

**ENVIRONMENTAL
IMPACT STATEMENT
PREPARATION NOTICE**

**FOR
WAIKOLOA MAKAI PROJECT**

September 2005



**WAIKOLOA LAND
& CATTLE COMPANY**

ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE

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Prepared For:



Waikoloa Land
& Cattle Company

Prepared By:



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CHAPTER 1 INTRODUCTION

1.1 PURPOSE FOR EIS PREPARATION NOTICE

Waikoloa Land and Cattle Company (also referred to as WLCC in this document) is proposing to develop one of its parcels associated with the Waikoloa Beach Resort. This project would consist of a mixture of multi-family residential units, a restaurant, and recreational amenities compatible with and complementary to the resort. This new development is referred to as “Waikoloa Makai”, and will expand the economic development and employment opportunities of this master planned resort destination.

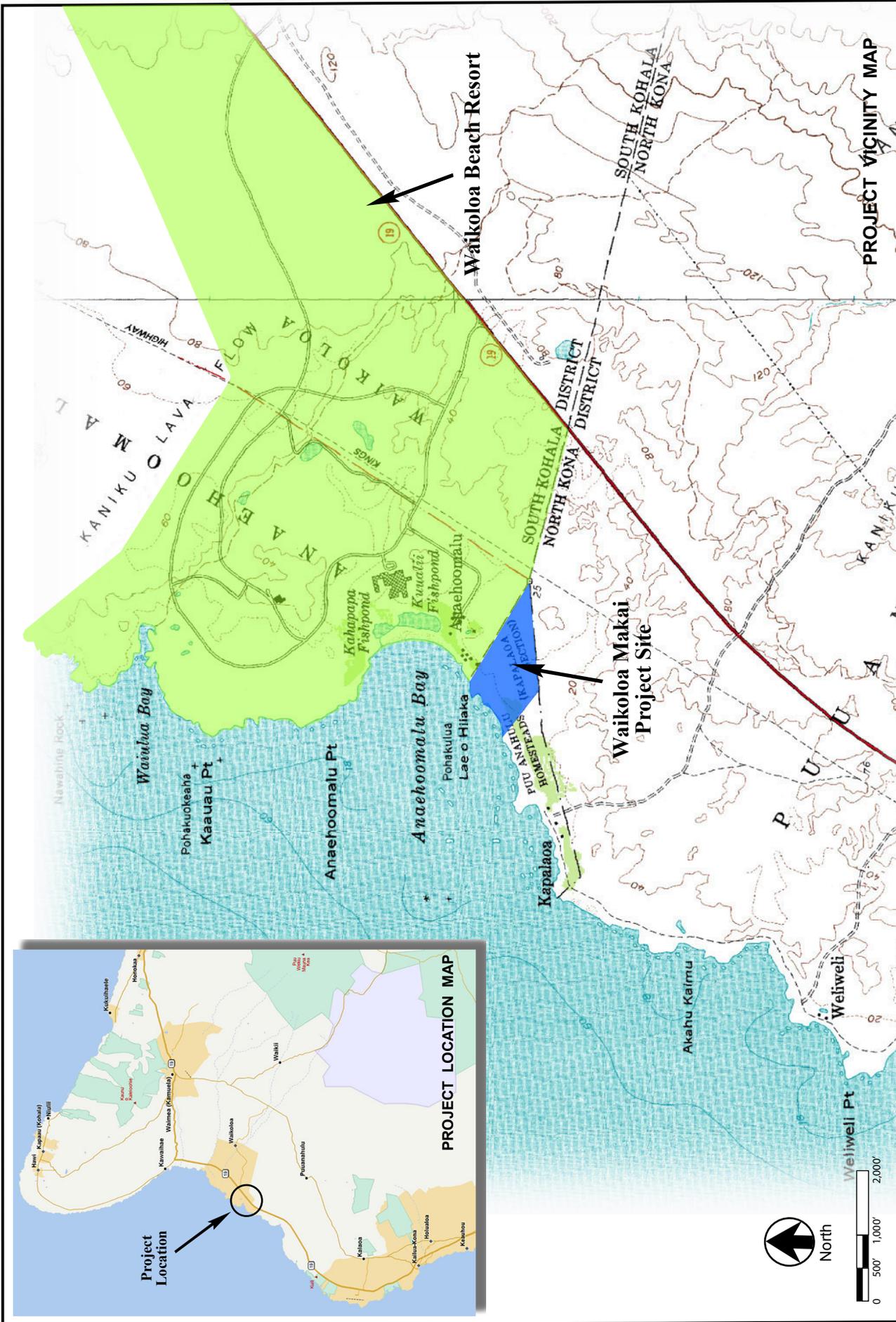
Waikoloa Land and Cattle Company is the fee simple owner of the subject property, which consists of 27.38 acres and is identified as Tax Map Key: (3) 7-01-003: 010. This property is situated along the shoreline immediately adjacent to the resort’s planned Beach Club development, a public parking lot parcel, and a future commercial site to the north. The property is located within the Land of Pu`uanahulu in the North Kona District, immediately adjacent to the South Kohala District border. Waikoloa Beach Resort is located on the northwestern end of the Island of Hawai`i along the Kona-Kohala coastline.

Figure 1.1 shows the general location and vicinity of the project site in relation to the surrounding area. Table 1.1 provides a summary of pertinent information associated with this project.

General Plan Program Requirements

Since 1992, the WLCC has had discussions with the County of Hawai`i Planning Department regarding the addition of the Waikoloa Makai parcel as a Resort designated property under the *Hawai`i County General Plan (General Plan)*. However, action on this item was never implemented. Subsequent to these discussions, the Planning Department initiated its *General Plan* revision program in 2001.

Pursuant to the revision program, WLCC requested that this Waikoloa Makai property be included as part of the new “Resort Node” then proposed for the Waikoloa Beach Resort. This request was processed by the Planning Department and the Planning Commission as part of the revision program process. In a letter dated October 19, 2001, the Planning Commission recommended several proposed amendments to the *General Plan*, which included designating the Waikoloa Makai parcel under the Resort Node. This recommendation was made after the Commission held several public hearings and workshops on this revision program around the island from May through October 2001.



PROJECT LOCATION AND VICINITY MAP

Figure 1.1

Source:
 Delorme 3D Topo Quads 2.0
 SSFM International, Inc.

Waikoloa Makai Project
 Waikoloa Land & Cattle Company



Table 1.1 Summary Information

Project Name:	Waikoloa Makai
Applicant:	Waikoloa Land and Cattle Company 150 Waikoloa Beach Drive Waikoloa, Hawai'i 96738 Contact: Ms. Eleanor Mirikitani
Authorized Agent:	SSFM International, Inc. 501 Sumner Street, Suite 620 Honolulu, Hawai'i 96817 Contact: Mr. Ronald A. Sato, AICP
Accepting Authority:	Planning Department, County of Hawai'i
Project Description:	The Waikoloa Makai project is planned to be comprised of a mixture of resort land uses consisting of residential condominium units (140–160 units), 10 lodge units, a restaurant, spa facility, recreation center, and support facilities.
Project Location:	The project site is located along the shoreline next to (south of) the existing Waikoloa Beach Resort. This property is within the Land of Pu'uuanahulu in the North Kona District immediately adjacent to the South Kohala District border.
Tax Map Key:	(3) 7-01-003: 010
Land Ownership:	The 27.38-acre property is owned by the Waikoloa Land and Cattle Company.
State Land Use:	Conservation District
County General Plan:	Conservation and Open
County Zoning:	Open
SMA Designation:	Project is within the County of Hawai'i's Special Management Area.

Subsequently, the Planning Director recommended that this request be processed as an interim amendment rather than as part of the comprehensive review taking place under the *General Plan* revision program.¹ The comprehensive *General Plan* revision program concluded this year, and the amended *General Plan* adopted via Ordinance 05-25 in February, 2005. Under the updated *General Plan's* Land Use Pattern Allocation Guide (LUPAG) Map, the majority of the Waikoloa Makai parcel is designated as "Conservation" with a strip of "Open" designation shown along the shoreline. The Waikoloa Beach Resort area located immediately to the north is designated as a Resort Node.

An Environmental Impact Statement (EIS) is being prepared in order to initiate a future interim amendment to the *General Plan* LUPAG Map by changing the designation of the parcel from Conservation to Resort Node. Preparing this EIS will provide the County with information to address any site specific issues associated with the project. Consequently, WLCC is now proceeding with preparing an EIS on the project to address impacts and issues associated with the project resulting in the publication of this EIS Preparation Notice.

¹ November 30, 2001, letter from the Planning Director to Planning Commission Chair regarding the Hawai'i County General Plan revision program.

Proposing Applicant and Accepting Authority

The Waikoloa Makai project will involve two Applicant actions that “trigger” the environmental review procedures prescribed under Chapter 343, Environmental Impact Statements, Hawai‘i Revised Statutes (HRS), and Title 11, Chapter 200 (Environmental Impact Statement Rules) of the State Department of Health’s Administrative Rules (HAR). The first of these actions will be an application to amend the *General Plan* to change the current Land Use Pattern Allocation Guide (LUPAG) Map designation of the subject property from “Conservation” to “Resort Node”. The second of these actions will be a petition to the State Land Use Commission to reclassify the project site’s State Land Use District designation from “Conservation” to “Urban”.

Due to the potential for significant environmental impacts from the proposed project, an Environmental Impact Statement will be prepared to fully analyze the project and describe mitigative measures that will be implemented to avoid or minimize such impacts. This EIS Preparation Notice, or EISPN, has been prepared in accordance with the requirements of Chapter 343, HRS, and Chapter 200, HAR, to notify the public of the proposed action, to identify potential concerns and issues that should be addressed in the Draft EIS, and to solicit further input from the public regarding this project.

Waikoloa Land and Cattle Company will serve as the Applicant initiating the preparation of environmental documents. The Accepting Authority for this EIS document will be the County Planning Director as the authorized representative for the Mayor of the County of Hawai‘i.

1.2 BACKGROUND ON EXISTING LAND USE DESIGNATIONS

Information on the existing State and County land use designations associated with the project site and surrounding areas are provided below.

State Land Use District

Under Chapter 205, HRS, all lands in the State of Hawai‘i are classified into four major land use districts (State Land Use Districts): Urban, Rural, Agricultural, and Conservation. The boundaries of these districts are shown on maps referred to as State Land Use District Boundary Maps.

The State Land Use Commission’s (LUC) Land Use District Boundary Map for Anaeho‘omalu (Map H-5) indicates that the project site and immediate surrounding area to the south are designated as “Conservation District.” Lands located immediately to the north, corresponding with the Waikoloa Beach Resort area, are designated as “Urban District”. Lands immediately east of the property are designated as “Agricultural District.” A future petition to the LUC will be filed to reclassify the project site’s Conservation District designation to the Urban District.

County of Hawai`i General Plan

The *County of Hawai`i General Plan* serves as a policy document for the long-range comprehensive development of the Island of Hawai`i (County 2005). Over the past four years, as required by the County Charter, the *General Plan* was in the process of being updated. Based on input obtained from numerous public informational hearings, the Planning Director and Planning Commission proposed changes to the *General Plan* and reviewed various amendments proposed by other parties, all of which were then forwarded to the County Council for action. Draft 6 of the proposed *General Plan* was subsequently adopted in February 2005 as Ordinance 05-25.

As previously discussed, the resulting *General Plan* LUPAG Map designation for the majority of the Waikoloa Makai parcel is “Conservation” with a strip of “Open” designation shown along the shoreline. The area immediately to the north is designated as “Resort Node” corresponding to the Waikoloa Beach Resort area. A *General Plan* amendment for this project will be filed upon completion of the EIS process to amend the LUPAG designation for the site to “Resort Node”.

