	737287		
Company:	711 KAPIOLANI BLVD 975			Run dates:	10/07/09 to 10/11/09		
Address:	HONOLULU, HI 96813			Class:	Legal Ads		
City:	23090			Sales Person:	TOYAMA		
Account ID:	(808) 597-1182			Printed by:	TOYAMA		
Account #:				Inserts:	6		
Telephone:				Lines:	28		
				Columns:	1		
				Depth (Inches):	2.0		
				Net Cost:	\$180.00		
				Tax:	\$8.48		
				Paid Amount:	\$188.48		
				Amount Due:	\$0.00		
				Keywords:			
				P.O. number:	971		

Publications:	Start	Stop	Inserts
The Honolulu Advertiser	10/07/09	10/11/09	3
Online	10/07/09	10/11/09	3

Payments:	Method	Card Type	Name on Card	Last 4 Digits	Expire Date	Check Number	Amount Paid
	CC	MC	SUARRA BAKER	5287	03/12		\$188.48

Ad Copy: (Actual Size)

CULTURAL IMPACT ASSESSMENT NOTICE:
 Information requested by SCS of cultural resources or on-going cultural activities on or near this parcel in Waimea, Hawaii. TMK: 6-7-002. Please respond within 30 days to SCS at (808) 597-1182.
 (Hon. Adv.: Oct. 7, 8, 11, 2009) (A-737287)

971

Received Time Oct. 2, 4:25PM

Print

Subject: Re: Cultural Impact Assessment Notice
From: Lisa Asato <lisaa@oha.org>
Sent: Friday, October 02, 2009 1:50:34 PM
To: leann@scshawaii.com

Aloha e Leann,

Thank you for your notice. It will run in the November issue of Ka Wai Ola.

For future notices, can you please send it in Word doc so we can just copy and paste?
We'd appreciate it.

Mahalo,
Lisa



Lisa Asato
Ka Wai Ola, Editor
Public Information Specialist
Office of Hawaiian Affairs

Phone: (808) 594-1981
Fax: (808) 594-0267
lisaa@oha.org

On Oct 2, 2009, at 1:44 PM, leann@scshawaii.com wrote:

Dear Ms. Asato,
Would you please insert the attached Cultural Impact Assesment Notice in the next edition of the Ka Wai Ola?
Thank you.

Aloha

971

**CULTURAL IMPACT ASSESSMENT
NOTICE**

Information requested by SCS
Of cultural resources or on-going
cultural activities on or near this
parcel in Waimea, Hawaii TMK: 6-7-002

Please respond within 30 days to SCS at
808-597-1182

132241

West Hawaii TODAY

RUN DATES

OCT 14, 2009

TRAFFIC IMPACT ANALYSIS REPORT

TRAFFIC IMPACT ANALYSIS REPORT

Waimea District/Regional Park

WAIMEA, BIG ISLAND, HAWAII

April 2010



PB Americas, Inc.

Over a Century of Engineering Excellence

Traffic Impact Analysis Report

Waimea District/Regional Park

Waimea, Big Island, Hawaii

April 2010

Prepared For:

PBR HAWAII & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, HI 96813

Prepared By:
PB Americas, Inc.
American Savings Bank Tower - Suite 2400
1001 Bishop Street
Honolulu, HI 96813
(808) 531-7094

PB Reference Number:

16488A

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I. INTRODUCTION

Waimea is located in the district of South Kohala, in the County of Hawaii. Figure 1 is an aerial photograph that illustrates the Waimea region. Figure 2 illustrates the conceptual site plan. The proposed park location is just north of the airport, and east of Mamalahoa Highway near the Parker Ranch Headquarters.

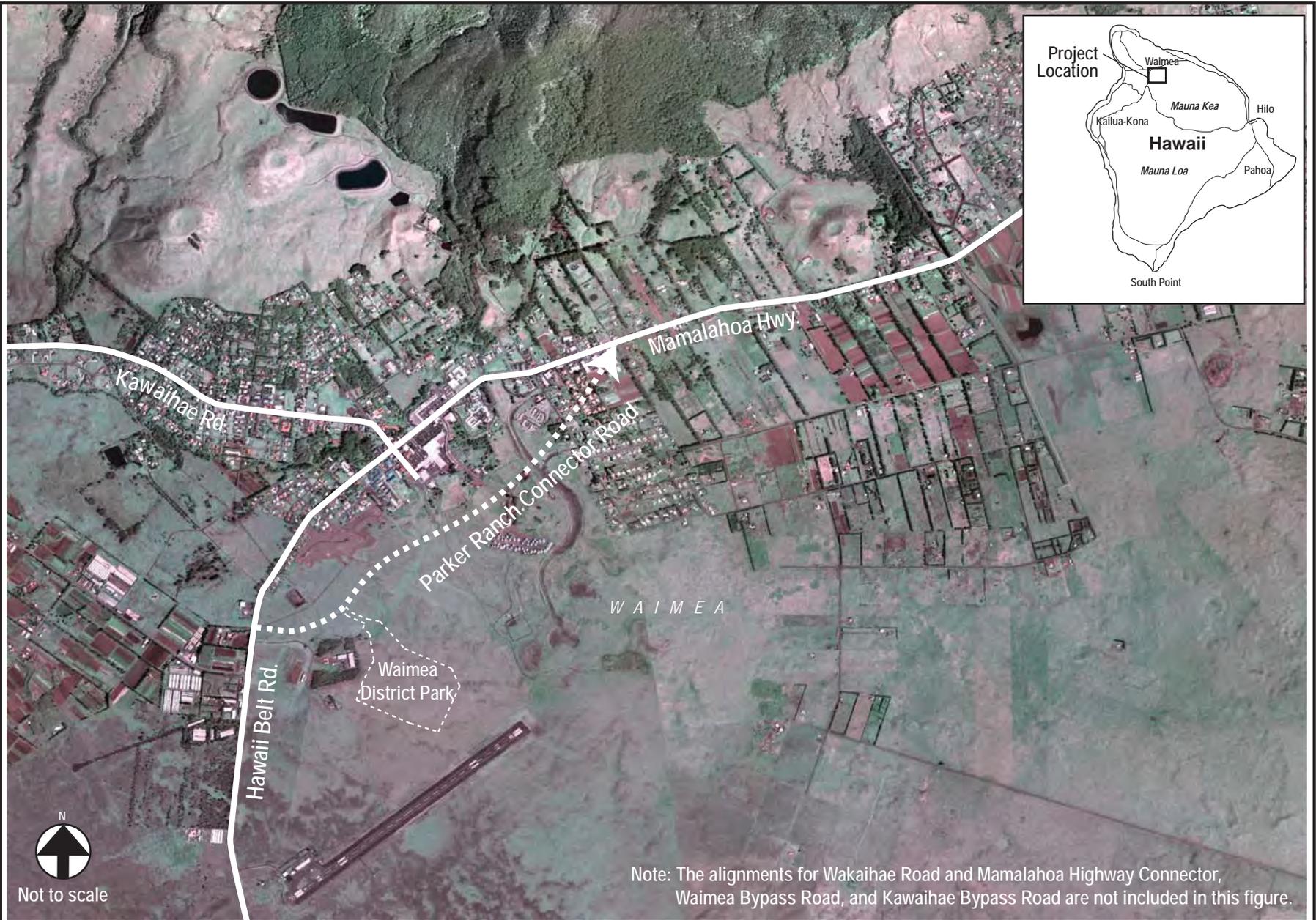
The Waimea District/Regional Park will be built in two phases. The first phase is scheduled to be completed by 2018. The first phase is about 28 acres, which includes:

- A community gymnasium – the gross floor area is approximately 15,000 to 18,000 square feet. It includes 1 basketball courts with 2 volleyball courts overlay and bleachers, some offices, restrooms / locker rooms, and outdoor fitness area with fitness equipments.
- A multi-purpose community building – the gross floor area is about 6,000 to 8,000 square feet. It includes open ground floor with associated outdoor functioning space and kitchen. The second floor is for classrooms, meeting rooms, and offices.
- A community gathering/family recreation area – this area is about 1 acre. It includes one comfort station, some picnic facilities, one amphitheater / pavilion, a tot lots playground, and walking trails.
- One regulation size football field,
- One rugby field/soccer field (overlapped),
- One regulation-size baseball field,
- One youth baseball field,
- A multi-use walkway and trail, and
- Comfort stations.

The second phase will develop the adjacent additional 22+ acres. The second phase is scheduled to be completed by 2023. Including the first phase, the total land area will cover 50+ acres. The second phase includes:

- One rugby field/soccer field (overlapped),
- One youth baseball field,
- One regulation-size baseball field,
- An extended multi-use walkway and trail, and

- Additional comfort stations.



Location Map

Figure

1

II. EXISTING CONDITIONS

A. Existing Land Use

Currently the proposed Waimea District/Regional park site is vacant land. The proposed park site is located just north of the Waimea-Kohala Airport. The Waimea Elementary School is located to the northeast of the proposed park. The majority of Waimea town consists of residential homes and small commercial businesses. The densest part of Waimea lies to the north of the proposed park.

