The Residences at Kapalua Bay

Final Environmental Impact Statement

Prepared for:
The Accepting Authority,
Maui Planning Commission
&
Kapalua Bay LLC

Prepared by

PBR HAWAII

September 2005

THE RESIDENCES AT KAPALUA BAY

FINAL ENVIRONMENTAL IMPACT STATEMENT

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This environmental impact statement and all ancillary documents were prepared under my direction or supervision and the information submitted, to the best of my knowledge, fully addresses document content requirements as set forth in Section 11-200-17 and section 11-200-18, Hawaii Administrative Rules.

Ryan Churchill, President
Kapalua Bay LLC.

September 2005

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Introduction & Summary

1.0 INTRODUCTION AND SUMMARY

This ~~Draft~~ Final Environmental Impact Statement (EIS) is prepared pursuant to Chapter 343, Hawaii Revised Statutes, and Title 11, Chapter 200, Administrative Rules, Department of Health, State of Hawai'i. Proposed is an applicant action by Kapalua Bay, LLC, for the development of The Residences at Kapalua Bay (or "The Residences"), located in Kapalua, West Maui, County of Maui, Hawai'i.

1.1 INTRODUCTION

1.1.1 Project Profile

Project Name:	The Residences at Kapalua Bay
Location:	Kapalua, West Maui, Maui, Hawaii
Judicial District:	Lahaina
Landowner:	Kapalua Bay, LLC (4-2-04: parcels 28 and 29) Maui Land & Pineapple Company, Inc. (TMK: 4-2-04: parcel 27)
Applicant:	Kapalua Bay, LLC
Tax Map Key:	(2) 4-2-04: parcels 27, 28, and 29
Property Area:	Approximately 25 acres
Existing Uses:	Resort, including a hotel, restaurants, retail shops, tennis courts, parking lots, and public shoreline access.
Proposed Use:	Resort-residential community, including resort-residences, a restaurant, spa facilities, a public shoreline trail, and public shoreline access.
Land Use Designations:	State Land Use: Urban Community Plan: Business/Commercial, Hotel, and Park, County Zoning: Hotel (H-M), Resort Commercial (B-R), Open Space Special Management Area (SMA): within the SMA
Permits/Approvals Required:	Compliance with Chapter 343, Hawaii Revised Statutes (HRS) Planned Development Approval Special Management Area Use Permit Shoreline Setback Variance Demolition Permits Grading/Building Permits NPDES Permit
EIS Accepting Authority:	Maui Planning Commission

1.1.2 Applicant

The applicant is Kapalua Bay, LLC.

Contact Person: Mr. Ryan Churchill
1000 Kapalua Drive
Lahaina, Hawai'i 96761
Telephone: (808) 669-5622
Facsimile: (808) 669-5454

1.1.3 Planning Consultant

Kapalua Bay, LLC.'s planning consultant for The Residences at Kapalua Bay is PBR HAWAII.

Contact Person: Tom Schnell, AICP
PBR HAWAII
1001 Bishop Street
ASB Tower, Suite 650
Honolulu, Hawai'i 96813
Telephone: (808) 521-5631
Facsimile: (808) 523-1402

1.1.4 Accepting Authority

The Maui Planning Commission is the accepting authority for this EIS. Determination of the Maui Planning Commission as the accepting authority is in accordance with Chapter 343, HRS, which states that privately initiated EIS documents must be accepted by the government agency empowered to issue permits for the project.

Contact Person: Mr. Michael Foley, Director
Planning Department
County of Maui
250 South High Street
Wailuku, Hawai'i 96793
Telephone: (808) 270-7735
Fax: (808) 270-7634

1.1.5 Compliance with State of Hawai'i and County of Maui Environmental Laws

This document has been prepared in accordance with the provisions of Hawaii Revised Statutes (HRS) Chapter 343, Environmental Impact Statement Law and Hawaii Administrative Rules (HAR) Title 11, Department of Health, Chapter 200, Environmental Impact Rules. Section 343-5, HRS, establishes nine "triggers" that require the preparation of an environmental assessment or environmental impact statement. The trigger applicable to The Residences at Kapalua Bay is use within the Shoreline Setback Area.

While The Residences at Kapalua Bay will not be within the shoreline setback area, the existing Kapalua Bay Hotel is within the shoreline area as defined in Section 205A-41, HRS and Section

12-203-6, Shoreline Rules for the Maui Planning Commission. The Residences will be set back further from the shoreline under the County's current shoreline set back rules, which were not in effect at the time the Kapalua Bay Hotel was built. Under the new rules, the shoreline setback line for The Residences at Kapalua Bay is calculated to be 150 feet from the shoreline.

Since the creation of The Residences at Kapalua Bay will require the removal of the existing Kapalua Bay Hotel located in the shoreline setback area, Kapalua Bay, LLC, has initiated the preparation of an environmental impact statement (EIS) to address any issues regarding work in the shoreline area necessary for the removal of existing structures. This EIS also addresses the uses related to The Residences that are located in the shoreline area, such as trails, pathways, and landscaping.

Section 343-5, HRS also requires an environmental assessment or environmental impact statement for projects involving the use of State or County funds or lands. Use of State or County lands or funds could include infrastructure improvements relating to roadway, traffic, water, sewer, utility, drainage, or other facilities. While the specific nature of all potential improvements is not known at this time, this EIS is intended to address all current and future instances involving the use of State or County lands or funds relating to The Residences at Kapalua Bay.

To provide a thorough environmental review of The Residences at Kapalua Bay, the preparation of an EIS is being undertaken. This ~~Draft~~ Final EIS was preceded by:

1. *The Residences at Kapalua Bay Environmental Impact Statement Preparation Notice* (EISPN). Notice of the availability of the EISPN was published in the January 23, 2005 edition of OEQC's *The Environmental Notice*. Copies of the EISPN were provided to appropriate government agencies and other organizations. The public comment period for the EISPN ended on February 22, 2005. Comments on the EISPN ~~have been~~ were incorporated in ~~this~~ the Draft EIS.

2. *The Residences at Kapalua Bay Draft Environmental Impact Statement* (EIS). The Draft EIS was submitted to OEQC on April 28, 2005. Notice of the availability of the Draft EIS was published in the May 8, 2005 edition of OEQC's *The Environmental Notice*. Copies of the DEIS were provided to appropriate government agencies and other organizations (See Chapter 12). The public comment period for the Draft EIS was from May 8, 2005 to June 22, 2005. Comments on the Draft EIS have been incorporated in this final EIS.

1.2 STUDIES CONTRIBUTING TO THIS ENVIRONMENTAL IMPACT STATEMENT

A number of specific technical studies were prepared for The Residences at Kapalua Bay. These include:

- Archaeological Inventory Survey Report
- Avifaunal and Feral Mammal Field Survey
- Cultural Impact Study/Assessment
- Traffic Impact Analysis Report
- Environmental Noise Assessment Report
- Air Quality Report

- Market Study and Economic Impact Analysis
- Preliminary Engineering and Drainage Report
- Marine Environment Assessment Report

The complete studies are included as appendices to this environmental impact statement.

1.3 EXECUTIVE SUMMARY

1.3.1 The Residences at Kapalua Bay Summary Description

The Residences at Kapalua Bay will provide additional resort-residential opportunities at the Kapalua Resort in West Maui. Proposed are approximately 155 homes to be clustered in approximately nine buildings on the property (Figure 1). Buildings will range from three- to six-stories in a general step-down fashion. Approximately 90 of the units are planned for sale as condominiums and approximately 65 homes will be sold under a one-twelfth fractional ownership plan. The Residences will also include a beach club, a spa, and a bar and grill restaurant.

The Residences at Kapalua Bay site is currently occupied by the Kapalua Bay Hotel, surrounding grounds, retail shops, parking lots, and tennis courts. Under current approvals, an additional 128 rooms could be added to the existing 196 rooms of the hotel for a total of 324 rooms. Creation of The Residences will require the removal of the hotel and related facilities. The existing shoreline access pathway and 10 public parking spaces will be retained.

Replacement of the existing Kapalua Bay Hotel and related facilities with The Residences creates opportunities for increased view corridors, increased access to the ocean, and buildings placed further from the shoreline compared to the existing hotel. The cluster approach and stepped design allows a gradual transition from low-rise buildings near the ocean to increased stories further from the shoreline. The new buildings also will be set back further from the shoreline under the County's current shoreline set back rules, which were not in effect at the time the Kapalua Bay Hotel was built. The increased area between buildings and the ocean will facilitate placement of a paved public coastal trail planned to run through The Residences site and beyond, providing continuous coastal access within Kapalua when all segments are completed.

1.3.2 Summary of Potential Impacts and Proposed Mitigation Measures

Botanical Resources
No endangered, threatened, or protected plant species are known to exist at The Residences site. The existing hotel facilities include landscaping and grounds typical of a resort. As much as possible, trees and other plants will be stored off-site during construction and replanted after construction. The Residences will include new landscaping appropriate to the resort-residential setting. New landscaping will include non-invasive species and, where feasible, native and indigenous plants. Drought-tolerant, hardy plants and grasses will also be used where feasible to minimize the need for irrigation.

Site Plan & Architecture

WCITARCHITECTURE

Figure 1
Conceptual Master Plan

The Residences at Kapalua Bay

KAPALUA BAY LLC

ISLAND OF MAUI

NORTH

LINEAL SCALE (FEET)
0 20 50 100

PBR HAWAII

Wildlife Resources
The Residences at Kapalua Bay is not expected to impact threatened, endangered, or native species of wildlife, since none were observed during a field survey. All of the birds and mammals found on the site are alien species.

Marine Resources
The marine water quality conducted for this EIS concludes: 1) "The changes in land use [from the existing hotel to The Residences] are not expected to have significant adverse effects on either the existing watershed, downstream properties, or coastal marine waters;" and 2) "it is not likely that there will be substantial differences compared to the existing situation" (Marine Research Consultants 2005a).

Archaeological Resources
No human remains whatsoever were observed or encountered within The Residences property during the archaeological survey conducted for this EIS. No subsurface burial features were observed. No historically-significant surface features or sites were found. Additional archaeological survey work will be conducted when the hotel is removed and before construction of The Residences.

Kapalua Bay, LLC and its contractors will comply with all laws and rules regarding preservation of archaeological and historic sites should any be found during construction.

Cultural Resources
Based on interviews with people knowledgeable with the Kapalua area and The Residences site, primary cultural concerns pertain to continued access to the shoreline. The Residences will not impact the existing on-site shoreline access pathway or public parking. In addition, The Residences will not impact access to the adjacent Kapalua (Fleming's) Beach, or any other public shoreline access points, related parking, and facilities. Further, a new paved public coastal trail is planned to run through The Residences site and beyond, providing continuous coastal access within the Kapalua Resort when all segments are completed.

Traffic
The traffic impact analysis report conducted for this EIS concludes that compared to the existing hotel on the site, The Residences will result in a 48 percent reduction in trips (vehicles entering and existing the site) in the AM peak hour and a 43 percent reduction in trips during the PM peak hour. The decrease in traffic generation is a result of the reduction in total units, as well as the trip-generating characteristics of the proposed types of uses. With The Residences, the total unit count on the property will be reduced from the existing 196 hotel rooms to a total of 155 resort-residential homes, resulting in less traffic generation.

Population
At full occupancy, The Residences is expected to have an average daily resident/guest population of 459.

Employment
Currently, the Kapalua Bay Hotel and related facilities support approximately 200 full-time equivalent on-site jobs. The Residences will generate jobs during construction and after its completion. Approximately 106 jobs will be generated in the second year, with 929 and 861 jobs

in the third and fourth year (during the height of construction), respectively. In the fifth year, the number of jobs generated will decline to 284. From the sixth year, full operations will be established and employment will be stabilized at approximately ~~263 jobs~~ 188 full-time equivalent on-site jobs and another 75 off-site positions.

Economic Impacts
The State of Hawai'i will receive nearly $40 million in primary tax receipts during the first decade of subject development and operation, and a stabilized amount of $3 million annually. The County of Maui will receive ~~$26.6~~ $34.1 million during the first ten years of the project, and ~~$3.4~~ $4.4 million per year thereafter. In no year does the State of County suffer a revenue shortfall (costs exceeding receipts) relative to the project.

While there will be some job displacement of existing Kapalua Bay Hotel and Shops employees during the construction period, the net result of redevelopment will be generally positive from an employment, economic impact, and tax receipts perspective relative to the current status quo. Further, it will re-establish the prestige of one of West Maui's premier resort sites, and create a fresher facility and more stable operation than currently exists.

Public Services
The de facto population of The Residences is projected to be 459.

It should be noted that because most of The Residences' population will be visitors using their second homes, pressure on government services and funds will be less than a community of full-time residents, as visitors typically do not rely on the full range of government services that full-time residents expect. However, property owners at The Residences, even if most (409 out of the 459 de facto population) are not full-time residents, will pay property taxes (on high value property) on a full-time basis, and excise taxes when they purchase goods and services on the island.

Water
The Residences will receive water from Kapalua Resort's dual water system, which provides potable and non-potable water.

Average daily potable water demand for The Residences is estimated to increase by approximately 27 percent compared to the hotel and related facilities. The Kapalua Resort's potable water sources have available capacity to supply this demand.

Average daily non-potable water demand for The Residences is estimated to decrease by approximately 1.8 percent compared to the average daily non-potable water demand of the hotel and related facilities.

Wastewater
The average sewer volume for The Residences is estimated to decrease by approximately 10 percent compared to the existing volume generated by the hotel and related facilities. Therefore, additional wastewater disposal capacity at the Lahaina Wastewater Treatment Facility will not be required.

Drainage
Estimated storm flow rates with The Residences are estimated to increase slightly over current conditions. All additional runoff over existing conditions will be retained on-site. The Residences' on-site storm drainage system will consist of a combination of drainlines, drain inlets, catch basins, storm drain manholes, and underground detention basins. The proposed improvements will direct flow from the newly constructed drainlines to underground detention basins.

Demolition and Recycling
Demolition of the Kapalua Bay Hotel and related facilities will be done safely and expeditiously while mitigating noise, dust, and disruption to the neighbors and the surrounding community. The goal is to recycle or reuse 90 to 95 percent of the materials from existing hotel. Materials that cannot be recycled will be taken to the County's construction and demolition landfill near Mā'alaea.

1.3.3 Relationship to Land Use Policies

State Land Use Law, Chapter 205, Hawaii Revised Statutes
The Residences at Kapalua Bay site is within the State Urban district. The uses planned by Kapalua Bay, LLC for The Residences at Kapalua Bay are permitted in the Urban district.

Hawaii Coastal Zone Management Program, Chapter 205A, Hawaii Revised Statutes
The Coastal Zone Management Area as defined in Chapter 205A, HRS, includes all the lands of the State. As such, The Residences at Kapalua Bay is within the Coastal Zone Management Area. Conformance with the Coastal Zone Management Program is discussed in Section 5.1.3 of this EIS.

Hawaii State Plan, Chapter 226, Hawaii Revised Statutes
The *Hawaii State Plan* (Chapter 226, HRS), establishes a set of goals, objectives, and policies that serve as long-range guidelines for the growth and development of the State. As proposed, The Residences are relevant to many of goals, objectives, and policies set forth by the *Hawaii State Plan*. Conformance with specific elements of the *Hawaii State Plan* is discussed in detail in Section 5.1.4 of this EIS.

State Functional Plans
The *Hawaii State Plan* directs State agencies to prepare functional plans for their respective program areas. There are 13 state functional plans that serve as the primary implementing vehicle for the goals, objectives, and policies of the *Hawaii State Plan*. The functional plans applicable to The Residences are discussed in Section 5.1.5 of this EIS.

Maui County General Plan
The *General Plan* of the County of Maui sets forth the desired sequence, patterns, and characteristics of future development. This is accomplished through long-range objectives focusing on the social, economic, and environmental effects of development coupled with specific policies designed to implement the objectives. Conformance with specific elements of the *General Plan* is discussed in Section 5.2.1 of this EIS.

West Maui Community Plan
The *West Maui Community Plan* Land Use Map designates specific areas of The Residences site as Hotel (H), Park (PK), and Business/Commercial (B). Conformance with specific elements of the *West Maui Community Plan* is discussed in Section 5.2.2 of this EIS.

Maui County Zoning
The County of Maui has zoned specific areas of The Residences site as Hotel (H-M), Resort Commercial (B-R), and Open Space (O). The Residences will be in conformance with these zoning designations, subject to the Planned Development Approval process.

1.3.4 Required Permits and Approvals

A preliminary list of permits and approvals required for The Residences at Kapalua Bay is presented in Table 1 below.

Table 1. Required Permits and Approvals

Permit/Approval	Responsible Agency	Status
Chapter 343, HRS Compliance	Maui Planning Commission/Maui Planning Department Office of Environmental Quality Control	Final EIS accepted September 13, 2005 by Maui Planning Commission
Planned Development Approval	Maui Planning Commission/Maui Planning Department	Submitted June 2, 2005 Action pending
Special Management Area Use Permit	Maui Planning Commission	Submitted June 2, 2005 Action pending
Shoreline Setback Variance	Maui Planning Commission	Submitted June 2, 2005 Action pending
Grading/Building Permits	County of Maui Department of Public Works and Waste Management	Expected submittal January 2006
Demolition & Building Permits	County of Maui Department of Public Works and Waste Management	Expected submittal January 2006
National Pollutant Discharge Elimination System (NPDES)	Hawaii Department of Health – Clean Water Branch	Expected submittal January 2006

1.3.5 Alternatives to the Proposed Action

The alternatives that have been considered are:
1) No action;
2) Renovation and expansion of the hotel; and
3) Postponing action pending further study.

1.3.6 Probable Adverse Environmental Effects That Cannot Be Avoided

Potential adverse environmental effects that cannot be avoided include short-term impacts to air quality and noise levels due to demolition and removal of the existing Kapalua Bay Hotel and construction of The Residences at Kapalua Bay. These impacts are more fully discussed in Section 4.5 (Noise) and Section 4.6 (Air Quality) in this EIS.

The closing of the Kapalua Bay Hotel and related facilities will also result in the short-term loss of hospitality and other existing jobs on the site. Currently, the Kapalua Bay Hotel and related facilities support approximately 200 full-time equivalent on-site jobs. Kapalua Bay, LLC will coordinate job placement within the Kapalua Resort community or at other facilities during the redevelopment. In the long-term, The Residences will support about 188 full-time equivalent on-site jobs and contribute to another 75 off-site positions. ~~The Residences at Kapalua Bay and~~ Further, other proposed new facilities at the Kapalua Resort are expected to create ~~hundreds of~~ additional job opportunities.

1.3.7 Cumulative and Secondary Impacts

The Residences at Kapalua Bay is not expected to contribute to substantial negative cumulative impacts (especially in regard to traffic) relative to other proposed projects in West Maui. With The Residences, the total unit count on the property will be reduced from the existing 196 hotel rooms to a total of 155 resort-residential homes, reducing the number of vehicle trips per day.

Impacts relating to the Residences at Kapalua Bay are expected to be generally less or substantially similar than the existing Kapalua Bay Hotel and related facilities. The property is already used for resort facilities. The Residences at Kapalua Bay will decrease many demands relative to the hotel, such as traffic, sewage flows, and needs for other infrastructure and resources.

1.3.8 Rationale for Proceeding with The Residences at Kapalua Bay Notwithstanding Unavoidable Effects

In light of the above mentioned unavoidable effects, the creation of The Residences at Kapalua Bay should proceed because the relatively minor negative impacts of the community will be offset by substantial positive impacts, including: 1) the improvement and upgrade of the Kapalua Resort to ensure Maui's preeminence as a desirable and modern resort destination; 2) the conformance with the *West Maui Community Plan*; and 3) the wages, taxes, and overall positive economic impacts of The Residences.

1.3.9 Unresolved Issue

Additional archaeological work will be required ~~after the hotel is demolished, but before construction of The Residences~~ following the closure of the existing resort. The scope of the additional testing will be determined in consultation with the State Department of Land and Natural Resources (DLNR) – Historic Preservation Division (SHPD), Maui archaeologist.

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2

Project Description

2.0 PROJECT DESCRIPTION

This section provides site background information and a general description of The Residences at Kapalua Bay.

2.1 BACKGROUND INFORMATION

2.1.1 Location

The Residences at Kapalua Bay will be located in the Kapalua region of West Maui, within the County of Maui (Figure 2). The oceanfront property is within the Kapalua Resort at the location of the Kapalua Bay Hotel. The address of the hotel is One Bay Drive, Kapalua, Hawai'i. Access to the property is provided by Lower Honoapi'ilani Road, which also forms the mauka boundary of the site.

2.1.2 Ownership

Kapalua Bay, LLC owns the property identified by TMK 4-2-04: parcels 28 and 29. Maui Land & Pineapple Company, Inc., owns the property identified by TMK: 4-2-04: parcel 27 and has granted Kapalua Bay, LLC a long-term lease for the property. Combined, these parcels total approximately 25 acres and comprise The Residences at Kapalua Bay site (Figure 3).

2.1.3 State Land Use District

The Residences at Kapalua Bay site is within the State Urban district (Figure 4). The uses planned by Kapalua Bay, LLC for The Residences at Kapalua Bay are permitted in the Urban district.

2.1.4 West Maui Community Plan

The *West Maui Community Plan* Land Use Map designates specific areas of The Residences site as Hotel (H), Park (PK), and Business/Commercial (B) (Figure 5). The Residences will be in conformance with these designations.

2.1.5 County of Maui Zoning

The County of Maui has zoned specific areas of The Residences site as Hotel (H-M), Resort Commercial (B-R), and Open Space (O) (Figure 6). The Residences will be in conformance with these zoning designations, subject to the Planned Development Approval process.

2.1.6 Special Management Area

The Residences at Kapalua Bay is within the Special Management Area (SMA) (Figure 7). Although established in the Coastal Zone Management Law (Chapter 205A, HRS), SMAs are under the jurisdiction of the counties. Kapalua Bay, LLC is seeking a SMA Use Permit from the County of Maui for The Residences.

2.1.7 Surrounding Uses

The area surrounding the site consists of resort properties and the ocean. The Kapalua Bay Villas condominiums and a private residence are north and adjacent to The Residences site. South and adjacent to The Residences site is the Coconut Grove condominiums. The Bay Golf Course is to the east, mauka of Lower Honoapi'ilani Road.

2.1.8 Description of the Property

The Residences at Kapalua Bay site is currently occupied by the Kapalua Bay Hotel, surrounding grounds, retail shops, parking lots, public shoreline access, and tennis courts (Figure 8). Three contiguous parcels identified by Tax Map Key Numbers (2)4-2-04: 27, 28, and 29 (Figure 3) comprise the site. Combined, these parcels total approximately 25 acres. Figure 9 contains photographs of the site.

The existing main hotel building is a six-story concrete structure with three wings. The hotel includes 196 guest rooms, two restaurants, a gift shop, beauty salon, fitness center, and a ballroom. The grounds include grass lawn areas with landscaping and sidewalks. The hotel swimming pool is located on the west portion of the property, near the ocean, along with an adjacent bar/restaurant building.

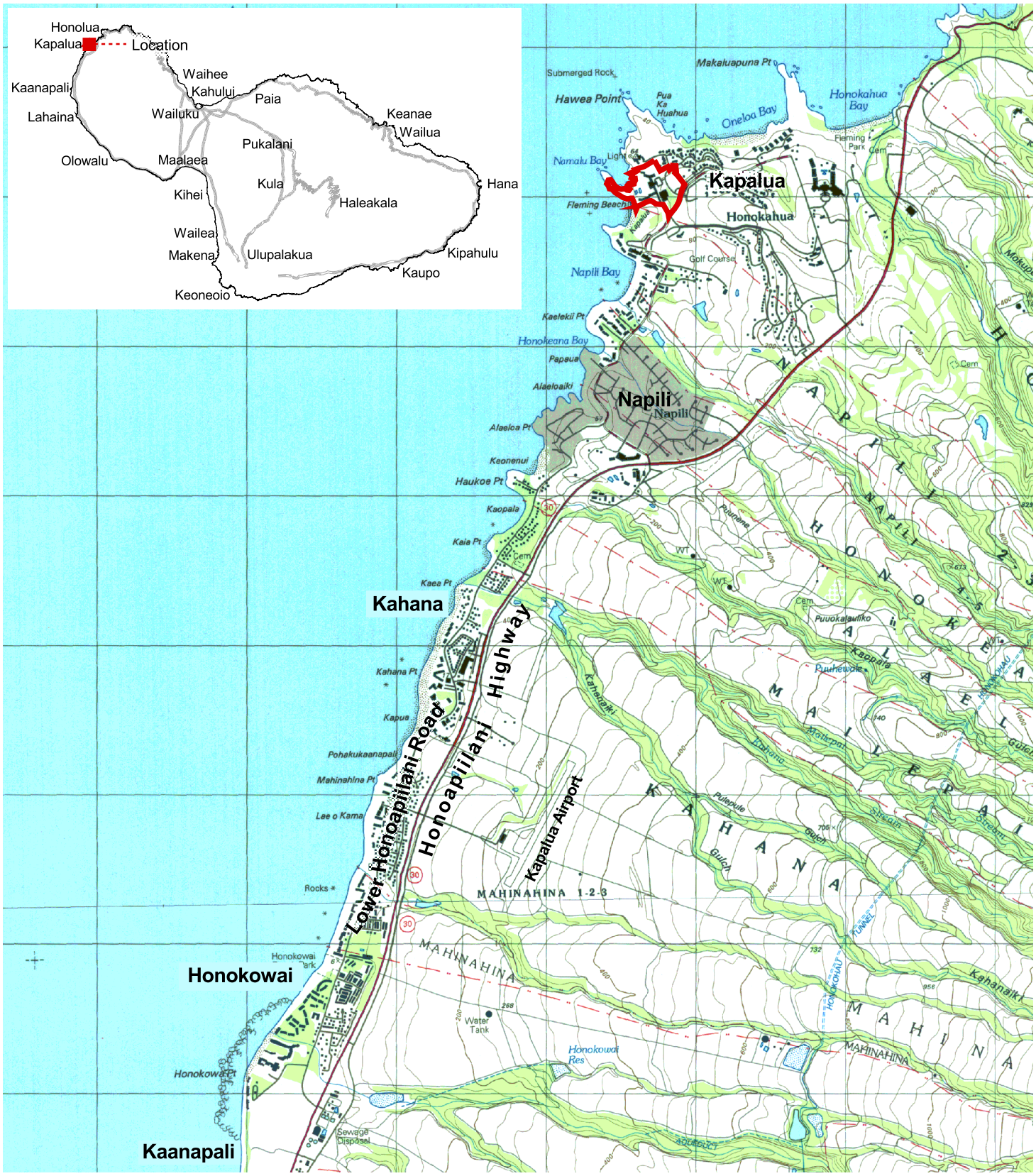
The property also includes: retail shops (The Kapalua Shops), located immediately northeast of the hotel building; a wooden structure (the Cliff House) used for special guests and events, located on the coastline near the west corner of the property; and an asphalt-paved parking lot located on the northeast portion of the property. Public access to the shoreline is provided by pathway on the north side of the property near the Bay Villas boundary.