County of Hawai`i Zoning District

The Waikoloa Makai project site is located within the County’s North and South Kona District zoning map. Under this zoning map, the property, along with surrounding properties to the south and east, are located within the Open District. Lands located further east of the project site are located within the Agricultural District, with a 5-acre minimum lot size (A-5a), which extends mauka to Queen Ka`ahumanu Highway and beyond.

The area immediately north of the site is shown on the County’s Puako-Anaeho`omalu zoning map. These properties are associated with the Waikoloa Beach Resort, and are located within the Resort-Hotel District (V-2a), the Open District for a parcel designated for public parking, and the Village Commercial District (CV-10). Other parcels within the resort are zoned for a variety of uses which includes Open District for golf courses, Resort-Hotel District, and various Residential Districts. A zone change will be filed for the Waikoloa Makai project to change the zoning of the property from the Open District to the Resort-Hotel District.

Special Management Area

Under Chapter 205A (Coastal Zone Management), HRS, the County is given authorization to regulate land uses located within the established Special Management Area for the Island of Hawai`i. A review of the County of Hawai`i’s Special Management Area map for the area determined that the Waikoloa Makai project site is situated within this Special Management Area. Thus, a Special Management Area Use Permit application will be filed for the Waikoloa Makai project.

CHAPTER 2 PROJECT DESCRIPTION

2.1 PROJECT LOCATION AND VICINITY

The Waikoloa Makai project is located near the northwestern end of the Island of Hawai'i along the Kona-Kohala coastline. This project site is situated along the shoreline within the Land of Pu'uuanahulu in the North Kona District, immediately adjacent to the South Kohala District border. This 27.38-acre property is located immediately south of the Waikoloa Beach Resort and adjacent to the resort's planned Beach Club development, a public parking lot parcel, and a future commercial site. Figure 2.1 shows the project site and surrounding vicinity in relation to the resort.

2.1.1 Project Vicinity

Waikoloa Beach Resort is a 1,350-acre ocean-side master planned resort destination with a national reputation as one of the finest places to play, stay and reside in Hawai'i. Being situated along Anaeho'omalu Bay and Waiulua Bay, the resort offers a wide mix of ocean sports, recreation, dining, and entertainment activities for residents and visitors. Some of the resort's facilities include world-class hotels, two championship golf courses, and luxury condominiums, townhomes, and single-family residences. The King's Shops complex offers many shops and boutiques, restaurants, and other entertainment activities for visitors and residents. Figure 2.2 is a 2003 aerial photo showing the master plan for this resort along with existing and currently planned developments.

The Kona-Kohala coastline, which extends north from the Kona International Airport at Keahole to the northwestern end of the island, can be generally characterized as consisting of a string of resort areas along the coastline separated by large tracts of undeveloped land and open space used for recreational activities. Queen Ka'ahumanu Highway is a two-lane State-operated highway providing vehicular access along this coastline. Lands mauka (inland or east) of this highway are predominantly undeveloped.

South of the Waikoloa Beach Resort are the developing resort-residential communities of Hualālai and Kūki'o Resorts at Ka'ūpūlehu and Manini'ōwali, respectively, and the Kekaha Kai State Park. North of Waikoloa Beach Resort are the Mauna Lani Resort, the Puakō community, the Mauna Kea Resort and the Hāpuna Beach Prince Hotel developments. Residential communities along this coastline, makai (seaward or west) of the highway, are mainly developments associated with these resort areas.

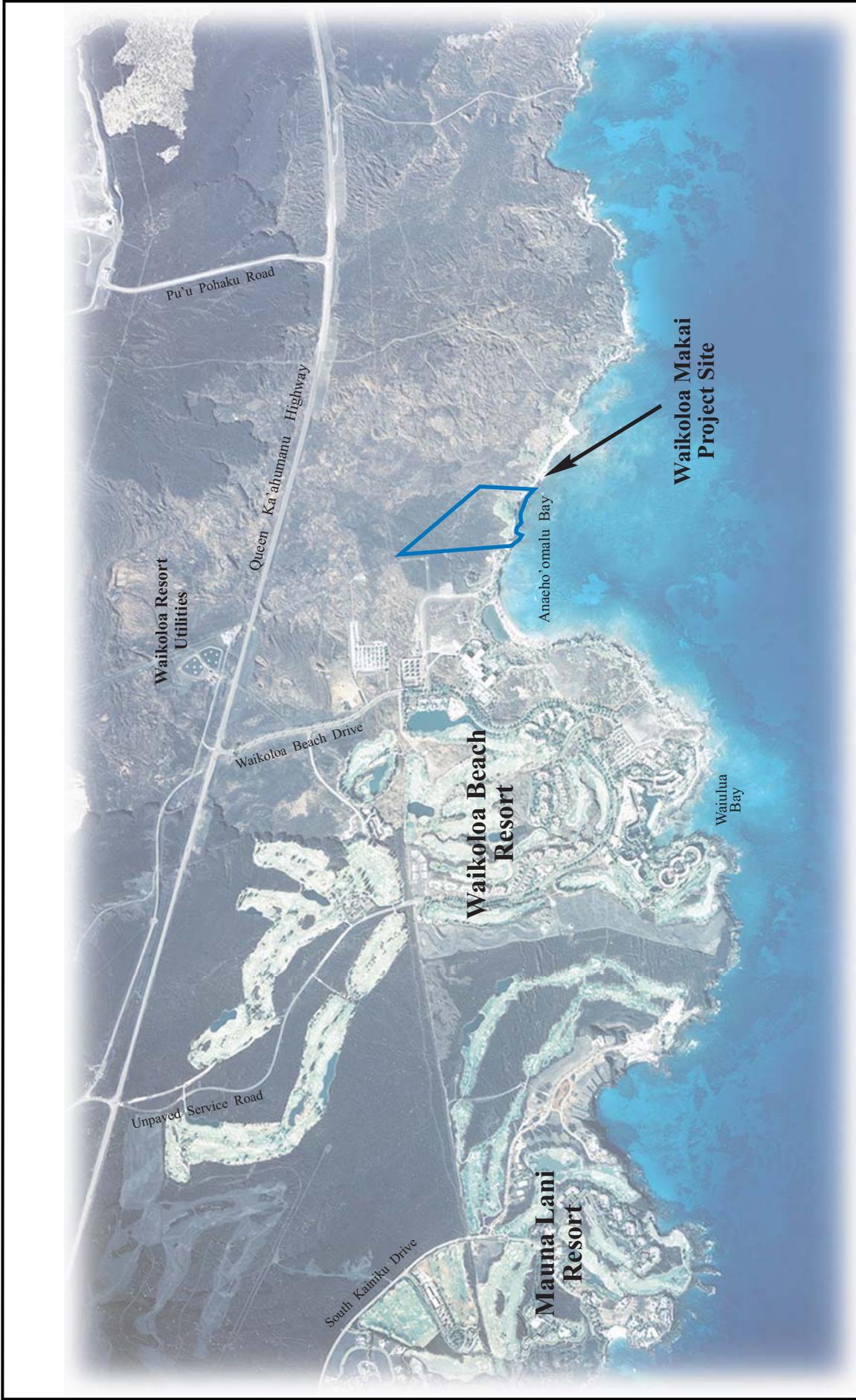


Figure 2.1



Source: National Oceanic & Atmospheric Administration (2000)

WAIKOLOA BEACH RESORT VICINITY MAP

Waikoloa Makai Project
 Waikoloa Land & Cattle Company





- Recent & Planned Resort Developments**
- #1 Waikoloa Colony Villas (Completed)
 - #2 Waikoloa Fairway Villas (Completed)
 - #3 Hali'i Kai formerly Kamalani Estates (Under Construction)
 - #4 Naupaka Place (Lots Under Sale)
 - #5 Kolea (Phase II Under Construction)
 - #6 Waikoloa Beach Villas (Under Construction)
 - #7 Queens' Cultural Gardens Marketplace (Development Pending)
 - #8 Beach Club (Development Pending)
 - #9 Hilton Resorts Corporation (Development Pending)



**MASTER PLAN
WAIKOLOA
BEACH RESORT**

NORTH
200' 0 400' 800'
March 2003

**WAIKOLOA BEACH RESORT
MASTER PLAN**

Figure 2.2

2.1.2 Property Information and Site Conditions

The Waikoloa Makai Project is proposed to be developed on a 27.38-acre property that is owned by the Waikoloa Land and Cattle Company, and is identified as Tax Map Key (TMK) 7-01-003: 010. Figure 2.3 shows the TMK plat map for this parcel of land.

As shown in the oblique aerial photograph on this page, the property consists predominantly of undeveloped land comprised of pāhoehoe and `a`ā lava flows. The shoreline is comprised of a gravel and sand beach consistent with the adjacent beach surrounding Anaeho`omalu Bay. However, as shown on the aerial photograph, much of this beach and near shoreline are overgrown with various types of coastal vegetation such as beach naupaka and kiawe. Vehicular access to this property will be from Ku`uali`i Place, a roadway off of Waikoloa Beach Drive, which currently serves the public parking lot and will provide access to the future Beach Club development.



Existing Surrounding Uses

Existing land uses surrounding this project site consist of undeveloped State-owned property along the entire southern half of the site. Further south along the shoreline are some residential lots associated with the Pu`uanahulu Homestead, and more undeveloped property owned by the State of Hawai`i.

The remaining adjacent property to the north of the project site is the Waikoloa Beach Resort, and there are three separate parcels bordering this site. The adjacent shoreline parcel is currently undeveloped, but is zoned and planned for development as the resort's Beach Club. Another parcel is designated to serve as public parking for the resort, and is already partially developed for such use. The third parcel is planned for future commercial use. The area to the northeast of the project site is planned for future residential and golf course uses.