B. Existing Roadway System

Mamalahoa Highway

Mamalahoa Highway is a 2-lane undivided roadway with the speed limit of 55 mph outside of Waimea town. A speed limit of 35 mph is posted as Mamalahoa highway passes through Waimea town. Mamalahoa Highway from Lindsey intersection to North Hawaii Community Hospital is 4-lane divided with the landscaped median. Mamalahoa Highway in South Kohala generally runs parallel to Queen Kaahumanu Highway. Queen Kaahumanu Highway traverses coastal Waikoloa with Mamalahoa Highway offset about 10 miles inland from Queen Kaahumanu Highway. Both highways intersect with Kawaihae Road. Mamalahoa Highway intersects Kawaihae Road in Waimea town, while Queen Kaahumanu Highway intersects Kawaihae Road near Kawaihae Harbor.

Kawaihae Road

Kawaihae Road is a rural arterial roadway which provides east-west mobility from coastal North Kohala to Waimea. Its western terminus is at Queen Kaahumanu Highway and it runs west to coastal North Kohala where it becomes Akoni Pule Highway. Approaching Waimea town, Kawaihae Road becomes Lindsey Road. Kawaihae Road is a 2-lane undivided roadway with a speed limit of 35 mph for the majority of the segment. From west to east, Kawaihae Road increases in elevation from about 300 ft to 2700 ft. The only signalized intersection along Kawaihae Road is in Waimea town where it intersects with Mamalahoa Highway. All other intersections are unsignalized with STOP-sign control on the intersecting roadway approaches.

III. PHASE I EVALUATION

A. Travel Demand Estimation

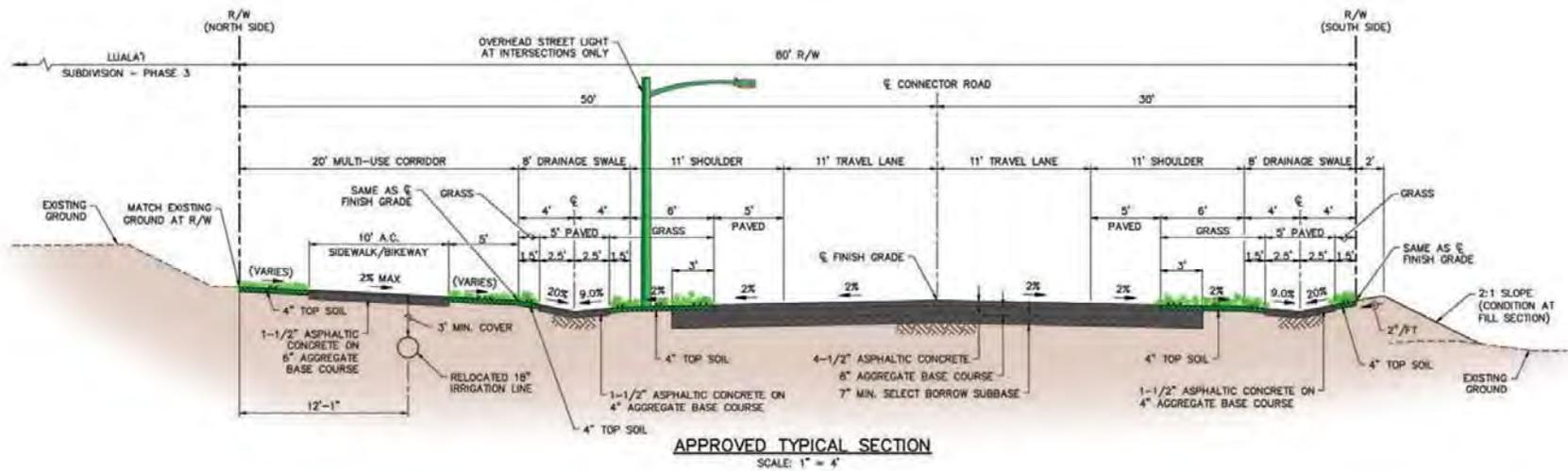
The Parker Ranch Connector Road is being currently developed by Parker Ranch. This connector would provide more routes for Waimea town roadways to better serve local traffic, potentially providing more opportunities for alternatives modes such as transit, biking, and walking. Figure 3 shows a typical cross section along the future Parker Ranch Connector Road.

The horizon year for the completion of Phase I of the park is the year 2018. The Parker Ranch Connector Road will provide access to the park. It is anticipated the following roads will not be completed by 2018:

- Kawaihae Road and Mamalahoa Highway Connector
- Waimea Bypass Road
- Kawaihae Bypass Road

The travel demand for the Waimea District/Regional Park was estimated using the process of trip generation, trip distribution, and trip assignment. This travel demand was then combined with the background traffic and the year 2018 intersection operations were evaluated.

Vehicular trips generated by the proposed Waimea District/Regional Park were estimated using trip generation relationships documented in the Institute of Transportation Engineers publication, Trip Generation, 8th Edition. Table 1 summarizes the estimated vehicle trips for the AM and PM peak hours for Phase I.



Typical Cross Section Along the Future Park Ranch Connector Road

Figure

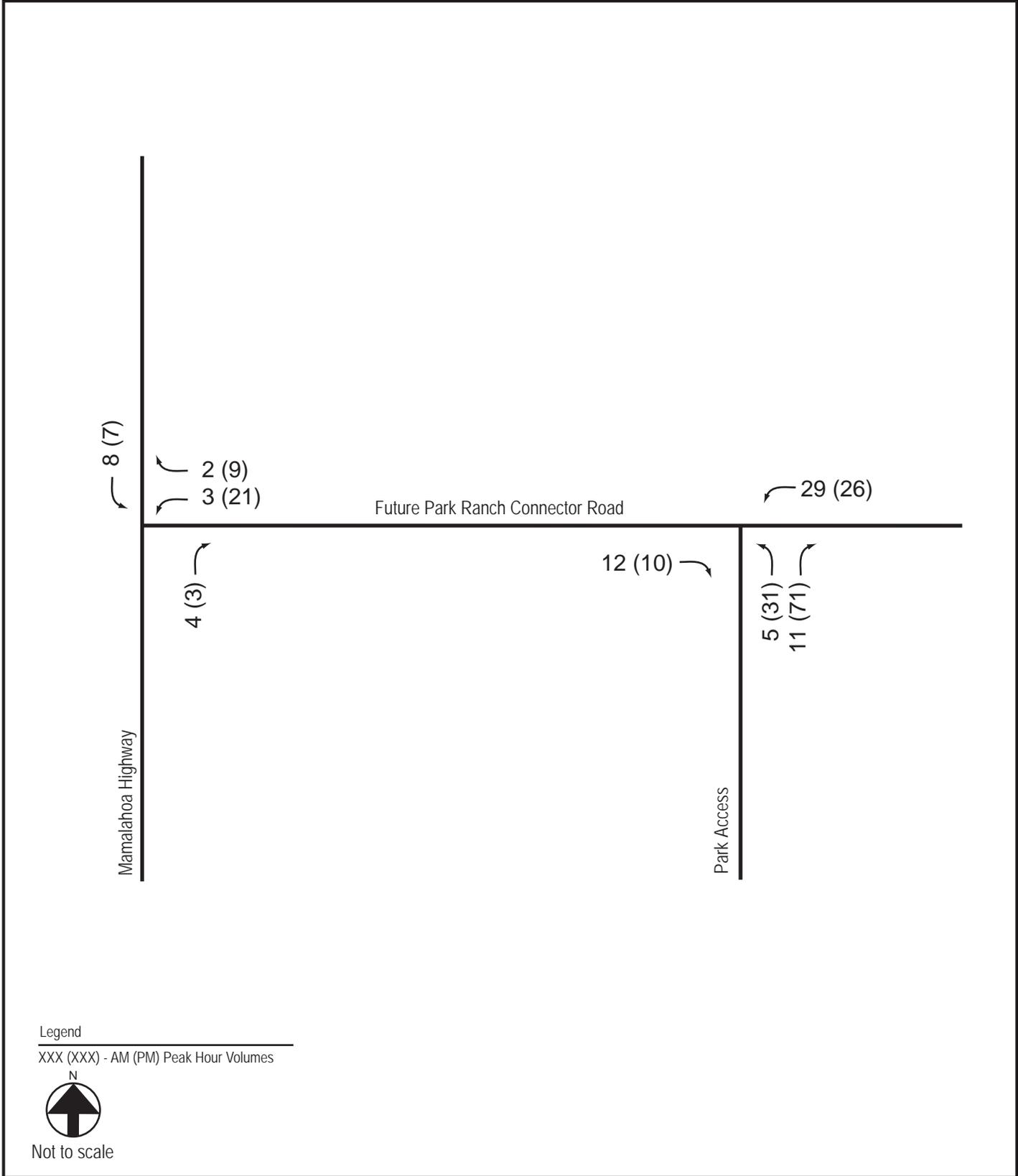
Table 1 Waimea District/Regional Park Trip Generation – Phase I

Development	Intensity		Weekday AM Peak			Weekday PM Peak		
			Enter	Exit	Total	Enter	Exit	Total
Community Gymnasium	18,000	SF	18	11	29	18	31	49
Multi-Purpose Community Building	8,000	SF	22	3	25	14	66	80
Sports fields	28	acres	1	1	2	5	5	10
Total			41	15	56	37	102	139