Elevations within the site range from approximately 100 feet above mean sea level (msl) near the east property corner of the site, along Lower Honoapi'ilani Road, to sea level along the west coast. From the east side of the property, the existing at-grade parking lot slopes moderately to the west toward the hotel. A sloped landscaped area transitions the grades down to the entry driveway and porte cochere approximately 8 feet lower in elevation. The porte cochere area is relatively flat. Continuing west, through the hotel, the grade steps down approximately 20 feet to the moderately sloping lawn and pool area. From the pool area to the shoreline, slopes vary and may be as steep as 30 percent. Near the shoreline, there is an abrupt drop ranging from 5 to 30 feet.

2.1.9 History of the Property

The Residences at Kapalua Bay property was vacant until it was developed with the current hotel complex in 1978. A review of historical aerial photographs indicates the property was undeveloped, moderately vegetated, and was not formerly used to grow commercial agricultural crops. An aerial photograph from the 1950s indicates that the only improvement on the property was a T-shaped road visible near the eastern boundary of the property (Clayton Group Services, Inc. 2004).

Historical ownership records indicate the property was owned by Baldwin Packers, Ltd., the predecessor company to Maui Land & Pineapple Company, Inc. Maui Land & Pineapple Company, Inc., was formed in 1962 when Baldwin Packers merged with Maui Pineapple Company. Maui Land & Pineapple Company, Inc., created the wholly-owned subsidiary named



LEGEND

The Residences at Kapalua Bay

Source:
U.S. Geological Survey

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

Figure 2
Regional Location Map

The Residences at Kapalua Bay

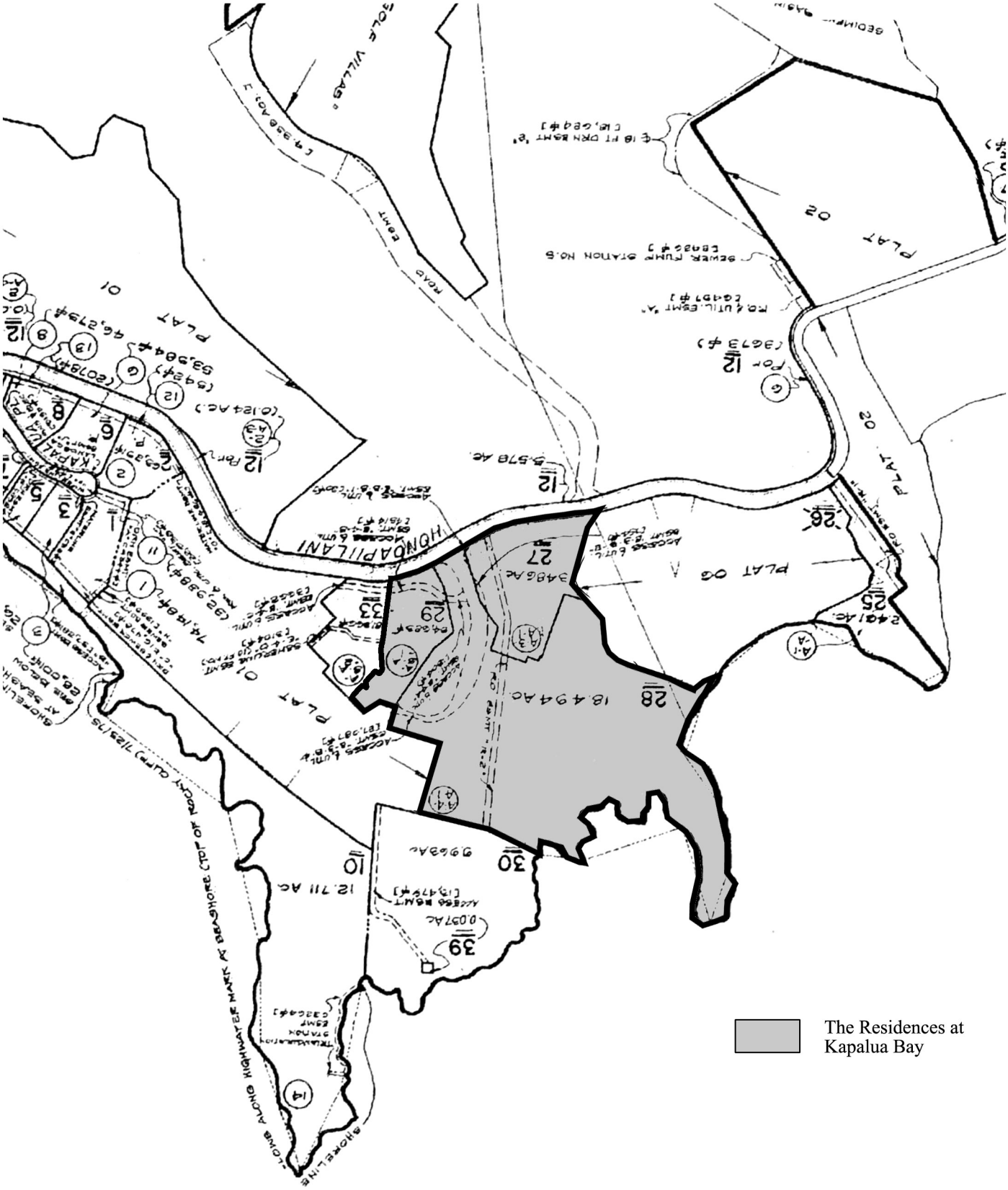
KAPALUA BAY LLC — ISLAND OF MAUI

NORTH

LINEAL SCALE (FEET)

0 — 1,500 — 3,000 — 6,000

PBR HAWAII



DEPARTMENT OF FINANCE PROPERTY ASSESSMENT DIVISION TAX MAPS SECTION STATE OF HAWAII TAX MAP		
COUNTY OF MAUI		
ZONE	SEC.	PLAT
4	2	04

Source:
Tax Maps Bureau

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

Figure 3
Tax Map Key Map

The Residences at Kapalua Bay

KAPALUA BAY LLC

ISLAND OF MAUI

NORTH

LINEAL SCALE (FEET)

0 500 1,000 2,000

PBR HAWAII

Source:
State Land Use Commission (2004)

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

LEGEND

Land Use Districts
- Conservation
- Agricultural
- Urban

The Residences at Kapalua Bay

Figure 4
State Land Use District Boundary Map

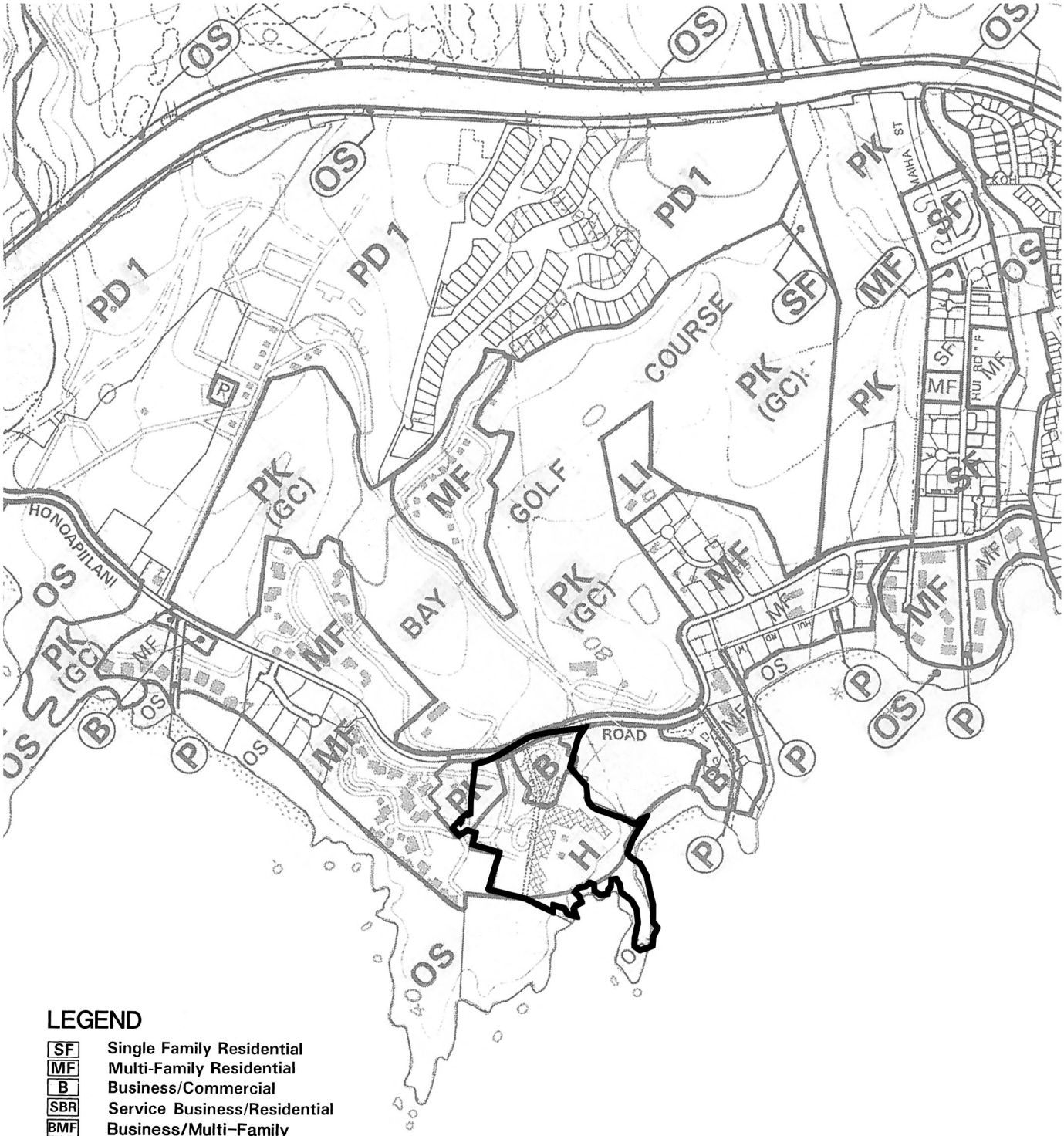
The Residences at Kapalua Bay

KAPALUA BAY LLC — ISLAND OF MAUI

NORTH

LINEAL SCALE (FEET)
0 500 1,000 2,000

PBR HAWAII



LEGEND

SF	Single Family Residential
MF	Multi-Family Residential
B	Business/Commercial
SBR	Service Business/Residential
BMF	Business/Multi-Family
HI	Heavy Industrial
LI	Light Industrial
H	Hotel
P	Public/Quasi-Public
PK	Park (GC) Golf Course
OS	Open Space
PD	Project District
AP	Airport
AG	Agricultural
R	Rural
C	Conservation

The Residences at Kapalua Bay

Source: County of Maui

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

Figure 5
West Maui Community Plan Land Use Map

The Residences at Kapalua Bay

KAPALUA BAY LLC

ISLAND OF MAUI

NORTH

LINEAL SCALE (FEET)

0 500 1,000 2,000

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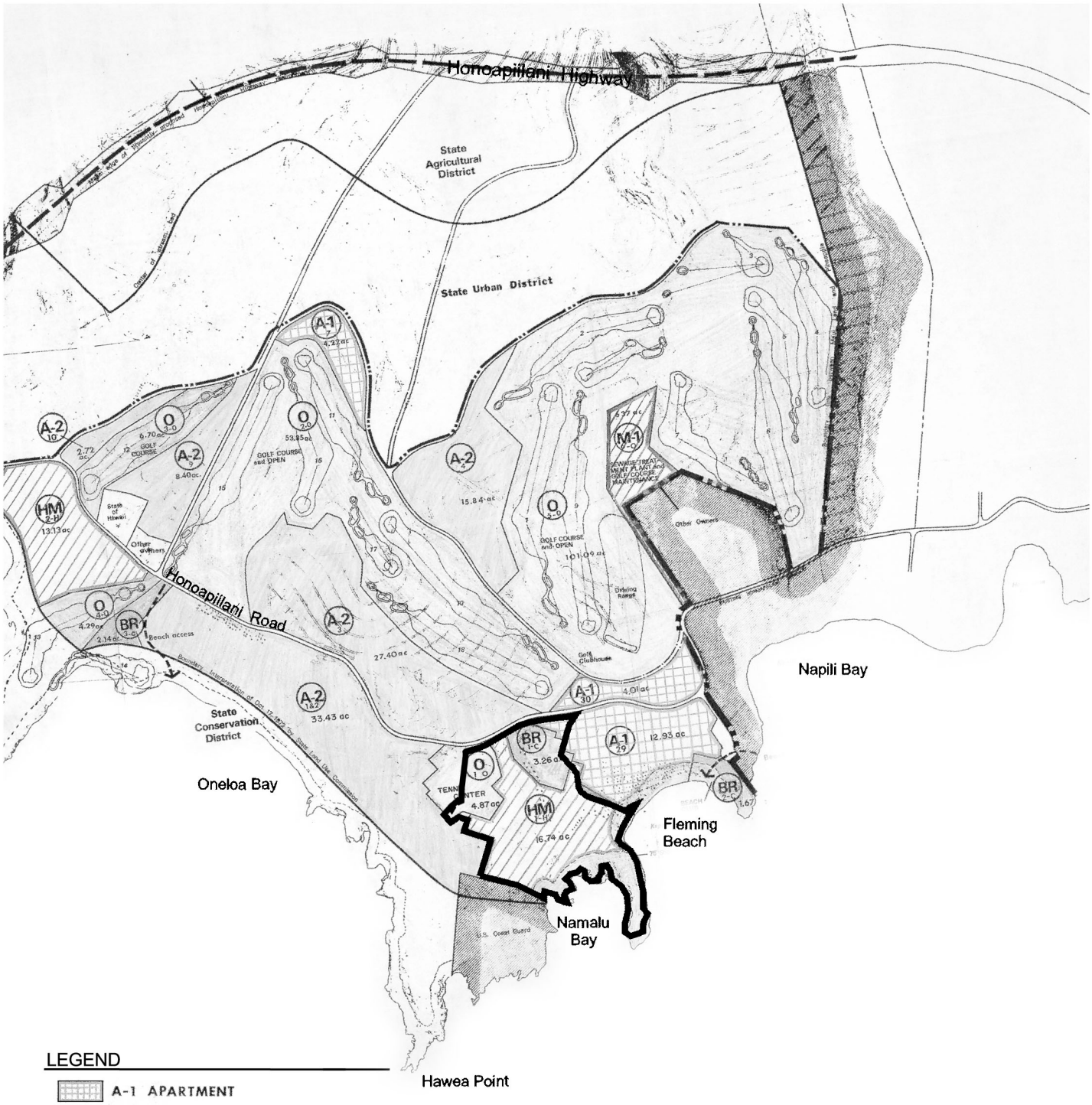


LEGEND

- A-1 APARTMENT
- A-2 APARTMENT
- H-M HOTEL MEDIUM
- B-R RESORT COMMERCIAL
- P PUBLIC USE
- BRW PUBLIC BEACH RIGHT OF WAY
- O OPEN SPACE OR GOLF COURSE
- EXISTING ROAD
- PROPOSED ROAD
- M-I LIGHT INDUSTRIAL DISTRICT
- The Residences at Kapalua Bay

Source:
County of Maui

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

Figure 6
County Zoning Map

The Residences at Kapalua Bay

KAPALUA BAY LLC

ISLAND OF MAUI

NORTH

LINEAL SCALE (FEET)

0 500 1,000 2,000

PBR HAWAII

LEGEND

Special Management Area

The Residences at Kapalua Bay

Source:
County of Maui

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

Figure 7
Special Management Area Map

The Residences at Kapalua Bay

KAPALUA BAY LLC

ISLAND OF MAUI

NORTH

LINEAL SCALE (FEET)

0 500 1,000 2,000

PBR HAWAII

1. The main lobby building of the Kapalua Bay Hotel.

2. The Lanai Wing of the hotel.

3. The Shops at Kapalua include an underground parking structure.

4. Kapalua (Fleming's) Beach adjoins The Residences site to the south.

5. The existing hotel grounds include landscaping typical of a resort.

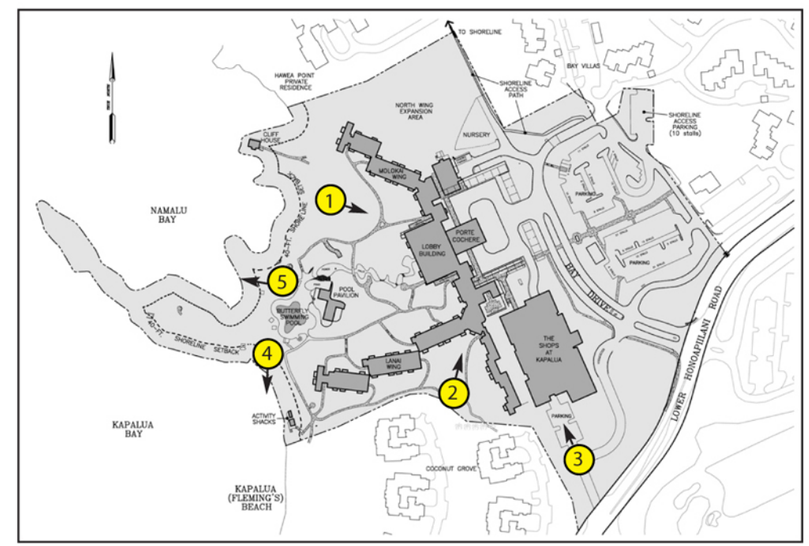


Figure 9
Site Photographs
The Residences at Kapalua Bay

KAPALUA BAY LLC — ISLAND OF MAUI

PBR HAWAII

Date of Photographs: 2/1/05

Kapalua Land Company, Ltd., which conceived and developed the master-planned Kapalua Resort featuring the Kapalua Bay Hotel at the shore of Honokahua ahupua'a. The hotel opened in 1978, beginning the transformation of the former ranch and pineapple lands of Honokahua into a world-class destination resort.

Since it was opened in 1978, the hotel structure and related facilities have been operated or owned by various managing entities, while fee simple land ownership remained with Maui Land & Pineapple Company, Inc., or one of its subsidiary companies. Maui Land & Pineapple Company, Inc., regained ownership of the facilities of the Kapalua Bay Hotel resort complex through their majority share of Kapalua Bay, LLC, which purchased the facilities in 2004.

The original County Special Management Area (SMA) Use Permit for the hotel, granted in 1976, allowed a 390-room hotel, including a north wing. The north wing was not constructed and the Kapalua Bay Hotel opened with 196 rooms. In 1987, an SMA Use Permit was granted for proposed improvements to the hotel, including plans to proceed with the previously abandoned north wing. This 1987 SMA approval was subsequently amended to extend the time to complete the construction of the north wing to December 31, 2007. To date, the north wing has not been constructed; however, as approved, the north wing could include 128 rooms and suites, various meeting rooms, and support space in a new four-, five-, and six-story addition to the hotel.

2.1.10 Kapalua Resort

Kapalua's highly recognized logo of a butterfly with a pineapple in the middle reflects Maui Land & Pineapple Company, Inc.'s agricultural heritage. Today, the Kapalua Resort includes the Kapalua Bay Hotel and the Ritz-Carlton Kapalua (containing a combined total of 747 rooms), homes and condominiums, two 10-court tennis facilities, three 18-hole championship golf courses, a 22,000-square-foot (gross leasable area) shopping village, and several freestanding retail, restaurant, and administrative buildings. Kapalua's residential communities, their number of units, densities, and other relevant information is contained in Table 2. Figure 10 contains a map of the existing resort.

From the outset, Kapalua was envisioned and designed as a master-planned resort. Besides its reputation as one of the world's premiere golf destinations, the resort is increasingly becoming known for its commitment to environmental and conservation efforts.

Kapalua's trendsetting conservation programs, based on the Hawaiian ahupua'a model of caring for resources from the mountains to the sea, include: partnership arrangements with the State of Hawai'i, The Nature Conservancy of Hawaii, and Audubon International; the development of an environmental code of ethics; marketing enrichment travel packages with partial funds going to benefit The Nature Conservancy; and resort-wide dedication of all properties to the ideal of preserving the unique Hawaiian environment and cultural heritage of which Kapalua is a part.

Additionally, all three of the resort's golf courses are Certified Audubon Cooperative Sanctuaries. To receive this designation, the courses must meet stringent environmental standards set forth by the Audubon International for environmental planning, water conservation, habitat enhancement, public involvement, integrated pest management, and water quality management.

Table 2. Kapalua Resort Residential Communities

Community	Number of Units	Acreage	Units per Acre	Type of Units	Description
The Bay Villas	141	16.5	8.5	MF	One and two bedroom condominiums overlooking Oneloa Bay
The Golf Villas	186	15.8	11.8	MF	One and two bedroom condominiums on the 10th and 18th fairways of the Bay Course
The Ridge Villas	161	21.5	7.5	MF	One and two bedroom condominiums on top of a ridge overlooking the ocean and The Bay Course
The Ironwoods	40	9	4.4	MF	Two and three bedroom luxury condominiums overlooking Oneloa Bay
The Coconut Grove at Kapalua Bay	36	12	3.0	MF	Three bedroom luxury condominiums fronting Kapalua Bay.
Pineapple Hill at Kapalua	99	45.4	2.2	SF	Single-family homes overlooking the Bay Course with views of the West Maui Mountains
Pineapple Hill Estates	31	19.9	1.6	SF	Single-family custom homesites overlooking The Bay Course
Kapalua Place	8	22.3	0.4	SF	Single-family beachfront homes at Oneloa Bay
The Plantation Estates	60	201.8	0.4	SF	Agricultural lots bordering The Plantation Golf Course
Honolua Ridge	25	190	0.13	SF	Agricultural lots above The Plantation Estates
Total	787	554.2	--	--	--

2.2 STATEMENT OF PURPOSE AND NEED FOR THE RESIDENCES AT KAPALUA BAY

Built in 1978, the Kapalua Bay Hotel is currently in need of renovations to return it to the stature required to maintain the Kapalua Resort's world-class status. Since the hotel was built, other hotels and resorts in Hawai'i and internationally have set new standards for premier vacation accommodations and facilities. With these competing resorts developing new and innovative market approaches, it is not economically feasible to upgrade the Kapalua Bay Hotel to modern standards. In addition, while many hotels in Hawai'i have been renovated and converted to residential ownership of individual rooms or units, the design of the Kapalua Bay Hotel, with wide shallow rooms, is not viable for extended residential use. After reviewing several alternatives, Kapalua Bay, LLC decided to completely rebuild the hotel to provide the facilities the Kapalua Resort market requires.

The resort condominium market is in a strong demand cycle throughout the State, with rapid absorption and escalating prices for the limited product available. The oceanfront sector is evidencing particular strength, with all competitive inventory on Maui having been absorbed (See Section 4.8 and Appendix A).

The interval ownership market is also experiencing a major expansion period on Maui, with prices and sales near record levels, and the sector becoming the focus of resort development on

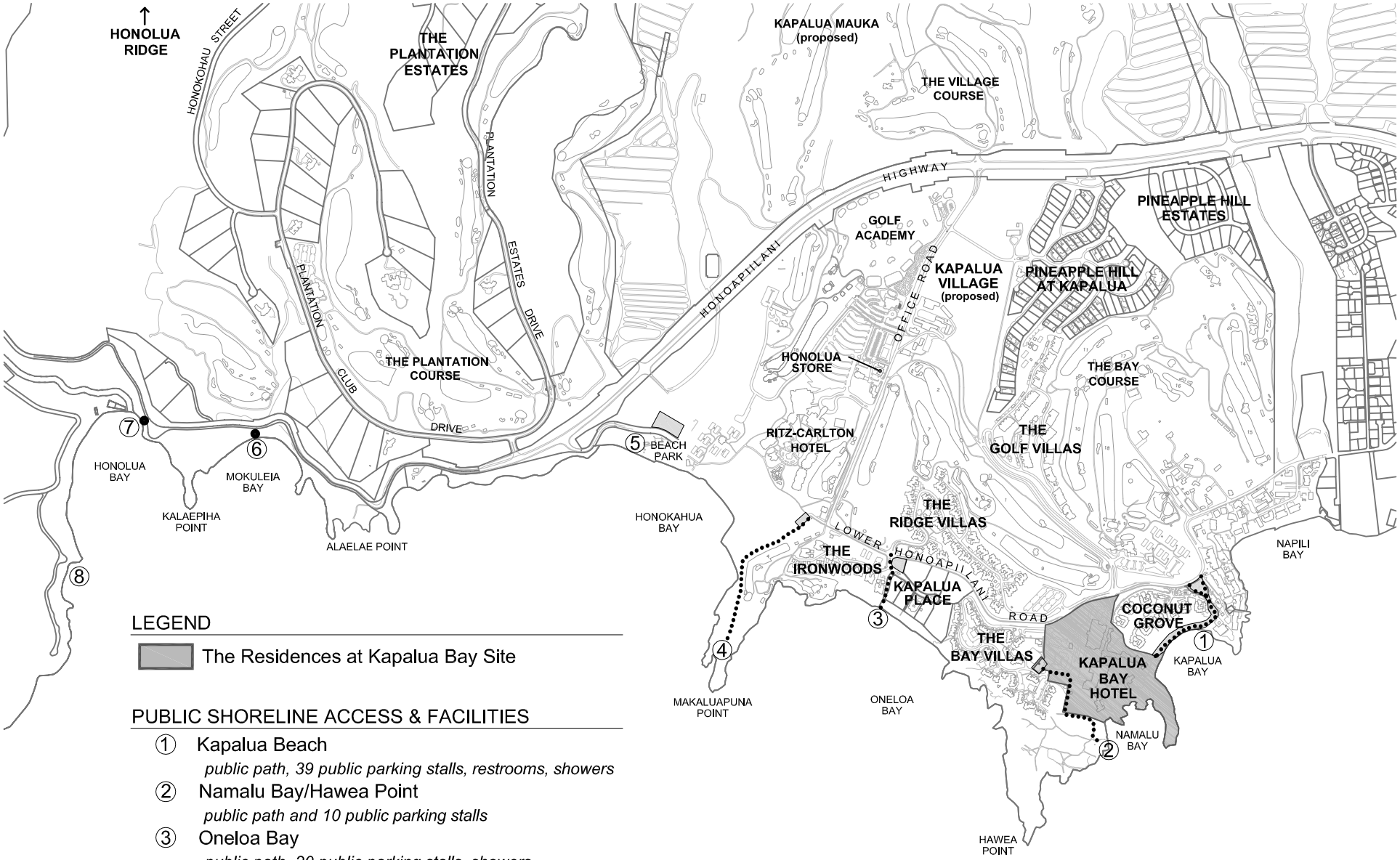


Figure 10
Kapalua Resort

The Residences at Kapalua Bay

KAPALUA LAND COMPANY, LTD. ISLAND OF MAUI

NORTH

LINEAL SCALE (FEET)

0 700 1,400 2,800

PBR HAWAII

the island. Products are moving further upscale and are pursuing a greater range of ownership options.