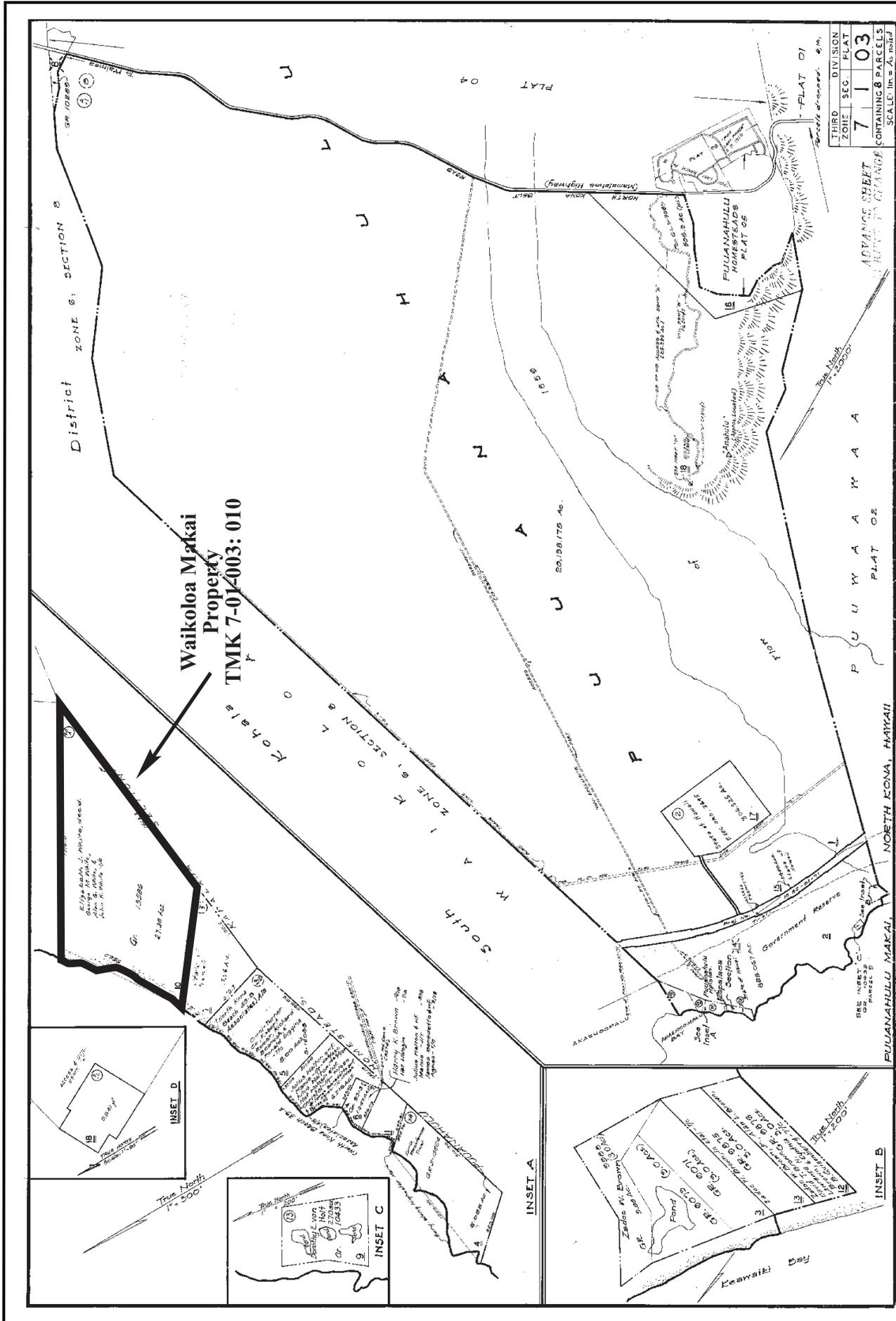


Figure 2.3

TAX MAP OF WAIKOLOA MAKAI PROPERTY

Source:
County of Hawaii



2.2 PROJECT NEED AND OBJECTIVES

WLCC has a strong interest in developing the Waikoloa Makai property because doing so would enable the developer to complete the build-out of Waikoloa Beach Resort's shoreline properties, meet market demands for more units and resort amenities, and support plans to build out the overall resort property that extends from Queen Ka'ahumanu Highway to the shoreline.

All of the resort's other shoreline properties have either been developed or are now being actively developed and sold. As shown on the master plan figure (Figure 2.2), a substantial portion of the shoreline properties have already been developed with hotels and preserves for the historical Kahapapa and Ku'uuli'i Fishponds. Within the last few years, development of other parcels along this shoreline has been undertaken in response to the strong market demand for multi-family units and residential lots. Shoreline parcels currently under development include the Naupaka Place, Kolea and Hali'i Kai projects. Naupaka Place consists of 11 single-family lots ranging in size from $\frac{3}{4}$ to 1- $\frac{1}{2}$ acres, several of which have sold and are anticipated to be developed soon. The Kolea development consists of 17 single-family lots ranging in size from approximately $\frac{1}{2}$ to 1 acre, 126 condominium villa units currently under construction, and an anchialine pond preserve. The Hali'i Kai project, which replaced the former Kamalani project, consists of 192 condominium units housed in 4-plex and 8-plex buildings now under construction. In addition, construction of the previously approved Beach Club development located north of the Waikoloa Makai project site is planned in the near future.

The strong market demand for resort units is also evident in the success of other multi-family developments on the resort's inland properties, most notably the recently completed Waikoloa Colony Villas and Waikoloa Fairway Villas projects. Other inland developments include the 120-unit Waikoloa Beach Villas project located adjacent to the Waikoloa Beach Golf Course and an 802-unit development planned by Hilton Hotels Corporation around the Kings' Golf Course. Additionally, WLCC will soon begin development of the Queens' Cultural Gardens Marketplace, a 100,000 square-foot retail complex located along Waikoloa Beach Drive and southeast of the existing Kings' Shops development.

With the construction of these various developments expected to be completed within the next few years, there will not be any more entitled shoreline parcels available for development. As a result, the WLCC is initiating environmental studies and this EIS process to satisfy necessary regulatory requirements before applying for the entitlements needed for the Waikoloa Makai project.

The land uses proposed for this parcel will be consistent with and complementary to the other developments within the resort. The multi-family units planned would address the strong market demand for this type of residential use, and provide residents and resort guests with additional and convenient recreational amenities. The restaurant planned would also provide residents, resort guests, and visitors with another option for dining activities.

2.3 DESCRIPTION OF PROJECT

The Waikoloa Makai project will consist of a condominium development with support facilities and recreational amenities to serve residents and guests. The project's objective and design principles are provided along with a description of specific uses planned.

2.3.1 Objective and Design Principles

Waikoloa has been a place for rest and relaxation since the times when ancient Hawaiian royalty made Anaeho`omalu their playground. This rich history is evidenced by the fishponds, petroglyph field, makahiki shrine, ancient Hawaiian fishing villages, and renowned King's Trail, all of which have been preserved and interpreted for residents, visitors and guests alike. In addition, the Waikoloa Anchialine Pond Preservation Area has provided a place for all to study and learn about the unique ecosystem of these brackish pools near the sea.

The Waikoloa Beach Resort has been developed since the early 1980's as a true destination resort suited to the beauty and history of Waikoloa in accordance with the resort's master plan. Such developments include hotels, two "signature" golf courses, luxury condominiums and single-family home lots, and the Kings' Shops retail complex that provides a wide array of shopping and dining opportunities for guests and residents.

Development of the Waikoloa Makai shoreline property will support and complement the existing Waikoloa Beach Resort area. The architectural design of this project will be consistent with the design concepts applicable to the entire resort as prescribed under its design guidelines, and reviewed by the Architectural Review Committee (ARC) of the Waikoloa Resort Association.

Design Principles

The design principles for this Waikoloa Makai project will be complementary to other developments within this resort. Compliance with design guidelines is required by the ARC for the purpose of maintaining the standards for development within the Waikoloa Beach Resort. This includes the process of review and approval of new developments, construction, and/or revision or alteration to existing land use designations and/or improvements.

As the result of this design review process, the Waikoloa Makai project will be compatible with other existing and planned developments, and will not detract from the overall vision and environment established for this resort. Some of the design principles planned to be embodied by this project are as follows:

- Implement sufficient buffer areas for archaeological sites consistent with setback requirements for other resort developments.
- Implement shoreline setbacks consistent with the Hawai'i County Code and other requirements prescribed by State laws or regulations.

- Reduce obstruction of existing view corridors by minimizing building mass and pursuing a lower density resort project.
- Implement minimum building setbacks from property lines that will conform to Hawai'i County Code requirements and other requirements prescribed by State laws or regulations.
- Restore the anchialine ponds on the property and implement a pond management plan consistent with the provisions for the adjacent Beach Club development.
- Provide extensive landscaping consistent with the resort's design to help screen views of the project.

2.3.2 Proposed Improvements

The Waikoloa Makai project will have of a mixture of resort land uses consisting of residential condominium units, lodge units, a restaurant, spa facility, recreation center, and support facilities. A preliminary site plan showing the proposed components associated with this project is provided in Figure 2.4. A summary of these project components is provided below and discussed in more detail.

Description		Size / Area	
A.	Residential Condominium	140 to 160	units
B.	Lodge	10	units
C.	Spa Facility	11,500	square feet
D.	Restaurant	7,500	square feet
E.	Recreation Center	3,000	square feet
F.	Administration / Service Facility	4,000	square feet

The concept for this project is to provide a lower density residential condominium development having several recreational amenities to serve residents and guests. The preservation and enhancement of resources present on the property are also being incorporated into the design concept.

The entrance to this project will be from Ku`uali`i Place, a roadway off of Waikoloa Beach Drive, which currently serves the public parking lot and will provide access to the future Beach Club development. A landscaped roundabout with signage near the entrance will serve as the project's entry feature. Internal roadways for this project will be designed to Waikoloa's resort standards. A centralized parking lot serving the spa/lodge complex and restaurant will be provided, and will have a one-way traffic circulation pattern around it.



Figure 2.4

PRELIMINARY WAIKOLOA MAKAI SITE PLAN

Residential Condominium Units Summary

A total of approximately 140 to 160 residential condominium units are planned to be developed. This translates into a land use density ranging from 5.35 to 6.11 units/acre based upon the total property area of 27.38 acres. These condominiums would conceptually consist of both 2- and 3-bedroom units, and floor areas would vary from about 1,800 up to 2,250 square feet in size. These units would be developed as part of three-story building complexes in various areas as shown on the Site Plan (Figure 2.4), and have a proposed building height limit of 45 feet. A single car parking garage would be provided for each unit within each building, and one (1) open parking stall provided for each unit. Several open visitor parking stalls will be provided to serve building complexes. These condominium units may either be sold as fee simple units or operated as a time-share property.

Spa / Lodge Facility Summary

The Spa and Lodge facility is conceptually planned to consist of a two-story, free standing building that has lodge units on the second floor and a spa on the ground floor. A reception area located on the ground floor entrance will serve guests for both the spa and lodge. A building height limit of 45 feet is proposed for this facility, which would be located along the shoreline and connected to the adjacent restaurant with a covered walkway. Vehicular parking would be provided in a parking lot with overflow parking permitted in the large central parking lot.

The Lodge would have a total of about 10 units located on the second floor of the building, and these units may consist of a mixture of both condominium units and guest rooms. Condominium units will consist of both 1- and 2-bedroom units of about 1,200 to 1,400 square feet in size while the guest rooms would consist of hotel-type rooms of about 600 to 700 square feet in floor area. The Lodge will provide short-term housing for guests of Waikoloa Makai residents wanting to reside on the property during their visits. These guests will be allowed access to the other amenities available within this project such as the spa.

The spa is planned to have a floor area of about 11,500 square feet, and will accommodate as many as 40 to 50 patrons. Three (3) free standing pavilions will be provided for spa activities as shown on the Site Plan. This spa will provide several amenities for patrons which include: 1) aerobics and exercise room, 2) bar and lounge for patrons, 3) sauna and steam rooms, 4) weight lifting room, 5) locker rooms for members, including showers and accessory facilities, and 6) a pool with associated amenities (ex. Jacuzzi).

Restaurant Summary

The restaurant will be a single-story, free standing restaurant complex with lounge. This building is planned to have a floor area of approximately 7,500 square feet and maximum building height of 45 feet. This restaurant would serve breakfast, lunch, and dinner daily, accommodate a maximum of 80 to 100 patrons, and be open to the general public. Daily and/or nightly

entertainment would also be provided at this restaurant and/or the lounge. The large existing public access parking lot would provide enough vehicular parking for patrons.

Accessory Service Facilities Summary

Accessory facilities serving this project would include a recreational center for residents and buildings for administration and general services. A single-story recreation center of about 2,500 to 3,000 square feet would be provided to serve residents of this project. It would include typical amenities such as a pool, lounge, entertainment center, and other associated accessories.

The buildings for administration and services would be two, single-story, free standing buildings of about 2,500 square feet each (total of about 5,000 s.f.). These buildings will provide residents and guests of this project with general services such as a laundromat and convenience store. If the condominium units are operated as a timeshare facility, one of these buildings could be used for administrative activities.