Note: Retail trip generation equations as documented in Trip Generation, 8th Edition. Volumes expressed as vehicles per hour. SF=floor area in square feet

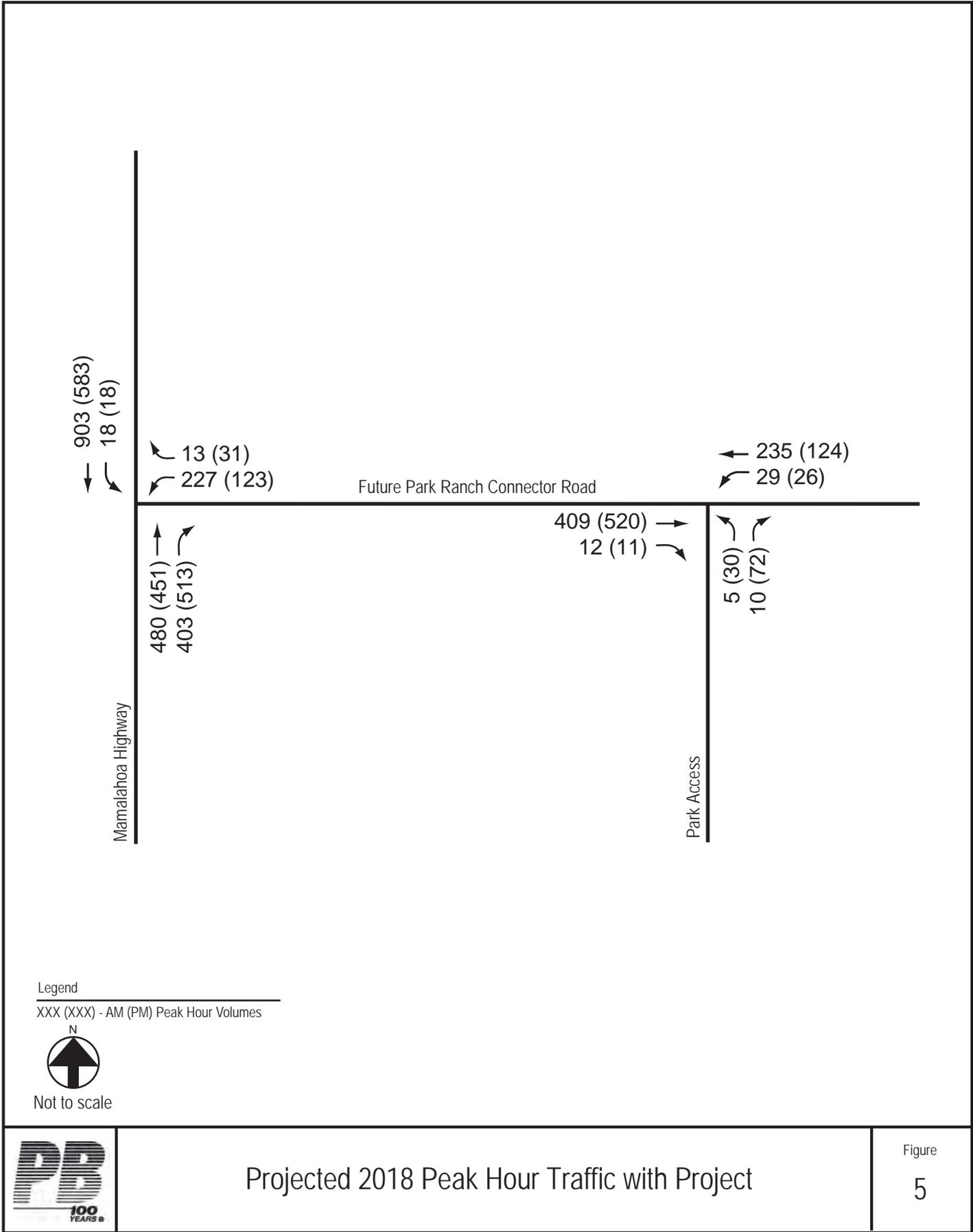
Because the proposed access to Waimea District/Regional Park lies to the west of the majority of Waimea town, it is estimated that 70% of the traffic using the Parker Ranch Connector Road will be arriving and exiting from the east and 30% from the west. Using this distribution, the project-generated traffic was assigned to the roadway system assumed to be in place in 2018. Figure 4 shows the Waimea District/Regional Park trip generated volumes for the AM and PM peak hours.

Project-generated traffic assignment and the background traffic were combined to produce total traffic assignments. Figure 5 illustrates the projected total year 2018 volumes with the Waimea District/Regional Park during the AM and PM peak hours.



Year 2018 Project-Generated Traffic Volumes

Figure
 4



Projected 2018 Peak Hour Traffic with Project

Figure 5

B. Phase I Analysis

The project site plan is shown in Figure 2. The site is to be accessed from the future Parker Ranch Connector Road. This intersection will be a T-intersection. Signal warrants and turning lane warrants were conducted at the future Parker Ranch Connector Road and the Waimea District/Regional Park access. According to the Traffic Management Consultant's *Waimea Town Center Connector Road Traffic Assessment* dated September 2008, the Mamalahoa Highway and Parker Ranch Connector Road intersection is analyzed as a signalized T-intersection.

1. Traffic Signal Warrant Study

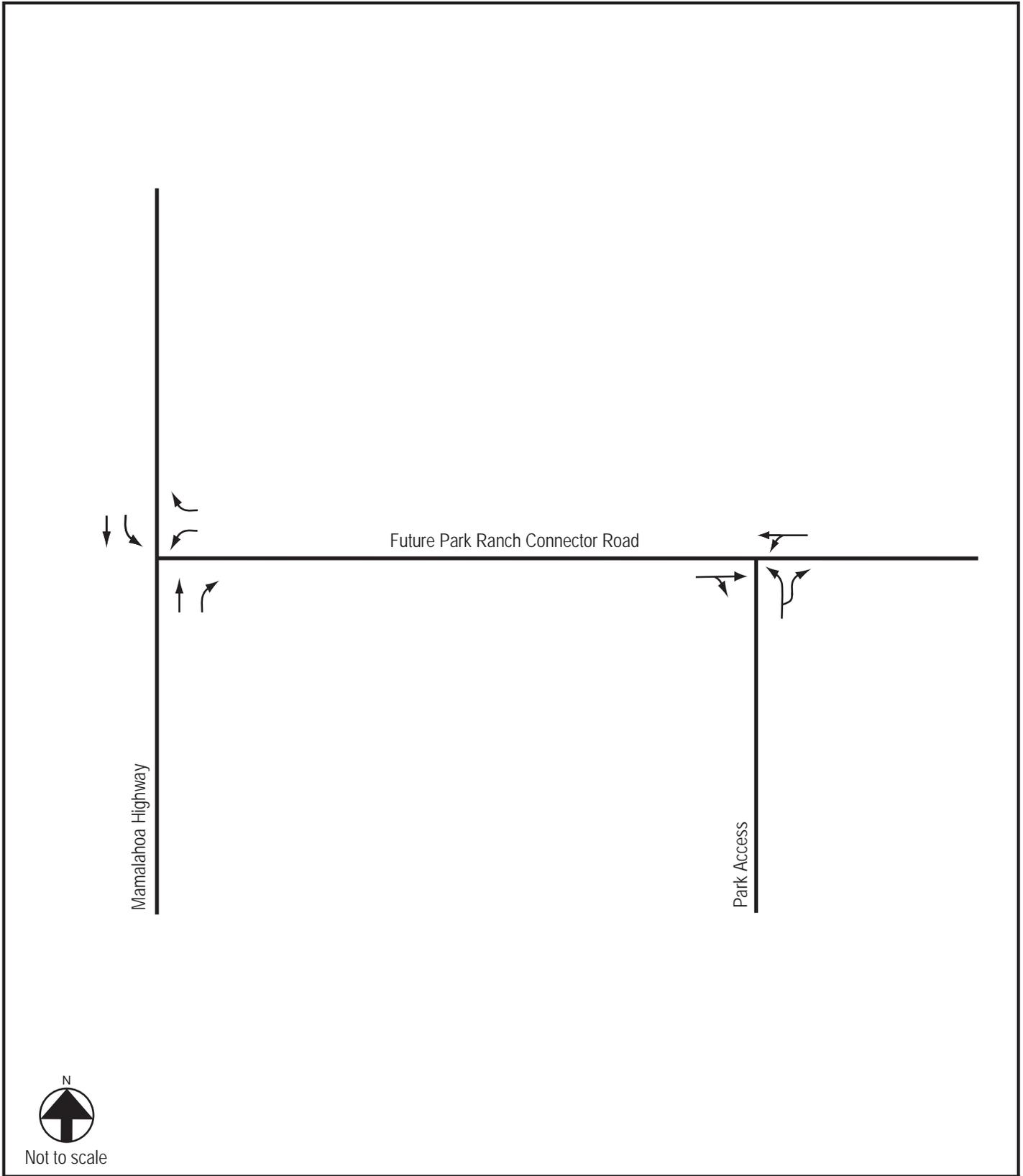
A traffic signal warrant analysis was performed at the park access intersection for Phase I using the Manual on Uniform Traffic Control Devices (MUTCD), 2003 Edition. The Warrant 3, Peak Hour was used to analyze the AM and PM peak hour. This intersection is not projected to warrant a signal during the AM or PM peak hour. The traffic signal warrant analysis worksheets can be found in Appendix A.