The property is well-suited for the proposed development, and the master plan will achieve market acceptance by providing high quality, new oceanfront purchase opportunities for residents and second-home and vacation-unit buyers.

Complete market absorption of the 90 full ownership resort condominium units will require less than three years, with sell-out expected via pre-sale offerings before project construction is finished. The 65 interval ownership units (780 total intervals) will also require fewer than three years to be absorbed.

2.3 GENERAL DESCRIPTION OF THE RESIDENCES AT KAPALUA BAY

2.3.1 Objectives

The objectives of The Residences at Kapalua Bay are rooted in a deep sense of caring for the land as reflected in the Kapalua Resort's commitment to environmental stewardship. The roots of this stewardship stem from a belief that the natural resources of the land and ocean are connected to one another and must be used responsibly to protect our quality of life. Quality of life is also connected to economic development, and with The Residences at Kapalua Bay, Kapalua Bay, LLC has sought to balance economic considerations with responsible residential-resort development.

The objectives of The Residences at Kapalua Bay are to:

- Improve and upgrade the Kapalua Resort to ensure Maui's preeminence as a desirable, modern, resort destination;
- Replace the aging Kapalua Bay Hotel and associated infrastructure with modern residences using current standards for sustainable building design and energy-efficiency;
- Provide additional resort-residential opportunities in an appropriate location in West Maui to help to satisfy the demand for this market;
- Meet changes in tourism accommodation preferences to condominium and fractional ownership versus hotels;
- Create a high-quality residential-resort community that meets the current land use (including shoreline setback) requirements; and
- Provide for the logical and long-planned best management of the Kapalua Resort.

2.3.2 The Residences at Kapalua Bay Description

The Residences at Kapalua Bay will provide additional resort-residential opportunities at the Kapalua Resort. Proposed are approximately 155 homes to be clustered in approximately nine buildings on the property. Buildings will range from three- to six-stories in a general step-down fashion. Approximately 90 of the units are planned for sale as condominiums and approximately 65 homes will be sold under a one-twelfth fractional ownership plan. The homes will range in size from two to three bedrooms, with some of the three-bedroom units also including a den. The Residences will also include a beach club, a spa, and a bar and grill restaurant (Figure 1). The existing public shoreline access will be maintained and a new paved coastal trail is planned near the ocean. Current parking for shoreline access will be retained with no loss of public parking.

Under The Residences' fractional ownership plan, buyers will be able to own a home to use for a specified interval. However, unlike a timeshare project, fractional home ownership allows for a larger interval of ownership. Where a timeshare unit may be sold for an interval of as little as one week, resulting in up to 52 separate owners, The Residences' fractional homes will be sold in intervals of one-twelfth of a year, resulting in 12 owners per home. This will allow each owner to enjoy the use of the home for approximately one month per year. Fractional ownership appeals to buyers who would like a vacation home but, due to infrequent use, do not want to invest in a wholly-owned home that could be vacant much of the year.

Replacement of the existing Kapalua Bay Hotel and related facilities with The Residences creates opportunities for increased view corridors, increased access to the ocean, and buildings placed further from the shoreline compared to the existing hotel. Under current approvals, an additional 128 rooms could be added to the existing 196 rooms of the hotel for a total of 324 rooms. In contrast, The Residences at Kapalua Bay will contain approximately 155 homes in a resort-residential setting. Lock-out units, which allow a portion of the unit to be "locked out" to create a separate unit, are not planned. Accordingly, the de facto number of units will not increase.

The cluster approach provides for increased ocean views between buildings and the stepped design allows a gradual transition from low-rise buildings near the ocean to increased stories further from the shoreline. The new buildings also will be set back further from the shoreline under the County's current shoreline set back rules, which were not in effect at the time the Kapalua Bay Hotel was built. The increased area between buildings and the ocean will facilitate placement of a paved public coastal trail planned to run through The Residences site and beyond, providing continuous coastal access within Kapalua when all segments are completed.

2.3.3 Land Use Summary

The conceptual master plan for The Residences at Kapalua Bay (Figure 1) includes a mix of clustered residences, restaurants, a spa, recreational areas (paved coastal trail, pool, and beach club), and open space areas.

Brief descriptions of the major land use elements of the conceptual master plan are presented below.

Residential
The residential component is proposed to contain approximately 155 homes to be clustered in approximately nine buildings on the property. The proposed buildings range from three- to six-stories in a general step-down fashion, with the shorter buildings closer to the ocean and the tallest buildings further mauka. A range of two- to three-bedroom homes will be provided with some of the three-bedroom units also including a den. The size of the homes will range from approximately 1,800 square feet to approximately 3,800 square feet.

Beach Club
The proposed Beach Club located on the southern property line, adjacent to the Coconut Grove Condominiums, will include approximately 2,500 square feet of indoor recreation space and 2,500 square feet of covered outdoor space and a pool.

Cliff House
The existing Cliff House is a wooden structure used for special guests and events, located on the coastline near the west corner of the property. There are no plans to alter the Cliff House.

Spa
An estimated 26,000-square-foot destination spa will replace the existing Kapalua Shops. The current parking structure beneath the existing shops will be retained. Service and "back of house" functions will also be included in this area.

Bar and Grill Restaurant
A bar and grill restaurant will be located in the center of The Residences, southwest of the main lobby at the mauka end of the pool. Current plans are for the restaurant to be open to The Residences owners and guests.

Open Space, Trails, Pathways, and Landscaping
Approximately 18 acres of The Residences at Kapalua Bay site will consist of open space, including paved walkways, the existing public shoreline access, a new paved coastal trail near the ocean, and landscaping and grounds typical of a resort setting. Approximately 2.5 acres of the open space is located within the shoreline setback area and the remainder is located around the clustered residences and other buildings.

Parking
Parking will include two parking stalls per residential home and 1.5 parking stalls per fractional home. Parking for the beach club, pool, bar and grill restaurant, and spa will be provided per Maui County requirements. Based on the proposed number of homes and other uses, a total of 395 parking stalls will be provided, which is expected to exceed County of Maui requirements.

2.4 DEVELOPMENT TIMETABLE AND PRELIMINARY COSTS

Permitting and approval is expected to take approximately 12 months. Subsequent removal of the existing Kapalua Bay Hotel, conversion of major infrastructure, and construction of the clustered residences and associated resort facilities is estimated to take an additional 24 months to complete. Conversion of infrastructure will be conducted simultaneously with demolition activities. Construction of The Residences will begin after demolition and continue until the development is complete. The estimated development schedule is provided in Table 3.

Table 3. Development Timetable

Phase	Year
Permitting and Approvals	2005-2006
Demolition of Kapalua Bay Hotel	2006
Construction of basic infrastructure	2006
Construction of units and associated facilities	2006-2008
Start of sales	2006

Costs to develop The Residences at Kapalua Bay are preliminary and will be better defined during detailed site engineering. Order of magnitude costs are estimated at approximately $245 million.

2.5 SUSTAINABLE BUILDING DESIGN

Where appropriate, The Residences at Kapalua Bay will implement techniques described in the Office of Environmental Quality Control's (OEQC) *Guidelines for Sustainable Building Design in Hawaii: A planner's checklist*. The OEQC Guidelines state, "[a] sustainable building is built to minimize energy use, expense, waste and impact on the environment. It seeks to improve the region's sustainability by meeting the needs of Hawaii's residents and visitors today without compromising the needs of future generations."

Techniques from *Guidelines for Sustainable Building Design in Hawaii: A planner's checklist* considered in The Residences at Kapalua Bay include:

- A site selected that is surrounded by existing development, which is easier to serve with existing municipal infrastructure.
- As much as possible, concrete and other materials will be recycled for use as the foundation for the new buildings – minimizing solid waste generated.
- Buildings will be sited to take advantage of natural features and maximize their beneficial effects, where practical.
- The footprint of The Residences at Kapalua Bay will be minimized by creating clustered residences to allow open space to be preserved, making more efficient use of the land.
- Natural cooling such as trees that shade buildings and paved areas will be included.
- Where feasible, landscaping that includes:
    - Use of locally-made soil amendments and compost for plant nourishment, improved water absorption, and holding capacity.
    - Use of drought-tolerant and/or slow-growing hardy grasses, native and indigenous plants, shrubs, ground covers, and trees appropriate for local conditions and to minimize the need for irrigation.
    - Use of mulches to minimize evaporation, reduce weed growth, and retard erosion.

Specific recommendations from OEQC's guidelines regarding energy-efficiency and recycling are incorporated in Section 4.9.5, Electrical and Communication Systems and Section 4.10, Solid Waste of this ~~Draft~~ Final EIS.

3

Description of the Natural Environment, Potential Impacts, & Mitigative Measures

3.0 DESCRIPTION OF THE NATURAL ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATIVE MEASURES

This section describes the existing conditions of the physical or natural environment, potential impacts of The Residences at Kapalua Bay, and measures to minimize any impacts.

3.1 CLIMATE

Existing Conditions

The climate of the Kapalua area is affected by its near coastal location and by nearby mountains. Winds are variable but are predominantly trade winds from the north or northeast. Wind speeds typically vary between about 5 and 15 miles per hour. During winter, occasional storms may generate strong winds from the south (Kona winds) for brief periods. Temperatures in the area are consistent and moderate with an average daily range of about 66 to 85 degrees Fahrenheit. The extreme minimum temperature recorded at nearby Kā'anapali is 47 degrees Fahrenheit, while the extreme maximum temperature is 98 degrees Fahrenheit. Average annual rainfall in the area amounts to about 20 to 30 inches.

Potential Impacts

The Residences at Kapalua Bay is not expected to have an impact on climatic conditions of the area.

Mitigative Measures

Since The Residences at Kapalua Bay is not expected to have an impact on climatic conditions of the area, no mitigative measures are proposed or warranted.

3.2 TOPOGRAPHY AND GEOLOGY

Existing Conditions

The Residences at Kapalua Bay will be located on the makai side of Lower Honoapi'ilani Road, which also forms the mauka boundary of the site. Elevations within the site range from approximately 100 feet mean sea level (msl) near the east property corner, along Lower Honoapi'ilani Road, to sea level along the west coast. From the east side of the property, the existing at-grade parking lot slopes moderately to the west, toward the hotel. A sloped landscaped area transitions the grades down to the hotel entry driveway and porte cochere, approximately 8 feet lower in elevation. The porte cochere area is relatively flat. Continuing west, through the hotel, the grade steps down approximately 20 feet to the moderately sloping lawn and pool area. From the pool area to the shoreline, slopes vary and may be as steep as 30 percent. Near the shoreline, there is an abrupt drop ranging from 5 to 30 feet.

Geologically, the island of Maui is characterized as East and West Maui, with East Maui dominated by 10,023-foot-high Haleakalā Volcano. The Residences at Kapalua Bay is on West Maui, an area where the 5,788-foot-high Mauna Kahalawai, is estimated to be more than two

million years old. Its last eruptions are estimated to have occurred about 200,000 years ago. According to Juvik and Juvik (1998):

> *An extinct volcano whose evolution includes shield, postshield and rejuvenated stages forms West Maui. Numerous cones, domes, dikes, flows, and pyroclastic deposits of mugearite, hawaiite, and trachyte represent the postshield stage, while the only evidence of its rejuvenated stage is a few vents and flows located mainly near Lahaina. Erosion has exposed nearly 4,900 vertical feet (1,490 meters) of volcanic layers on West Maui.*

Macdonald, Abbot, and Peterson (1983) categorize five major geologic units of West Maui as follows:

1. Pliocene and Pleistocene volcanic rocks, including the Wailuku and Honolua volcanic series;
2. Pleistocene and recent volcanic rocks, including the Lahaina volcanic series;
3. Pleistocene sediments which include calcareous dunes and consolidated earthy deposits;
4. Recent sediments which include unconsolidated deposits; and
5. Historic volcanic rocks.

Typically, the West Maui basalt is thin-bedded a'a and pahoehoe created by quiescent flank eruptions along rift zones. The soils of West Maui reach depths of about 20 feet and indicate that the volcanic activity probably stopped in the Pliocene or earliest Pleistocene era (Macdonald, Abbot, and Peterson 1983).

In describing the stage of geological erosion of West Maui, Macdonald, Abbot, and Peterson (1983) state:

> *Stream erosion of West Maui volcano has reached a late youthful to submature stage. Because of the thick armor of Honolua flows, the rainy northeastern slope has reached a less advanced stage of dissection than might otherwise be expected, and broad surfaces that have not been lowered much below the original surface lie between the deep canyons. In contrast, the drier southwestern slope has been much more deeply dissected, leaving sharp crested ridges between the valleys.*

Potential Impacts

Impacts on the topography and geology of the site could be caused by alterations, such as grading, to accommodate buildings and associated facilities; however, the clustered character of The Residences will provide considerable open space and limit the need to grade extensive areas.

Mitigative Measures

Because the proposed improvements are relatively insignificant compared to the overall geologic character of the site and region, and because significant impacts are not expected, extensive mitigative measures are not planned. Appropriate engineering, design, and construction measures will be undertaken to minimize potential erosion due to grading of soils during construction. Further information on soils and grading is provided in Section 3.3. Information on drainage conditions and improvements is provided in Section 4.9.2.

3.3 SOILS

Existing Conditions

Three soil suitability studies have been prepared for lands in Hawai'i. These are: 1) the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Soil Survey; 2) the University of Hawai'i Land Study Bureau *Detailed Land Classification*; and 3) the State of Hawai'i Department of Agriculture *Agricultural Lands of Importance to the State of Hawaii* (ALISH). The principal focus of these studies has been to describe the physical attributes of Hawai'i's lands and the relative productivity of different land types for agricultural production purposes.

Natural Resources Conservation Service. The NRCS Soil Survey of the islands of Kaua'i, O'ahu, Maui, Moloka'i, and Lāna'i, classifies the soils of The Residences at Kapalua Bay site as Dune Land (DL) and Kahana Silty Clays (KbB and KbC) (Figure 11). A brief description of each soil type follows:

> Dune Land (DL) – Dune land consists of hills and ridges of sand-size particles drifted and piled by wind. The hills and ridges are actively shifting, or are so recently fixed or stabilized that no soil horizons have developed. The sand is primarily from coral and seashells. This land type is used for wildlife habitat and recreational areas and as a source of liming material. Vegetation is sparse, but ironwood trees, koa haole, tropical almond, kiawe, and mixed grasses have gained a foothold in places.
>
> Kahana Silty Clays (KbB, KbC) – Kahana Silty Clays developed in material weathered from basic igneous rock. For KbB soils runoff is slow and the erosion hazard is slight. For KbC soils permeability is moderately rapid, runoff is slow to medium, and the erosion hazard is slight to moderate. The soils are used for sugarcane, pineapple and homesites. The natural vegetation consists of guava, koa haole, lantana, Natal redtop, and yellow foxtail.

Detailed Land Classification. The University of Hawai'i Land Study Bureau document, *Detailed Land Classification, Island of Maui*, classifies soils based on a five-class productivity rating using the letters A, B, C, D, and E, with A representing the highest class of productivity and E the lowest. The soils of The Residences site are not classified by the *Detailed Land Classification* (Figure 12).

Agricultural Lands of Importance to the State of Hawaii. The State of Hawai'i Department of Agriculture *Agricultural Lands of Importance to the State of Hawaii* (ALISH) system of defining agricultural suitability does not classify soils on The Residences site (Figure 13).

Potential Impacts

The Residences at Kapalua Bay will be built on broad gently sloping land now occupied by the Kapalua Bay Hotel, associated facilities, and open space. Creation of The Residences will include grading portions of these areas.

Impacts to the soils of the site include the potential for soil erosion and the generation of dust during construction. Clearing and grubbing activities will temporarily disturb the soil retention values of the existing vegetation and expose soils to erosion forces. Some wind erosion of soils

could occur without a proper watering and re-grassing program. Heavy rainfall could also cause erosion of soils within disturbed areas of land.

Mitigative Measures

The Residences at Kapalua Bay will include considerable open space, thus limiting the need to grade all areas. To the extent possible, improvements will conform to the contours of the land or be located in areas of existing facilities, further limiting the need for extensive grading of the site. In addition, graded areas will be limited to specific areas for short periods of time.

Site grading will be segmented and exposed areas will be immediately grassed or landscaped before commencement of grading in the next phase, in compliance with the Maui County grading ordinance and Chapter 20.08 (Soil Erosion and Sedimentation Control) of the Maui County Code. Measures to control erosion during the site development period will include:

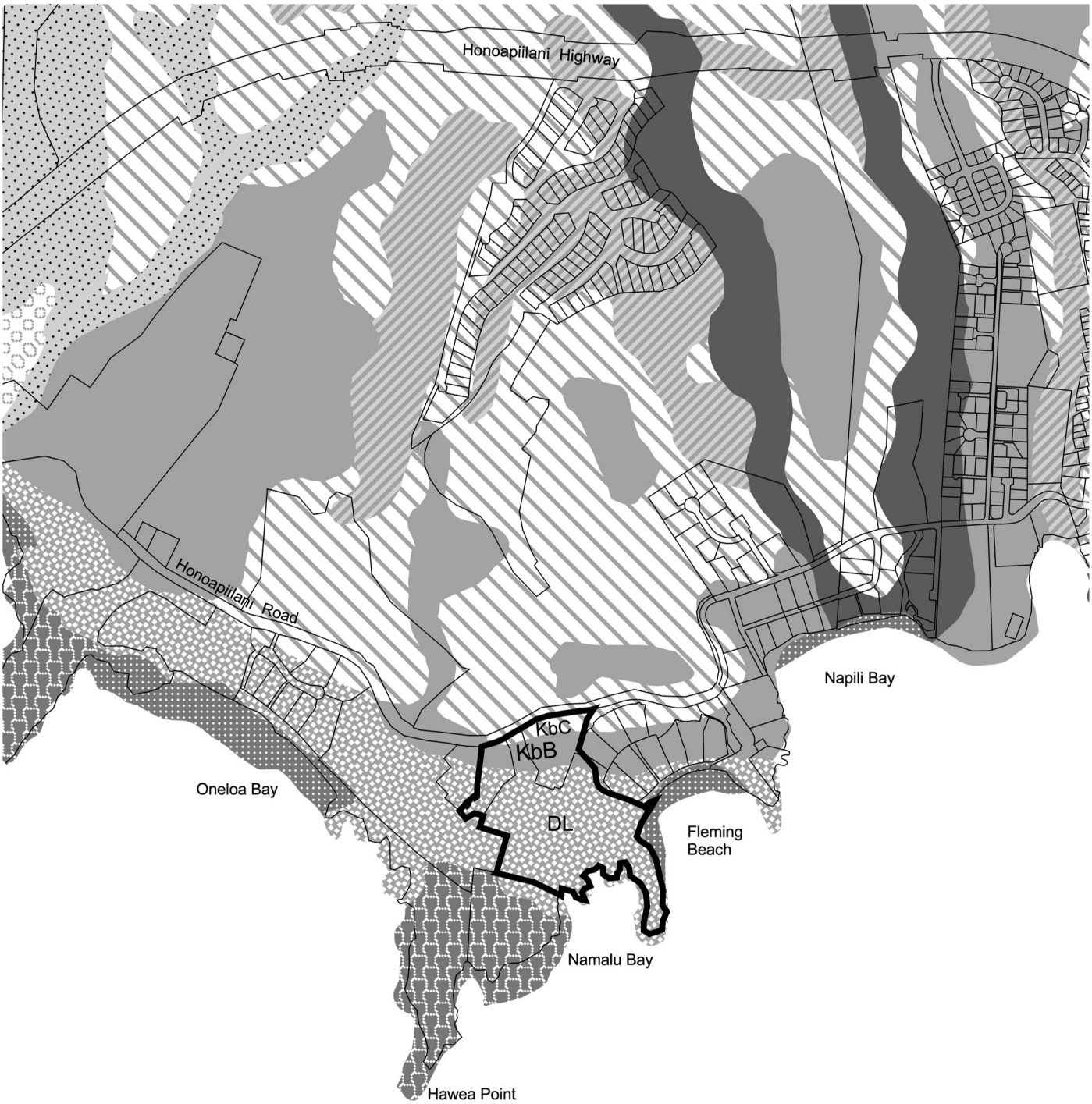
- Minimizing the time of construction;
- Retaining existing ground cover as long as possible;
- Constructing drainage control features early;
- Using temporary area sprinklers in non-active construction areas when ground cover is removed;
- Providing a water truck on site during the construction period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

Construction activities will comply with all applicable Federal, State, and County regulations and rules for erosion control. Before issuance of a grading permit by the County of Maui, an erosion control plan and Best Management Practices (BMPs) required for the National Pollutant Discharge Elimination System (NPDES) permit will be prepared describing the implementation of appropriate erosion control measures.

All construction activities will also comply with the provisions of HAR, Section 11-60.1-33, Fugitive Dust. Measures to control dust from road areas during various phases of construction include:

- Planning phases of construction to: minimize the amount of dust-generating materials and activities, centralize on-site vehicular traffic routes, and locate potential dust-generating equipment in areas of the least impact;
- Providing an adequate water source at the site prior to start-up construction activities;
- Landscaping and rapidly covering bare areas, including slopes, starting from the initial grading phase;
- Minimizing dust from shoulders and access roads;
- Providing adequate dust control measures during weekends, after hours, and before daily start-up of construction activities; and
- Controlling dust from debris being hauled away from the project site.

After construction, establishment of permanent landscaping will provide long-term erosion and dust control.