2.3.3 Treatment of Existing Features

Several petroglyphs are located near the southwestern corner of the property. Consequently, this area is being preserved and a buffer area provided around it. If appropriate, signage and other design elements may be incorporated as part of this buffer area for informational and educational purposes. An old foot trail running through the northeastern corner of the project site will also be preserved, and only one (1) crossing of this trail at the project driveway's entrance near the roundabout is planned. Signage and other design features are planned to be incorporated into the path's crossing at this roundabout for educational purposes.

Development of this site will also include the restoration of a large anchialine pond situated along the shoreline that is presently overgrown with vegetation and thus of lower functional value.

Public access to the shoreline in the area of the project is now and will continue to be provided by the resort-maintained facilities at Anaeho'omalua Beach Park. These facilities are located to the north of the project site and consist of a public parking lot, paved access, and bathroom and shower facilities. The proposed development will not curtail the use of public access trails along the shoreline fronting the subject property.

2.3.4 Development Schedule and Construction Cost Estimates

Upon completion of the environmental review process for this project, the WLCC will pursue necessary entitlements in order to develop the project. These entitlements will include a General Plan amendment, Land Use District boundary amendment, Change of Zone, and Special Management Area Use Permit. It is estimated that the time needed to complete this EIS process and obtain the entitlements would range from 3 to 4 years.

Design work for this project would then be completed and submitted to pertinent agencies for review and approval, and necessary ministerial permits would be obtained. The estimated

budget for the construction of this project is \$50,000,000. It is estimated that time needed to design the project and obtain all necessary approvals would take another 1.5 to 2 years. Construction of the improvements will take approximately 18 to 24 months. Thus, completion of this project could occur about the year 2013.

Entitlements and Ministerial Permits Required

A listing of required discretionary land use approvals and ministerial permits for this project is provided.

Entitlements

1. General Plan amendment
2. Land Use District boundary amendment
3. Change of Zone
4. Special Management Area Use Permit

State of Hawai'i Permits

1. NPDES Permit
2. Construction Noise Permit – Only if required

County of Hawai'i Approvals and Permits

1. Subdivision Application
2. Plan Approval
3. Grading and building permits

CHAPTER 3

ALTERNATIVES CONSIDERED

This chapter identifies alternatives associated with the Waikoloa Makai project that will be considered and evaluated throughout the EIS process. Alternatives identified include: 1) not implementing development of the project, otherwise referred to as the No Action Alternative, 2) proceeding with the proposed Project, 3) single-family residential development, and 4) hotel development. The Draft EIS will discuss the feasibility and practicability of alternatives considered.

3.1 NO ACTION ALTERNATIVE

The No Action Alternative would entail not proceeding with development of the Waikoloa Makai project. Under this scenario, the 27.38-acre project site would remain undeveloped and essentially retain its existing physical environmental setting. Other entitled developments planned within the resort would be completed and operational.

This alternative's feasibility in achieving the project's need and objectives would be evaluated. It would also represent a future scenario "without the project" providing a reference base to evaluate impacts to the physical and social environment, both beneficial and adverse, resulting from the proposed project. A study year of 2013 is used for this No Action alternative to correspond to the projected construction completion of the proposed Waikoloa Makai project.

3.2 SINGLE-FAMILY RESIDENTIAL DEVELOPMENT

One development alternative to the project is a single-family residential development. Such a development would still require an amendment of the *General Plan*, a reclassification from the Conservation District to the Urban District, and other entitlements previously identified for the project.

The primary difference between the project as proposed and the single-family residential alternative would be a change in density. For instance, if a county zoning designation of single-family residential with a minimum lot size of 15,000 square feet (RS-15) were sought, the 27.38-acre property theoretically could be developed with up to 79 single family dwellings. If single-family residential zoning with a minimum lot size of 20,000 square feet (RS-20) were pursued, this would allow for the creation of up to 59 homes.

The DEIS will consider this alternative and evaluate its feasibility and practicability in meeting the project needs and objectives.

3.3 HOTEL DEVELOPMENT

Another alternative is a conventional, high-density hotel such as the Waikoloa Outrigger Marriott or the Hilton Waikoloa present within the resort. For instance, if the developer were to pursue resort-hotel zoning requiring 1,250 square feet per unit (V-1.25), the 27.38-acre property could be developed with as many as 954 hotel rooms.

This alternative development would require an amendment of the *General Plan*, a reclassification from the Conservation District to the Urban District, and other entitlements previously identified for the project. The DEIS will consider this alternative and evaluate its feasibility and practicability in meeting the project needs and objectives.

CHAPTER 4

ENVIRONMENTAL SETTING

This chapter of the EISPN identifies the resource areas that will be addressed in the DEIS, describes the scope of the analysis and assessment to be conducted, and identifies the anticipated environmental impacts and issues. The DEIS will discuss and evaluate the environmental impacts of the Project on the various resource areas that will be organized under five major categories: 1) physical environment, 2) biological environment, 3) historic, archaeological and cultural environment, 4) socio-economic environment, and 5) infrastructure and public facilities.

4.1 PHYSICAL ENVIRONMENT

4.1.1 Climate and Air Quality

Climate

Climate on the Island of Hawai`i, as well as within the State, can be characterized as having low day-to-day and month-to-month variability. Differences in the climates of various areas are generally attributable to the island's geologic formation and topography creating miniature ecosystems ranging from tropical rain forests to dryer plains along with corresponding differences in temperature, humidity, wind, and rainfall over short distances (Dept. of Geography 1998).

The climate of the Waikoloa Makai project site in the North Kona District of the Island of Hawai`i is typical of the arid coastal areas of West Hawai`i. Although temperature data is not available for the Waikoloa area specifically, such information is available for two similar West Hawai`i coastal sites: Pu`ukohola Heiau and Keāhole Point.

Approximately 9.5 miles to the north of the project site, average monthly temperatures recorded at Pu`ukohola Heiau in 2000 ranged from about 70 to 76 degrees Fahrenheit with a recorded low of 57 degrees and high of 89 degrees. Similarly, approximately 17 miles south of Waikoloa, average monthly temperatures recorded at Keāhole Point in 2000 ranged from about 72 to 80 degrees Fahrenheit with a recorded low of 61 degrees and high of 89 degrees. Rainfall in the project area is very minimal and ranges roughly between 5 and 10 inches per year. The annual rainfall recorded at Waikoloa Beach Resort in 2000 was 4.6 inches (NOAA 2000).

The wind patterns on the Island of Hawai`i are complex due to the mountainous nature of the terrain. Typically, trade winds are from an east to west direction and are usually the dominant wind pattern from April to November. Winds from the southwest are infrequent, occurring only a few days a year, and mainly during the winter when associated with "Kona" storms. Although the trade winds are fairly constant, this wind pattern is affected by the heating of the land mass during the day and disrupted by the terrain.

As with much of the West Hawai`i coastline, surface heating causes upslope or onshore winds during the day in the Waikoloa area. Additionally, trade winds that funnel through the Humu`ula Saddle between Mauna Loa and Mauna Kea at the upper elevations during the day meet with onshore coastal winds to produce strong winds that blow in a north to south direction in the Waikoloa area. At night, cooled mountain air moves down slope and blows offshore. Due to these conditions, wind directions and speeds vary throughout the day and night in the Waikoloa area (Dept. of Geography 1998).

Air Quality

Although the State of Hawai`i operates a network of air quality monitoring stations around the state, systematic data are not available for this area of North Kona as the closest station is located in Kealahou. It is generally accepted that all criteria pollutants in the State are well within standards, at least on a regional basis.

The air quality for pollutants other than particulates is mainly influenced by the isolation of the island from any outside sources of air pollution. However, the Hawai`i carbon monoxide criteria, which are more stringent than the federal standards, may be exceeded on occasion near high-volume intersections during periods when traffic congestion and poor dispersion conditions coincide. In addition, major manmade air pollution sources on the Island of Hawai`i include oil-fired plants, which emit SO₂, nitrogen oxides (NO_x) and particulate matter (PM), and motor vehicles, which emit carbon monoxide (CO), NO_x, and hydrocarbons (an ozone precursor), as well as small amounts of other pollutants.

It is also possible that some areas near volcanic sources do not comply with air quality standards at times. Volcanic emissions of sulfur dioxide (SO₂) from Kilauea Volcano convert into particulate sulfate, which combined with air and sunlight form an atmospheric haze, locally called vog. Vog becomes trapped in the atmosphere of Kona because of the diurnal wind reversal from off-shore to on-shore.

Potential Impacts and Issues

The project has the potential to impact air quality due to construction and increased motor vehicle emissions from project-related traffic. The DEIS will address development of an effective dust control plan to avoid or mitigate impacts from construction. The plan may include watering of active work areas, wind screens, covering of open-bodied trucks carrying soil or rock, and other elements. The DEIS will also include a traffic study that will be utilized to analyze air quality impacts from increased motor vehicle emissions at selected study intersections.

4.1.2 Regional Geology, Topography and Soils

Regional Geology and Topography

The Island of Hawai`i is the largest island in the Hawaiian Archipelago and covers an area of approximately 4,000 square miles, about twice the size of all other Hawaiian Islands combined. This island was formed by the activity of five shield volcanoes: 1) Kohala (long extinct); 2) Mauna Kea (some activity during recent geologic times); 3) Hualalai (last erupted in 1801 and is considered dormant); 4) Mauna Loa (still active); and 5) Kilauea (still active).

The Waikoloa Makai project is situated along the western coast of the Island of Hawai`i in the Kapalaoa Section of Pu`uanahulu Homesteads in North Kona. The interbedded pāhoehoe and `a`ā lava flows in the project area are from the Ka`u Volcanic Series generated by Mauna Loa. These lava flows filled a depression that existed between Mauna Kea and Hualalai and therefore interfinger with the flows of these two volcanoes. The Mauna Loa shield has been built by eruptions along two rift zones that extend east-northeastward and southwestward from the caldera. A less well defined rift zone, which fans out on the northern slope, is responsible for the great lava flow of 1859, located to the south of the project area (Macdonald, Abbott, and Peterson 1983).

The topographic features of this project site are generally typical of other undeveloped coastal land areas in the surrounding vicinity. The terrain is gently undulating with elevations ranging from mean sea level at the shoreline to approximately 25 feet above mean sea level near the eastern boundary of the property.

Soils

A review of the U.S. Department of Agriculture, Soil Conservation Service's *Soil Survey of Island of Hawai`i, State of Hawai`i* (SCS 1973), indicates that pāhoehoe lava (rLW) and beach sand (BH) are the land types found on the subject property. Pāhoehoe lava is classified as a miscellaneous land type. This lava has a billowy, glassy surface that is relatively smooth. In some areas, however, the surface is rough and broken, and there are hummocks and pressure domes. Pāhoehoe lava has no soil covering and is typically bare of vegetation except for mosses and lichens. Beaches are long, narrow, sloping areas of sand and gravel along the coastline of the island.

The Land Study Bureau's *Detailed Land Classification - Island of Hawai`i*, (LSB 1965) has given these land types an overall master productivity rating of "E" or "Very Poorly Suited" to agricultural productivity. None of the land in the project area is identified by the U.S. Natural Resources Conservation Service as Prime, Unique or Other Important Agricultural Lands in the *Agricultural Lands of Importance to Hawai`i* (ALISH) map series (Baker 1976).

Potential Impacts and Issues

Construction activities would involve excavation and grading work along with construction of the new buildings and necessary infrastructure. The design of the project would try to achieve a balanced cut and fill condition to minimize disturbances to the property's topography and soils as practical. Nevertheless, short-term impacts from construction activities associated with land disturbing activities will inevitably occur and would be addressed in the DEIS. Suitable erosion control measures and other best management practices will be identified to mitigate such effects.