2. Turning Lane Warrant

The American Association of State Highway and Transportation Officials (AASHTO) Guide for left turn lanes on two-lane highways was used to verify the need for a left turn storage lane at the park access intersection. This intersection is not projected to need a left turn storage lane for the Kona-bound approach into the park. Left turn warrant worksheets can be found in Appendix B.

Neither right turn in and out of this intersection warrants a separate lane. Right turn lanes are warranted for right-turning lanes that accommodate 300 vehicles per hour.

Although not warranted a separate right turn lane is recommended out of the park driveway to reduce delay. The recommended lane configuration can be found in Figure 6.



	<p>Year 2018 Recommended Lane Configuration</p>	<p>Figure 6</p>
-------------------------------------------------------------------------------------	-------------------------------------------------	---------------------

3. Level of Service Analysis

Using the projected peak hour traffic turning movement count data, intersection operations at the park access were evaluated using the *2000 Highway Capacity manual (HCM)*. Operating conditions at an intersection can be expressed as a qualitative index known as Level of Service (LOS) with letter designations ranging from A through F. LOS A represents operating conditions resulting in low vehicle delay while LOS F represents operating conditions with very long delays. Level of Service criteria is described in Appendix C. Synchro 7.0 was used to analyze this intersection. Synchro 7.0 is a traffic analysis program that calculates the delay and generates a LOS at signalized and unsignalized intersections. Synchro analysis worksheets are included in Appendix D.

The park access road was analyzed as a stop-controlled intersection, with the park access being stop controlled. Table 2 shows the LOS and delay for the Parker Ranch Connector Road at the Park access intersection and Mamalahoa Highway intersection.

Table 2 Peak Hour Levels of Service – Phase I

Year 2018	Without Project				With Project			
	AM		PM		AM		PM	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
Parker Ranch and Park Access	LOS analysis for this intersection does not exist without project.				Unsignalized		Unsignalized	
West bound left/through					A	1.2	A	1.7
North bound left					B	12.4	B	14.0
Parker Ranch & Mamalahoa Highway	Signalized		Signalized		Signalized		Signalized	
	B	12.0	A	6.1	B	12.5	A	7.1
Parker Ranch left	C	32.6	C	21.4	C	32.1	C	21.3
Parker Ranch right	C	24.5	B	19.0	C	24.1	B	18.5
Mamalahoa NB through	A	7.9	A	5.7	A	8.8	A	6.1
Mamalahoa NB right	A	6.8	A	5.3	A	7.5	A	5.7
Mamalahoa SB left	D	53.1	C	30.3	D	40.9	D	48.6
Mamalahoa SB through	B	10.8	A	3.7	B	11.0	A	4.1

Delay Expressed in Seconds per Vehicle

The LOS for all movements are acceptable for all peak hours for both intersections. Both intersections operate at LOS B or better during both peak hours, as well as with the project

and without the project. All movements operate at LOS B or better at the park access and LOS D or better at the Parker Ranch and Mamalahoa Highway intersection.

IV. PHASE II EVALUATION

A. Travel Demand Estimation

The horizon year for the completion of Phase II of the park is the year 2023. It is anticipated the following roads will be completed by 2023:

- Kawaihae Road and Mamalahoa Highway Connector
- Waimea Bypass Road
- Kawaihae Bypass Road

The travel demand for the Waimea District/Regional Park development was estimated using the process of trip generation, trip distribution, and trip assignment. This travel demand was then combined with the background traffic and the year 2023 intersection operations were evaluated.

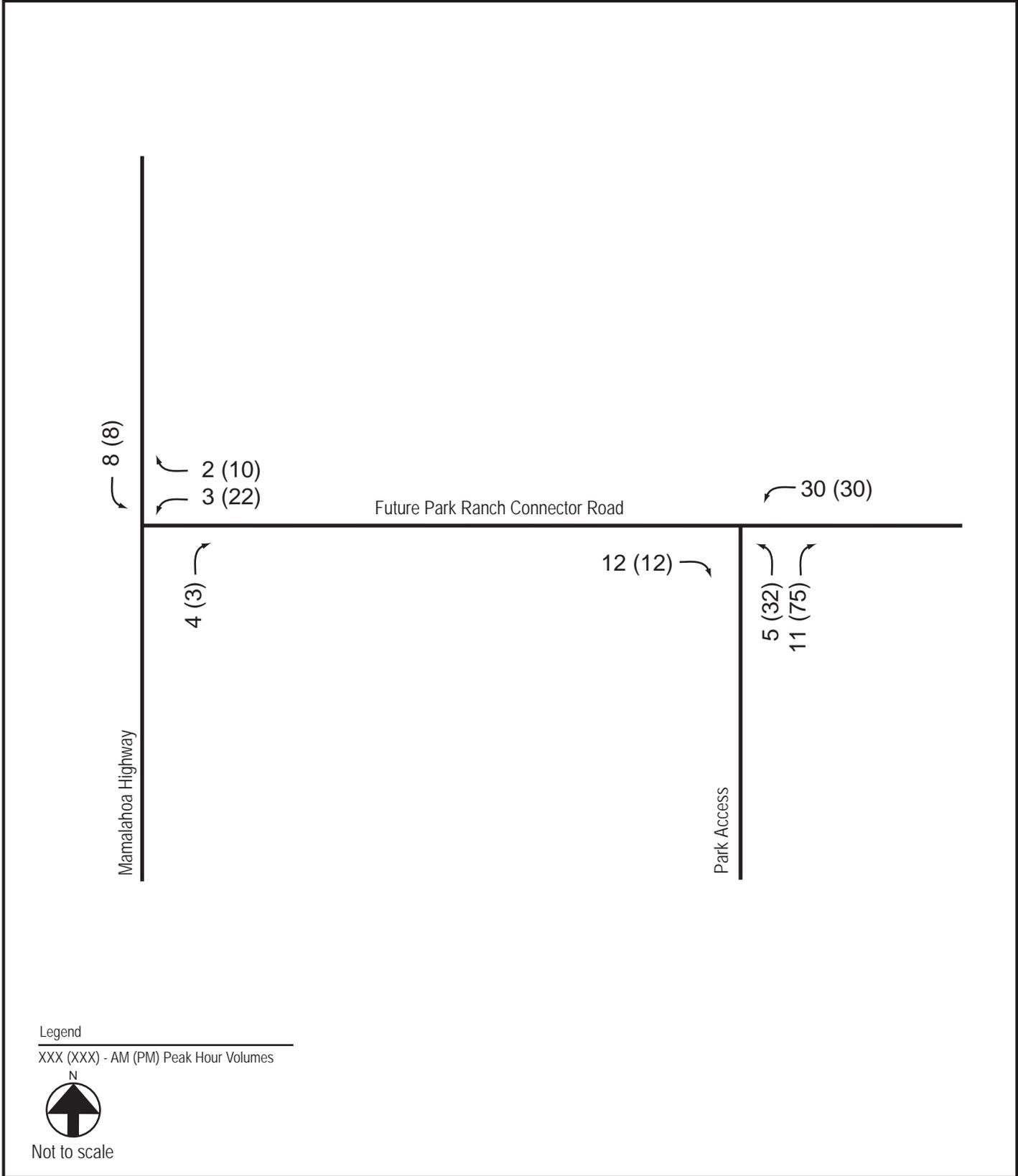
Vehicular trips generated by the proposed Waimea District/Regional Park were estimated using trip generation relationships documented in the Institute of Transportation Engineers publication, Trip Generation, 8th Edition. Table 3 summarizes the estimated vehicle trips for the AM and PM peak hours.