LEGEND

Soil Types

- BS: Beaches
- DL: Dune Land
- KbB: Kahana Silty Clay, 3-7% Slopes
- KbC: Kahana Silty Clay, 7-15% Slopes
- KbD: Kahana Silty Clay, 15-25% Slopes
- PsA: Pulehu Clay Loam, 0-3% Slopes
- rLW: Aa Lava Flows
- rRR: Rough Broken Land
- rRS: Rough Broken & Stony Land

The Residences at Kapalua Bay

Source:
U.S. Natural Resources Conservation Service (1995)

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

Figure 11
Natural Resources Conservation Service
Soil Survey Map

The Residences at Kapalua Bay

KAPALUA BAY LLC

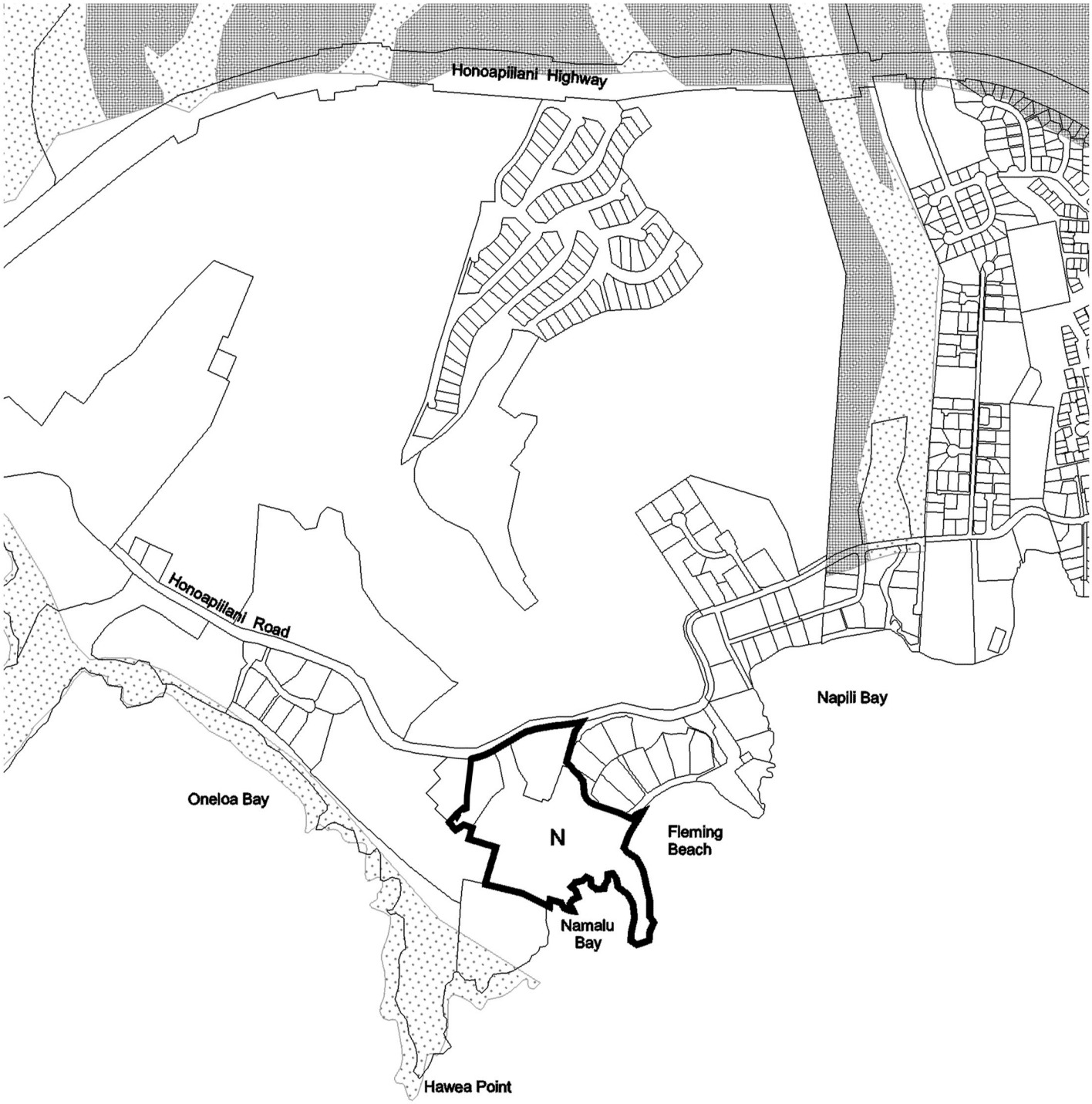
ISLAND OF MAUI

NORTH

LINEAL SCALE (FEET)

0 500 1,000 2,000

PBR HAWAII



Source:
Land Study Bureau (1967)

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

LEGEND

Agricultural Land Productivity Rating

- A (Excellent)
- B
- C
- D
- E (Very Poor)
- N: Not Classified

The Residences at Kapalua Bay

Figure 12
Detailed Land Classification Map

The Residences at Kapalua Bay

KAPALUA BAY LLC

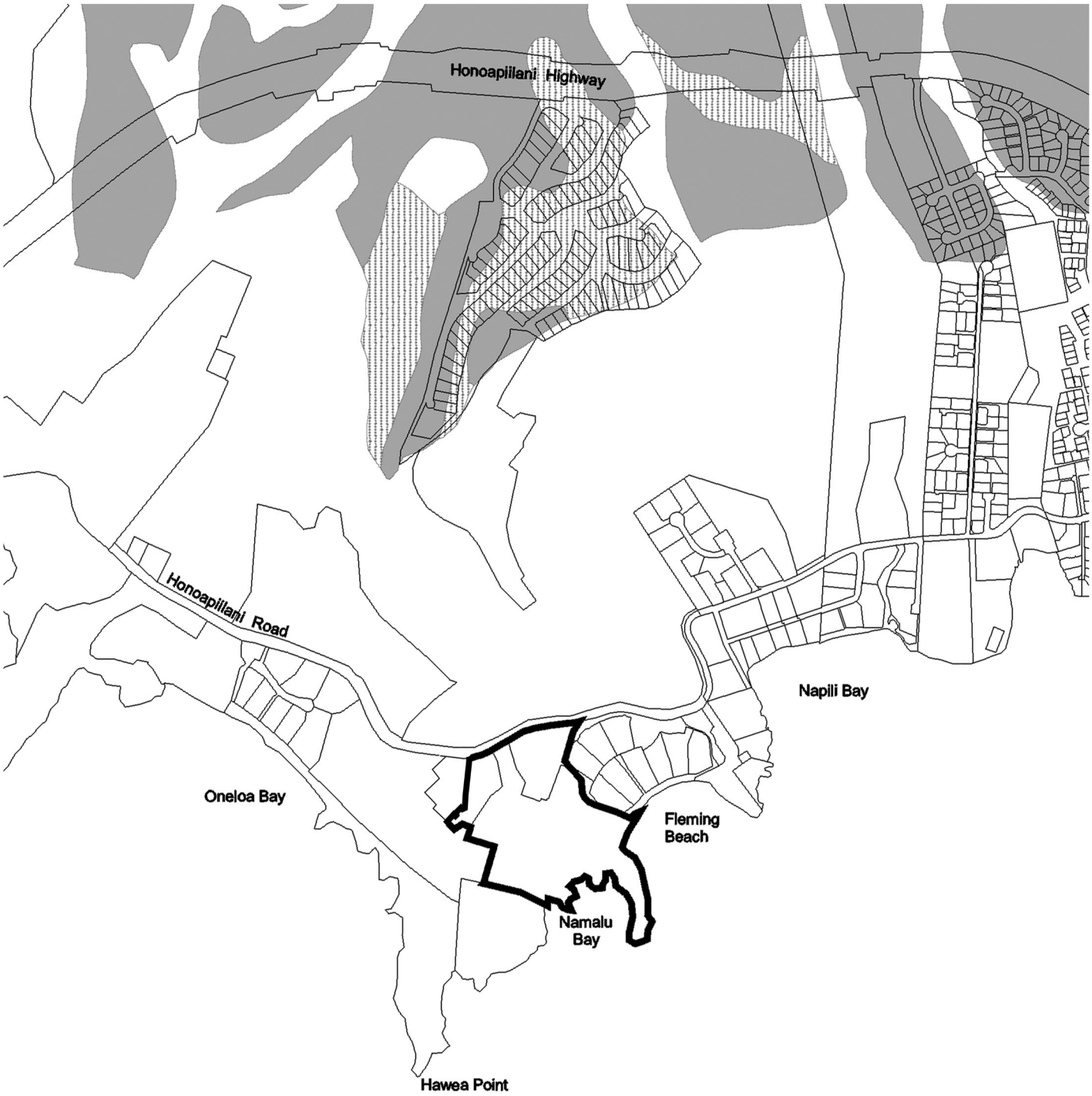
ISLAND OF MAUI

NORTH

LINEAL SCALE (FEET)

0 500 1,000 2,000

PBR HAWAII



Source:
U.S. Department of Agriculture and University of Hawaii (1977)

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

LEGEND

ALISH Types
- Prime ALISH Land
- Other ALISH Land
- Not Classified as ALISH Land

The Residences at Kapalua Bay

Figure 13
Agricultural Lands of Importance to the State of Hawaii (ALISH)

The Residences at Kapalua Bay

KAPALUA BAY LLC — ISLAND OF MAUI

NORTH

LINEAL SCALE (FEET)
0 500 1,000 2,000

PBR HAWAII

3.4 NATURAL HAZARDS

Existing Conditions

Natural hazards impacting the Hawaiian Islands include hurricanes, volcanic eruptions, earthquakes, tsunamis, and floods.

Volcanic hazards in the area of The Residences are considered minimal due to the dormant status of the Mauna Kahalawai volcano comprising West Maui. Its last eruptions are estimated to have occurred about 200,000 years ago (Juvik and Juvik 1998).

In Hawai'i, most earthquakes are linked to volcanic activity, unlike other areas where a shift in tectonic plates is the cause of an earthquake. Each year, thousands of earthquakes occur in Hawai'i; the vast majority of them so small they are detectable only with highly sensitive instruments.

The 1938 Maui Earthquake, with a magnitude of 6.7 to 6.9 and an epicenter six miles north of Maui, created landslides and forced the closure of the road to Hāna. Damaged water pipes and ground fractures were also reported in Lahaina.

Devastating hurricanes have impacted Hawai'i twice in the past 23 years: Hurricane 'Iwa in 1982 and Hurricane 'Iniki in 1992. While it is difficult to predict these natural occurrences, it is reasonable to assume that future events could be likely given the recent record.

Tsunamis are large, rapidly moving ocean waves triggered by a major disturbance of the ocean floor, which is usually caused by an earthquake but sometimes can be produced by a submarine landslide or a volcanic eruption. About 50 tsunamis have been reported in the Hawaiian Islands since the early 1800s. Seven caused major damage, and two of these were locally generated. The Residences at Kapalua Bay site is within the Tsunami Evacuation Zone.

Flood hazards are primarily identified by the Flood Insurance Rate Map (FIRM) prepared by the Federal Emergency Management Agency (FEMA) National Flood Insurance Program (Figure 14). According to FIRM Community Panel Number 150003 0138 B (June 1, 1981), the Flood Zone Designations for The Residences at Kapalua Bay site are Flood Zones C and A4. The majority of The Residences site is within Zone C, which indicates an area of minimal flooding outside of the 500-year flood plain. Limited areas of The Residences site located directly adjacent to the ocean are located in Zone A4, identified as an area affected by the 100-year flood plain with base flood elevation +18.0 feet msl.

Potential Impacts

The Residences at Kapalua Bay will not exacerbate any hazard conditions. Volcanic impacts to the area are considered unlikely. Seismic hazards in the area are no greater than other locations on Maui. Buildings, roadways, sewer, and water lines could be damaged by an earthquake of sufficient magnitude. Tsunamis could impact The Residences; however, The Residences at Kapalua Bay, as the rest of Maui or the State, is no more or less vulnerable to the destructive winds and torrential rains associated with hurricanes.

Because the buildings of The Residences will be located in an area of minimal flooding (Zone C), impacts from flooding are not expected. No buildings or improvements will be within the

100-year floodplain (Zone A4), which is primarily the shoreline area. Section 4.9.2 contains more information on drainage of the site and discusses proposed impacts and improvements related to drainage infrastructure.

Mitigative Measures

Volcanic impacts to The Residences at Kapalua Bay are considered unlikely; however, mitigation of lava flow hazards is limited to provision of adequate evacuation routes and a civil defense warning system designed to provide area residents with as much advance notice of a threatening lava flow as possible.

Mitigation of hazards associated with earthquakes, hurricanes, and tsunamis include adherence to Maui County building codes and standards to minimize potential damage to structures. Impacts from hurricanes and tsunamis can be further mitigated by adherence to appropriate civil defense evacuation procedures.

Relative to the existing hotel and facilities, The Residences will be set back further from the shoreline, thereby reducing risks associated with hurricanes, tsunamis, and floods.

Section 4.9.2 contains more information on drainage of the site and discusses proposed impacts and improvements related to drainage infrastructure.

3.5 BOTANICAL RESOURCES

Existing Conditions

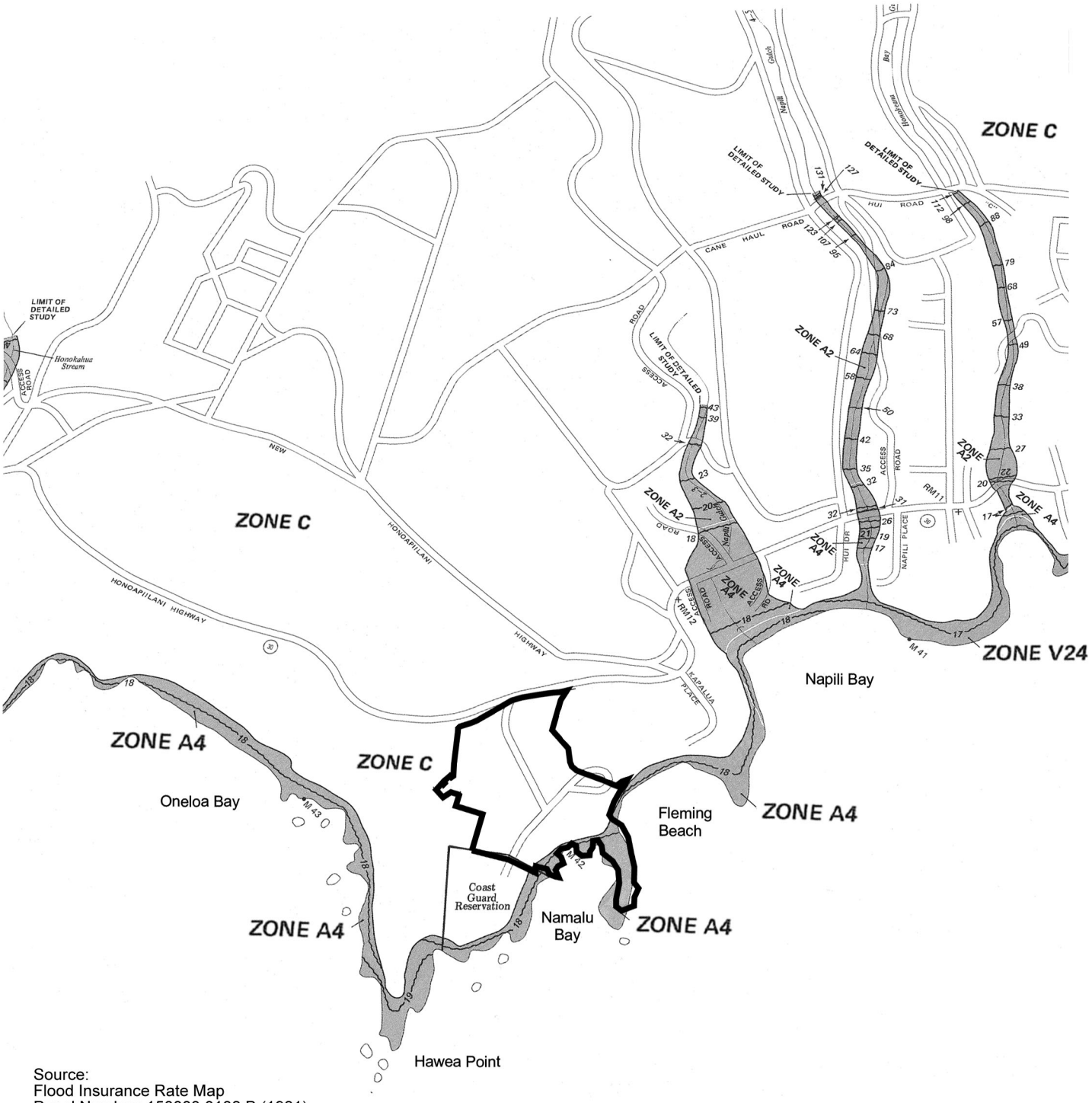
No endangered, threatened, or protected plant species are known to exist on The Residences site. The existing hotel facilities include landscaping and grounds typical of a resort setting. The highly manicured grounds include the following plants:

- **Palms:** Coconut Palm, Fan Palm, Royal Palm, Pygmy Date Palm, and Rhapis Palm.
- **Trees:** Kamani Tree, Hala, Plumeria, Iron Wood, Autograph Tree, Silver Buttonwood, Banyan Tree, Monkeypod Tree, Cook Island Pine, Haole Koa, and Wiliwili.
- **Shrubs:** Natal Plum, Bromeliads, Croton, Yellow Hibiscus, Red Hibiscus, Spider Lily, Oleander, Snow bush, Ti Plants, Ixora, Song of India, Ferns, Orchids, Lollipop Plant, Philodendron, Beach Heliotrope, Bird of Paradise, Ape, Naupaka, Hau, Bougainvillea, Red Ginger, and Mock Orange.
- **Groundcover:** Wedlia, Asystasia, and Grass.

Potential Impacts and Mitigative Measures

Since The Residences will be built on a previously landscaped site, impacts to any endangered, threatened, or protected plant species are not expected. Creation of The Residences will require the removal of most of the existing vegetation. As much as possible, trees and other plants will be stored off-site during construction and replanted after construction. Other trees and plants may be relocated to other areas of the Kapalua Resort. Trees and plants that cannot be replanted will be chipped and recycled at the resort's green waste recycling center.

The Residences will include new landscaping appropriate to the resort-residential setting. New landscaping will include non-invasive species and, where feasible, native and indigenous plants.



Source:
Flood Insurance Rate Map
Panel Number: 150003 0138 B (1981)

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

LEGEND

Flood Zones

A1-A30: Areas of 100-year flood; base flood elevations and flood hazard factors determined.

C: Areas of minimal flooding. (No shading)

The Residences at Kapalua Bay

Figure 14
Flood Insurance Rate Map

The Residences at Kapalua Bay

KAPALUA BAY LLC — ISLAND OF MAUI

NORTH

LINEAL SCALE (FEET)
0 500 1,000 2,000

PBR HAWAII

Drought-tolerant, hardy plants and grasses will also be used where feasible to minimize the need for irrigation.

3.6 WILDLIFE RESOURCES

Existing Conditions

No threatened or endangered species of birds or mammals were observed on The Residences at Kapalua Bay site during an avifaunal and feral mammal field survey conducted on January 8 and 9, 2005 (Bruner 2005). In addition, no native birds or mammals were observed over the course of the survey. Results of the survey are summarized below. Appendix B contains the complete survey.

Three species of migratory shorebirds were recorded during the survey. Five Ruddy Turnstones (*Arenaria interpres*) were seen on the rocky shoreline on January 8. Three Wandering Tattlers (*Heteroscelus incanus*) were seen in the same area on January 8 and 9. A total of 16 Pacific Golden-Plovers (*Pluvialis fulva*) were counted on both days of the survey. While in Hawai'i, plovers are territorial and forage on lawns during August through April. The Hawaiian name for the Pacific Golden-Plover is Kolea.

A total of ten alien bird species were tallied on the survey and are listed in Table 4 below. None of these birds are listed as threatened or endangered. No unexpected species were recorded. Avifaunal surveys in this region of Maui have encountered a similar array of alien birds (Bruner 2005).

Table 4. Alien Bird Species Found On Site

Common Name	Scientific Name
Cattle Egret	*Bubulcus ibis*
Gray Francolin	*Fancolinus pondicerianus*
Spotted Dove	*Streptopelia chinenesis*
Japanese White-eye	*Zosterops japonicus*
Zebra Dove	*Geopelia striata*
Common Myna	*Acridotheres tristis*
Red-crested Cardinal	*Paroaria coronata*
Northern Cardinal	*Cardinalis cardinalis*
House Finch	*Carpodacus mexicanus*
House Sparrow	*Passer domesticus*

One small Indian Mongoose (*Herpestes auropunctatus*) was seen on the survey. No feral cats (*Felus catus*), rats (*Rattus spp.*), or mice (*Mus musculus*) were seen, but likely occur in this area. An ultrasound detector was used on the night of January 8 to listen for any vocalizing Hawaiian Hoary Bats. None were recorded. Relatively small numbers of bats are believed to occur on Maui.

The absence of native birds and mammals was not unexpected due to the elevation and type of available habitats in The Residences site. The migratory shorebirds recorded on the site were typical of their occurrence in Hawai'i at this time of year.

Potential Impacts

The Residences at Kapalua Bay is not expected to impact threatened, endangered, or native species of wildlife, since none were observed on the site. All of the birds and mammals found on the site are alien species.

Mitigative Measures

Since The Residences at Kapalua Bay will be built on a previously constructed site, mitigative measures are minimal. New landscaping will include native, indigenous, and Polynesian-introduced plants, perhaps making the area more attractive to the introduced species of birds that are present. To the extent possible, existing trees on-site will be retained.

3.7 MARINE RESOURCES

Marine Research Consultants conducted two marine surveys to evaluate existing marine resources and document baseline conditions of the nearshore marine habitats. The surveys include an assessment of the marine water quality and a characterization of benthic habitats in the vicinity of The Residences at Kapalua Bay. Both survey reports are summarized below. Appendix C contains the full survey reports.

Existing Conditions

Marine Water Quality. A field investigation was conducted in December 2004 (Marine Research Consultant 2005a) to evaluate existing marine water quality in the immediate vicinity of The Residences at Kapalua Bay site. Water samples were collected in Kapalua Bay and Nāmalu Bay to identify marine water quality conditions. Forty-eight water samples were collected along four transects extending from shoreline out to the open ocean.

Results of water chemistry analyses indicate that the flow of nutrient-containing groundwater extends from the shoreline to a distance of approximately 10 meters (33 feet) offshore. Water samples containing levels of several nutrient constituents that occur in high concentrations in groundwater were detected closest to shore with decreasing concentrations moving seaward. Conversely, salinity levels were lowest closest to shore and increased seaward. Seaward of 10 meters, sampling results indicated freshwater mixing with ocean water to near background oceanic levels with little to no effect from groundwater or nutrient inputs originating on land.

The results indicate more groundwater with higher nutrient content flowing into Kapalua Bay than Nāmulu Bay. The likely source of nutrients, particularly nitrate nitrogen (NO^{3-}), is fertilizer leaching into the groundwater from agriculture, golf courses, and landscaping. Similar levels occur in other embayments along the Kapalua shoreline. Elevated silica (Si) concentrations were noted, but sources could not be determined by the study. Most fertilizers do not contain large volumes of Si, and elevated Si levels were not detected in similar studies in other embayments along the Kapalua shoreline.

The only measurements of water quality constituents that were found to exceed State of Hawai'i DOH standards were (NO^3) and total nitrogen (TN) within one meter of the shoreline. No other constituents measured in either bay exceeded the State Department of Health (DOH) water quality standards.

Benthic Habitat. A benthic habitat map of the area fronting the Kapalua Resort was produced in December 2004 (Marine Research Consultants 2005b) using satellite remote sensing imagery and an in-water survey with divers using underwater propulsion vehicles. The benthic habitat map characterizes the marine environment in the nearshore area (shoreline to the 20-meter depth contour) extending from Nāpili Bay to Honolua Bay. The map can be considered a baseline that will provide the capability to evaluate potential changes to nearshore marine habitats.

The Kapalua shoreline contains a series of crescent-shaped indentations (embayments) delineated by rocky headlands extending from the shoreline seaward. In several of the larger embayments (Nāpili, Kapalua, Oneloa and Honokahua), the shoreline consists of sandy beach. In the smaller embayments, such as Nāmalu, the shoreline consists of boulder cliff. The central interiors of the bays consist of sand bottoms, while the lateral margins of the bays generally consist of basaltic or beach rock pavements colonized by reef corals. Sand plains extend seaward of the submerged basaltic fingers to deep water.

The Kapalua coastline is exposed to long-period swells from the north and south, and coral community structure is defined by the level of exposure of each particular area to wave forces. Dominant coral species include *Porites lonbata* (the most common coral species in Hawai'i), *Monitpora dilitata*, *M. patula*, and *Pocillopora meandrina*.

The introduced red algae *Hypnea musciformis* was not observed in any of the Kapalua embayments. This species has colonized much of the coastline of West Maui and Kīhei, south of Kapalua, and resulted in nuisance blooms in many areas over the last decade.

Potential Impacts

The marine water quality report concludes: 1)"The changes in land use [from the existing hotel to The Residences] are not expected to have significant adverse effects on either the existing watershed, downstream properties, or coastal marine waters;" and 2) "it is not likely that there will be substantial differences compared to the existing situation" (Marine Research Consultants 2005a).

While there is evidence of increased nutrients close to the shoreline, the extent of the mixing zone is so narrow that there is virtually no possibility of impact to marine biota. It is important to note that the observed substances are restricted to the innermost portion of Kapalua and Nāmalu Bays and do not extend more than 10 to 25 meters offshore. Results of surveys from other embayments along the Kapalua shoreline reveal similar results.

Mitigative Measures

With baseline water quality and marine environment data established, additional monitoring can be used to evaluate any changes to the nearshore marine resources resulting from The Residences at Kapalua Bay. If necessary, appropriate mitigative measures can then be implemented.

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4

Assessment of the Human Environment, Potential Impacts, & Mitigative Measures

4.0 ASSESSMENT OF THE HUMAN ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATIVE MEASURES

This section describes the existing conditions of the human environment, potential impacts of The Residences at Kapalua Bay, and mitigative measures to minimize any impacts.

4.1 ARCHAEOLOGICAL AND HISTORIC RESOURCES

Scientific Consultant Services (SCS), Inc., conducted an archaeological inventory survey of The Residences property. The work consisted of historical background and archival research; pedestrian survey and inspection of the parcel; mapping and description of site features; subsurface testing (excavation by backhoe); consultation with State archaeological Dr. Melissa Kirkendall; and, analysis, interpretation, and reporting of all relevant data. The main objectives of the survey were to determine if significant cultural and/or historic resources and/or human burials occurred on the property and to provide significance assessments and recommendations. The archaeological inventory survey is summarized below. Appendix D contains the complete survey report.

Existing Conditions

Previous Archaeology. The majority of previous archaeology in leeward West Maui has been conducted in and around the general Lahaina area, especially to the north (*e.g.,* Kā'anapali), due to the greater impact of modern development there. Lahaina has been the most important population center in leeward West Maui for quite some time, at least from the later pre-Contact era. Relatively less is known about the archaeology of the Honokahua-Kapalua-Nāpili area, both because it has not been developed as intensively as areas to the south, and because it was probably not a major population center in leeward West Maui in traditional times.

The Honokahua Burial Site (Bishop No. D13-9) (approximately one kilometer to the northeast within the grounds of the Ritz-Carlton Hotel), is the most spectacular traditional site in the vicinity of The Residences property. The Honokahua Burial Site represents one of the largest traditional Native Hawaiian cemeteries ever recorded, with over 1,000 sets of human remains recovered in excavation (Donham 1986, 1989, 2000; Pietrusewsky *et al.* 1991). The site represents the single, most informative sample of human remains from traditional Native Hawaiian times.

Kirch (1973a and 1973b) conducted the first systematic archaeological survey in the Kapalua area, including the area of The Residences property. No sites were documented within The Residences property; however, no subsurface testing (excavation) was conducted. Kirch documented a total of nine, mostly traditional, archaeological sites in the vicinity. Most of these were located in and around Honokahua, including the Honokahua Burial Site (Bishop No. D13-9). Three sites nearby The Residences property identified by Kirch include:

- A small, temporary fishing village at TMK: 4-2-04: por. 10 and por. 30 (SIHP No. 50-50-01-1346, Bishop No. D13-1), approximately 200 meters (700 feet) north of The Residences property; the site consisted of eight features, including several small shelters, one *ahu* (stone cairn), and midden.

- A small shelter cave (SIHP No. 50-50-01-1347, Bishop No. D13-2) beneath the overhanging oceanfront *pali,* in the adjacent parcel to the north (parcel 30), approximately 180 meters (600 feet) from the northern boundary of The Residences property.
- A stone platform (SIHP No. 50-50-01-1348, Bishop No. D13-3), with an associated low wall, on a promontory, some 200 meters (700 feet) northeast (and upslope) of the eastern boundary of The Residences property.

Two additional, brief archaeological surveys/field inspections were conducted at the adjacent parcel (TMK: 4-2-04: 30) in which Kirch (1973a and 1973b) documented the small, temporary fishing village and the cliff-face rockshelter. Rosendahl (1988a) did not locate any additional sites, but Kennedy (1990) recorded three additional sites, all stacked-rock features, presumably dating from traditional times (*i.e.,* a low, soil-filled platform, an L-shaped alignment, and a C-shaped structure). No excavation was conducted at these sites.