4.1.3 Natural Hazards

Those natural hazards with the potential to affect the project and site will be identified and addressed. The most applicable natural hazards to the project include earthquakes and lava flows, hurricane, and tsunami inundation and flooding hazards.

Earthquake Hazards

Earthquakes in the Hawaiian Islands are primarily associated with volcanic eruptions resulting from the inflation or shrinkage of magma reservoirs beneath the earth's surface that result in a shifting of segments of the volcano (Macdonald, et. al. 1983). Most of the earthquakes that occur are volcanic earthquakes, which cause little or no damage. The seismic risk for the entire Island of Hawai'i is Zone 4 Seismic Probability Rating (*Uniform Building Code*, Appendix Chapter 25, Section 2518). Zone 4 areas are at risk from major earthquake damage, especially to poorly designed and/or built structures.

Lava Flow Hazards

In 1987, the U.S. Geological Survey revised the volcanic hazard zone maps developed for the Island of Hawai'i. The current map divides the island into zones ranked from 1 through 9 based on the probability of coverage by lava flows, with 1 indicating the greatest risk and 9 the least. Based upon this map, the portion of the North Kona District where the project area is located has a hazard zone rating of 3. Zone 3 areas have experienced 1 to 5 percent lava coverage since 1800 and 15 to 75 percent coverage in the last 750 years (USGS 1997).

Hurricane Hazards

Hurricanes are tropical cyclones with sustained (one-minute average) wind speeds greater than 75 miles per hour. They form over warm tropical water and generally travel in the same direction as the winds in the surrounding environment. The three major hazardous elements of a hurricane are: 1) strong winds and gusts, 2) large waves and storm surge, and 3) heavy rainfall. Although hurricanes are unpredictable, the Island of Hawai'i has historically received less threat and damage from these severe storms (FEMA 1993).

Tsunami Inundation and Flooding Hazards

The Flood Insurance Rate Map (FIRM), Community Panel Number 155166 0267 C, was reviewed to identify tsunami inundation and flooding hazards that may affect the project area. According to the FIRM, the area of the property located immediately adjacent to the shoreline is within Zone VE, indicating a special flood hazard area subject to coastal flooding with velocity hazard (wave action). Within this Zone VE, the base flood elevation has been determined to be 8 feet above mean sea level. This designation means that the first floor of any habitable structures within the area must be elevated to a height of 8 feet above mean sea level.

Immediately inland of Zone VE, a very small portion of the property adjacent to the northern property boundary is located within Zone AE, indicating a special flood hazard area inundated by 100-year floods. Within this Zone AE, the base flood elevation has been determined to be 7 feet above mean sea level. The great majority of the property is located in Zone X, an area determined to be outside the 500-year flood plain (FEMA 1988). There are no streams or major drainage ways located on the subject property.

Potential Impacts and Issues

In general, the risk of earthquakes should impose no major constraint on the project since the entire West Hawai'i region is subject to varying degrees of hazards. As required under federal, State and County regulations, all construction will conform with the provisions of the *Uniform Building Code* appropriate to the Zone 4 Seismic Probability Rating. The project could be subject to damage from lava flows from Mauna Loa, if such flows were to occur. The DEIS will discuss potential impacts from both lava flow hazards and earthquakes in greater detail.

The project could be adversely affected in the event that a hurricane passes over or close to the Island of Hawai'i. It could also be adversely affected by tsunami events, high surf, and flooding due to its location along the shoreline. Improvements will be subject to County requirements and design standards prescribed by Chapter 27 of the *Hawai'i County Code* relating to flood control. Thus, the DEIS will discuss the types of impacts that could result from these hazards and identify mitigative measures to avoid or reduce such impacts from such events.

4.1.4 Hydrogeological Resources

Water for the project will be provided by the West Hawai'i Utilities Company (formerly Waikoloa Resort Utilities, Inc.). This private utility company provides potable water to the rest of Waikoloa Beach Resort from its wells located proximate to Waikoloa Village. There are no County owned or operated water facilities serving the Waikoloa area.

Under the State's Water Resource Protection Plan, aquifers of the Island of Hawai'i have been classified according to a coding system that identifies and describes these aquifers. This system is comprised of Aquifer Sectors and Aquifer Systems that are located within these sectors. The project site is located within the North West Mauna Loa Aquifer Sector (Sector 807) that

encompasses an area along the shoreline generally from Weliweli Point to Puakō Point. This sector is composed entirely of the Anaeho`omalū Aquifer System (80701). The sustainable yield of this system is 30 million gallons per day (MGD). Currently, there are two wells operated within the lower portion of the sector/system by the West Hawai`i Utilities Company that provide brackish water to the Waikoloa Beach Resort for irrigation purposes.

Potable water for the resort and Waikoloa Village comes from three wells operated by the West Hawai`i Utilities Company located within the adjoining West Mauna Kea Aquifer Sector (Sector 803). This sector encompasses an area along the shoreline generally from Puakō Point to Kawaihae Harbor. This sector is composed entirely of the Waimea Aquifer System (80301), which has a sustainable yield of 24 MGD.

Potential Impacts and Issues

The project has the potential to impact groundwater resources through increased withdrawals, runoff from impervious surfaces, and contamination resulting from the construction and operation of the project. The DEIS will include a study to assess the project's potential impact on water resources, and discuss applicable mitigative measures. This report will include an analysis of water samples and water levels to characterize existing groundwater quality and to characterize the quantity and quality of groundwater moving beneath the site and discharging along its shoreline. Based on the data collected, the effects of the project (i.e., withdrawal of groundwater, wastewater and storm water disposal, and landscape irrigation return) on the quality and quantity of this groundwater flow will be calculated.

4.1.5 Visual Character

The *Hawai`i County General Plan* characterizes the scenic beauty of various areas and identifies sites and vistas of natural beauty. Although the subject property is not specifically listed as an example of natural beauty within the Kona districts, the viewplane extending mauka and makai from Queen Ka`ahumanu Highway is identified as such a site. The large geographical area within this viewplane includes the project site.

Potential Impacts and Issues

Due to its location within the Queen Ka`ahumanu Highway viewplane, the project has the potential to impact public views of the coastline in this area of North Kona. The DEIS will evaluate the scenic impacts of the project through a comparison of current scenic character from various vantage points with those expected after the project is constructed. Mitigation for such impacts will be discussed which may include landscaping and design principles.

4.1.6 Noise

Due to the undeveloped state of the property, noise in the project area is currently limited primarily to natural sources such as wind and wave action. Sources of noise from adjacent

properties consist of motor vehicle and pedestrian traffic associated with the public parking lot and nearby beach. It is anticipated that the project will generate noise levels similar to those of other multi-family residential and commercial developments within the Waikoloa Beach Resort.

Potential Impacts and Issues

The DEIS will examine the extent of anticipated short-term noise impacts due to construction of the project as well as long-term noise impacts due to operation of the project. Noise during construction will be mitigated through compliance with the Department of Health Noise Control Rules, which define maximum permissible noise levels for construction and prescribe specific mitigation measures to achieve these levels.

4.2 BIOLOGICAL ENVIRONMENT

4.2.1 Anchialine Ponds and Marine Resources

The Anaeho`omalu area contains the largest single concentration of anchialine ponds on the Kona Coast and in the State of Hawai`i. Anchialine ponds are ponds that occur along coastal lava flows that exhibit tidal fluctuations without a surface connection to the ocean. In Hawai`i, these pools were frequently excavated or otherwise modified by Hawaiians to serve as sources of drinking water, baths and fish ponds.

Anchialine ponds provide habitat for rare types of shrimp, including the `ōpae`ula (*Metabetaeus lohena*), a half-inch long invertebrate. Anchialine pond shrimp are herbivores that eat plant material and maintain the balance in the ponds. Previous investigations of the several anchialine ponds present on the site have determined the presence of `ōpae`ula. `Ōpae`ula are not considered endangered or threatened under the U.S. Endangered Species Act but have been listed as a candidate endangered species by the U.S. Fish and Wildlife Service for several years. Although Hawai`i has legislation that allows for the listing of endangered species at the State level, no invertebrates other than those recognized on Federal endangered species lists have been listed as threatened or endangered.

Marine species adjacent to the project site consist of a variety of corals, algae, invertebrates and reef fish. There are no known rare, endangered, threatened or candidate species occurring in the marine environment adjacent to the property.

Potential Impacts and Issues

The project has the potential to affect the anchialine ponds, the species that inhabit the ponds, and the nearby marine environment. The DEIS will include a technical report that assesses the marine biological community structure, provides qualitative characterizations of the physical and biotic composition of the anchialine ponds, and identifies the presence or absence of rare and distinctive species as well as introduced species. This report will be used in tandem with a

previously described report on water resources which will include information on the quality and quantity of water recorded in the anchialine ponds. Based on the data collected, the effects on the anchialine ponds and marine resources will be calculated, potential environmental problems or concerns will be discussed and appropriate mitigative measures identified.

4.2.2 Botanical, Avifaunal and Faunal Resources

The project site occurs in the arid coastal vegetation zone on the leeward side of the island. Throughout the State, this zone is one of the most completely altered vegetation zones and it is therefore difficult to determine what it was really like prior to human habitation (Sohmer and Gustafson 1987). The majority of the vegetation on the property is concentrated primarily along its coastal boundary and consists of kiawe, naupaka-kahakai, hala (*Pandanus odoratissimus* L.F.) and pohuehue (*Ipomoea pes-caprae* L.).

Vegetation around the anchialine ponds consists of 'akulikuli-kai (*Batis maritima* L.), grasses and sedges. The majority of the property is devoid of vegetation with the exception of sparsely distributed fountain grass (*Pennisetum setaceum*) and 'uhaloa (*Waltheria Americana* L.). There are no known rare or endangered plant species on the project site or in the immediate vicinity (Jensen 1991).

Avian species listed as endangered, threatened, proposed or candidate species by the U.S. Fish and Wildlife Service or by the State of Hawai'i under its endangered species program are not known to be present on the project site or in the immediate vicinity. However, it is possible that both the threatened Newell's Shearwater (*Puffinus newelli*) and the endangered Dark-rumped Petrel (*Pterodroma phaeopygia sandwichensis*) overfly the site. Avian species likely to be present consist of introduced species such as various types of pigeons and doves, mynahs, babblers, silvereyes, saltators, and cardinals.

Mammals present on the project site are likely to consist of feral mammals such as Indian mongoose (*Herpestes auropunctatus*) and feral cats (*Felis catus*). Also, it is likely that Roof rats (*Rattus r. rattus*), Norway rats (*Rattus norvegicus*), and, possibly, Polynesian rats (*Rattus exulans hawaiiensis*), as well as House mice (*Mus musculus*), are present (van Viper 1982).

Potential Impacts and Issues

The project has the potential to affect plant and animal species found on the property. The DEIS will include technical reports that document the botanical, avian and faunal resources present on the property. These reports will ascertain whether any endangered, threatened, proposed or candidate species are present, using or might utilize any of the habitat within the project area. These reports will identify areas of potential environmental problems or concerns and propose appropriate mitigative measures.

4.3 ARCHAEOLOGICAL, HISTORIC AND CULTURAL ENVIRONMENT

4.3.1 Archaeological Resources

In 1991, an archaeological inventory survey was conducted that included the Waikoloa Makai project site along with the adjacent property where the Beach Club is planned (Rosendahl, 1991). Since then, an addendum archaeological inventory survey was completed in 1996 which was reviewed and approved by the Department of Land and Natural Resources' State Historic Preservation Division (SHPD) in a letter dated October 23, 1996.² This letter indicated that development of this area will have no adverse effect on sites provided committed mitigation measures are implemented.