Table 3 Waimea District/Regional Park Trip Generation – Phase II

Development	Intensity		Weekday AM Peak			Weekday PM Peak		
			Enter	Exit	Total	Enter	Exit	Total
Phase I Total			41	15	56	37	102	139
Phase II Total	50	acres	1	1	2	5	5	10
TOTAL			42	16	58	42	107	149

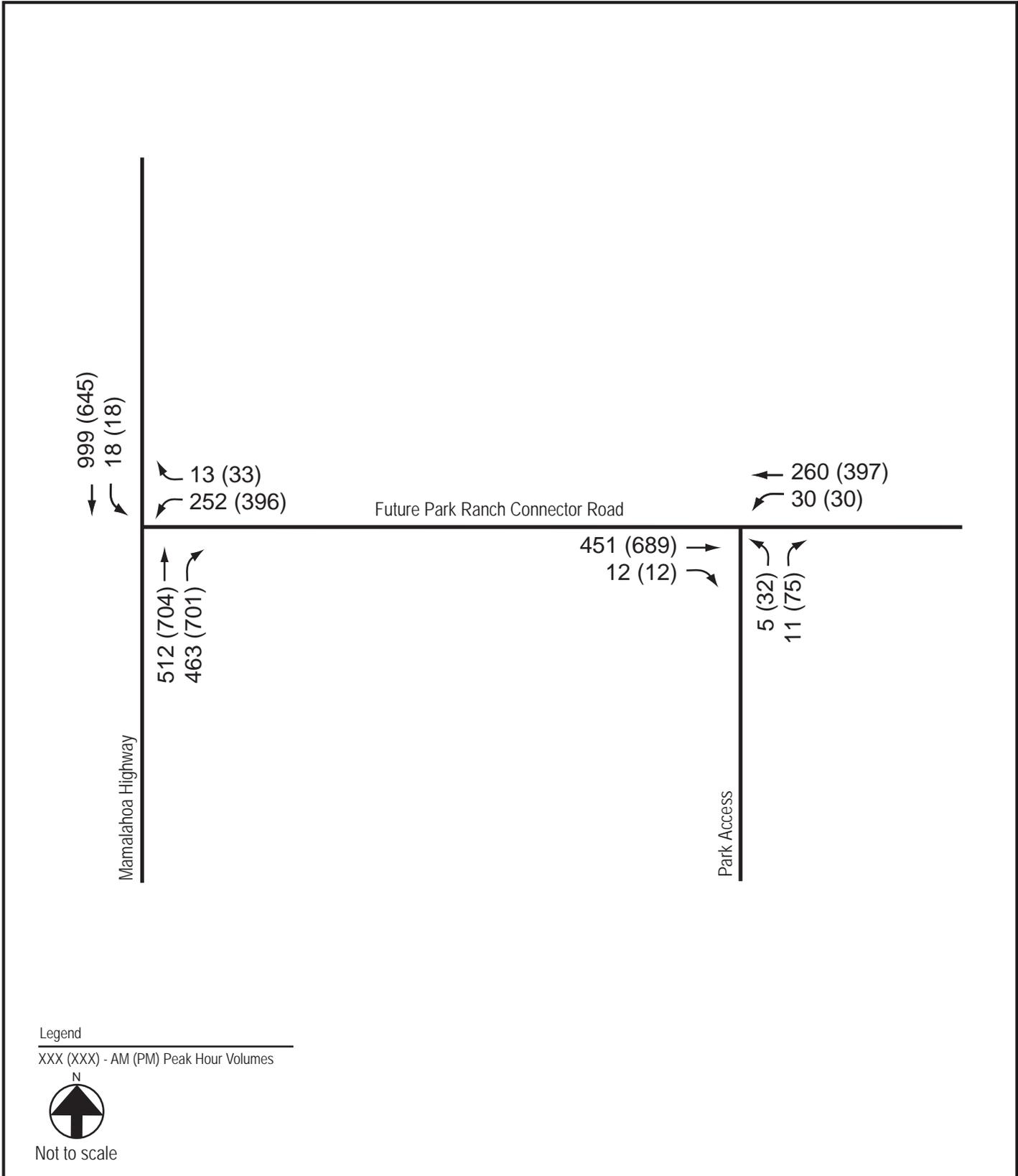
Note: Retail trip generation equations as documented in Trip Generation, 8th Edition. Volumes expressed as vehicles per hour. SF=floor area in square feet

Figure 7 shows the Waimea District/Regional Park trip generated volumes for the AM and PM peak hours. Project-generated traffic assignment and the background traffic were combined to produce total traffic assignments. Figure 8 illustrates the projected total year 2023 volumes with the Waimea District/Regional Park during the AM and PM peak hours.



Year 2023 Project-Generated Traffic Volumes

Figure
7



Projected 2023 Peak Hour Traffic with Project

Figure 8

B. Phase II Analysis

The site is to be accessed from the future Parker Ranch Connector Road. This intersection will be a T-intersection. Signal warrants and turning lane warrants were conducted at the future Parker Ranch Connector Road and the Waimea District/Regional Park access. According to the Traffic Management Consultant's *Waimea Town Center Connector Road Traffic Assessment* dated September 2008, the Mamalahoa Highway and Parker Ranch Connector Road intersection is analyzed as a signalized T-intersection.

1. Traffic Signal Warrant Study

A traffic signal warrant analysis was conducted at the park access intersection for Phase II using the Manual on Uniform Traffic Control Devices (MUTCD), 2003 Edition. The Warrant 3, Peak Hour was used to analyze the AM and PM peak hour. This intersection is not projected to warrant a signal for the AM or PM peak hour. The traffic signal warrant analysis worksheets can be found in Appendix A.

2. Turning Lane Warrant

The American Association of State Highway and Transportation Officials (AASHTO) Guide for left turn lanes on two-lane highways was used to verify the need for a left turn storage lane and the park access intersection. This intersection is not projected to need a left turn storage lane for the Kona-bound approach into the park. Left turn warrant worksheets can be found in Appendix B.

Neither right turn in or out of this intersection warrants a separate lane. Right turn lanes are warranted for right-turning lanes that accommodate 300 vehicles per hour. The future recommended lane configuration will remain same as shown in Figure 6.

3. Level of Service Analysis

The park access road was analyzed as a stop controlled intersection, with the park access being stop controlled. Movements along the Parker Ranch Connector Road were analyzed as free movements. Table 4 shows the LOS and delay for the Parker Ranch Connector Road at the Park access intersection and Mamalahoa Highway intersection.

Table 4 Peak Hour Levels of Service – Phase II

Year 2023	Without Project				With Project			
	AM		PM		AM		PM	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
Parker Ranch and Park Access	LOS analysis for this intersection does not exist without project.				Unsignalized		Unsignalized	
West bound left/through					A	1.2	A	1.1
North bound left					B	13.0	C	20.0
Parker Ranch & Mamalahoa Highway	Signalized		Signalized		Signalized		Signalized	
	B	13.8	B	15.9	B	13.9	B	17.0
Parker Ranch left	C	34.0	C	28.9	D	35.6	C	31.8
Parker Ranch right	C	21.6	B	15.9	C	21.4	B	16.6
Mamalahoa NB through	A	8.1	B	19.1	A	8.0	B	19.5
Mamalahoa NB right	A	6.8	B	10.7	A	6.8	B	11.3
Mamalahoa SB left	D	39.9	D	35.8	D	47.3	D	47.3
Mamalahoa SB through	B	14.5	B	10.1	B	14.0	B	10.5

Delay Expressed in Seconds per Vehicle

The LOS for all movements are acceptable for all peak hours. Both intersections operate at LOS B or better during both peak hours, as well as with the project and without the project. The movement out of the park operates at LOS C or better during the PM Peak Hour. All other movements operate at LOS B or better. The Mamalahoa Highway and Parker Ranch Connector Road intersection operates at LOS B during the AM peak hour and LOS B during the PM peak hour. All movements operate at LOS D or better with the project.

V. SUMMARY AND RECOMMENDATIONS

A. Summary and Recommendations

The Waimea District/Regional Park Phase I can be accommodated by the future Parker Ranch Connector Road. Traffic signal warrants and turning lane warrants were conducted, and it is recommended that the park access intersection be an unsignalized, stop-controlled intersection. Left turn and right turn storage lanes on Parker Ranch Connector Road into the park access are not warranted. Both the AM and PM peak hour LOS are projected to be acceptable. The access out of the park is recommended to be built as an exclusive left-turning lane and right-turning lane out of the planned park to reduce delay.

There are no additional roadway improvements required for Phase II.

The future Parker Ranch Connector Road and Waimea District Park access intersection should be monitored when the major developments in the region and new roadway connections are constructed that would trigger the traffic pattern changes. Improvements should be made when the signal, left turn, and right turn warrants are met based on the actual counts.

According to the Traffic Management Consultant's *Waimea Town Center Connector Road Traffic Assessment* dated September 2008, the Mamalahoa Highway and Parker Ranch Connector Road intersection is analyzed as a signalized T-intersection. With the Waimea District/Regional Park, the intersection operates at an acceptable Level of Service.