An archaeological inventory survey (Fredricksen *et al.* 1994 and 1996) and subsequent archaeological monitoring (Fredricksen 2001) were conducted on the 12.2-acre parcel (TMK: 4-2-04: 26) immediately adjacent to (southwest of) The Residences property. The survey area was extensively excavated with backhoe trenches and hand-dug units. No significant sites or features were identified in the inventory survey, although one area of buried sand dune deposits was recommended for monitoring. During monitoring three sites were identified:

- A buried (subsurface) cultural layer (Site 50-50-03-4815), interpreted as a probable habitation site, approximately 15 centimeters thick, located approximately 1.5 meters below the ground surface, containing three traditional artifacts (coral abrader, bone fishhook blank, and utilized basalt flake), shell midden, fire-cracked rock, and a hearth; one radiocarbon date indicated a later pre-Contact occupation (A.D. 1490–1665, 2 Sigma).
- A historic burial feature (Site 50-50-03-4814) containing two individuals, located approximately 1.7 to 1.9 meters below the ground surface, and cutting into and through the cultural layer (50-50-03-4815); the burial feature consists of a stone-lined crypt, probably topped with a wooden cover; stratigraphic evidence and artifact style (of the nails used to construct the overlying cover) suggest that the burial feature dates from the late 19th to early 20th century.
- A scatter of fragmentary human remains (Site 50-50-03-5059), representing one or more individuals, in previously disturbed sediments.

M. Rosendahl (1988a) conducted an archaeological reconnaissance survey at "The Cottages" residential development, Oneloa Bay, immediately east-northeast of The Residences property. This area included sand dune sediments; however, the 10.8-acre coastal parcel did not contain any significant surface sites or features. P. Rosendahl (1988b) subsequently conducted subsurface testing (excavation). No significant surface sites or features were located. No burials or human remains were observed.

Current Survey Findings. No human remains whatsoever were observed or encountered within The Residences property during the archaeological survey. No subsurface, burial features (*e.g.,* soil anomalies) were observed. No historically-significant surface features or sites were found.

Subsurface investigations (20 backhoe trenches) led to the identification of one significant site (5565), a buried cultural layer. The buried layer is located between 80 and 150 centimeters below the present ground surface, in sandy deposits on the rocky point between Fleming Beach and Nāmalu Bay. The buried layer consisted of charcoal-stained sediment, diffuse and concentrated charcoal (including a small hearth feature), fire-cracked rock, and one or two informal (i.e., expediently manufactured) stone tools.

Although significant portions of The Residences property have been disturbed and filled, natural sand dune deposits underlie much of the property, starting at approximately 50 to 100 centimeters beneath the surface. A small portion of The Residences property was unavailable for subsurface testing (excavation) because the hotel is still fully functioning, and additional testing will have to be conducted before the parcel is fully documented and assessed for historic significance.

Potential Impacts and Mitigative Measures

The archaeological survey report recommends no further work for the archaeological site (5565) identified during the survey. The site is located on a rocky point between Fleming Beach and Nāmalu Bay and is within the shoreline setback area and not on the portion of the property proposed for The Residences' buildings. ~~The~~ As recommended by the State Historic Preservation Division (SHPD), the site will be placed in "as is" passive preservation.

Additional backhoe testing will be needed in the area (immediately west (*makai*)) of the main lobby ~~when the hotel building is removed~~ following the closure of the existing resort. The scope of the additional testing will be determined in consultation with the ~~State Historic Preservation Division (~~SHPD~~)~~, Maui archaeologist. Results of this additional testing will guide the preparation of an archaeological monitoring plan.

Given a variety of factors—including the documented presence of undisturbed, natural dune sand throughout much of The Residences property—archaeological monitoring will be conducted ~~for future construction activities. Monitoring will be needed~~ during both the demolition of the current hotel facilities and the construction of The Residences. It may be that archaeological monitoring of the demolition may be necessary prior to some of the inventory level testing. ~~Specifics of the archaeological monitoring plan will be contingent upon results of the additional testing, which will be conducted after the existing buildings are removed.~~ The specific scope of the work will be developed in consultation with the SHPD Maui archaeologist. The additional archaeological testing will be submitted as an addendum to the current archaeological inventory survey.

If necessary, based on the additional inventory work and the results of monitoring, an archaeological data recovery program will be conducted.

Kapalua Bay, LLC and its contractors will comply with all laws and rules regarding the preservation of archaeological and historic sites should any sites be found during demolition and construction. Should historic remains such as artifacts, burials, concentrations of shell or charcoal be encountered, work shall cease immediately in the immediate vicinity of the find and the find shall be protected from further damage. The contractor shall immediately contact the

SHPD, which will assess the significance of the find and recommend appropriate mitigation measures, if necessary.

The SHPD has reviewed the current archaeological inventory survey report and found the report to be acceptable (Appendix D contains the acceptance letter). ~~has been submitted to the SHPD for review.~~

4.2 CULTURAL RESOURCES

SCS conducted a cultural impact assessment of The Residences site to gather information about traditional cultural practices and pre-historic and historic cultural resources. Preparation of the assessment included archival and documentary research, as well as consultation with individuals with knowledge of the area, and the cultural resources, practices, and beliefs associated with the area. The cultural impact assessment is summarized below. Appendix E contains the full report.

Cultural Historical Context

Traditional Settlement Patterns. The traditional district (*moku*) of Kā'anapali, where The Residences site is located, consisted of five major stream valleys (Honokōwai, Kahana, Honokahua, Honolua, and Honokohau), all of which were extensively terraced for wet taro (*lo'i*) in early historic and later times. Honokahua Valley, just northeast of The Residences site, has been described as having wet taro (*lo'i*) lands, although not in great abundance (Sterling 1998). Sweet potatoes were reportedly grown between Honokohau and Kahakuloa Ahupua'a, presumably on lower *kula* lands. South of The Residences site, Kahana Ahupua'a, was known as a place of salt gathering for the people of Lahaina (Sterling 1998).

There are six bays located on Maui's west shore whose names begin with the word *hono*. These bays and coves are collectively known as *Hono a Pi'ilani* (the bays beginning with Hono, ruled by Kihapi'ilani), which referred to a vision predicting the prominence of Kihapi'ilani over his brother, Lonoapi'ilani in ruling Maui in the early 1600s (Clark 1980, Cordy 2000, Manu 1884). Kapalua is situated along this coast between Honokahua and Honokeana. The coastal and marine environments adjacent to The Residences site would have provided rich resources for traditional subsistence foragers and fishermen in ancient times.

While no *heiau* were documented within The Residences site or general area (Nāpili 2–3 Ahupua'a), nor in the adjacent (to the southwest) Honokeana Ahupua'a, early archaeological surveys identified seven religious shrines (*heiau*) from Māhinahina to Honokohau Ahupua'a (Thrum 1909 and 1917, Walker 1931). The closest *heiau* reported by these early surveys was located in the adjacent (to the northeast) Honokahua Ahupua'a (Kahauiki Heiau, Walker Site No. 16), just over one kilometer northeast of The Residences site. *Heiau* indicate the presence of political power and the appropriate population to support it.

Traditionally, trails extended from the coast to the mountains, linking the two for both economic and social reasons. The Kā'anapali District is noted for an *alaloa* (a path or trail) that reportedly encircled the entire island. Walker (cited in Sterling 1998:46) wrote:

> *The north end of Maui also is traversed by a paved trail. Sections of it can be seen from Honolua to Honokohau to Kahakuloa. It is paved with beach rocks and has a width of four to six feet...This trail is also spoken of as the Kihapiilani Trail.*

Early Historic Land Use. Most of the ethnographic and historic literature of *ahupua'a* in West Maui focuses on Lahaina, which served as the capitol of the Hawaiian Kingdom after the conquest of Kamehameha until 1855. This information indicates that the lands around Lahaina were rich agricultural areas irrigated by aqueducts originating in well-watered valleys, with permanent occupation predominately on the coast. Crops cultivated included coconut, breadfruit, paper mulberry, banana, taro, sweet potato, sugar cane, and gourds.

Handy and Handy (1972) quote Vancouver's naturalist and surgeon Menzies (in 1793) and traveler Arago (in 1819) as marveling at the state of cultivation and fertility of the greater Lahaina area, which was extensively planted with wet taro (*lo'i*) and other subsistence crops (*e.g.*, breadfruit, sweet potato, and coconut palms).

In the 1840s, traditional land tenure shifted drastically with the introduction of private land ownership based on Western law. The Great Māhele of 1848 divided Hawaiian lands between the king, the chiefs, the government, and began the process of private ownership of lands. The subsequently awarded parcels were called Land Commission Awards. Once lands were made available and private ownership was instituted, the *maka'āinana* (commoners)—if they had been made aware of the procedures—were able to claim land on which they had been cultivating and living.

No Land Commission Awards (LCA) were located within The Residences site. Nineteen LCA are on record for Honolua Ahupua'a, just northeast of the site. These documents indicate land use for taro and sweet potato cultivation, *kula* lands (roughly "pasture"), and house lots.

Historic Land Use. Whaling (centered in Lahaina) was the first commercial enterprise in West Maui, but it more or less collapsed by the 1860s. Commercial sugar cane production was the next large capitalist venture in West Maui, starting as early as 1863, and it was focused between Ka`anapali and Lahaina.

The area in and around the The Residences site, which was located at the margins of sugar cane enterprises in West Maui (Dorrance and Morgan 2000), was most important as a center of commercial ranching (cattle raising) and, subsequently, pineapple cultivation.

In the late 18th to early 19th century, the entire *ahupua'a* of Honokahua, immediately adjacent to (north of) The Residences site was given to Isaac Davis by Kamehameha I. Following the death of Davis in 1810, the land was eventually passed onto a succession of owners, from John Young to both Davis' and Young's heirs (1835) to Davis' daughter (Kele Sally Davis) during the Great Māhele (1848) (LCA 8522-B, RP 2236). In the later 19th century, these lands became part of the James Campbell Estate. This was also the time that the Honolua Ranch was first established. Cattle ranching began then and was continued by Henry Perrine Baldwin, who acquired the lands from the Campbell Estate in 1890 (Fredricksen and Fredrickson 2003). In addition to ranching, other early commercial activities included coffee farming.

David T. Fleming became manager of Honolua Ranch in 1911 (or 1912). Fleming was well-versed in pineapple production from the Haiku area and gradually began shifting the ranch's initiative to pineapple production. The Honolua Ranch/Baldwin Packers complex shifted from Honolua to Honokahua in 1915, and a pineapple cannery was constructed. A major commercial pineapple industry emerged in West Maui during the 1920s. The plantation communities of

Honokahua and Nāpili emerged and developed as Honolua Ranch/Baldwin Packers pineapple operations grew. The population of the Lahaina area increased with the successful economic operations of the pineapple plantation.

In 1962, Baldwin Packers merged with Maui Pineapple Company to form Maui Land & Pineapple Company, Inc. Maui Land & Pineapple Company, Inc., became the parent company of Kapalua Land Company, Ltd., which conceived of a master planned resort featuring The Kapalua Bay Hotel at the shore of Honokahua Ahupua'a. The hotel opened in 1978, beginning the transformation of former ranch and pineapple lands in to a modern resort complex. Both the Ritz-Carlton Kapalua and The Residences at Kapalua Bay are part of this ongoing process.

Interviews

As part of the cultural assessment, individuals were interviewed to obtain information concerning their knowledge of Kapalua or the vicinity. Summaries of these interviews follow below. Transcripts of the interviews are included in the cultural assessment report (Appendix E).

Clifford Nae'ole, the Cultural Advisor for the Ritz-Carlton Hotel in Kapalua and a member of the Maui-Lāna'i Burial Council, feels that access to the beach is important for fishermen and people gathering coastal resources and just for "plain meditation." "Access with dignity" is a term used by Nae'ole to refer to local people being able to park their cars and go down to the coast without being made to feel "shame." Nae'ole believes that the rights of the visitors and the local residents should not be infringed upon. Nae'ole feels that whoever is developing needs to make sure there is "access with dignity" for the local fishermen, practitioners of hula, chant, etc. He is also concerned that the developers be sensitive to the proper protocol, ceremonies, and notification of the Burial Council in the case *'iwi* are uncovered. Nae'ole said, "It's just vital the 'host' and 'hosted' feel equally as comfortable within the confines or shores of this island."

Wesly Nohara, Manager of Maui Land & Pineapple Company, Honolua Plantation, was born and raised in one of Kapalua's plantation camps near the Honolua Store. The store is still in operation within the Kapalua Resort. Both his father and grandfather worked for the pineapple company. Nohara's memories of the area where the Kapalua Bay Hotel is located included the Boy Scout Camp grounds, the old beach club built by the Plantation and used for various functions, an open grassy area with coconut trees, a restroom facility, and the peacefulness of the bay, which he considers ideal for children. Kapalua Bay was called Fleming's Beach in those days. Nohara would go spear fishing there because it was so calm, but it was mostly popular as a family snorkeling area. Some fishing occurred on the two points on either side of the bay. Hāwea Point was a popular fishing spot. His father would go to a particular area to pick *ogo*, a Japanese seaweed. Nohara mentioned that there were about five places where people can access the beach and stated: "Actually, in terms of access, in terms of distance-wise, it's better now than when I was a kid!"

An interview was held at the Kapalua Bay Hotel with Sila Kaina, Cultural Advisor for the hotel; and Betty Taira, Makanani Catugal, and Yolanda Dukes—all long-time residents in the Kapalua area. These women expressed a "sense of place" regarding Kapalua; that is, it is culturally patterned and includes happy childhood memories, traditional family gathering practices, and an association with Hawaiian history. These factors all produce feelings of love and respect for their home. Much of the past is entwined with activities and institutions present in plantation

life, such as large families congregating on holidays and the use of various fixtures provided by the plantation for everyone's enjoyment. Some of these, of course, ended with the closing of the various camps and the plantation itself. Other activities such as fishing, camping on the beach, gathering *'opihi* and *maile* continued after the plantation's closing, as they were cultural activities. Regular use only diminished as commercial development made access difficult.

All agreed that development impacts the continuation of a 'local' lifestyle. The women feel that private owners keep local people from the areas they have traditionally used. Because of this, local people stop going to these places. They expressed that more public parking and access is needed to ensure that local residents can in fact have "access with dignity." To Kaina, Taira, Catugal, and Dukes, "access with dignity" means that local people should not be made to feel that they are second-class citizens when trying to visit these areas. They should not have to justify or defend their purpose to private landowners or to security guards when trying to go to the beach for any activity. It was suggested that the developers consult with cultural advisors in the area. In this way, the rights of the private landowner and the rights of native Hawaiians can both be honored and protected.

Recommendations

To preserve native Hawaiian rights and the ability of the local community to access, gather, and perform other customary activities that have continued along the coast, the cultural assessment report recommends continued communication and consultation between Kapalua Bay, LLC and cultural practitioners, especially regarding access to the shore and its resources during the planning process.

Potential Impacts and Mitigative Measures

Based on interviews with people knowledgeable with the Kapalua area and The Residences site, primary cultural concerns pertain to continued access to the shoreline. In particular, as Clifford Nae'ole termed it, "access with dignity," meaning that local people should be able to access the coast without being made to feel uncomfortable.

Kapalua Resort maintains a network of public access pathways throughout the coastal area of the resort to allow access to the shoreline. This access network is open to both residents and visitors. Maui residents and visitors are welcomed at the Resort.

As discussed below in the next section, The Residences at Kapalua Bay will not change access to the shoreline over existing conditions.

In creating The Residences at Kapalua Bay, Kapalua Bay, LLC will follow proper protocol, ceremonies, and notification of the Burial Council and the SHPD in case *'iwi* or other significant cultural or archaeological sites are discovered.

4.3 ACCESS AND TRAILS

Current access to the shoreline through The Residences site is provided by a public shoreline access pathway on the north side of property near the Bay Villas boundary (see Figure 8). The pathway primarily provides access to Nāmalu Bay and Hāwea Point, although other shoreline

areas are accessible via this path. Public parking for the shoreline access path is provided in the Kapalua Bay Hotel parking lot, at the start of the path, with signs clearly designating the shoreline access parking area. There are 10 parking stalls allocated for public shoreline access parking.

Additional public shoreline access and public parking within the Kapalua Resort are provided at the following areas (also see Figure 10):

- **Kapalua (Fleming's) Beach.** Public access to Kapalua (Fleming's) Beach is provided south of the Coconut Grove Condominiums (which are adjacent to The Residences site). In addition to the public access path, there are 39 public parking stalls, restrooms, and showers. Kapalua Land Company Ltd., owns and maintains these facilities.
- **Oneloa Bay.** Public access to Oneloa Bay is provided adjacent to the Kapalua Place residential property. In addition to the public access path, there are 20 public parking stalls and showers. Kapalua Land Company Ltd., owns and maintains these facilities.
- **D.T. Fleming Beach Park.** D.T. Fleming Beach Park fronts Honokahua Beach and includes ~~70~~ 107 public parking stalls, restrooms, and showers. The park is under a 55 year "Charitable Lease" from Maui Land & Pineapple Company, Inc., to the County of Maui for one dollar per year. Maui Land & Pineapple Company, Inc., maintains the parking lot. The County of Maui maintains the other park facilities. The current restrooms and showers were constructed by the County of Maui in 1995.
- **Makāluapuna Point.** Public access to Makāluapuna Point is provided near the intersection of Lower Honoapi'ilani Road and Office Road. In addition to the public access path, there are 10 public parking stalls for shoreline access.
- **Mokuleia Bay.** Public access to Mokuleia Bay is via a public path provided by a partnership between Maui Land & Pineapple Company, Inc., and the DLNR.
- **Honolua Bay.** Public access to Honolua Bay, mainly used by divers and surfers, is provided from Lipoa Point.

Potential Impact and Mitigative Measuress

The Residences will not impact the access to Nāmalu Bay and Hāwea Point, the adjacent Kapalua (Fleming's) Beach south of the adjoining Coconut Grove Condominiums, or any other public shoreline access points, related parking, and other facilities. Maui Land & Pineapple Company, Inc., or Kapalua Land Company Ltd., will continue to maintain all access areas and related facilities as noted above.

Relative to the existing Kapalua Bay Hotel, the creation of The Residences at Kapalua Bay will make the shoreline more accessible to the public. The existing shoreline access pathway and 10 public parking spaces will be retained.

The buildings of The Residences will be setback at least 110 feet further from the shoreline than the closest buildings of the existing hotel. This increased area between buildings and the ocean will facilitate placement of a new paved public coastal trail planned to run through The Residences site and beyond, providing continuous coastal access within Kapalua when all segments are completed.

Because of the location of the existing public shoreline path near the Bay Villas property boundary, public access on this path is not expected to be impacted during construction of The Residences. If this pathway cannot be used by the public during construction because of safety concerns, alternative access will be provided. Also during construction, public parking for shoreline access may be temporarily located across Lower Honoapi'ilani Road from the site.

The many public shoreline access points, parking spaces, and related facilities provided within the Kapalua Resort allow extensive public access to the shoreline, the ocean, and ocean resources. Most importantly, these facilities ensure "access with dignity" for local fishermen, practitioners of hula, chant, and others seeking to enjoy the benefits and opportunities afforded by the coastline and the ocean. Further, the facilities ensure that the rights of local residents and visitors are not infringed upon.

4.4 TRANSPORTATION

Wilson Okamoto Corporation prepared a Traffic Impact Analysis Report (TIAR) for The Residences at Kapalua Bay. Key elements of the analysis are summarized below. Appendix F contains the complete report.

Existing Conditions

Honoapi'ilani Highway. Honoapi'ilani Highway, a State highway, serves as the primary arterial roadway in the West Maui region. It is generally oriented parallel to the coast and connects to other regional highway systems serving other parts of the island. In West Maui, Honoapi'ilani Highway is linked to mauka-makai collector roads that serve residences, resort areas, agricultural lands, and commercial areas.

In the vicinity of the Kapalua Resort, Honoapi'ilani Highway is a two-way, two-lane, undivided roadway with a posted speed limit of 45 miles per hour (mph). South of the resort, in the Honokōwai region, beginning at the intersection with Lower Honoapi'ilani Road, Honoapi'ilani Highway is a two-way, four-lane undivided roadway to Dickenson Street in Lahaina. South of Dickenson Street, Honoapi'ilani Highway continues as a two-way, two-lane, undivided roadway.

Access to and from The Residences site is via Lower Honoapi'ilani Road. Connections to Lower Honoapi'ilani Road are available via the following collector roads that connect to Honoapi'ilani Highway.

Office Road. Office Road is the primary access to the Kapalua Resort via the intersection of Honoapi'ilani Highway with Office Road. Office Road is a two-lane collector road serving the Kapalua Resort area oriented in the mauka-makai directions with a posted speed limit of 25 mph. The intersection of Honoapi'ilani Highway and Office Road operates as an unsignalized intersection with stop-controls provided for Office Road. The northbound and southbound approaches of the intersection include exclusive left-turn lanes and shared through and right-turn lanes. The Office Road approach of the intersection services left-turn, through, and right-turn traffic movements. Office Road terminates at the intersection with Lower Honoapi'ilani Road. This intersection includes one lane on each approach servicing all permitted traffic movements.

Napilihau Street. Napilihau Street connects with Honoapi'ilani Highway south of the Honoapi'ilani Highway/Office Road intersection. Napilihau Street operates as a two-way, two-lane, County of Maui roadway with a posted speed limit of 20 mph. The Ironwood Ranch and operations associated with Maui Pineapple Company, Ltd., are located on the mauka side of the Napilihau Street/Honoapi'ilani Highway intersection. Uses on the makai corners of the intersection include the Honolua United Methodist Church and Pre-School, and the Nāpili Plaza commercial area. The intersection of Honoapi'ilani Highway and Napilihau Street services traffic using a three-phase traffic signal system. The lane designations on the northbound approach of the intersection serve exclusive left-turn, and shared through and right-turn traffic movements. The lane designations on the eastbound approach of Napilihau Street serve exclusive right-turn, and shared through and left-turn movements, while the one-lane westbound approach is designated as shared between left-turn, through, and right-turn traffic movements.

Ho'ohui Road. The Ho'ohui Road/Honoapi'ilani Highway intersection is approximately 1.5 miles south of the Napilihau Street/Honoapi'ilani Highway intersection. Ho'ohui Road is a two-way, two-lane, County of Maui roadway with a posted speed limit of 20 mph. The Kahana Ridge residential subdivision is located on the mauka side of the intersection and the Kahana Shopping Center is located on the makai side. The intersection is controlled by a traffic signal system with lane designations on both the southbound and northbound approaches serving exclusive left-turn, through, and right-turn traffic movements. The lane designations on the eastbound and westbound approaches of Ho'ohui Road provide shared left-turn and through traffic movements, and exclusive right-turn traffic movements.

Akahele Street. The Akahele Street/Honoapi'ilani Highway intersection is approximately 4,000 feet further south of the Ho'ohui Road/Honoapi'ilani Highway intersection. Makai of Honoapi'ilani Highway, Akahele Street is a two-way, two-lane, County of Maui roadway with a posted speed limit of 30 mph. Mauka of Honoapi'ilani Highway, Akahele Street is a two-way, two-lane, State roadway. The Kapalua West Maui Airport is located mauka of the intersection; residential homes are on the makai side. The intersection is controlled by a traffic signal system with lane designations on both the northbound and southbound approaches of Honoapi'ilani Highway providing exclusive left-turn, through, and right-turn traffic movements. The eastbound and westbound approaches of Akahele Street both provide exclusive left-turn, and shared through and right-turn movements.

Lower Honoapi'ilani Road. South of the Akahele Street/Honoapi'ilani Highway intersection, Lower Honoapi'ilani Road intersects with Honoapi'ilani Highway. From the intersection with Honoapi'ilani Highway, Lower Honoapi'ilani Road traverses northward and generally runs parallel to Honoapi'ilani Highway to the Kapalua Resort. Along its length Lower Honoapi'ilani Road provides access to residential, resort, and commercial areas. The prevailing posted speed limit on the roadway is 20 mph. The intersection of Honoapi'ilani Highway and Lower Honoapi'ilani Road is controlled by a traffic signal system utilizing a three-phase signal operation with northbound and southbound left-turn lanes, and a southbound deceleration lane on the highway. The traffic on eastbound approach of Lower Honoapi'ilani Road at the intersection is serviced by a shared left-turn and through lane, and an exclusive right-turn lane. The westbound approach of the intersection has one lane servicing left-turn, through, and right-turn traffic movements.

Highway Capacity Analysis. A highway capacity analysis was conducted for the above Honoapi'ilani intersections using data from: 1) manual traffic counts during AM and PM peak traffic times; 2) other recently prepared traffic reports for the area; and 3) 24-hour traffic counts for Honoapi'ilani Highway. Regarding data from other traffic studies in the region, while the analysis of existing conditions in other studies were generally found to be the same, the data set with the highest traffic demands at each of the above intersections was used in this analysis to represent a conservative approach.

The analysis indicates that, in general, the above intersections operate at acceptable levels, meaning that traffic at the intersections does not experience unacceptable delays. However, some movements at some intersections are approaching noticeable congestion in the AM and PM peak hours: 1) Nāpilihau Street/Honoapi'ilani Highway: northbound left-turn and southbound through traffic movements on the highway and the eastbound right-turn movement during the PM peak hour; 2) Akahele Street/Honoapi'ilani Highway: the northbound left-turn movement and the southbound left-turn and through movements and the eastbound approach of Akahele Street during the AM and PM peaks; and 3) Lower Honoapi'ilani Road/Honoapi'ilani Highway: the northbound left-turn and southbound through movements during the AM peak, other movements, except the southbound left-turn and right-turn movements, during the PM peak.

Kapalua Resort Shuttle. Kapalua Resort operates a shuttle system for resort residents and guests that provides transportation within the resort and to and from the Kapalua West Maui Airport. Service is provided "on call" from 6:00 a.m. to 11:00 p.m. The shuttle service carries approximately 18,000 passengers per year.

Potential Impacts

The TIAR concludes that compared to the existing hotel on the site, The Residences will result in a 48 percent reduction in trips (vehicles entering and existing the site) in the AM peak hour and a 43 percent reduction in trips during the PM peak hour. The decrease in traffic generation is a result of the reduction in total units, as well as the trip generating characteristics of the proposed types of uses. With The Residences site, the total unit count on the property will be reduced from the existing 196 hotel rooms to a total of 155 larger resort-residential homes and fractional ownership units, resulting in less traffic generation, as traffic generation is generally less for multi-room units. Resort-residential properties also have guests with longer stays than the typical resort hotel which typically correlates to less traffic generation with guests using available on-site amenities. Based on established trip generation rates, the occupants of The Residences fractional component are also expected to generate less vehicular trips than typical resort hotel guests.