During the survey, 23 sites were identified within or immediately adjacent to these two properties. Of the 23 sites, 18 were assessed as significant solely for information content. For these 18 sites, no further archaeological data collection was recommended. Of the five (5) remaining sites, four (4) are located within the Waikoloa Makai project site. These four sites were identified, using the SIHP identification number (50-10-10), as Sites 14193 (habitation complex), 14196 (trail), 14202 (petroglyphs), and 14203 (platform).

For the petroglyphs present at Sites 14193 and 14202, the present level of recording was considered sufficient and no further data collection was recommended. Preservation and interpretive development were recommended for the petroglyphs at Site 14202 and for the Feature A cave and associated (interior) pond and exterior petroglyphs at Site 14193. Site 14193 has additional potentially significant scientific research potential in the portable cultural material, which remains largely undisturbed within some features, and thus additional data recovery work was recommended for the site.

Site 14196 was assessed as significant for information and cultural values, however, no further data collection was warranted or recommended for this site. For Site 14203 (platform), preservation with some level of interpretive development was recommended as the site represents a relatively rare feature type along this section of coastline, and the feature possesses potential cultural value in that it represents a possible shrine or political boundary marker.

Potential Impacts and Issues

The project should not have an adverse effect on the archaeological resources identified within the project site since previously committed mitigation measures would be implemented. Such measures would include preservation site buffer areas and other requirements under the Preservation Plan developed for this property. The DEIS will describe the results of the archeological inventory survey in greater detail, and discuss the preservation efforts required to mitigate the impacts to the identified sites.

² SHPD Letter dated October 23, 1996; Log No. 18331, Doc No: 9610PM20

4.3.2 Historic and Cultural Resources

According to information contained in the 1991 archaeological inventory survey, it is has been postulated that initial permanent settlement of the Anaeho`omalu area occurred around AD 900 and continued intermittently through the contact period. Permanent habitation sites identified at Anaeho`omalu occur within the immediate coastal zone (within about 100 meters from the shoreline) while short-term shelters, such as C-shaped walls and lava clearings, occur within the immediate coastal area and along trails or foot paths (Jensen 1991).

Specialized activities in the Anaeho`omalu and Waikoloa areas consisted of petroglyph fields and, even more extensively, the production of portable scoria abraders. It is has been suggested that the petroglyph production at Anaeho`omalu probably began after AD 1400, since the local population and that of adjacent ahupua`a in West Hawai`i were quite low prior to that time. Historic-period petroglyphs depicting monograms, dates, horses and western-style sailing ships are present at numerous sites at Anaeho`omalu and Waikoloa and offer evidence that petroglyph production continued into the nineteenth century (Jensen 1991).

The scoria abrader quarry and workshop areas extend from the coast at Anaeho`omalu Point, southeast behind the ponds at Anaeho`omalu Bay, and then south across the South Kohala/North Kona district boundary and the Queen Ka`ahumanu Highway, terminating within Pu`uanahulu at the face of the Kaniku Flow. In short, much of the seaward portion of Waikoloa, and perhaps more than half of Anaeho`omalu, contain evidence of extensive quarrying and grinding basins (Jensen 1991).

The basic subsistence pattern and exploitation strategy for the Anaeho`omalu /Waikoloa area appears to have been one which relied heavily upon and revolved primarily around marine resources. Based on analysis of midden remains, it appears that occupants also exploited various terrestrial resources (Jensen 1991).

Potential Impacts and Issues

The project has the potential to affect historic and cultural resources. The DEIS will include a cultural impact assessment which will identify traditional native Hawaiian activities and cultural resources through research of the historic record and interviews with persons knowledgeable about the historic and traditional practices in the project area and region. The cultural impact assessment will identify and describe traditional land use activities, cultural resources, practices and beliefs associated with the parcel and identify present uses that may be occurring thereon.

4.4 SOCIO-ECONOMIC ENVIRONMENT

4.4.1 Population, Housing and Economic Characteristics

The Puakō census designated place (CDP) for the 2000 Census includes the Waikoloa Beach Resort, the Mauna Lani Resort to the north and the beachside community of Puakō located to the north of Mauna Lani Resort. According to the census data, the population for the Puakō CDP is 429 persons; 379 persons are 18 years of age or older, 37 are between the ages of 5 and 17 and 13 are below the age of 5. The median age of residents is 48.1 years. The average household size is 2.00 persons and the average family size is 2.43 persons.

As with the rest of the state, Hawai'i County's ethnic makeup is diverse. However, persons of Caucasian and Asian ancestry are especially numerous, representing 31.5 percent and 26.7 percent of the population, respectively. Within the Puakō CDP, 71.6 percent of the population is Caucasian while 12.6 percent of the population is comprised of persons of two or more races, and 11.4 percent is of Asian ancestry.

There are a total of 702 housing units in the Puakō CDP but only 215 of these units are occupied. Of the 487 vacant units, 436 are for seasonal, recreational or occasional use. These housing unit statistics are consistent with the resort-residential uses occurring within Waikoloa Beach Resort, Mauna Lani Resort and the Puakō community where many units are used on a part-time or occasional basis as vacation homes, time-share or vacation rentals.

The 2000 Census data indicate that 395 persons, or about 92 percent of the population, in the Puakō CDP are of working age (16 years and over) while 250 persons are in the labor force. Of those in the labor force, approximately 37 percent are employed in management, professional, or related fields. Service occupations account for jobs held by about 31 percent of the labor force, while sales and office occupations account for about 17 percent of the labor force.

The population within the Puakō CDP is more prosperous than the rest of the County, with greater average household incomes, a greater percentage of households with incomes between \$35,000 and \$49,999 and between \$75,000 and over \$200,000, and significantly fewer residents living below the poverty level. Within the Puakō CDP, the median household income is \$60,250 and the median family income is \$81,176. These amounts are 51 percent and 75 percent higher, respectively, than the median household income and family income for the County of Hawai'i.

Potential Impacts and Issues

It is unlikely that the proposed project will have direct social impacts on the residents of the other developments within the Waikoloa Beach Resort area or the larger community. However, the project does have the potential to indirectly impact residents through population increase as new residents add to the demand for services and transform the existing character of a place. The DEIS will include an analysis of the direct and indirect effects of the project on these social factors.

4.4.2 Economic and Fiscal Factors

The economy of Hawai'i Island has recovered from the decade-long economic slump that began with the Persian Gulf War of 1991 and the demise of the Japanese "bubble economy", both of which caused tourism to decline significantly. Despite the temporary economic slowdowns experienced as the result of the September 11, 2001, terrorist attacks and the subsequent Afghanistan and Iraq wars, the island's economy has been growing, based primarily upon the continued demand for high-end resort-residential housing in West Hawai'i and a healthy tourism industry. Economic diversification in West Hawai'i consists of technology industries centered on the Natural Energy Laboratory Hawai'i and the astronomical base facilities in Waimea, diversified agriculture, and various service industries.

Table 4.1 lists selected employment characteristics from the 2000 census, comparing the island as a whole with Puakō and nearby Waikoloa Village. As evidenced by this comparison, both Puakō and Waikoloa have a greater number of residents employed in service occupations and significantly higher proportions of jobs involving arts, entertainment, recreation, accommodations and food services than the rest of the island. Presumably, this is due to the proximity of these communities to several large resort properties on the Kona-Kohala coast, including the Waikoloa Beach Resort. Other areas in which both communities have a proportionately higher number of jobs in comparison with the County are finance, insurance, real estate, and rental and leasing, and professional, scientific, management, administrative, and waste management services.

Table 4.1
Selected Employment Characteristics

CHARACTERISTIC	Hawai'i (%)	Puakō (%)	Waikoloa (%)
(Employed civilian population 16 years and over)			
OCCUPATION			
Management , professional and related occupations	30.2	36.6	26.8
Service occupations	22.2	31.3	34.9
Sales and office occupations	25.1	16.5	23.7
Farming, fishing, and forestry occupations	3.8	2.1	0.5
Construction, extraction, and maintenance occupations	9.9	7.0	7.5
INDUSTRY			
Agriculture, forestry, fishing and hunting, and mining	7.1	5.3	1.2
Construction	7.8	7.4	4.7
Manufacturing	2.6	3.3	0.9
Wholesale trade	2.7	3.7	1.2
Retail trade	12.0	7.4	8.2
Transportation and warehousing, and utilities	5.5	2.5	5.2
Information	1.8	1.2	2.1
Finance, insurance, real estate, and rental and leasing	5.1	9.1	6.6
Professional, scientific, management, administrative, and waste management services	8.6	11.5	9.1
Educational, health and social services	18.9	7.0	9.1
Arts, entertainment, recreation, accommodation and food services	17.6	36.2	46.2
Other services (except public administration)	4.5	2.9	3.6
Public administration	5.7	2.5	1.9

CLASS OF WORKER

Private wage and salary workers	67.5	76.5	81.2
Government workers	19.7	4.5	8.6
Self-employed workers in own not incorporated business	12.0	18.9	9.6
Unpaid family workers	0.8	0.0	0.6

Source: U.S. Bureau of the Census. May 2001. *Profiles of General Demographic Characteristics, 2000 Census of Population and Housing, Hawai'i*. (U.S. Census Bureau. <http://www.census.gov/>).

As shown in Table 4.2, unemployment in Hawai'i County has historically been higher than that for the State. Unemployment in Hawai'i County during 2004 was 3.9%, representing its lowest point in over fifteen years. During the first five months of 2005, unemployment dropped even lower before increasing to a high of 4.0% in June, and then dropping slightly to 3.8% in July.

Table 4.2
Unemployment Rates, State and Hawai'i County 1998 to July 2005

	1998	1999	2000	2001	2002	2003	2004	July 2005
Hawai'i State	6.2%	5.6%	4.3%	4.6%	4.2%	4.3%	3.3%	3.0%
Hawai'i County	9.6%	8.7%	6.7%	6.8%	5.7%	6.3%	3.9%	3.8%

Source: State of Hawai'i Department of Labor and Industrial Relations. <http://www.loihi.state.hi.us/>. All figures year-end with the exception of July 2005.

Potential Impacts and Issues

Moderate to large construction projects such as Waikoloa Makai generate a fair amount of employment, income and tax revenues, and in some cases may lead to in-migration of workers. Direct construction jobs typically consist of on-site laborers, tradesmen, equipment operators, supervisors, and administrative and clerical staff. The design and construction management work associated with these types of projects include the services of design engineers, surveyors, architects, and related administrative staff. It is anticipated that most project-related jobs will be filled by residents from the Island of Hawai'i employed within the engineering, architectural and construction fields.

The DEIS will analyze direct, indirect and induced construction employment, income, and expenditures. It will also include an analysis of State and County revenues versus expenditures. It will assess the labor market for construction and determine the impact, if any, on local employment and housing.

4.5 PUBLIC FACILITIES AND SERVICES

4.5.1 Water Facilities

Water for the project will be provided by the West Hawai'i Utilities Company (formerly Waikoloa Resort Utilities, Inc.). This private utility company provides water to the rest of Waikoloa Beach Resort from its wells located proximate to Waikoloa Village. There are no County owned or operated water facilities serving the Waikoloa area.

Potential Impacts and Issues

The project has the potential to impact the water facilities operated by West Hawai'i Utilities Company. The DEIS will include a preliminary engineering report to assess the impacts of the proposed project on the water system and will identify appropriate mitigative measures.