Appendix A Traffic Signal Warrant Study

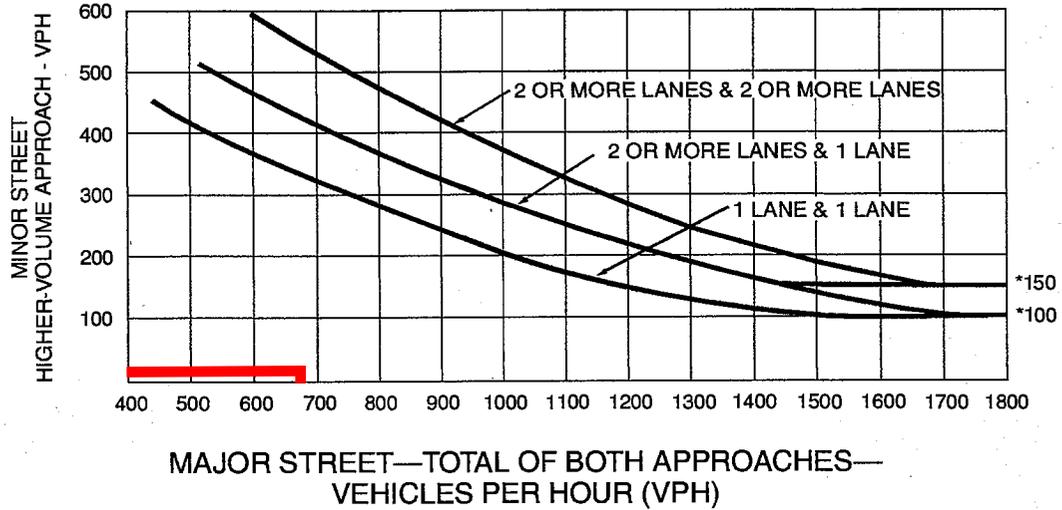
Waimea District Park Access

2018 AM Peak Hour Traffic Warrant

Figure 4C-3. Warrant 3, Peak Hour

Major: 683 vehicles

Minor: 15 vehicles



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

DOES NOT WARRANT A SIGNAL

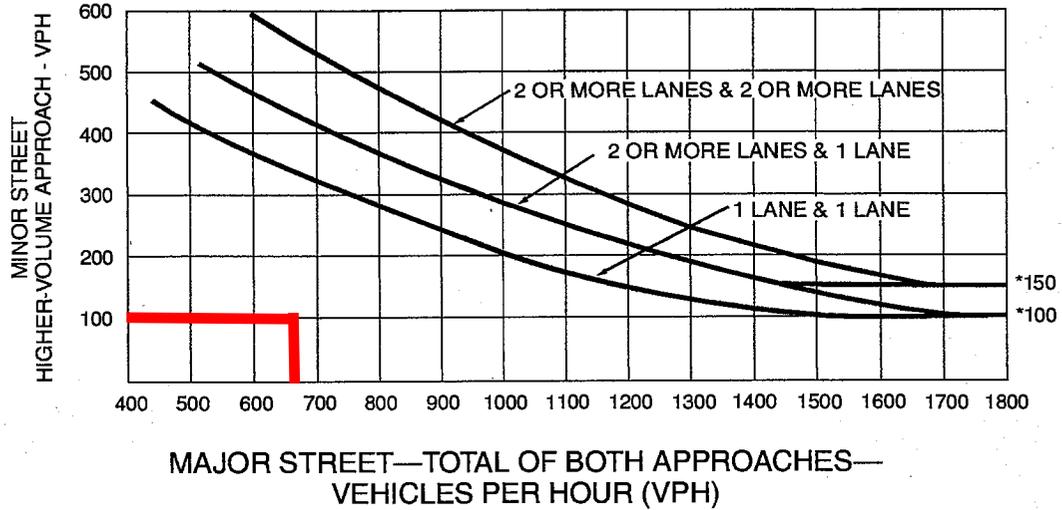
Waimea District Park Access

2018 PM Peak Hour Traffic Warrant

Figure 4C-3. Warrant 3, Peak Hour

Major: 670 vehicles

Minor: 102 vehicles



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

DOES NOT WARRANT A SIGNAL

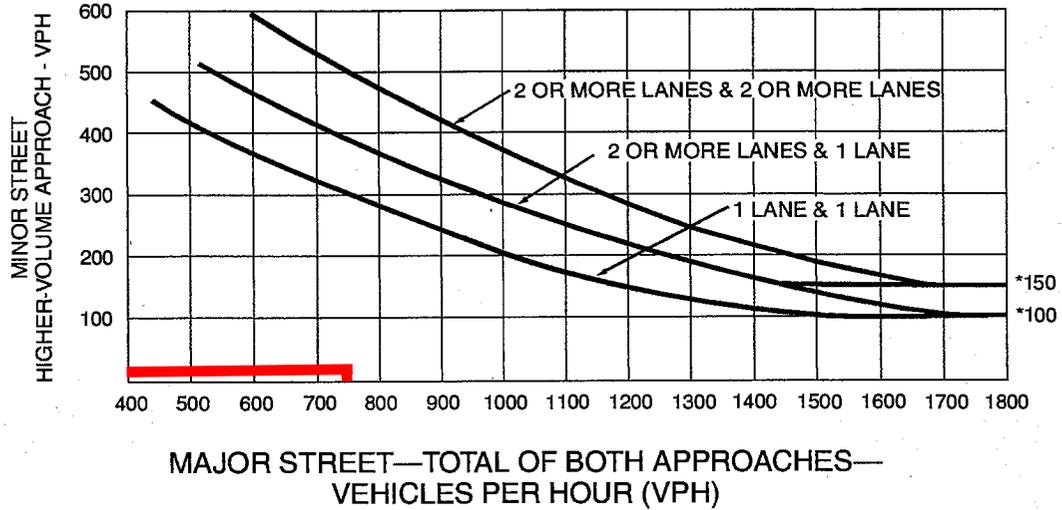
Waimea District Park Access

2023 AM Peak Hour Traffic Warrant

Figure 4C-3. Warrant 3, Peak Hour

Major: 741 vehicles

Minor: 16 vehicles



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

DOES NOT WARRANT A SIGNAL

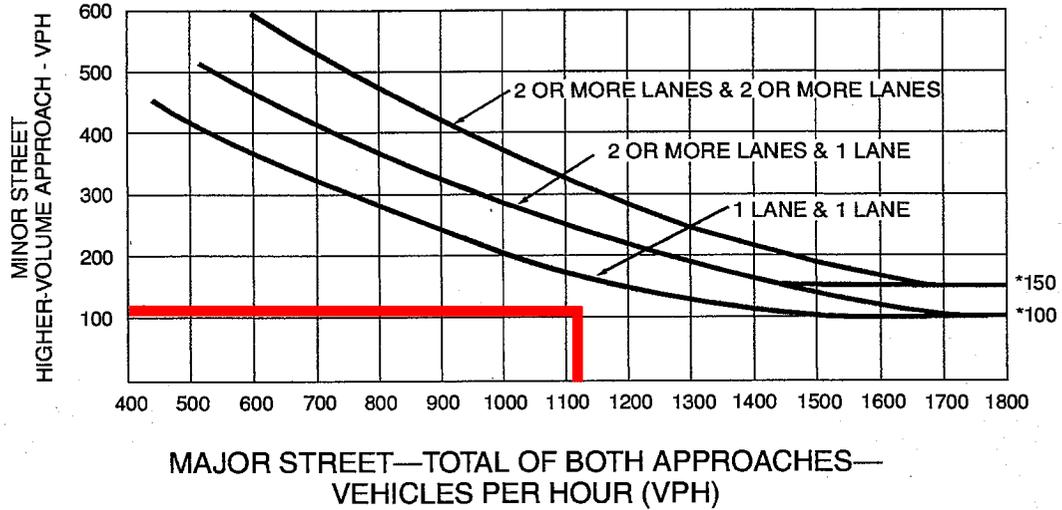
Waimea District Park Access

2023 PM Peak Hour Traffic Warrant

Figure 4C-3. Warrant 3, Peak Hour

Major: 1116 vehicles

Minor: 107 vehicles



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

DOES NOT WARRANT A SIGNAL

Appendix B Left Turn Lane Warrant Analysis

Metric					US Customary				
Opposing volume (veh/h)	Advancing volume (veh/h)				Opposing volume (veh/h)	Advancing volume (veh/h)			
	5% left turns	10% left turns	20% left turns	30% left turns		5% left turns	10% left turns	20% left turns	30% left turns
60-km/h operating speed					40-mph operating speed				
800	330	240	180	160	800	330	240	180	160
600	410	305	225	200	600	410	305	225	200
400	510	380	275	245	400	510	380	275	245
200	640	470	350	305	200	640	470	350	305
100	720	515	390	340	100	720	515	390	340
80-km/h operating speed					50-mph operating speed				
800	280	210	165	135	800	280	210	165	135
600	350	260	195	170	600	350	260	195	170
400	430	320	240	210	400	430	320	240	210
200	550	400	300	270	200	550	400	300	270
100	615	445	335	295	100	615	445	335	295
100-km/h operating speed					60-mph operating speed				
800	230	170	125	115	800	230	170	125	115
600	290	210	160	140	600	290	210	160	140
400	365	270	200	175	400	365	270	200	175
200	450	330	250	215	200	450	330	250	215
100	505	370	275	240	100	505	370	275	240

Exhibit 9-75. Guide for Left-Turn Lanes on Two-Lane Highways (6)

40 mph operating speed

2018 AM left turn analysis

Advancing Volume: 264

Advancing Volume WB left turn: 29

Advancing WB left turn Volume Percentage: 10.98%, use 20%

Opposing Volume (EB through): 409, use 600

Since advancing WB left turn is less than 225, left turn storage lane is NOT needed.

2018 PM left turn analysis

Advancing Volume: 150

Advancing Volume WB left turn: 26

Advancing WB left turn Volume Percentage: 17.33%, use 20%

Opposing Volume (EB through): 520, use 600

Since advancing WB left turn is less than 225, left turn storage lane is NOT needed.