The Residences at Kapalua Bay is not expected to negatively impact traffic operations in the vicinity. Any future impacts to Honoapi'ilani Highway capacity and intersections will be the result of overall ambient growth of traffic in the area as well as cumulative traffic generation by other developments. The Residences at Kapalua Bay will result in a net decrease from existing conditions, thus assisting in improving the overall traffic situation in West Maui.

In their comments on the Draft EIS, the Maui Police Department noted that they have not heard or received complaints regarding the issue of traffic and safety in the Kapalua Resort area. In addition, they stated that roadways in the vicinity of The Residences (Kapalua Bay Drive, Office

Road, Honoapiilani Highway and Lower Honoapiilani Road) "are located on the outskirts north of Lahaina in a relatively remote area and are not heavily used throughout both the daytime and evenings. Therefore, minimal impact on traffic in this area is anticipated."

Mitigative Measures

Since The Residences at Kapalua Bay will generate less traffic than the existing hotel, no traffic mitigative measures are proposed or warranted. The existing Kapalua Resort shuttle system for resort residents and guests will service The Residences. This service currently provides transportation within the resort and to and from the Kapalua West Maui Airport. Service is provided "on call" from 6:00 a.m. to 11:00 p.m. The paved coastal trail fronting The Residences will eventually extend to other areas within the Kapalua Resort, facilitating pedestrian access to restaurants, shops, and other facilities, further reducing trips by car. Facilities within The Residences site, such as a restaurant, a spa, and recreational amenities, will reduce the need for trips outside of the property.

4.5 NOISE

D.L. Adams Associates, Ltd., prepared an environmental noise assessment report for The Residences at Kapalua Bay to examine potential noise impacts and suggest possible mitigation measures (see Appendix G). Key elements of the report are summarized below.

Existing Conditions

The Kapalua Bay Hotel vicinity is relatively quiet. The area is exposed to daytime ambient noise from vehicular traffic on nearby roads, waves crashing on the shoreline, occasional aircraft flyovers, wind, birds, crickets, and other hotel operations. Noise measurements taken at the property line indicate noise levels ranging from 40 decibels (dBA) during the night to around 55 dBA during the day.

Potential Impacts

Potential impacts to the acoustic environment of the site and neighboring properties relate to short-term demolition and construction noise. It is expected that after The Residences are completed, ongoing noise levels will be similar to those that exist now.

Demolition and Construction Noise. The dominant noise sources during demolition and construction will be from equipment such as bulldozers, excavators, and diesel trucks. Demolition and construction may generate significant amounts of noise that may impact nearby residences. Increased noise due to demolition will be short-term, limited to daytime hours, and must comply with Department of Health noise regulations.

Traffic Noise. The Residences at Kapalua Bay is expected to generate less traffic than the existing hotel. Therefore, traffic-related noise levels are also expected to decease and no vehicular-related noise impacts are anticipated due to The Residences.

Post Construction Operations. After construction, noise levels related to operations and activities of The Residences are expected to be similar to those that exist now with the hotel. The Residences will incorporate stationary mechanical equipment typical for homes and resort buildings. Expected mechanical equipment may include air handling equipment and condensing units. Other noises include typical human activities (*i.e.,* outdoor maintenance, conversations, etc.), vehicles entering and exiting the property, and other miscellaneous resort activity noises.

Mitigative Measures

All activities related to The Residences will comply with HAR, Chapter 11-46, Community Noise Control.

Demolition and Construction Noise. Proper mitigating measures will be employed to minimize demolition- and construction-related noise impacts to comply with all Federal and State noise control regulations. The noise assessment report recommends a temporary sound barrier wall be constructed at the north and south project property lines to help mitigate construction noise. The temporary sound barrier wall will help reduce the impact of demolition and construction activities for neighbors closest to the construction site. The wall could be constructed of three-fourth-inch plywood, or other similar weight building materials.

Increased noise activity due to demolition and construction will be short-term, limited to daytime hours, and persist only during the construction period. When construction noise exceeds, or is expected to exceed the Department of Health's allowable limits, a permit must be obtained. Specific permit restrictions for construction activities are:

- No permit shall allow any construction activities that emit noise in excess of the maximum permissible sound levels before 7:00 a.m. and after 6:00 p.m. of the same day, Monday through Friday.
- No permit shall allow any construction activities that emit noise in excess of the maximum permissible sound levels before 9:00 a.m. and after 6:00 p.m. on Saturday.
- No permit shall allow any construction activities that would emit noise in excess of the maximum permissible sound levels on Sundays and holidays.

The use of pile drivers, hoe rams, jack hammers 25 pounds or larger, high-pressure sprayers, and chain saws may be restricted to 9:00 a.m. to 5:30 p.m., Monday through Friday.

Section 4.11, Hotel Demolition and Recycling, discusses additional demolition-related noise mitigation measures.

Traffic Noise. Since traffic-related noise levels are expected to decease and no vehicular-related noise impacts are anticipated due to The Residences, mitigation measures related to traffic noise are not warranted or proposed.

Post Construction Operations. The design of The Residences will provide for the location and placement of stationary mechanical equipment, such as chillers, compressors, air conditioning units, away from neighbors and residential units, as much as is practical. Enclosed mechanical rooms may be required for some equipment.

4.6 AIR QUALITY

B. D. Neal & Associates prepared an air quality impact assessment to: 1) examine potential air quality impacts related to The Residences at Kapalua Bay; and 2) suggest mitigative measures to reduce any potential air quality impacts where possible and appropriate. The air quality assessment is summarized below. Appendix H contains the full study.

Existing Conditions

The climate of the Kapalua area is affected by its near coastal location and by nearby mountains. Winds are variable but are predominantly trade winds from the north or northeast. Wind speeds typically vary between about 5 and 15 miles per hour. During winter, occasional storms may generate strong winds from the south (Kona winds) for brief periods. Temperatures in the area are consistent and moderate with an average daily range of about 66 to 85 degrees Fahrenheit. The extreme minimum temperature recorded at nearby Kā'anapali is 47 degrees Fahrenheit, while the extreme maximum temperature is 98 degrees Fahrenheit. Average annual rainfall in the area amounts to about 20 to 30 inches.

The air quality in the Kapalua area is generally good. Existing impacts to air quality include distant volcanic emissions (VOG) and possibly occasional localized impacts from traffic congestion.

Both Federal and State standards have been established to maintain ambient air quality. Seven parameters are regulated: particulate matter, sulfur dioxide, hydrogen sulfide, nitrogen dioxide, carbon monoxide, ozone, and lead. State of Hawai'i air quality standards are more stringent than the comparable national standards, except for those pertaining to sulfur dioxide and particulate matter, which are equivalent.

Potential Impacts

Short-Term Impacts. Two potential types of air pollution emissions could result in direct short-term air quality impacts during construction: 1) fugitive dust from building demolition, soil excavation and vehicle movement; and 2) exhaust emissions from on-site construction equipment.

Fugitive dust emissions from demolition and construction activities are difficult to estimate accurately because of their elusive nature of emission and because the potential for dust generation varies greatly depending upon soil type, the amount and type of dirt-disturbing activity taking place, the moisture content of exposed soil in work areas, and the wind speed.

The U.S. Environmental Protection Agency has provided a rough estimate for uncontrolled fugitive dust emissions from construction activity of 1.2 tons per acre per month under conditions of "medium" activity, moderate soil silt content (30 percent), and precipitation/evaporation (P/E) index of 50. The air quality assessment estimates that uncontrolled fugitive dust emissions from construction of The Residences would likely be somewhere near this level. State of Hawai'i Air Pollution Control Regulations prohibit visible emissions of fugitive dust from construction activities at the property line.

The existing hotel contains evidence of existing or pre-existing potentially hazardous materials, such as perchloroethylene (PCE), polychlorinated biphenyls (PCBs), diesel fuel, fungi, asbestos, and lead paint. Arsenic-containing (Canec boards) building materials have not been identified at the hotel. Canec boards manufactured after the mid-1960s are not assumed to contain arsenic and are not expected to have been used in construction of the Kapalua Bay Hotel, which was built in the mid-1970s.

On-site mobile and stationary demolition and construction equipment also will emit air pollutants from engine exhausts. The largest of this equipment is usually diesel-powered. Nitrogen oxides emissions from diesel engines can be relatively high compared to gasoline-powered equipment, but the standard for nitrogen dioxide is set on an annual basis and is not likely to be violated by short-term construction equipment emissions. Carbon monoxide emissions from diesel engines, on the other hand, are low and should be relatively insignificant compared to vehicular emissions on nearby roadways.

Indirectly, there also could be short-term air quality impacts from slow-moving construction vehicles on roadways leading to and from the project site, which could obstruct the normal flow of traffic to such an extent that overall vehicular emissions are increased.

Long-Term Impacts. The air quality assessment concludes that after construction: 1) The Residences should have no significant long-term impacts on maximum air pollution levels in the area; and 2) it is extremely unlikely that traffic associated with The Residences will cause any significant detrimental impacts on air quality in the area.

Mitigative Measures

Mitigation measures will be implemented to minimize potential air quality impacts, as discussed below.

Short-Term Demolition and Construction Activities. All demolition and construction activities will comply with the provisions of HAR, Chapter 11-60.1, Air Pollution Control, Section 11-60.1-33, "Fugitive Dust". In compliance with these provisions, an effective dust control plan will be implemented. Removal of all hazardous materials will be performed in accordance with a hazardous materials abatement plan and all applicable Federal, State, and County regulations and rules.

Fugitive dust emissions will be controlled by the establishment of a frequent watering program to keep demolition areas and bare-dirt surfaces in active construction areas from becoming significant sources of dust. On days without rainfall, construction areas will be watered at least twice during the workday to help keep dust emissions to a minimum. Control regulations further stipulate that open-bodied trucks must be covered at all times when in motion if they are transporting materials likely to give rise to airborne dust. Haul trucks tracking dirt onto paved streets from unpaved areas are oftentimes a significant source of dust in construction areas. Some means to alleviate this problem, such as tire washing or road cleaning, may be appropriate. Dust monitoring may be considered as a means to quantitatively evaluate the effectiveness of dust control measures.

Section 4.11, Hotel Demolition and Recycling, discusses additional demolition-related air quality mitigation measures.

Air quality impacts from slow-moving construction vehicles on roadways will be mitigated by moving heavy construction equipment during periods of low traffic volume. Likewise, the schedules of commuting construction workers can be adjusted to avoid peak hours in the vicinity.

Long-Term Operations. Since long-term air quality impacts due to The Residences are deemed to be extremely unlikely and not significant, no long-term mitigation measures are proposed or warranted.

4.7 VISUAL RESOURCES

Existing Conditions

The Residences at Kapalua Bay site is currently occupied by the Kapalua Bay Hotel, a six-story concrete structure with three wings, and related resort facilities (see Figure 8 (Existing Conditions) and Figure 9 (Site Photographs)). The highly manicured grounds include landscaping typical of a resort setting.

From the vantage point on Lower Honoapi'ilani Road at the entrance to the existing hotel property, the hotel and other buildings block all ocean views. Because the terrain mauka of Lower Honoapi'ilani Road increases in elevation, eventually—at a high enough elevation—ocean views are available over the rooftops of the hotel (Figure 15). Views of Moloka'i (to the northwest) and Lāna'i (to the southwest) are also available from elevations mauka of Lower Honoapi'ilani Road. However, further mauka—from Honoapi'ilani Highway—the hotel is not visible and ocean views are not available.

From the shoreline in front of the hotel looking mauka, distant views of the West Maui Mountains are available; however, the hotel and other buildings block immediate mauka views beyond the property.

Potential Impacts and Mitigative Measures

The Residences at Kapalua Bay will replace the existing Kapalua Bay Hotel and related facilities on the site. The Residences creates opportunities for increased view corridors (both mauka and makai) and buildings placed further from the shoreline compared to the existing Kapalua Bay Hotel. As proposed, The Residences will include nine buildings clustered on the property. Buildings will range from three to six stories in a general step-down fashion, allowing for a gradual transition from low-rise buildings near the ocean to increased stories further from the shoreline.

While ocean views are not currently available from Lower Honoapi'ilani Road at the entrance to the property, the existing views at this vantage point will be positively impacted as The Residences represents a substantial upgrade over the existing hotel facilities. Positive impacts include modern, well-designed buildings and new landscaping and entry features. The potential exists for view corridors between buildings to the ocean.

Existing view with The Kapalua Bay Hotel

View with The Residences at Kapalua Bay

Figure 15
Visual Analysis

The Residences at Kapalua Bay

KAPALUA BAY LLC

ISLAND OF MAUI

PBR HAWAII

Existing ocean views from points mauka of the Lower Honoapi'ilani Road will change due to the configuration of The Residences buildings compared to the existing hotel; however, primary views of the ocean horizon and views of Moloka'i and Lāna'i will not be impacted (Figure 15).

Regarding ocean views from adjoining residences (the Coconut Grove condominiums to the south and the Bay Villas condominiums to the north), the placement of The Residences buildings may impact peripheral ocean views from some units; however, primary ocean views will not change. Upgrading the hotel site with The Residences is expected to have a substantial positive impact on all surrounding property values, regardless of any peripheral ocean views affected.

From the shoreline in front of The Residences looking mauka, distant views of the West Maui Mountains will still be available; however, similar to conditions with the existing hotel, The Residences buildings may block immediate mauka views beyond the property. Nonetheless, the potential exists for view corridors between buildings to the mountains.

Finally, the increased area between The Residences' buildings and the ocean, compared to the existing hotel, will facilitate placement of a paved public coastal trail planned to run through the site and beyond, providing continuous coastal access within Kapalua when all segments are completed. This trail will increase public shoreline access, hence increasing public viewing of the coast and ocean.

4.8 SOCIO-ECONOMIC IMPACTS

The Hallstrom Group, Inc., prepared an economic impact analysis and public cost/benefit assessment for The Residences (see Appendix A). Key elements of the study are summarized below.

Existing Conditions

The West Maui region provides approximately 28 percent of all Maui jobs, generates upwards of $3.2 billion in economic activity annually, represents almost 30 percent of the island tax base, and more than 20 percent of countywide assessed real property value (Hallstrom 2004).

Potential Impacts

On a conservative basis, using a relatively low-end multiplier effect ratio of 2.0, the total overall direct impact on the Maui island economy resulting from The Residences at Kapalua Bay project would be $687.7 million over the 10-year projection period (in constant 2005 dollars). On a stabilized annual basis thereafter, the overall impact would be at $80.2 million.

Mitigative Measures

Due to the positive impacts of the proposed project, no mitigative measures are necessary.

4.8.1 Population

Existing Conditions

The 2000 United States Census reported that resident population of Maui County was 128,094 people in 2000. This is more than double the 1980 total of 62,823 persons.

Population projections commissioned by the Maui Planning Department and calculated by SMS Research indicate that the Maui County population will reach 139,573 people in 2005[1] (SMS 2002).

For the West Maui region (Lahaina, Kā'anapali, Nāpili-Honokōwai, and Kapalua), the United States Census reported a population of 17,748 people in 2000. The SMS Research projections indicate that the West Maui population will reach 19,779 people in 2005 (SMS 2002).

In addition to the resident population, for the year 2005 it is projected that approximately 46,865 non-residents populate Maui County on any given day. Approximately 25,069 (53.5 percent of total) of these visitors are in the West Maui region (SMS 2002).

Combining resident and visitor populations, the de facto population of Maui is estimated to be 186,438 people in 2005. The de facto population of West Maui is estimated to be 44,848 people in 2005.

Currently, The Residences site provides temporary accommodations for visitors at the existing Kapalua Bay Hotel. The hotel contains 196 rooms. Based on a conservative occupancy rate of 80 percent and an estimated 2.3 guests per room, the current de facto population of hotel guests is approximately 360. This does not include day visitors, restaurant diners not staying at the hotel, and others.

Potential Impacts

Projections indicate that the Maui County population will increase to 175,136 people in 2020, a 25.5 percent increase from the 2005 population. In West Maui the population is expected to increase to 25,431 people in 2020, a 28.5 percent increase from the 2005 population. The daily visitor population for Maui County is projected to increase to 55,800 visitors in 2020. Approximately 31,757 (56.9 percent) of these visitors will be in the West Maui region. Therefore, the de facto population of Maui County in 2020 is estimated to be 230,936 people. The de facto population of West Maui in 2020 is estimated to be 57,188 people.

The Residences will provide resort-residential accommodations and opportunities for permanent residents. The full-time population of The Residences is projected to be 50 people. The visitor population is expected to be 409. Combined, the de facto population is estimated to be 459.

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[1] SMS projections presented here are their "baseline" projections, defined as "Current best guess by DBEDT of Maui County variables based on the long-term forecast model and incorporating year 2000 Census date where possible."

Mitigative Measures

As The Residences at Kapalua Bay project is not expected to have a direct and significant impact on population levels, no mitigative measures relating to population are planned. Because most of the population will be visitors using their second homes, pressure on government services and funds will be less than a community of full-time residents, as visitors typically do not rely on the full range of government services that full time residents expect. However, The Residences property owners, even if they are not full-time residents, will pay property taxes (on high value property) as if they were residing on Maui, on a full-time basis, and pay excise taxes when they purchase goods and services on the island.

Analysis of State of Hawai'i and Maui County budgets indicates the actual effect of governmental services relating to the population of The Residences would not create the need to expand additional County and State funding on Maui.

A maximum of 20 percent of the condominium units (18 homes) are estimated to be used as full-time resident households, with the remaining 80 percent of the condominium units being second/vacation homes. In full-time residences, the average household size is forecast at 2.8 persons, so that there will be 50 permanent residents. For second/vacation homes, the average party size is estimated at 3.8 persons, with the home occupied about 60 percent of the time. This will create an average of 227 second-home users and their guests in addition to full-time residents. Another 65 interval units will be sold. Assuming an occupancy rate of 92 percent and an average party size of 3.8 persons, the de facto population of these units is estimated at 227 persons.

4.8.2 Housing

Existing Conditions

West Maui is among the most desirable resort and residential areas in Hawai'i. The area has many full-time residents, but is also a large vacation destination, with many visitors, resorts, and second homes. In the past, the West Maui residential sector has been dominated by condominium projects along the shoreline, with single-family subdivisions further from the shore, in destination resorts, or in mauka areas, such as Lahainaluna. Oceanfront condominium projects generally have been devoted to vacation or second home uses, with limited numbers of full-time residents, while the more mauka areas (such as Lahainaluna) have been more commonly occupied by full-time residents. The large majority of buyers in resort single-family subdivisions have been non-residents. However, the movement of non-resident buyers into non-resort subdivisions is an increasing trend, as evidenced at Kahana Ridge, Lahaina, and Launiupoko.

The demand by non-resident buyers for general residential units in West Maui is significant; among the highest for any region in the state. This conflict between visitors and full-time residents over a limited available land base has created a dysfunctional real estate market with tourist-dollars overwhelming the local population in the competition for housing. In addition, non-resident buyers typically place their second homes in vacation rental pools to be used for short-term transient vacation rentals to other non-residents or leave the home vacant when they are not on Maui. These units then are not available for rental to long-term residents, further

decreasing the amount of available housing. It is expected that the local residential population in West Maui would be higher were it not for the competition in residential units between full-time residents and visitors (Hallstrom 2005).

Potential Impacts and Mitigative Measures

The Residences at Kapalua Bay will contain a total of 155 resort-residential condominium and interval units. While estimated prices of the homes will be affordable to only 10 to 15 percent of the resident population, this segment will still require approximately 1,800 to 3,200 new units over the next 20 years. The Residences needs only to capture a portion of this demand to achieve rapid absorption and be considered a meaningful source of residential inventory. While the target market for the proposed project is for buyers with higher incomes, providing more inventory, whatever the price range, will reduce demand, especially in non-resort subdivisions.

Table 5. Affordable Housing Requirements for the Kapalua Bay Hotel and the Ritz-Carlton Hotel Kapalua

Kapalua Bay Hotel			
Date	**Permit/Approval**	**Affordable Housing Requirement**	**Affordable Housing Provided/ Condition Satisfied.**
1976	Original SMA for hotel	No specific condition	174 affordable SF homes provided in Napilihau
1987	SMA for hotel improvements and North Wing expansion of 128 rooms *(Note: the North Wing was never built.)*	Final Decision & Order approving the SMA stated: "the initial development of housing at Napilihau far exceeds current County requirements that would be applicable to the Kapalua Bay Hotel." Affordable Housing Program required to assist all new employees hired as a result of improvements to obtain affordable housing.	Affordable Housing program developed.
2002	Time extension of 1987 SMA approval	No additional requirements	Affordable housing program implemented/ coordinator hired.
Ritz-Carlton Kapalua			
Date	**Permit/Approval**	**Affordable Housing Requirement**	**Affordable Housing Provided/ Condition Satisfied.**
1990	SMA and Phase II Project District Approval	72 units from the Hale Noho Subdivision plus a minimum of 20 additional employee housing units by the dedication of land to meet a 6 to 1 hotel unit/ affordable housing ratio.	38 affordable SF homes provided in the Honokeana residential subdivision 13.5 acres of land in West Maui donated for the County Hale Noho Subdivision (which contains 72 homes built by the County). The County and MLP executed the agreement for the Hale Noho Subdivision on November 27, 1984. The agreement provided a credit of 72 employee housing units to be applied against future employee housing units required for future MLP developments in West Maui.

Maui Land & Pineapple Company, Inc., has satisfied all affordable housing requirements associated with the Kapalua Bay Hotel (see Table 5). When the hotel was built in 1978, Maui Land & Pineapple Company, Inc., also built the 174-unit Napilihau neighborhood (in partnership with the State) and created various programs to provide affordable housing to employees.

All entitlements have been approved to proceed with the proposed North Wing expansion, which could add 128 more rooms to the existing hotel for a total of 324 rooms. As approved, there are no additional affordable housing requirements related to the North Wing approvals.

Maui Land & Pineapple Company, Inc., has also satisfied all affordable housing requirements for the Ritz-Carlton Kapalua Hotel (see Table 5). While the Ritz-Carlton Hotel is within the Kapalua Resort, changes to, or expansion of, the Ritz-Carlton are not proposed.

4.8.3 Community Character

Existing Conditions

West Maui, generally, and Kāʻanapali and Kapalua specifically, are among the most desirable resort/residential areas in Hawaiʻi, with an exceptional and diverse visitor industry offering a strong employment base, a historic town offering a range of modern services, a superior climate, lush natural beauty, and a variety of recreational resources.

While areas adjacent to Kāʻanapali Beach and Lahaina have become more urbanized in character, Kapalua Resort has maintained a low-density rural character and a reputation as a relaxed vacation area. The intent of the Kapalua Resort has been to provide a luxurious resort atmosphere removed from the Lahaina-Kāʻanapali area. From the outset, Kapalua was envisioned and designed as a master-planned resort community. To ensure this ambiance, the Kapalua Resort has not been developed to the density levels of Kāʻanapali or other West Maui properties; rather, it is an example of a low-key, low-density destination resort community.

Potential Impacts and Mitigative Measures

The Residences at Kapalua Bay will be a significant upgrade to the Kapalua Resort that will help to ensure Maui's preeminence as a desirable and modern resort destination. Replacement of the aging Kapalua Bay Hotel with The Residences will provide facilities required to maintain the Kapalua Resort's world-class status.

The Residences' design provides for the appropriate use of materials, colors, design standards, and landscaping in character with the Kapalua Resort. The Residences also creates opportunities for increased view corridors, increased access to the ocean, and buildings placed further from the shoreline compared to the existing Kapalua Bay Hotel. The stepped design allows a gradual transition from low-rise buildings near the ocean, to increased stories further from the shoreline and conforms to the natural contours of the land. The new buildings also will be set back further from the shoreline under the current shoreline setback rules of the County, which were not in effect at the time the Kapalua Bay Hotel was built. The increased area between buildings and the ocean will facilitate placement of a paved public coastal trail planned to run through the site and beyond, providing continuous coastal access within Kapalua when all segments are completed.

4.8.4 Employment

Existing Conditions

In 2001, of approximately 74,200 persons in the Maui County civilian labor force, 70,650 were employed, equating to an unemployment rate of 4.8 percent. The "leisure and hospitality" industry, including hotels, employs the greatest number of persons, followed by "trade, transportation, and utilities," "government," and "professional and business services."

Currently, the Kapalua Bay Hotel and related facilities support approximately 200 full-time equivalent on-site jobs.

Potential Impacts and Mitigative Measures

~~The Residences at Kapalua Bay will provide a needed future supply of jobs for Maui residents. These will include jobs for the current workforce population as well as persons coming of working age during the term of the project. These employment opportunities will be in parallel with anticipated population growth and future employment needs.~~

The construction of The Residences at Kapalua Bay and its ongoing operations will create some 3,509 "worker years" of employment on Maui during the first decade of its construction and use, with wages of circa $146 million. On a stabilized basis, The Residences operations will support about 188 full-time equivalent on-site jobs and contribute to another 75 off-site positions, with total wages of $7.5 million annually.

In the short-term, the closing of the Kapalua Bay Hotel and related facilities will result in the in the loss of hospitality and other existing jobs on the site. Kapalua Bay, LLC will coordinate job placement within the Kapalua Resort community or at other facilities during the redevelopment.

4.8.5 Economic Impacts

Existing Conditions

The ten-mile urban strand stretching close by the coastline from Puamana to the Ritz-Carlton Kapalua Hotel has been the economic engine that changed Maui from an isolated agrarian community to a world-class vacation destination boasting the finest in tourism infrastructure. While extensive quality development in the Kīhei-Makena corridor in the 1980s placed that region in a competitive position with greater Lahaina, the South Maui area lacks the history and charm of West Maui.

Despite having urban uses on only 6.4 percent of the total district land base, which is still dominated by agricultural and conservation holdings, the West Maui region houses nearly one-quarter of all Maui jobs, generates upwards of $3 billion in economic activity annually, and represents almost 30 percent of the island tax base and more than 20 percent of countywide assessed real property value.

Tourism is the primary sector of Maui's economy. On average, the 2,048,768 visitors to the island of Maui in 2000 spent an average of $178.06 per person per day. In 2001, the service

industry, including hotels, employed 24,350 persons in Maui County. This represents 34 percent of the total employed civilian labor force (70,650). Unemployment for the County was 4.8 percent in 2001. According to the U.S. Census Bureau, both median household income ($49,489 in 1999) and per capita income ($22,033 in 1999) in Maui County closely mirror the statewide figures ($49,820 and $21,525 respectively). DBEDT projects per capita income in Maui County to rise to $27,562 by 2025. Nearly eight percent of families in Maui County fall below the poverty level.