4.5.2 Wastewater Facilities

Wastewater generated by the proposed project will be collected, treated and disposed of by the wastewater treatment facilities owned and operated by West Hawai'i Utilities Company for the Waikoloa Beach Resort area. The wastewater treatment plant, which services the entire Waikoloa Beach Resort, has a capacity of 1.25 million gallons per day (MGD) and a current peak maximum flow of approximately 650,000 gallons per day, or approximately 52 percent of total capacity. Wastewater is subjected to secondary treatment at the WWTP, resulting in R-2 quality effluent water, all of which is used to irrigate Waikoloa Beach Resort's two golf courses.³

Potential Impacts and Issues

The project has the potential to impact the wastewater collection and treatment facilities owned and operated by West Hawai'i Utilities Company. The DEIS will include a preliminary engineering report designed to assess the impacts of the proposed project on the wastewater system and will identify appropriate mitigative measures.

4.5.3 Drainage Facilities

Due to the low rainfall levels in the project area, and the lack of streams or other major drainage ways in the immediate area, it appears that there is not a significant amount of storm water currently draining through the property. The naturally occurring drainage likely infiltrates into the ground or sheet flows in a mauka to makai direction across the property before discharging into the ocean at the shoreline.

The shoreline portion of the property is located in Zone VE with a base flood elevation of 8 feet, a very small portion of the property inland of the Zone VE-designated area is within Zone AE with a base flood elevation of 7 feet, and the majority of the property is located in Zone X, or outside the 500-year floodplain.

³ Personal communication with Robert Spettich, October 18, 2004.

Potential Impacts and Issues

Virtually all large projects have the potential, if not properly mitigated, to adversely affect natural and man-made drainage systems. The proposed project will increase the proportion of impervious surfaces on the subject property, thereby adding to total runoff and necessitating the development of an appropriate drainage system. The preliminary engineering report in the DEIS will calculate the anticipated drainage to be generated by the project, identify the impacts this drainage could have on the environment and identify mitigative measures for avoiding or minimizing impacts. Due to its location within Zones VE and AE, the project will be designed in accordance with the requirements of Chapter 27, Flood Control, of the Hawai'i County Code.

4.5.4 Solid Waste Facilities

Solid waste generated in West Hawai'i is disposed of at the West Hawai'i Landfill, a 300-acre facility that is located approximately 2 miles southeast of the project area in Pu'uana'hulu, on the mauka side of Queen Ka'ahumanu Highway. This facility is expected to be able to serve the County's needs well into the future.

Potential Impacts and Issues

Construction-related solid wastes will be generated over a relatively short time period and will consist primarily of vegetation, rocks, and other debris resulting from the clearing and grading of the area as well as the construction of buildings. The contractor will be required to remove all debris from the project site, and properly dispose of them at the West Hawai'i Landfill in conformance with County regulations. The operation of the project will also generate solid waste associated with the use and maintenance of the units and facilities. The DEIS will discuss the potential impacts on solid waste facilities in greater detail and identify mitigative measures, which will include the development of a solid waste management plan.

4.5.5 Transportation Facilities

Existing roadway facilities include the Queen Ka'ahumanu Highway (SR 19), Waikoloa Beach Drive and Ku'uali'i Place. Queen Ka'ahumanu Highway is the only major public roadway facility in the immediate vicinity of the project area. This two-lane highway is a State-operated highway that serves as the main vehicular access from Kailua-Kona to Kawaihae. It has a posted speed limit of 55 miles per hour which decreases to 45 miles per hour at its intersection with Waikoloa Beach Drive. This signalized intersection is fully channelized and serves as the main access point to Waikoloa Beach Resort.

Waikoloa Beach Drive has a posted speed limit of 25 miles per hour and the intersection of Waikoloa Beach Drive with Ku'uali'i Place and the Kings' Shops is controlled by four-way stop signs. Ku'uali'i Place leads to the public parking lot for Anaeho'omalua Bay, the planned Beach Club site, and the project site.

Potential Impacts and Issues

The DEIS will include the results of a traffic impact analysis that will identify and document the traffic related impacts of the proposed project. The traffic analysis will identify and evaluate traffic related improvements required to provide adequate access and egress to and from the proposed project and to mitigate the project's traffic impacts.

4.5.6 Electrical and Communication Facilities

Electrical power on the Island of Hawai'i is provided by Hawai'i Electric Light Company, Inc. (HELCO), a privately owned utility company regulated by the State Public Utilities Commission. Hawaiian Telcom provides telephone and telecommunications services.

Potential Impacts and Issues

The DEIS will identify the proposed project's effects on utilities, including utility relocation or system expansion, and propose mitigative measures if appropriate.

4.5.7 Recreational Facilities

The most notable recreational facility in the immediate vicinity of the project is Anaeho'omalu Beach Park, which is used for a wide range of ocean and beach activities. Public access to the beach park is permitted everyday from sunrise to sunset and free public parking is located immediately adjacent to the northeast of the project site. Waikoloa Beach Resort maintains public bathroom and shower facilities at the beach, the beach itself, and the Ku'uali'i and Kahapapa Fishponds fronting Anaeho'omalu Bay. Public access trails extend northward from Anaeho'omalu Bay to Waiulua Bay and southward along the shoreline.

Other historically significant sites within the Waikoloa Beach Resort that offer recreational opportunities are the Ala Loa, or King's Trail, and the Waikoloa petroglyph field.

Potential Impacts and Issues

Development of the project is expected to have minimal impact on existing recreational facilities as it should not curtail the public's use or enjoyment of Anaeho'omalu Beach Park, the bay itself, the historic fishponds, shoreline trails, the Ala Loa, or the petroglyph field. The DEIS will include a full discussion of potential project impacts on recreational facilities and identify appropriate mitigative measures.

4.5.8 Medical Facilities

The closest major medical facility in the vicinity of the project site is the community owned non-profit North Hawai'i Community Hospital (NHCH) located approximately 18 miles northeast of the project site in the town of Waimea. NHCH offers 24-hour emergency services and 35 acute care beds. The hospital has a medical staff of over 119, a total hospital staff in excess of 300, and a 95-member volunteer services program. The State-operated Kona Community

Hospital is located approximately 34 miles to the south of the project site in the town of Kealahou and limited emergency care services are available at the privately owned and operated Hualalai Urgent Care facility in Kailua-Kona, approximately 24 miles from the project site.

Potential Impacts and Issues

The construction and operation of the proposed project may have an impact on the facilities and operations of the North Hawai'i Community Hospital, the Kona Community Hospital and Hualalai Urgent Care. The DEIS will discuss these potential impacts in greater detail and identify mitigative measures as appropriate.

4.5.9 Police Facilities

The project area is located within the South Kohala Police District and is part of the Hawai'i County Police Department's Area II field operations bureau. Police services are provided by a central station in Waimea, a substation located within the Mauna Lani Resort and a mini-station located at the Waikoloa Golf Course in Waikoloa Village. The South Kohala Police District is bounded by the North Kohala District at Kai'ōpae and the Kona District at Ka'auau Point (HPD 2002-2003 Annual Report). Waikoloa Beach Resort also has its own private security system that can provide some supplementary support.

Potential Impacts and Issues

Development of the project may impact police protection and related services as the result of slightly increased population and vehicular traffic within the Waikoloa Beach Resort. The DEIS will discuss the potential impacts to police services in detail and describe appropriate mitigative measures as necessary.

4.5.10 Fire and Emergency Facilities

Fire protection and emergency medical and paramedical services are provided by the Hawai'i County Fire Department's Kohala Coast Fire Station situated approximately 3 miles north of the project site along the Queen Ka'ahumanu Highway. In addition, backup fire protection is available from Waikoloa Village and Waimea Fire Stations.

Potential Impacts and Issues

Development of the project may impact fire protection and related services as the result of slightly increased population and vehicular traffic within the Waikoloa Beach Resort. The DEIS will discuss the potential impacts to fire services in detail and describe appropriate mitigative measures as necessary.

4.5.11 Educational Facilities

The Waikoloa Elementary School operated by the State Department of Education in Waikoloa Village provides public education to students in grades Kindergarten through 5. The school's fall enrollment count for the 2004-2005 year was 582 students. Waikoloa Elementary School is part of the Honoka'a Complex which in turn is part of the larger Honoka'a-Kealakehe-Kohala-Konawaena Complex-area (DOE 2005).

The Kealakehe Intermediate School located in Kailua-Kona educates students in grades 6 through 8 and had a fall enrollment of 1,052 during the 2004-2005 school year. Kealakehe High School is located next to the intermediate school, and serves grades 9 through 12. The high school's fall enrollment during the 2004-2005 school year was 1,450.

Potential Impacts and Issues

Given the anticipated use of the development as a time-share or similar vacation-type project, it is unlikely that it will impact educational facilities in the surrounding community. Nonetheless, the DEIS will include a thorough discussion of the potential impacts of the project on school campuses and operations, and will identify mitigative measures, if appropriate.

4.6 SECONDARY AND CUMULATIVE IMPACTS

Secondary impacts, or indirect effects, are effects which are caused by an action and are later in time or farther removed in distance, but are still reasonably foreseeable. Such effects may include growth inducing impacts and other effects related to changes in land use patterns, population density or growth rate, and related effects on air, water, and other natural systems.

Cumulative impacts are effects on the environment which result from the incremental impact of a project when added to past, present, and reasonably foreseeable future actions regardless of what government agency or person undertakes the action.

The DEIS will identify and address the potential secondary impacts associated with the project, and the cumulative impacts from this project taking into account other pertinent developments in the immediate vicinity.

CHAPTER 5

CONSISTENCY WITH GOVERNMENT PLANS AND POLICIES

The DEIS will contain a discussion of the project's consistency with a number of County and State plans and policies. This discussion will include, but will not necessarily be limited to, the following:

The Hawai'i State Plan. Adopted in 1978 and last revised in 1991 (Hawai'i Revised Statutes, Chapter 226, as amended), the Plan establishes a set of themes, goals, objectives and policies that are meant to guide the State's long-range growth and development activities. The three themes that express the basic purpose of the *Hawai'i State Plan* are individual and family self-sufficiency, social and economic mobility and community or social well-being.

Hawai'i State Functional Plans. The *Hawai'i State Plan* provides for the preparation of Functional Plans by the state agencies responsible for certain program areas. There are twelve Functional Plans dealing with specific areas of concern, and each contains objectives, policies, and implementing actions necessary to accomplish the goals of the plan. State Functional Plans cover the program areas of agriculture, transportation, conservation lands, housing, tourism, historic preservation, energy, recreation, education, health, human services, and employment. The DEIS will discuss those Functional Plans that are applicable to the proposed project.

Hawai'i State Land Use Law. All land in the State of Hawai'i is classified into one of four land use categories – Urban, Rural, Agricultural or Conservation – by the State Land Use Commission, pursuant to Chapter 205, Hawai'i Revised Statutes. The DEIS will discuss the consistency of the reclassification request from Conservation to Urban, as well as that of the project itself, with Chapter 205.

Coastal Zone Management Act. The purpose of Chapter 205A, Hawai'i Revised Statutes, is to preserve, protect, develop, and where possible, enhance the resources of the coastal zone. The DEIS will discuss the project's consistency with Chapter 205A.

Hawai'i County General Plan. The *General Plan* for the County of Hawai'i is a policy document expressing the broad goals and policies for the long-range development for the Island of Hawai'i. The DEIS will contain an analysis of each of these sections as they relate to the proposed project, and will also contain discussion of the project's relation with the LUPAG Map designations of the *General Plan*.

West Hawai'i Regional Plan. This plan represents an attempt to coordinate planning efforts among State agencies that have programs, facilities and other interests in the region. The purposes are to respond more effectively to emerging needs and critical problems, to coordinate capital improvements within a regional framework, and to provide guidance in State land use decision-making processes. The DEIS will discuss the proposed project in relation to this plan.