Metric					US Customary				
Opposing volume (veh/h)	Advancing volume (veh/h)				Opposing volume (veh/h)	Advancing volume (veh/h)			
	5% left turns	10% left turns	20% left turns	30% left turns		5% left turns	10% left turns	20% left turns	30% left turns
60-km/h operating speed					40-mph operating speed				
800	330	240	180	160	800	330	240	180	160
600	410	305	225	200	600	410	305	225	200
400	510	380	275	245	400	510	380	275	245
200	640	470	350	305	200	640	470	350	305
100	720	515	390	340	100	720	515	390	340
80-km/h operating speed					50-mph operating speed				
800	280	210	165	135	800	280	210	165	135
600	350	260	195	170	600	350	260	195	170
400	430	320	240	210	400	430	320	240	210
200	550	400	300	270	200	550	400	300	270
100	615	445	335	295	100	615	445	335	295
100-km/h operating speed					60-mph operating speed				
800	230	170	125	115	800	230	170	125	115
600	290	210	160	140	600	290	210	160	140
400	365	270	200	175	400	365	270	200	175
200	450	330	250	215	200	450	330	250	215
100	505	370	275	240	100	505	370	275	240

Exhibit 9-75. Guide for Left-Turn Lanes on Two-Lane Highways (6)

40 mph operating speed

2023 AM left turn analysis

Advancing Volume: 290

Advancing Volume WB left turn: 30

Advancing WB left turn Volume Percentage: 10.34%, use 20%

Opposing Volume (EB through): 451, use 600

Since advancing WB left turn is less than 225, left turn storage lane is NOT needed.

2023 PM left turn analysis

Advancing Volume: 427

Advancing Volume WB left turn: 30

Advancing WB left turn Volume Percentage: 7.02%, use 20%

Opposing Volume (EB through): 689, use 800

Since advancing WB left turn is less than 180, left turn storage lane is NOT needed.

Appendix C Level of Service Definitions

The Highway Capacity Manual defines six Intersection Levels of Service (LOS), labeled A through F, from free flow to congested conditions.

Levels of Service for signalized intersections is defined in terms of control delay, which is a measure of driver discomfort, frustration, fuel consumption, and increased travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, geometrics, traffic, and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during base conditions: in the absence of traffic control, geometric delay, any incidents, and any other vehicles. Specifically, LOS criteria for traffic signals are stated in terms of the average control delay per vehicle, typically for a 15-minute analysis period. Delay is a complex measure and depends on a number of variables, including the quality of progression, the cycle length, the green ratio, and the v/c ratio for the lane group.

LEVEL-OF-SERVICE A: Low control delay, up to 10 s/veh. This LOS occurs when progression is extremely favorable and most vehicles arrive during the green phase. Many vehicles do not stop at all. Short cycle lengths may tend to contribute to low delay values.

LEVEL-OF-SERVICE B: Control delay greater than 10 and up to 20 s/veh. This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of delay.

LEVEL-OF-SERVICE C: Control delay greater than 20 and up to 35 s/veh. These higher delays may result from only fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level. Cycle failure occurs when a given green phase does not serve queued vehicles, and overflows occur. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.

LEVEL-OF-SERVICE D: Control delay greater than 35 and up to 55 s/veh. At LOS D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, and high v/c

ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.

LEVEL-OF-SERVICE E: Control delay greater than 55 and up to 80 s/veh. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent.

LEVEL-OF-SERVICE F: Control delay in excess of 80 s/veh. This level, considered unacceptable to most drivers, often occurs with oversaturation, that is when arrival flow rates exceed the capacity of lane groups. It may also occur at high v/c ratios with many individual cycle failures. Poor progression and long cycle lengths may also contribute significantly to high delay levels.

For unsignalized intersections, the Highway Capacity Manual evaluates gaps in the major street traffic flow and calculates available gaps for left-turns across oncoming traffic and for the left and right-turns onto the major roadway from the minor street. Average control delay, based on these factors, is still used to define the levels of service.

LEVEL-OF-SERVICE A: Low control delay, up to 10 s/veh.

LEVEL-OF-SERVICE B: Control delay greater than 10 and up to 15 s/veh.

LEVEL-OF-SERVICE C: Control delay greater than 15 and up to 25 s/veh.

LEVEL-OF-SERVICE D: Control delay greater than 25 and up to 35 s/veh.

LEVEL-OF-SERVICE E: Control delay greater than 35 and up to 50 s/veh.

LEVEL-OF-SERVICE F: Control delay in excess of 50 s/veh.

Appendix D Synchro Worksheets

HCM Signalized Intersection Capacity Analysis
 7: Parker Ranch Connector Road & Mamalahoa Highway

2018 WITHOUT PROJECT - AM Peak

3/29/2010



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	224	11	480	399	10	903
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	243	12	522	434	11	982
RTOR Reduction (vph)	0	9	0	163	0	0
Lane Group Flow (vph)	243	3	522	271	11	982
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	16.3	16.3	48.8	48.8	1.0	53.8
Effective Green, g (s)	16.3	16.3	48.8	48.8	1.0	53.8
Actuated g/C Ratio	0.21	0.21	0.62	0.62	0.01	0.69
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	369	330	1164	989	23	1283
v/s Ratio Prot	c0.14		0.28		0.01	c0.53
v/s Ratio Perm		0.00		0.17		
v/c Ratio	0.66	0.01	0.45	0.27	0.48	0.77
Uniform Delay, d1	28.3	24.5	7.6	6.6	38.3	8.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.2	0.0	0.3	0.2	14.8	2.8
Delay (s)	32.6	24.5	7.9	6.8	53.1	10.8
Level of Service	C	C	A	A	D	B
Approach Delay (s)	32.2		7.4			11.2
Approach LOS	C		A			B

Intersection Summary

HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	78.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 7: Parker Ranch Connector Road & Mamalahoa Highway

2018 WITHOUT PROJECT - PM Peak

3/29/2010



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	102	12	451	510	10	583
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	111	13	490	554	11	634
RTOR Reduction (vph)	0	11	0	219	0	0
Lane Group Flow (vph)	111	2	490	335	11	634
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	7.3	7.3	31.1	31.1	1.0	36.1
Effective Green, g (s)	7.3	7.3	31.1	31.1	1.0	36.1
Actuated g/C Ratio	0.14	0.14	0.61	0.61	0.02	0.70
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	251	225	1127	958	34	1308
v/s Ratio Prot	c0.06		0.26		0.01	c0.34
v/s Ratio Perm		0.00		0.21		
v/c Ratio	0.44	0.01	0.43	0.35	0.32	0.48
Uniform Delay, d1	20.2	18.9	5.4	5.1	24.9	3.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.0	0.3	0.2	5.5	0.3
Delay (s)	21.4	19.0	5.7	5.3	30.3	3.7
Level of Service	C	B	A	A	C	A
Approach Delay (s)	21.2		5.5			4.2
Approach LOS	C		A			A

Intersection Summary				
HCM Average Control Delay		6.1	HCM Level of Service	A
HCM Volume to Capacity ratio		0.48		
Actuated Cycle Length (s)		51.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization		43.0%	ICU Level of Service	A
Analysis Period (min)		15		
c Critical Lane Group				

HCM Unsignalized Intersection Capacity Analysis

3: Parker Ranch Connector Road & Park Access

2018 WITH PROJ - AM Peak

3/29/2010



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Volume (veh/h)	409	12	29	235	5	10
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	445	13	32	255	5	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						4
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			458		770	451
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			458		770	451
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		98	98
cM capacity (veh/h)			1103		359	608

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	458	287	16
Volume Left	0	32	5
Volume Right	13	0	11
cSH	1700	1103	912
Volume to Capacity	0.27	0.03	0.02
Queue Length 95th (ft)	0	2	1
Control Delay (s)	0.0	1.2	12.4
Lane LOS		A	B
Approach Delay (s)	0.0	1.2	12.4
Approach LOS			B

Intersection Summary			
Average Delay		0.7	
Intersection Capacity Utilization		46.7%	ICU Level of Service A
Analysis Period (min)		15	

HCM Signalized Intersection Capacity Analysis
 7: Parker Ranch Connector Road & Mamalahoa Highway

2018 WITH PROJ - AM Peak
 3/29/2010



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	227	13	480	403	18	903
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	247	14	522	438	20	982
RTOR Reduction (vph)	0	11	0	174	0	0
Lane Group Flow (vph)	247	3	522	264	20	982
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	16.4	16.4	46.7	46.7	2.4	53.1
Effective Green, g (s)	16.4	16.4	46.7	46.7	2.4	53.1
Actuated g/C Ratio	0.21	0.21	0.60	0.60	0.03	0.69
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	375	335	1123	954	55	1276
v/s Ratio Prot	c0.14		0.28		0.01	c0.53
v/s Ratio Perm		0.00		0.17		
v/c Ratio	0.66	0.01	0.46	0.28	0.36	0.77
Uniform Delay, d1	28.0	24.1	8.5	7.3	36.8	8.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.1	0.0	0.3	0.2	4.1	2.9
Delay (s)	32.1	24.1	8.8	7.5	40.9	11.0
Level of Service	C	C	A	A	D	B
Approach Delay (s)	31.7		8.2			11.6
Approach LOS	C		A			B

Intersection Summary			
HCM Average Control Delay	12.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	77.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
 3: Parker Ranch Connector Road & Park Access