Potential Impacts and Mitigative Measures

As proposed and planned, The Residences at Kapalua Bay will result in the following economic impacts.

The average daily de facto population of the project is projected at 459 persons, including 50 full-time residents, with annual discretionary expenditures of $29.3 million per year. The project will infuse $300 million in development capital and $11 million in annual business operations into the Maui economy. The State of Hawai'i will receive nearly $40 million in primary tax receipts during the first decade of development and operation, and a stabilized amount of $3 million annually. The County of Maui will receive $26.6 million during the first ten years of the project, and $3.4 million per year thereafter on a stabilized basis. In no year does the State or County suffer a revenue shortfall (costs exceeding receipts) relative to the project.

Subsequent to the completion of the public costs/benefits assessment report for the Residences at Kapalua Bay (Appendix A), the Maui County Council passed an ordinance making timeshare units subject to a higher real property tax rate. In the case of the Residences, the 65 fractional units would be subject to this new, higher "timeshare" tax rate of $14.00 per $1,000.00 of assessed value, as compared to the standard real property tax rate of $8.30 per $1,000.00 of assessed value for resort condominiums.

As a result, the total projected property tax revenues received by the County of Maui for The Residences at Kapalua Bay will increase from $26.6 million in the first ten years of the project to approximately $34.1 million, a gain of $7.5 million. On a stabilized basis, the projected tax revenue will increase from $3.4 million per year to approximately $4.4 million per year, a gain of $1 million per year.

4.9 INFRASTRUCTURE AND UTILITIES

Wilson Okamoto Corporation prepared a preliminary civil engineering and drainage report for The Residences at Kapalua Bay. Key elements of the report are summarized in the following sections. The complete report is included in Appendix I.

4.9.1 Roadway Facilities

Existing Conditions

The Residences at Kapalua Bay site is adjacent to and west (makai) of Lower Honoapi'ilani Road. Within the Kapalua Resort Lower Honoapi'ilani Road is a two-lane roadway owned and maintained by Kapalua Resort. Approximately one-quarter mile south of The Residences site,

Lower Honoapi'ilani Road is a County-owned road, which provides access to other residential uses and commercial areas of West Maui. About one-half mile north of The Residences site, Lower Honoapi'ilani Road terminates and connects to Office Road, which continues east (mauka) to Honoapi'ilani Highway, the main State highway for this portion of West Maui.

Access to the Kapalua Bay Hotel is provided via a two-way access drive (Bay Drive), which connects with Lower Honoapi'ilani Road at a stop sign-controlled intersection. The beginning section of the driveway provides access to an at-grade parking lot for hotel guests. The driveway continues on to provide access to the hotel, the Shops at Kapalua, public access parking stalls, the Kapalua Bay Villas condominiums, and a private residence located on Hāwea Point.

A second makai driveway off Lower Honoapi'ilani Road provides direct access to the parking structure located beneath the Shops at Kapalua.

Potential Impacts and Mitigative Measures

Access to The Residences at Kapalua Bay will be from the existing access drive (Bay Drive) that currently provides access to the Kapalua Bay Hotel. The second makai driveway off Lower Honoapi'ilani Road will also be retained, as the parking structure beneath the current Shops at Kapalua will be incorporated into The Residences site. An internal roadway system will provide access to all uses within The Residences site (Figure 1).

Emergency and fire truck vehicles will enter The Residences site via the existing access drive. A new 20-foot-wide, grass block-paved fire access lane is proposed along the northern boundary of the site to provide emergency access to The Residences and the shoreline on the western portion of the property. The grass block-paved road will accommodate a 50,000 pound fire truck with either a hammerhead or cul-de-sac turnaround located near the terminus of the fire access lane. The turnaround area will be designed for the fire truck's outside turning radius of 40.5 feet.

4.9.2 Drainage

Existing Conditions

Elevations within The Residences site range from approximately 100 feet mean sea level (msl) near the eastern corner, along Lower Honoapi'ilani Road, to sea level along the west coast. From the east side of the site, the existing at-grade parking lot slopes moderately to the west toward the Kapalua Bay Hotel. A sloped landscaped area transitions the grade down to the entry driveway and porte cochere located approximately 8 feet lower in elevation. The porte cochere area is relatively flat. Continuing west, through the hotel, the grade steps down approximately 20 feet to the moderately sloping lawn and pool area. From the pool area to the shoreline, slopes vary and may be as steep as 30 percent. Near the shoreline, there is an abrupt drop ranging from 5 to 30 feet.

Drainage for the existing Kapalua Bay Hotel is collected by a system of drainlines, drain inlets, catch basins, and storm drain manholes throughout the site. Flow from the site is conveyed to the main Kapalua Resort system along the shoreline of the property. The Kapalua Resort system enters the site along the shoreline entering from the north and the south. Both drainlines combine and outflow to the ocean via a 60-inch drainline toward the west.

Under existing conditions with the hotel and related facilities, storm drainage flow rates for a 50-year, 1-hour rainfall event are estimated to be 78.60 cubic feet per second (cfs).

Potential Impacts and Mitigative Measures

Estimated storm flow rates with The Residences are estimated to be 84.22 cfs, an increase of 5.56 cfs over current conditions. All additional runoff over existing conditions will be retained on site.

The Residences' on-site storm drainage system will consist of a combination of drainlines, drain inlets, catch basins, storm drain manholes, and underground detention basins. The proposed improvements will direct flow from the newly constructed drainlines to underground detention basins.

The detention system is designed to accommodate all increases in storm runoff volume from the site as a result of the proposed improvements, based on a 50-year, 1-hour storm event. The additional stormwater runoff, as a result of the proposed improvements, will be accommodated with underground detention basins located along the west property line near the shoreline setback.

The detention system will consist of continuous lengths of 3-, 4-, or 5-foot diameter perforated pipe. Each pipe will be centered atop a one-foot bed of number 3 filter gravel in a trench two feet wider than the pipe. Once in place, the remaining area will be backfilled with the same material to a depth of one foot above the top of the pipe. The stormwater entering the underground detention basins will be allowed to percolate into the ground. The required storage volume for the increase in storm runoff based on a 50-year, 1-hour rainfall event is 13,300 cubic feet. The current design provides 16,000 cubic feet of storage

Creation of The Residences is not expected to have an adverse effect on marine waters. The marine water quality report prepared for this EIS (see Section 3.7 and Appendix C) concludes: 1) "The changes in land use [from the existing hotel to The Residences] are not expected to have significant adverse effects on either the existing watershed, downstream properties, or coastal marine waters;" and 2) "it is not likely that there will be substantial differences compared to the existing situation."

<u>All drainage systems for the Residences will be designed, built, and operated in compliance with all State of Hawaii and County of Maui regulations and requirements. In the development of specific drainage plans, Kapalua Bay, LLC will consult with applicable agencies concerning the feasibility of other mitigative measures such as oil/water separators.</u>

In accordance with County of Maui requirements, planning for The Residences will include the creation of a site-specific Water Quality Management Plan, which will incorporate Best Management Practices (BMPs). The BMPs for The Residences will be implemented for both construction and operational phases. The BMPs will be created from guidelines from a number of sources including *Hawaii's Coastal Nonpoint Pollution Control Program Management Plan*; the *West Maui Watershed Owners Manual*, Chapters 2 and 4; and *Island Stewardship: Guide to Preventing Water Pollution for Maui's Homes and Businesses.*

As suggested by the County of Maui Department of Water Supply (DWS) in their comment letter on the EISPN, BMPs will include minimizing infiltration and runoff from demolition, construction, and vehicle operations. Precautionary measures will be taken to prevent construction materials and debris and eroded soils from entering coastal waters. Suggested BMPs include:

- Covering nearby storm drains or other containment devices to prevent dirty runoff and loose particles from entering the storm drainage system. Covers must be placed at the beginning of the work day and accumulated materials must be collected and disposed before removing covers at the end of the work day.
- Using dikes, berms, or other methods to protect overland discharge paths from runoff.
- Sweeping gutters, sidewalks, driveways, and other paved surfaces in the immediate demolition area at the end of each work day to collect and dispose of loose debris and garbage.
- Spraying water throughout the site to help control wind from blowing fine materials such as soil, concrete dust, and paint chips; however, water must be controlled to prevent runoff from the site and control dust.
- Scheduling demolition during a dry time of the year.

4.9.3 Water System

Existing Conditions

The Kapalua Bay Hotel is currently served by a dual water system which provides potable, fire protection, and non-potable irrigation water to the Kapalua Resort. Both systems are owned and operated by Maui Land & Pineapple Company, Inc., or its subsidiaries.

The current average daily potable water demand for the Kapalua Bay Hotel and related facilities is approximately 68,600 gallons per day (gpd). The current average daily non-potable water demand is approximately 56,000 gpd.

The source of Kapalua Resort's potable water is two deep wells located between elevations of 768 and 796 feet above mean sea level (msl), approximately 1.5 miles east of The Residences site. Each well has a capacity of 1.0 million gallons per day (mgd). The wells draw water from the Honolua Aquifer. The DLNR Commission on Water Resource Management has not designated the Honolua Aquifer, or the adjoining Honokōwai Aquifer, as groundwater management areas.

Water from the wells is pumped into a 100,000-gallon glass-lined steel control tank at the elevation of 820 feet. It is then transmitted by gravity into a 1.0-million gallon reinforced concrete storage reservoir at the elevation of 405 msl. From this storage reservoir water is conveyed to Kapalua Resort by means of a 16-inch line that runs along Office Road and Lower Honoapi'ilani Road. This line is augmented by a 12-inch line that runs along Village Road and Lower Honoapi'ilani Road.

For the years 2002 to 2004, the average daily potable water demand for Kapalua Resort (including the Kapalua Bay Hotel) was approximately 578,000 gpd. For the first month in 2005,

the average daily demand was approximately 490,000 gpd. Based on this analysis, there is available capacity in potable water sources to supply The Residences.

The Kapalua Resort uses surface water for non-potable needs (irrigation and fire protection) within the Resort. Non-potable irrigation and fire protection water for the Kapalua Resort is provided by the Honolua Ditch. The Honolua Ditch has been providing irrigation water in the region since 1913.

The non-potable system includes a 5.5-million gallon reservoir at an elevation of 650 feet msl, located approximately 1.3 miles east from The Residences site. For the years 2002 to 2004, the average daily non-potable water demand for the Kapalua Resort (including Kapalua Bay Hotel) was approximately 2.1 mgd. For the first month in 2005, the average daily demand was 0.98 mgd. Based on this analysis, there is available non-potable capacity to supply The Residences.

Potential Impacts

The Residences will receive water from Kapalua Resort's dual water system, which provides potable, fire protection, and non-potable irrigation water.

Average daily potable water demand for The Residences is estimated to be 86,800 gpd, based on the DWS Water System Standards. This represents a 26.5 percent increase compared to the hotel and related facilities. The Kapalua Resort's potable water sources have available capacity to supply this demand.

The potable water supply for The Residences will be via connection to the existing 12-inch water main located along Lower Honoapi'ilani Road. Standard improvements will consist of connection to the 12-inch water main, water meter vault, reduced pressure backflow prevention device, and necessary distribution waterline piping to the various site structures.

The average daily non-potable water demand for The Residences is estimated to be 55,000 gpd. This represents a 1.8 percent decrease compared to the average daily non-potable water demand of the hotel and related facilities. The non-potable water supply for The Residences will be via connection to the existing non-potable water main located along Lower Honoapi'ilani Road.

The fire protection water service lateral for the property will consist of a detector check meter and waterline extending to the various buildings. The site fire protection system will consist of waterlines extending around The Residences buildings with fire hydrants spaced at 250-foot intervals.

Mitigative Measures

As noted above, The Residences will be serviced by a dual potable/non-potable water system. To reduce potable water demands, non-potable water will be used for landscape irrigation and fire protection. Non-potable water will also be used for dust control and other uses that do not require potable water during construction.

The non-potable water system will be carefully designed and operated to prevent cross-connection of the potable and non-potable water systems and backflow of water from the non-

potable water system to the potable water system. The two water systems will be clearly labeled and physically separated. In addition, backflow devices will be periodically tested to assure their proper operation. All non-potable spigots and irrigated areas will be clearly labeled with warning signs to prevent inadvertent consumption of non-potable water. The Residences will comply with Hawaii Administrative Rules, Title 11, Chapter 11-21, "Cross-Connection and Backflow Control."

To further conserve water within The Residences:

- Single pass cooling will not be allowed pursuant to Maui County Code, Section 14.21.20.
- Low-flow fixtures and devices will be used pursuant to Maui County Code, Section 16.20A.680.
- Individual homeowners and businesses will be encouraged to maintain fixtures to prevent leaks.
- Climate-adapted native and other appropriate plants will be used in landscaping, as practical.
- Irrigated turf will be limited to 25 percent or less of the total landscaped area, if practical.
- Low-water use shrubs and ground covers will be considered for use within landscaped areas.
- BMPs designed to minimize infiltration and runoff from daily operations will be implemented.

4.9.4 Wastewater System

Existing Conditions

Wastewater generated by the Kapalua Bay Hotel is treated at the County of Maui Lahaina Wastewater Reclamation Facility (LWRF) located approximately four miles south of The Residences site on Honoapi'ilani Highway. The LWRF total treatment capacity is currently 9.0 million gallons per day (mgd), with 6.0 mgd for secondary treatment and 3.0 mgd for R-1 treatment. Presently, the facility treats about 5.3 mgd of wastewater.

When the LWRF was constructed, Kapalua Land Company, Ltd., a subsidiary of Maui Land & Pineapple Company, Inc., paid for an additional allocation of approximately 219,800 gpd in the new facility. According to County records, 185,340 gpd of this allocation, or approximately 84 percent of the total, is currently unused.

The sewer system within Kapalua Resort is owned, operated, and maintained by Maui Land & Pineapple Company, Inc., or its subsidiaries. In the vicinity of The Residences site, the system consists of a 15-inch gravity line located along the makai boundary of the Kapalua Bay Hotel. This line also serves properties north of The Residences site, including the Ritz-Carlton, the Ironwoods, the Bay Villas, and the private residence located on Hāwea Point. South of The Residences site the gravity collection system continues collects flows from Coconut Grove condominium and the Bay Club restaurant. A pump station located near the Bay Club then pumps the flows to the County's Nāpili sewer pump station No. 6 from where the flows are transported via County-owned force mains and gravity sewerlines to the LWRF.

The existing average sewer volumes from the Kapalua Bay Hotel and associated uses, is estimated to be 68,600 gpd, based on the County guidelines for wastewater contribution.

Potential Impacts and Mitigative Measures

The average sewer volume for The Residences is estimated to be 61,425 gpd, based on County guidelines for wastewater contribution. This is a decrease of 10.0 percent compared to the existing volume generated by the hotel and related facilities. Additional wastewater disposal capacity at the LWRF will not be required as The Residences will generate less wastewater than the hotel and related uses that will be taken out of service.

Removal of wastewater from The Residences site will be via a connection to the existing 15-inch gravity sewer main located on the makai side of the project site. The connection will likely consist of a new sewer connection into an existing sewer manhole. Other site improvements will consist of an underground sewer collection system to connect the various site structures to the existing 15-inch sewer main.

Discussions with Kapalua Resort utility and County of Maui Wastewater personnel indicate that both the Kapalua and County systems in the area are sufficient with regard to gravity sewerlines, sewer pump stations, and treatment plant capacity to support The Residences at Kapalua Bay development.

The sewer system for The Residences will be designed to County of Maui standards. In addition, all wastewater plans will conform to applicable provisions of HAR, Chapter 11-62, Wastewater Systems.

In addition, swimming pool discharges will be disposed of properly. Kapalua Bay, LLC will provide swimming pool wastewater disposal system plans to the Department of Health for review and approval.

4.9.5 Electrical and Communications Systems

Existing Conditions

Maui Electric Company (MECO) provides electricity for West Maui from its Mā'alaea Power Plant. ~~Verizon Hawaii~~ Hawaiian Telcom provides telephone service to the Kapalua Bay Hotel and related facilities. Oceanic Time Warner Cable provides cable television service and hi-speed internet access.

The existing electric service to The Residences site is from a 277/480-volt (V), three-phase, four-wire system from the Nāpili substation, located about 1,300 feet above Honoapi'ilani Highway across from the Pineapple Hill subdivision. The existing distribution line is located underground along Bay Drive (access road to the hotel).

~~Verizon Hawaii~~ Hawaiian Telcom provides telephone service to The Residences site and surrounding area from the system located along Lower Honoapi'ilani Road. Service enters The Residences site from Bay Drive and continues through to service the Bay Villas and the private residence on Hāwea Point.

Oceanic Time Warner Cable provides service for The Residences site and surrounding area from a main underground cable located along Lower Honoapi'ilani Road. Service enters The Residences site from Bay Drive.

Potential Impacts

MECO acknowledges that electrical service is available to serve The Residences. However, MECO recommends that electrical design consultants meet with MECO to verify demands required.

Telephone and cable systems along Lower Honoapi'ilani Road are adequate to service The Residences.

New underground ductlines for electrical, telephone, internet, and cable service will be extended from existing underground ductlines along Lower Honoapi'ilani Road.

Mitigative Measures

While MECO acknowledges that electrical service is available to serve The Residences, energy-efficient and conservation measures to reduce the maximum electrical demand will be considered in the design and operation of The Residences, where feasible. Design standards will specify low-impact lighting and will encourage energy-efficient building design and site development practices.

Further efforts to minimize energy consumption may include inclusion of select items from the Hawaiian Design Strategies for Energy Efficient Architecture (Strategic Industries Division of the State Department of Business, Economic Development and Tourism) and *Guidelines for Sustainable Building Design in Hawai'i: A planner'sChecklist* (Office of Environmental Quality Control 1999) into The Residences' design guidelines.

Where applicable, the following additional energy-saving methods and technologies will be considered:

- Use of site shading to reduce cooling load;
- Maximum use of day-lighting;
- Use of high efficiency compact fluorescent lighting;
- Exceeding Model Energy Code requirements;
- Roof and wall insulation, radiant barriers, and energy efficient windows;
- Use of solar parking lot lighting;
- Use of light color or "green" roofs;
- Use of roof and gutters to divert rainwater for landscaping;
- Use of landscaping for dust control and to minimize heat gain to area; and
- Use of photovoltaics, fuel cells and other renewable energy sources.

4.10 SOLID WASTE

This section addresses current solid waste generated on The Residences site and potential impacts and mitigative measures related to construction of The Residences and post-construction operations. Demolition wastes, potential impacts, and mitigative measure are discussed below in Section 4.11.

Existing Conditions

Currently, solid waste generated from the Kapalua Bay Hotel and related facilities that cannot be recycled is collected by a private refuse hauler and taken to the County's Central Maui Sanitary Landfill, located four miles southeast of the Kahului Airport on Pūlehu Road. Green waste from the hotel is recycled on-site as mulch or soil amendments, or taken to Maui Land & Pineapple Company's agricultural composting facilities located nearby at the Honolua Plantation.

Potential Impacts and Mitigative Measures

In the *Public Facilities Assessment Update County of Maui (2002)*, R.M. Towill Corporation projected that the Central Maui Landfill will have adequate capacity to accommodate residential and commercial waste through the year 2020, with a surplus of approximately one million cubic yards of landfill space. This projection was arrived at by multiplying the Maui County's de facto population projections by an estimated number of pounds per person per day of waste generated. The projection assumes that solid waste generated by commercial and industrial growth will be captured by a corresponding trend in projected population growth.

Construction. As much as practical, construction plans will specify the use of products with recycled content (such as steel, concrete aggregate fill, drywall, carpet, and glass tile) and the use of locally-produced products (such as plastic lumber, hydromulch, soil amendments, and glass tile).

During construction, a job-site waste management and recycling program will be implemented to maintain clean construction sites, maximize material recycling, and minimize disposal truck traffic impacts. This recycling program will incorporate the "Three Rs" of effective construction waste management:

- Reduce: by preventing waste before it happens through efficient design;
- Reuse: by using materials removed during demolition (such as rocks and concrete) on-site; and
- Recycle: by separating recyclable materials from non-recyclable materials and supplying these recyclable materials to a recycler for use as new products.

Construction materials that cannot be recycled will be disposed of in the County's construction and demolition landfill near Mā'alaea.

Post-Construction Operations. The County of Maui's Solid Waste Division estimates that households on Maui generate approximately nine pounds of solid waste per day. Using this estimate, after build-out and sale of all The Residences homes, total waste from residential uses would be approximately 1,395 pounds per day. This estimate includes full occupancy of all

homes; however, because of the resort-residential nature of The Residences, not all units are expected to be occupied on a full-time basis.

The County Solid Waste Division does not have an established method or formula to estimate the amount of solid waste generated from commercial uses. In addition, there are no methods or formulas established by the State of Hawai'i or at the national level. This is likely due to the fact that, unlike residential uses, the type and amount of solid waste generated by commercial uses can vary widely, and therefore, is difficult to accurately project.

Commercial wastes from The Residences are expected to be relatively small because of the limited amount of commercial uses (spa, restaurant, beach club).

The Kapalua Resort is an active participant in recycling programs and plans to continue its participation with the addition of The Residences at Kapalua Bay. Provisions for recycling, such as collection systems and space for bins for recyclables, will be incorporated into The Residences' design. To the extent practical, wastes such as aluminum, paper, newspaper, glass, and plastic containers will be recycled. Similar to the existing hotel, it is expected that green waste will continue to be recycled on-site or taken to Maui Pineapple Company's agricultural composting facilities located nearby at the Honolua Plantation.

4.11 HOTEL DEMOLITION AND RECYCLING

Demolition and Recycling Plan

The goal of the *Kapalua Bay Hotel Demolition and Recycling Plan* is to safely and expeditiously demolish the existing structure while mitigating noise, dust, and disruption to the neighbors and the surrounding community, and ultimately minimize waste disposal at the County landfill.

The preliminary Plan is similar to the plan used for demolition of the former Waiohai Hotel on Kaua'i in 2001, where impact to surrounding neighbors, community and County landfill were significantly mitigated in that only two truckloads of demolition debris were taken to the County landfill. The *Kapalua Bay Hotel Demolition and Recycling Plan* will be further refined and detailed once a general contractor is hired to complete the work.

The *Kapalua Bay Hotel Demolition and Recycling Plan* will be presented to the County of Maui for approval, prior to commencement of any demolition activities on the site.

Site/Building Preparation

Work will begin with the remediation and proper disposal of hazardous materials from the existing hotel. Perimeter dust and security fencing will be erected, and select landscape material scheduled for salvage and reuse on the property will be removed and stored off-site (location to be determined). Green waste materials will be removed and taken from the site to mulch for future use. Erosion control silt fences will be placed and grading work will proceed in a manner to maintain surface run-off in its current configuration on the property. Existing utilities will be disconnected and reconfigured for temporary use. Existing pavement areas will remain in place until completion of demolition. These areas will be used for staging and will mitigate dust. After demolition, the pavement will be recycled as rubble and used for on-site structural fill.

Soft Demolition (Non-structural)

Work will begin inside the existing hotel with selective non-structural demolition. This work will be confined to interior spaces with exterior walls remaining intact. Based on the direction of the prevailing trade winds (from the northeast), work will commence on the Molokai Wing (north) of the existing hotel and progress clockwise toward the Lanai Wing (south) wing. This progression will mitigate dust and noise to the surrounding neighbors. At the completion of the soft demolition phase, only the concrete structural shell of the existing hotel will remain.

Carpet and pad will be removed and taken to on-island landscape companies to recycle as weed mats. Aluminum railings will be removed by a recycler and taken off-site.

Bobcats or other such machines will be fitted with appropriate attachments and hoisted to the upper floors to knock down non-bearing partitions and sort waste into piles of metals, gypboard, rubble, and wood. Metals are considered as piping, wire, fan coil units, steel tubs, aluminum window frames, and metal studs. Toilets, mirrors, plaster and glass are considered as concrete rubble.

Once sorted into piles, the bobcats will remove exterior walls and push the sorted materials into the courtyard areas. Fire hoses will spray water onto areas generating dust. The wings of the existing hotel will mitigate wind-blown dust and noise during this process. Additional sorting of these materials will occur as trucks are loaded with recyclable materials to be taken from the site. Fire hoses and water trucks will be used to mitigate dust during the loading and hauling processes.

Hard Demolition

Once soft demolition is substantially underway, hard demolition will commence directly after soft demolition. Large excavators operated by an experienced demolition operator will bring down the structure in manageable sizes and safely control the rate of fall. Once the structure is down, the excavator will be fitted with an attachment to process the large chunks of the building into rubble and separate the concrete from the reinforcing, piping, and other metals. This process will produce rubble of 12-inch minus material. Two or three other excavators will be assisting in this process.

Labor on the ground will use fire hoses to mitigate dust during the above process, especially when the excavators are working at heights above the ground.

Once the 12-inch minus material is produced, the rubble will be placed into an on-site processor(s) capable of reducing the rubble to structural fill the size of 3- to 6-inch minus material. This processed material will then be placed and compacted to the rough final grade of the site. Excess material will be stockpiled on-site for future use or trucked to an approved off-site location for use by current or future on-island projects. The processing equipment will be set-up on the makai side of the east wing to mitigate noise and dust from neighbors around the property.

Recycling

Metals. All metals (aluminum, steel, rebar, metal studs, elevator and mechanical equipment, etc.) from the demolition will be initially stockpiled on-site. Midway through the demolition, the material will be loaded into trucks for transport to a stockpile at the harbor. The stockpile will be placed on a barge and taken for eventual recycling on O'ahu or the West Coast.

Rubble. All concrete will be processed to 12-inch minus material as reinforcing material is removed. The rubble will be further downsized by a processor capable of reducing the material to 3- to 6-inch minus for use as structural fill. Rubble includes concrete, glass, toilets, tile, and stone.

Drywall (gypboard). Drywall will be sorted during the soft demolition phase and trucked to a recycler (to be determined) capable of turning the material into landscaping soil amendment. The lime component of the gypboard is a soil amendment.