CHAPTER 6 AGENCY AND PUBLIC CONSULTATION

The following agencies and organizations have been provided with a copy of the EISPN and are invited to consult on the EIS process for this project.

Federal

U.S. Army Engineer District, Department of the Army
U.S. Department of Agriculture, Natural Resources Conservation Service
U.S. Department of the Interior, National Park Service
U.S. Department of the Interior, Pacific Island Region, Fish and Wildlife Service
U.S. Department of the Interior, Water Resources Division, Geological Survey
U.S. Department of Transportation, Federal Highway Administration, Hawai'i Division
U.S. Environmental Protection Agency

State

Department of Accounting and General Services
Department of Agriculture
Department of Agriculture, Agribusiness Development Corporation
Department of Business, Economic Development and Tourism
Department of Education
Department of Hawaiian Home Lands
Department of Health
Department of Land and Natural Resources
Department of Land and Natural Resources, Division of Boating and Ocean Recreation,
Hawai'i District Office
Department of Land and Natural Resources, Land Division
Department of Land and Natural Resources, State Historic Preservation Division
Department of Land and Natural Resources, State Parks Division, Hawai'i Parks Section
Department of Transportation
Department of Transportation, Highways Division, Hawai'i District Office
Housing and Community Development Corporation of Hawai'i
Land Use Commission, Department of Business, Economic Development and Tourism
Office of Hawaiian Affairs
Office of Planning, Department of Business, Economic Development and Tourism
Office of the Governor – West Hawai'i Liaison
University of Hawai'i, Water Resources Research Center
University of Hawai'i, Environmental Center

County

Civil Defense Agency
County Council
Department of Environmental Management
Department of Parks and Recreation
Department of Public Works
Department of Research and Development
Department of Water Supply
Fire Department
Mayor Harry Kim
Office of Housing and Community Development
Planning Department
Police Department

Organizations and Individuals

Hawai'i Leeward Planning Conference
Kohala Coast Resort Association
Kona-Kohala Chamber of Commerce
Kona Outdoor Circle
Sierra Club
South Kohala Traffic Safety Committee
Senator Paul Whalen, 3rd Senatorial District
Representative Cindy Evans, 7th Representative District
Councilman Pete Hoffman, Council District 9

Utilities

Hawai'i Electric Light Company, Inc.
Hawaiian Telcom

The above list is a preliminary identification of parties with interests at stake or who may have information pertinent to the proposed project. Waikoloa Land and Cattle Company welcomes and appreciates any assistance in identifying others who may have special information or might be adversely affected by the proposed project, and who should therefore be consulted in the process of preparing the DEIS.

A copy of this EISPN has also been made available at the Kailua-Kona, Bond Memorial, Waimea, and Hilo Public Libraries.

CHAPTER 7

FINDINGS AND ANTICIPATED DETERMINATION

To determine whether a proposed action may have a significant effect on the environment, the Approving Agency needs to consider every phase of the action, the expected primary and secondary consequences, cumulative effect, and the short- and long-term effects. The Approving Agency's review and evaluation of the proposed action's effect on the environment would result in a determination of whether: 1) the action would have a significant effect on the environment, and an Environmental Impact Statement Preparation Notice should be issued, or 2) the action would not have a significant effect warranting a Finding of No Significant Impact (FONSI).

This chapter discusses the project's potential impact on the environment based upon the 13 Significance Criteria established under the State Department of Health's Administrative Rules Title 11, Chapter 200 and anticipated determination by the Accepting Authority.

7.1 PRELIMINARY FINDINGS

1. *Involves an irrevocable commitment to loss or destruction of any natural or cultural resource.*

The proposed improvements would not result in the irrevocable commitment to loss or destruction of any natural or cultural resource. Appropriate mitigative measures will be implemented to address impacts occurring. The DEIS will discuss the project's effects on such resources in greater detail along with proposed mitigative measures.

2. *Curtails the range of beneficial uses of the environment.*

The project would not curtail the range of beneficial uses associated with this property since it is privately-owned and not open to the general public for use. As a result, there are no activities or other uses of the environment presently occurring. With the project, beneficial uses for the public and resort will be created as a result of the proposed improvements. The DEIS will include greater discussion of these uses and activities.

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

The improvements should not conflict with the State's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS. A discussion of the project's consistency with applicable guidelines will be provided in the Draft EIS.

4. *Substantially affects the economic, or social welfare, cultural practices of the community or State.*

The project should not have any significant negative impacts on economic factors, the surrounding community, or its resort character. This project would create some economic benefits resulting from new short-term construction related jobs, permanent jobs associated with commercial and resort uses, and increased tax revenue to the County and State.

This project is not expected to significantly affect traditional native Hawaiian cultural practices other traditional cultural practices occurring in the surrounding area. A cultural impact assessment will be conducted and the results discussed in the DEIS. Other effects on the social welfare of the community will be addressed.

5. *Substantially affects public health.*

The project is not expected to substantially affect public health. The DEIS will address the project's effects on public health issues such as air quality.

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

This project could have some form of secondary impacts on the social environment or other infrastructure and public facilities due to the creation of new residential units on the property. The DEIS will address such secondary impacts associated with the project.

7. *Involves a substantial degradation of environmental quality.*

The project should not involve a substantial degradation to the quality of the surrounding environment. Appropriate mitigative measures will be implemented to address impacts on the environment in coordination with appropriate government agencies. The DEIS will include further discussion of the project's potential impacts on the environment.

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

This project does not involve a commitment for larger actions since this involves development of the last remaining undeveloped shoreline parcel under the Waikoloa Resort. The project should have minimal cumulative impacts as well since all infrastructures are provided by private utility companies. However, the DEIS will address the cumulative effect of the project on the environment.

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

The project should not have an adverse effect on endangered, threatened, or rare species or resources present on the property. Appropriate mitigative measures will be implemented to ensure any impacts are minimized. Such measures would include rehabilitating an anchialine pond along the shoreline, and incorporating other preservation

plans and monitoring measures which are implemented with other similar properties within this resort. The DEIS will address these resources and proposed mitigative measures.

10. Detrimentially affects air or water quality or ambient noise levels.

This project should not have a detrimentally significant impact on air, water quality, or ambient noise levels in the immediate vicinity of the project site. Impacts associated with these factors would be limited to short-term construction activities. To further minimize impacts, construction activities would be subject to applicable State regulations addressing air quality, noise, and water quality. The DEIS will address these areas and the project's effects on water quality.

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.

Construction of the project would be in compliance with applicable County building codes and DWS system standards. Thus, the design of buildings and structures will be in conformance with flood design criteria and standards along with other pertinent requirements. The DEIS will discuss these design requirements in greater detail.

12. Substantially affects scenic vistas and viewplanes identified in county or state plans or studies.

The project should not adversely affect scenic vistas or viewplanes. The DEIS will include a visual assessment to address the probable effects and landscaping planned to buffer and screen buildings and structures.

13. Requires substantial energy consumption.

The project would not require substantial energy consumption or increased capacity of supporting electrical facilities. The DEIS will discuss the electrical demand generated.

7.2 ANTICIPATED DETERMINATION

This project may potentially have a significant impact on the environment based upon the 13 Significance Criteria. Consequently, a Draft EIS is being prepared for this project resulting in the publication of this EISPN. The preliminary findings supporting this anticipated determination are based upon the previous discussion of the project's affect on the environment in relation to these criteria.

CHAPTER 8 BIBLIOGRAPHY

- Baker, H.L. 1976. *Agricultural Lands of Importance to the State of Hawaii*. University of Hawai'i at Manoa College of Tropical Agriculture Cooperative Extension Service Circular 496. Honolulu, Hawaii.
- Commission on Water Resource Management (CWRM). 1989, December. *Hawai'i County Water Use and Development Plan*. Hawai'i Water Plan. Department of Land and Natural Resources, State of Hawai'i. Prepared for Department of Water Supply, County of Hawai'i by Megumi Kon, Inc. Honolulu, Hawai'i: Author.
- County of Hawai'i. 2005. *The General Plan; Hawai'i County*. Adopted under Ordinance 05-25. Hilo, Hawai'i.
- County of Hawai'i (County). 2000. *The Hawai'i County Code 1983 (Revised and Republished 1995)*. Hilo, Hawai'i.
- Department of Education. 2005. *Enrollment Reports for 2004-2005*. State of Hawai'i. Honolulu, Hawai'i: Author. Retrieved June 27, 2005 from <http://doe.k12.hi.us/reports/>.
- Department of Geography. (1998). *Atlas of Hawai'i*. Third Edition. University of Hawai'i at Hilo. University of Hawai'i Press. Honolulu, Hawai'i.
- Federal Emergency Management Agency (FEMA). (1993). *Hazard Mitigation Report, Hurricane Iniki*. In Response to the September 12, 1992 Federal Disaster Declaration. FEMA-961-DR-HI. San Francisco, California: Author.
- Hawai'i Cooperative Park Service Unit (HCPSU). (1990, December). *Hawai'i Stream Assessment; A Preliminary Appraisal of Hawai'i's Stream Resources*. Report R84. Prepared for Commission on Water Resource Management, Department of Land and Natural Resources, State of Hawai'i. Honolulu, Hawai'i: Author.
- Historic Preservation Division (SHPD). 2004. *SHPD Library Listing: Hawai'i Island*; [Electronic version]. Department of Land and Natural Resources, State of Hawai'i. Retrieved October 18, 2004 from <http://www.state.hi.us/dlnr/hpd/hpgreeting.htm>.
- Historic Preservation Division. 2004, January. *Hawai'i Island Historic Register Regional Map; Hawi (02)* [Electronic version]. Department of Land and Natural Resources, State of Hawai'i. Retrieved October 18, 2004 from <http://www.state.hi.us/dlnr/hpd/hpgreeting.htm>.
- Land Study Bureau. 1965. *Detailed Land Classification – Island of Hawai'i*. L.S. Bulletin No. 6. University of Hawai'i. Honolulu, Hawai'i: Author.
- Macdonald, Gordon A., Abbott, Agatin T., and Peterson, Frank L. 1983. *Volcanoes in the Sea, The Geology of Hawai'i*. Second Edition. University of Hawai'i Press. Honolulu, Hawai'i.

- National Oceanic and Atmospheric Administration (NOAA). 2000. *Climatological Data Annual Summary; Hawai'i and Pacific*. Volume 96, Number 13. Department of Commerce, United States of America. National Climatic Data Center. Asheville, North Carolina.
- Sato, H.H. et al. 1973. *Soil Survey of Island of Hawai'i, State of Hawai'i*. U.S.D.A. Soil Conservation Service in cooperation with the University of Hawai'i, Agricultural Experiment Station. Washington, D.C.
- State of Hawai'i. 1998. *Hawai'i Revised Statutes*. Chapter 343, Environmental Impact Statements.
- State of Hawai'i. 1996. *Hawai'i Administrative Rules*. Title 11, Department of Health, Chapter 200, Environmental Impact Statement Rules.
- State of Hawai'i, Department of Health. 1996. *Community Noise Control*. Chapter 11-46, Hawai'i Administrative Rules.
- Sohmer, S. H. and Gustafson, R. 1987. *Plants and Flowers of Hawai'i*. University of Hawai'i Press. Honolulu, Hawai'i.
- U.S. Geological Survey (USGS). 1997. *Volcanic and Seismic Hazards on the Island of Hawai'i*. Department of Interior.
- Van Riper, Sandra G. and Van Riper III, Charles. 1982. *A Field Guide to the Mammals in Hawai'i*. The Oriental Publishing Company. Honolulu, Hawai'i.