2018 WITH PROJECT - PM Peak
 3/29/2010



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↩			↩	↩	↩
Volume (veh/h)	520	11	26	124	30	72
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	565	12	28	135	33	78
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						4
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			577		763	571
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			577		763	571
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		91	85
cM capacity (veh/h)			996		362	520

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	577	163	111
Volume Left	0	28	33
Volume Right	12	0	78
cSH	1700	996	737
Volume to Capacity	0.34	0.03	0.15
Queue Length 95th (ft)	0	2	13
Control Delay (s)	0.0	1.7	14.0
Lane LOS		A	B
Approach Delay (s)	0.0	1.7	14.0
Approach LOS			B

Intersection Summary			
Average Delay		2.2	
Intersection Capacity Utilization		39.2%	ICU Level of Service A
Analysis Period (min)		15	

HCM Signalized Intersection Capacity Analysis
 7: Parker Ranch Connector Road & Mamalahoa Highway

2018 WITH PROJECT - PM Peak

3/29/2010



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	123	31	451	513	18	583
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	134	34	490	558	20	634
RTOR Reduction (vph)	0	29	0	227	0	0
Lane Group Flow (vph)	134	5	490	331	20	634
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	8.1	8.1	30.7	30.7	1.0	35.7
Effective Green, g (s)	8.1	8.1	30.7	30.7	1.0	35.7
Actuated g/C Ratio	0.16	0.16	0.59	0.59	0.02	0.69
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	277	248	1104	938	34	1284
v/s Ratio Prot	c0.08		0.26		0.01	c0.34
v/s Ratio Perm		0.00		0.21		
v/c Ratio	0.48	0.02	0.44	0.35	0.59	0.49
Uniform Delay, d1	19.9	18.5	5.8	5.4	25.2	3.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.0	0.3	0.2	23.4	0.3
Delay (s)	21.3	18.5	6.1	5.7	48.6	4.1
Level of Service	C	B	A	A	D	A
Approach Delay (s)	20.7		5.9			5.5
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	7.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	51.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 7: Parker Ranch Connector Road & Mamalahoa Highway

2023 WITHOUT PROJECT - AM Peak
 4/9/2010



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	249	11	514	459	10	999
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	271	12	559	499	11	1086
RTOR Reduction (vph)	0	10	0	199	0	0
Lane Group Flow (vph)	271	2	559	300	11	1086
Turn Type		Perm		Perm	Prot	
Protected Phases	3		2		1	6
Permitted Phases		3		2		
Actuated Green, G (s)	13.9	13.9	41.0	41.0	1.2	46.2
Effective Green, g (s)	13.9	13.9	41.0	41.0	1.2	46.2
Actuated g/C Ratio	0.20	0.20	0.60	0.60	0.02	0.68
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	361	323	1122	953	31	1264
v/s Ratio Prot	c0.15		0.30		0.01	c0.58
v/s Ratio Perm		0.00		0.19		
v/c Ratio	0.75	0.01	0.50	0.32	0.35	0.86
Uniform Delay, d1	25.5	21.6	7.7	6.7	33.1	8.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.5	0.0	0.3	0.2	6.9	6.0
Delay (s)	34.0	21.6	8.1	6.8	39.9	14.5
Level of Service	C	C	A	A	D	B
Approach Delay (s)	33.5		7.5			14.7
Approach LOS	C		A			B

Intersection Summary			
HCM Average Control Delay	13.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	68.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 7: Parker Ranch Connector Road & Mamalahoa Highway

2023 WITHOUT PROJECT - PM Peak
 4/9/2010



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	374	23	704	698	10	645
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	407	25	765	759	11	701
RTOR Reduction (vph)	0	18	0	380	0	0
Lane Group Flow (vph)	407	7	765	380	11	701
Turn Type		Perm		Perm	Prot	
Protected Phases	3		2		1	6
Permitted Phases		3		2		
Actuated Green, G (s)	18.1	18.1	31.3	31.3	1.2	36.5
Effective Green, g (s)	18.1	18.1	31.3	31.3	1.2	36.5
Actuated g/C Ratio	0.29	0.29	0.50	0.50	0.02	0.58
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	512	458	932	792	34	1086
v/s Ratio Prot	c0.23		c0.41		0.01	c0.38
v/s Ratio Perm		0.00		0.24		
v/c Ratio	0.79	0.02	0.82	0.48	0.32	0.65
Uniform Delay, d1	20.5	15.9	13.3	10.3	30.3	8.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.3	0.0	5.9	0.5	5.5	1.3
Delay (s)	28.9	15.9	19.1	10.7	35.8	10.1
Level of Service	C	B	B	B	D	B
Approach Delay (s)	28.1		15.0			10.5
Approach LOS	C		B			B

Intersection Summary			
HCM Average Control Delay	15.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	62.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

3: Parker Ranch Connector Road & Park Access

2023 WITH PROJECT - AM Peak

4/9/2010



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↩			↩	↩	↩
Volume (veh/h)	451	12	30	260	5	11
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	490	13	33	283	5	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						4
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			503		845	497
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			503		845	497
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		98	98
cM capacity (veh/h)			1061		323	573

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	503	315	17
Volume Left	0	33	5
Volume Right	13	0	12
cSH	1700	1061	834
Volume to Capacity	0.30	0.03	0.02
Queue Length 95th (ft)	0	2	2
Control Delay (s)	0.0	1.2	13.0
Lane LOS		A	B
Approach Delay (s)	0.0	1.2	13.0
Approach LOS			B

Intersection Summary			
Average Delay		0.7	
Intersection Capacity Utilization		48.8%	ICU Level of Service A
Analysis Period (min)		15	

HCM Signalized Intersection Capacity Analysis
 7: Parker Ranch Connector Road & Mamalahoa Highway

2023 WITH PROJECT - AM Peak
 4/9/2010



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	252	13	514	463	18	999
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	274	14	559	503	20	1086
RTOR Reduction (vph)	0	11	0	202	0	0
Lane Group Flow (vph)	274	3	559	301	20	1086
Turn Type		Perm		Perm	Prot	
Protected Phases	3		2		1	6
Permitted Phases		3		2		
Actuated Green, G (s)	13.2	13.2	39.8	39.8	1.4	45.2
Effective Green, g (s)	13.2	13.2	39.8	39.8	1.4	45.2
Actuated g/C Ratio	0.20	0.20	0.60	0.60	0.02	0.68
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	352	315	1117	949	37	1268
v/s Ratio Prot	c0.15		0.30		0.01	c0.58
v/s Ratio Perm		0.00		0.19		
v/c Ratio	0.78	0.01	0.50	0.32	0.54	0.86
Uniform Delay, d1	25.2	21.3	7.6	6.6	32.2	8.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.4	0.0	0.4	0.2	15.1	5.9
Delay (s)	35.6	21.4	8.0	6.8	47.3	14.0
Level of Service	D	C	A	A	D	B
Approach Delay (s)	34.9		7.4			14.6
Approach LOS	C		A			B

Intersection Summary			
HCM Average Control Delay	13.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	66.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

3: Parker Ranch Connector Road & Park Access

2023 WITH PROJECT - PM Peak

4/9/2010



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↩			↩	↩	↩
Volume (veh/h)	689	12	30	397	32	75
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	749	13	33	432	35	82
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						4
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			762		1252	755
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			762		1252	755
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		81	80
cM capacity (veh/h)			850		183	408

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	762	464	116
Volume Left	0	33	35
Volume Right	13	0	82
cSH	1700	850	583
Volume to Capacity	0.45	0.04	0.20
Queue Length 95th (ft)	0	3	18
Control Delay (s)	0.0	1.1	20.0
Lane LOS		A	C
Approach Delay (s)	0.0	1.1	20.0
Approach LOS			C

Intersection Summary			
Average Delay		2.1	
Intersection Capacity Utilization		55.6%	ICU Level of Service B
Analysis Period (min)		15	

HCM Signalized Intersection Capacity Analysis
 7: Parker Ranch Connector Road & Mamalahoa Highway

2023 WITH PROJECT - PM Peak
 4/9/2010



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	396	33	704	701	18	645
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	430	36	765	762	20	701
RTOR Reduction (vph)	0	25	0	379	0	0
Lane Group Flow (vph)	430	11	765	383	20	701
Turn Type		Perm		Perm	Prot	
Protected Phases	3		2		1	6
Permitted Phases		3		2		
Actuated Green, G (s)	19.6	19.6	33.3	33.3	1.4	38.7
Effective Green, g (s)	19.6	19.6	33.3	33.3	1.4	38.7
Actuated g/C Ratio	0.30	0.30	0.50	0.50	0.02	0.58
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	523	468	936	795	37	1087
v/s Ratio Prot	c0.24		c0.41		0.01	c0.38
v/s Ratio Perm		0.01		0.24		
v/c Ratio	0.82	0.02	0.82	0.48	0.54	0.64
Uniform Delay, d1	21.7	16.6	13.9	10.8	32.1	9.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.1	0.0	5.6	0.5	15.1	1.3
Delay (s)	31.8	16.6	19.5	11.3	47.3	10.5
Level of Service	C	B	B	B	D	B
Approach Delay (s)	30.6		15.4			11.6
Approach LOS	C		B			B

Intersection Summary			
HCM Average Control Delay	17.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	66.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			