Wood. Wood can be ground into mulch and used as a landscape product. This material will be trucked off-site to a recycler (to be determined). Materials include roof shingles, doors, cabinets, finish trim, and non-treated wood.

Green Waste. All vegetation not salvaged will be chipped into mulch for reuse.

Carpet and Pad. All carpets and pads will be transported to on-island landscape companies for use as weed mitigation.

Landfill Mitigation

Most of the materials from the existing hotel will either be recycled or reused. Materials that cannot be recycled (plastics, conglomeration of above noted materials, etc.) will be taken to the County's construction and demolition landfill near Mā'alaea. Until a general contractor is hired, the amount of unsuitable material requiring transport to the landfill is unknown. The goal is to recycle 90 to 95 percent of the existing hotel, thus mitigating a significant impact to the County landfill.

Water Pollution Protection

A spill prevention plan will be developed for the demolition. This plan will address prevention and actions which should be taken in the event of a spill of fuel, hydraulic oil, or other fluids. Each piece of equipment will have a spill clean-up kit and personnel will be trained in the event of a spill situation.

Hazardous Materials

The existing hotel contains evidence of existing or pre-existing potentially hazardous materials, such as perchloroethylene (PCE), polychlorinated biphenyls (PCBs), diesel fuel, fungi, asbestos, and lead paint. Arsenic-containing (Canec boards) building materials have not been identified at the hotel. Canec boards manufactured after the mid-1960s are not assumed to contain arsenic

and are not expected have been used in construction of the Kapalua Bay Hotel, which was built in the mid-1970s.

Further surveying and testing of the buildings and site will be conducted after the hotel is closed prior to demolition.

Regarding asbestos, in compliance with HAR, Chapters 501 and 504, prior to demolition, a certified inspector will inspect the existing facilities for the presence of asbestos. An Asbestos Demolition/Renovation Notification will be filed with the DOH Noise, Radiation and Indoor Air Quality Branch at least ten working days prior to the demolition, regardless of the presence of asbestos. All regulated quantities and types of asbestos-containing materials will be handled according to all laws and regulations, including emission control, proper collection, containerizing, and disposal at a permitted landfill by a licensed asbestos contractor using certified persons.

Demolition of the Kapalua Bay Hotel and related facilities provides the opportunity for the remediation or removal of hazardous materials from the site. The remediation and disposal of all hazardous materials will be undertaken in accordance with all applicable governmental laws and regulations to ensure safe and environmentally-sound treatment or disposal.

4.12 PUBLIC SERVICES AND FACILITIES

As discussed in Section 4.8.1, the current de facto population of the Kapalua Bay Hotel is 360.6 persons at any given time, not including day visitors, diners at the restaurant who are not staying at the hotel, and others. The de facto population of The Residences at Kapalua Bay is estimated to be approximately 459, with only about 50 full-time residents. Because most of the population will be visitors using their second homes, demand on government services and funds will be less than a community of full-time residents, as visitors typically do not rely on the full range of government services that full-time residents expect. However, property owners at The Residences, even if they are not full-time residents, will pay property taxes (on high value property) on a full-time basis and excise taxes when they purchase good and services on the island.

During the build-out and sales period, The Residences at Kapalua Bay is projected to generate approximately $6.1 million in taxes for the County of Maui; and approximately $22.4 million for the State of Hawai'i. After build-out, annual taxes generated from the community are projected to be approximately ~~$3.4~~ $4.4 million for the County and approximately $2.9 million for the State. In no year will the State or the County suffer a revenue shortfall due to The Residences (Hallstrom 2005).

4.12.1 Police Protection

Existing Conditions

The Maui Police Department provides police protective services on Maui. The Residences at Kapalua Bay falls within the Maui Police Department's District IV – Lahaina. This district is serviced by: 1) a police station located at the Lahaina Civic and Recreation Center (1850 Honoapi'ilani Highway), approximately 5 miles from The Residences site; and 2) a police

substation located in the Nāpili Shopping Center, approximately one-half mile from The Residences site.

The Kapalua Resort operates its own security service within the Kapalua Resort area. With officers on 24-hour patrol, a dispatcher, and several security vehicles, the Kapalua Resort Security Service responds to a variety of police-related calls.

Potential Impacts and Mitigative Measures

The de facto population of The Residences is projected to be approximately 459 people on any given day. However, it should be noted that only 50 of this de facto population will be full-time residents.

The Kapalua Resort's private security will service The Residences and will be available to respond to a variety of calls that might otherwise be directed to the Police Department.

4.12.2 Fire Protection

Existing Conditions

Two fire stations cover the West Maui region: the Lahaina Fire Station and the Nāpili Fire Station. The Lahaina Fire Station is responsible for the Lahaina, Olowalu, and Kā'anapali areas. The Nāpili Fire Station is responsible for the Honokōwai, Nāpili, and Kapalua, areas. The Nāpili Fire Station is located near the Nāpili Shopping Center at 4950 Hanawai Street and is approximately one-half mile from The Residences site.

Potential Impacts and Mitigation Measures

Residents and visitors of The Residences are likely to require Fire Department services at some time; however, the demand for services is not expected be significantly different than the demand from the current hotel and related facilities on the site.

4.12.3 Schools

Existing Conditions

Educational facilities in West Maui include four public schools and two private schools. The public schools are: King Kamehameha III Elementary (grades K-5), Princess Nahi'ena'ena Elementary (grades K-5), Lahaina Intermediate (grades 6-8), and Lahainaluna High (grades 9-12). The private schools are: Sacred Hearts School (grades K-8) and West Maui Carden Academy.

As of October 2004, the enrollment at West Maui's public schools was as follows:

	Current Enrollment	Capacity
Kamehameha III Elementary	698	704
Princess Nahi'ena'ena Elementary	661	681
Lahaina Intermediate	637	577
Lahainaluna High School	1,038	850

Kamehameha III Elementary School is the designated public elementary school for students from the area extending from Honokōhau Valley to Kā'anapali (which includes the Kapalua area).

Potential Impacts and Mitigative Measures

As a resort-residential community, The Residences at Kapalua Bay is not expected to increase demand for school facilities. The full-time resident population at The Residences at Kapalua Bay is estimated be 50 persons (The Hallstrom Group 2005). This population is estimated to include approximately 10 to 20 school-age children (The Hallstrom Group 2005). The low amount of school-age children is based upon two factors. First, because of the resort-residential nature of The Residences, only 18 of the 155 units are expected to be used by full-time residents. This estimate is supported by various mid- to upscale resort projects throughout the State, including the existing Kapalua Resort, Kā'anapali, Wailea, Mauna Lani, and Hualālai. Second, the average household size of the full-time residences is projected to be 2.8 persons, with most residents being adults.

A new private school, Maui Preparatory Academy, will be located in Nāpili and is scheduled to open in the fall of 2005. Maui Preparatory Academy is anticipated to open with an enrollment of 52 students in grades 6, 7, and 8. In 2007, four classes of pre-Kindergarten will be added. The anticipated enrollment of pre-Kindergarten children is 18 students per classroom. In 2008, an additional primary grade level will be added. By the year 2013, Maui Preparatory Academy will reach its anticipated full enrollment of 540 students in grades pre-Kindergarten through 12.

4.12.4 Recreational Facilities

Existing Conditions

West Maui has a well-developed park system, with over 10.3 acres of sub-regional and special-use park land per 1,000 residents. The sub-regional park system in the West Maui area consists of 23 neighborhood parks. The West Maui community currently has access to two tennis courts, two sports fields, a gym, and a community center (Lahaina Civic Center), in addition to the many supplemental facilities offered by resorts in the area. The following major public parks are available in the region:

- Hanaka'ō'ō Beach Park;
- Wahikuli Beach Park;
- Wahikuli State Wayside Park;
- Māla Beach Park;
- Kelawea Park;
- Paunau Park;
- Malu'ulu O Lele Park; and
- Nāpili Park.

Potential Impacts and Mitigative Measures

The Residences at Kapalua Bay is not expected to have a significant impact on regional recreation facilities. Similar to the existing hotel, residents and guests at The Residences are expected to make extensive use of on-site recreation amenities and the Kapalua Resort's many

recreation facilities, including golf courses, tennis courts, swimming pools, trails, and related amenities.

The Residences will not impact the current on-site public shoreline access path, the Kapalua (Fleming's) Beach public access and facilities south of the adjoining Coconut Grove Condominiums, or any other public shoreline access points, related parking, and other facilities within the Kapalua Resort (see Section 4.3).

In addition, the increased area between The Residences buildings and the ocean, compared to the existing hotel, will facilitate placement of a paved public coastal trail planned to run through the site and beyond, providing continuous coastal access within Kapalua when all segments are completed. This trail will increase public shoreline access and will be a major West Maui recreational resource.

Approximately 18 acres of The Residences at Kapalua Bay site will consist of open space, including the shoreline setback area, paved walkways, the existing public shoreline access, the new paved coastal trail, and landscaping and grounds.

4.12.5 Health Care Services

Existing Conditions

Maui Memorial Medical Center, located in Wailuku, currently is Maui's only acute care facility. The medical center has 196 beds and provides emergency, acute, and general medical care. Maui Memorial Medical Center is approximately an hour's drive from West Maui by emergency ambulance. Routine and non-emergency medical services for West Maui residents are provided by medical and dental offices located in communities of West Maui.

Potential Impacts and Mitigative Measures

Residents and visitors of The Residences at Kapalua Bay are likely to require health care or emergency medical services at some time; however, the demand for services is not expected be significantly different than the demand from the current hotel and related facilities on the site.

There are several other proposals for increased medical services on Maui:

- The Maui Memorial Medical Center in Wailuku is currently undergoing a $42 million renovation, which will add 45 additional beds by 2007.
- Maui Land & Pineapple Company, Inc., is currently participating in discussions with Maui Memorial Medical Center officials to donate land for a medical facility within their proposed Pulelehua community in the Māhinahina area.
- Plans are currently underway for the West Maui 24-Hour Acute Care Emergency Medical Facility, to be located on a 15-acre site near the Lahaina Civic Center.
- Malulani Health Systems proposes to build a 40-acre, $180 million, 100-bed hospital in Kīhei, which is estimated to open in 2009.

5

Relationship to the Land Use Plans, Policies, & Controls for the Affected Area

5.0 RELATIONSHIP TO LAND USE PLANS, POLICIES, AND CONTROLS

This section discusses the relationship of the proposed Residences at Kapalua Bay to State and County land use plans, policies, and controls for the West Maui region.

5.1 STATE OF HAWAI'I

5.1.1 Environmental Impact Statement Law, Chapter 343, Hawaii Revised Statutes

Compliance with Chapter 343, HRS is required as described earlier in Section 1.1.5.

5.1.2 State Land Use Law, Chapter 205, Hawaii Revised Statutes

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

The Residences at Kapalua Bay is within the State Urban District (Figure 4). The uses planned by Kapalua Bay, LLC for The Residences at Kapalua Bay are permitted in the Urban district.

5.1.3 Hawaii Coastal Zone Management Program, Chapter 205A, Hawaii Revised Statutes

The Hawaii Coastal Zone Management (CZM) program as defined in Chapter 205A, HRS, includes all the lands of the State. As such, The Residences at Kapalua Bay is within the Coastal Zone Management Area.

The CZM program is built upon ten policy areas. The relevant objectives and policies of the CZM program pertaining to The Residences at Kapalua Bay include recreational resources, historic resources, scenic and open space resources, coastal ecosystems, economic uses, coastal hazards, managing development, and marine resources. The relevant objectives and policies of the CZM program pertaining to The Residences, along with a discussion of conformance to these objectives and policies, is discussed below.

Recreational Resources

Objective:

(A) Provide coastal recreational opportunities accessible to the public.

Policies:

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

(i) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas.

(iii) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value.

(vi) Adopting water quality standards and regulating point and nonpoint sources of pollution to protect, and where feasible, restore the recreational value of coastal waters.

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

Discussion: A new paved public coastal trail is planned to run through The Residences site and beyond, providing continuous coastal access within the Kapalua Resort when all segments are completed. This trail will increase public shoreline access and coastal recreational opportunities accessible to the public.

The Residences will not impact the existing on-site shoreline access pathway or public parking. In addition, The Residences will not impact access to the adjacent Kapalua (Fleming's) Beach, or any other public shoreline access points, related parking, and facilities.

The marine water quality conducted for this EIS concludes: 1) "The changes in land use [from the existing hotel to The Residences] are not expected to have significant adverse effects on either the existing watershed, downstream properties, or coastal marine waters;" and 2) "it is not likely that there will be substantial differences compared to the existing situation" (Marine Research Consultants 2005a).

Historic Resources

Objective:

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

Policies:

(A) Identify and analyze significant archaeological resources.

(B) Maximize information retention through preservation of remains and artifacts or salvage operations.

Discussion: No human remains whatsoever were observed or encountered within The Residences property during the archaeological survey conducted for this EIS. No subsurface burial features were observed. No historically-significant surface features or sites were found. Additional archaeological survey work will be conducted when the hotel is removed and before construction of The Residences. Kapalua Bay, LLC and its contractors will comply with all laws and rules regarding preservation of archaeological and historic sites should any be found during construction.

Scenic and Open Space Resources

Objective:

(A) Protect, preserve, and, where desirable, restore or improve the quality of coastal scenic and open space resources.

Policies:

(B) Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline.

(C) Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources.

Discussion: The Residences will be further from the shoreline compared to the existing Kapalua Bay Hotel. Coastal scenic and open space resources within the expanded shoreline setback area will be restored and protected for public use and enjoyment. The increased area between the buildings of The Residences and the ocean will facilitate placement of a paved public coastal trail planned to run through the site and beyond, providing continuous coastal access within Kapalua when all segments are completed. This trail will increase public shoreline access, hence increasing public viewing of the coast and ocean.

Additional positive impacts include modern, well-designed buildings, opportunities for increased view corridors between buildings, and new landscaping and entry features.

Coastal Ecosystems

Objective:

(A) Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.

Policies:

(A) Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources.

(B) Improve the technical basis for natural resource management.

(C) Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance.

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

Discussion: The marine water quality conducted for this EIS concludes: 1) "The changes in land use [from the existing hotel to The Residences] are not expected to have significant adverse effects on either the existing watershed, downstream properties, or coastal marine waters;" and 2) "it is not likely that there will be substantial differences compared to the existing situation."

With baseline water quality and marine environment data established, additional monitoring can be used to evaluate any changes to the nearshore marine resources resulting from The Residences. If necessary, appropriate mitigative measures can then be implemented.

Economic Uses

Objective:

(A) Provide public or private facilities and improvements important to the State's economy in suitable locations.

Policies:

(A) Concentrate coastal dependent development in appropriate areas.

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

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

(ii) Adverse environmental effects are minimized.

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

Discussion: The Residences at Kapalua Bay is a compatible land use in an appropriate setting. The property is already used for resort facilities in conformance with the West Maui Community Plan. The Residences are a substantially similar use as the existing Kapalua Bay Hotel and related facilities.

The Residences represents a substantial upgrading and improvement of the existing Kapalua resort, while decreasing room count. The Residences will contribute to the maintenance of the Kapalua Resort's world-class status and Maui's preeminence as a desirable, modern, resort destination, thus ensuring economic growth for both State and County governments and Maui residents.

Coastal Hazards

Objective:

(A) Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence, and pollution.

Policies:

(A) Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and nonpoint source pollution hazards.

(B) Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and nonpoint source pollution hazards.

(C) Ensure that developments comply with requirements of the Federal Flood Insurance Program.

Discussion: Relative to the existing hotel and facilities, The Residences will be set back further from the shoreline, thereby reducing risks associated with hurricanes, tsunamis, and floods. In conformance with the Federal Flood Insurance Program, no buildings or improvements will be within the 100-year floodplain (Zone A4), which is primarily the shoreline area.

Managing Development

Objective:

(A) Improve the development review process, communication, and public participation in the management of coastal resources and hazards.

Policies:

(A) Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development.

(B) Facilitate timely processing of applications for development permits and resolve overlapping or conflicting permit requirements.

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

Discussion: The Residences will be in conformance with all applicable, laws, regulations, and requirements. Permit processing for The Residences will include a Special Management Area Use Permit, a Planned Development Approval, and a Shoreline Setback Variance. All of these steps provide for agency review and public comments, as well as opportunities for the public and decision-makers to ask for more information.

In addition, the resort-residential homes of The Residences are substantially similar to the existing hotel. Resort uses on the property are consistent with the State Land Use, *West Maui Community Plan*, and County zoning designations for the property. As such, resort uses on the property have been thoroughly considered and approved through the processes involved with these designations.

Further, this EIS (and the preceding EISPN) and related technical studies are subject to public review and comment and provide a thorough evaluation of the impacts of The Residences.

Public Participation

Objective:

(A) Stimulate public awareness, education, and participation in coastal management.

Policies:

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

Discussion: Kapalua Bay, LLC has already met with surrounding property owners, hotel employees, public agencies, and other organizations to discuss plans for The Residences (see Chapter 8). In addition, as noted above, the EISPN, this EIS, and the required permitting process, provide numerous opportunities for public comments and participation.

Beach Protection

Objective:

(A) Protect beaches for public use and recreation.

Policies:

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

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

Discussion: The Residences will not impact access to the adjacent Kapalua (Fleming's) Beach, or any other public shoreline access points, related parking, and facilities. In addition, The Residences will be further from the shoreline compared to the existing Kapalua Bay Hotel and will not interfere with natural shoreline processes.

Marine Resources

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

Policies:
(A) Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial.
(B) Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency.
(C) Assert and articulate the interests of the State as a partner with federal agencies in the sound management of ocean resources within the United States exclusive economic zone.
(D) Promote research, study, and understanding of ocean processes, marine life, and other ocean resources in order to acquire and inventory information necessary to understand how ocean development activities relate to and impact upon ocean and coastal resources.
(E) Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.

Discussion: The Residences is not expected to impact marine and coastal resources and will be environmentally sound and economically beneficial. The Residences are a substantially similar use as the existing Kapalua Bay Hotel but will be set back further from the shoreline. The Residences also provides opportunities for increased ocean access via the wider setback, improved on-site drainage facilities, and decreased energy efficiency through modern building design.

The marine water quality conducted for this EIS concludes: 1) "The changes in land use [from the existing hotel to The Residences] are not expected to have significant adverse effects on either the existing watershed, downstream properties, or coastal marine waters;" and 2) "it is not likely that there will be substantial differences compared to the existing situation."

The Residences will contribute to the maintenance of the Kapalua Resort's world-class status and Maui's preeminence as a desirable, modern, resort destination, thus ensuring economic growth for both State and County governments and Maui residents.

5.1.4 Hawaii State Plan, Chapter 226, Hawaii Revised Statutes

The *Hawaii State Plan* (Chapter 226, HRS), establishes a set of goals, objectives, and policies that serve as long-range guidelines for the growth and development of the State. The sections of

the *Hawaii State Plan* applicable to The Residences, along with a discussion of how the project conforms to the *Hawaii State Plan*, are included below.

The Hawaii State Plan lists three "Overall Themes" relating to: 1) individual and family self-sufficiency; 2) social and economic mobility; and 3) community or social well-being. These themes are viewed as "basic functions of society" and goals toward which government must strive (§226-3). To guarantee the elements of choice and mobility embodied in the three themes, the Plan states three goals:

1) *A strong, viable economy, characterized by stability, diversity and growth that enables fulfillment of the needs and expectations of Hawaii's present and future generations.*
2) *A desired physical environment, characterized by beauty, cleanliness, quiet, stable natural systems, and uniqueness, that enhances the mental and physical well-being of the people.*
3) *Physical, social and economic well-being, for individuals and families in Hawaii, that nourishes a sense of community responsibility, of caring and of participation in community life (§226-4).*

Discussion: The Residences contributes to the attainment of the three goals by: 1) providing direct and indirect short and long-term employment opportunities for the present and future residents of Maui; 2) generating increased State and County tax revenues; and 3) contributing to the stability, diversity and growth of local and regional economies.

Part I. Overall Theme, Goals, Objectives and Policies

§226-5 Objective and policies for population.

(a) *It shall be the objective in planning for the State's population to guide population growth to be consistent with the achievement of physical, economic, and social objectives contained in this chapter.*

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

  (1) *Manage population growth statewide in a manner that provides increased opportunities for Hawaii's people to pursue their physical, social, and economic aspirations while recognizing the unique needs of each county.*

  (2) *Encourage an increase in economic activities and employment opportunities on the neighbor islands consistent with community needs and desires.*

  (3) *Promote increased opportunities for Hawaii's people to pursue their socio-economic aspirations throughout the islands.*

Discussion: The de facto population of The Residences at Kapalua Bay is estimated to be approximately 459 persons, with only 50 being full-time residents. Because most of the population will be visitors using their second homes, demand on government services and funds will be less than a community of all full-time residents, as visitors typically do not rely on the full range of government services that full-time residents expect. However, property owners at The Residences, even if most are not full-time residents, will pay property taxes (on high value property) on a full-time basis and excise taxes when they purchase good and services on the island.

§226-6 Objectives and policies for the economy—in general.

(a) Planning for the State's economy in general shall be directed toward achievement of the following objectives:

(1) Increased and diversified employment opportunities to achieve full employment, increased income and job choice, and improved living standards for Hawaii's people.

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

(6) Strive to achieve a level of construction activity responsive to, and consistent with, state growth objectives.

(9) Foster greater cooperation and coordination between the government and private sectors in developing Hawaii's employment and economic growth opportunities.

(14) Promote and protect intangible resources in Hawaii, such as scenic beauty and the aloha spirit, which are vital to a healthy economy.

Discussion: The Residences at Kapalua Bay represents a substantial upgrading and improvement of the existing Kapalua resort, while decreasing room count. The Residences will contribute to the maintenance of the Kapalua Resort's world-class status and Maui's preeminence as a desirable, modern, resort destination, thus ensuring economic growth for both State and County governments and Maui residents.

Economic impacts associated with The Residences include:

- $22.4 million in taxes for the State of Hawai'i and ~~$6.1~~ $7.7 million in taxes for the County of Maui during the 4-year build out period.
- $2.9 million annually in stabilized taxes for the State and approximately ~~$3.4~~ $4.4 million annually for the County after the build out period.
- $0.4 million annually in net benefits (taxes minus costs) to the State and ~~$2.4~~ $3.4 million annually in net benefits to the County.
- 188 full-time equivalent jobs related to on-site activities, on a stabilized basis, after build-out.
- $99.7 million in total wages over the build-out period.
- $7.5 million in stabilized annual wages after build-out.

§226-8 Objective and policies for the economy—visitor industry.

(a) Planning for the State's economy with regard to the visitor industry shall be directed towards the achievement of the objective of a visitor industry that constitutes a major component of steady growth for Hawaii's economy:

(b) To achieve the visitor industry objective, it shall be the policy of this State to:

(1) Support and assist in the promotion of Hawaii's visitor attractions and facilities.

(2) Ensure that visitor industry activities are in keeping with the social, economic, and physical needs and aspirations of Hawaii's people.

(3) Improve the quality of existing visitor destination areas.

(4) Encourage cooperation and coordination between the government and private sectors in developing and maintaining well-designed, adequately serviced visitor industry and related development which are sensitive to neighboring communities and activities.

(7) Foster a recognition of the contribution of the visitor industry to Hawaii's economy and the need to perpetuate the aloha spirit.

Discussion: The Residences will contribute to the maintenance of the Kapalua Resort's world-class status and Maui's preeminence as a desirable, modern, resort destination, thus ensuring the steady growth of Hawaii's and Maui's economy. Since the Kapalua Bay Hotel was built, other hotels and resorts in Hawaii and internationally have set new standards for premier vacation accommodations and facilities. With these competing resorts developing new and innovative resorts and market approaches, it is essential to upgrade the Kapalua Resort to maintain Maui's competitive advantage.

§226-11 Objectives and policies for the physical environment—land-based, shoreline, and marine resources.

(a) Planning for the State's physical environment with regard to land-based, shoreline, and marine resources shall be directed towards achievement of the following objectives:
- *(1) Prudent use of Hawaii's land-based, shoreline, and marine resources.*
- *(2) Effective protection of Hawaii's unique and fragile environmental resources.*

(b) To achieve the land-based, shoreline, and marine resources objectives, it shall be the policy of this State to:
- *(2) Ensure compatibility between land-based and water-based activities and natural resources and ecological systems.*
- *(3) Take into account the physical attributes of areas when planning and designing activities and facilities.*
- *(4) Manage natural resources and environs to encourage their beneficial and multiple use without generating costly or irreparable environmental damage.*

Discussion: The Residences at Kapalua Bay is a prudent and compatible land use in an appropriate setting. The property is already used for resort facilities in conformance with the West Maui Community Plan. The Residences are a substantially similar use as the existing Kapalua Bay Hotel and related facilities.

The marine water quality conducted for this EIS concludes: 1) "The changes in land use [from the existing hotel to The Residences] are not expected to have significant adverse effects on either the existing watershed, downstream properties, or coastal marine waters;" and 2) "it is not likely that there will be substantial differences compared to the existing situation".

§226-12 Objective and policies for the physical environment—scenic, natural beauty, and historic resources.

(a) Planning for the State's physical environment shall be directed towards achievement of the objective of enhancement of Hawaii's scenic assets, natural beauty, and multi-cultural/historical resources.

(b) To achieve the scenic, natural beauty, and historic resources objective, it shall be the policy of this State to:
- *(2) Provide incentives to maintain and enhance historic, cultural, and scenic amenities.*
- *(3) Promote the preservation of views and vistas to enhance the visual and aesthetic enjoyment of mountains, ocean, scenic landscapes, and other natural features.*
- *(5) Encourage the design of developments and activities that complement the natural beauty of the islands.*

Discussion: The Residences will not negatively impact the scenic assets, natural beauty, and cultural/historic resources of the site. The property is already used for resort facilities and The Residences represents a substantial upgrade over the existing hotel. Relative to the existing hotel, The Residences creates opportunities for increased view corridors (both mauka and makai) and buildings placed further from the shoreline. Additional positive impacts include modern, well-designed buildings and new landscaping and entry features.

No human remains, subsurface burial features, historically-significant surface features or sites were found were observed or encountered during the archaeological survey conducted for this EIS. Kapalua Bay, LLC and its contractors will comply with all laws and rules regarding preservation of archaeological and historic sites should any be found during construction.

Based on interviews with people knowledgeable with the Kapalua area and The Residences site, primary cultural concerns pertain to continued access to the shoreline. The Residences will not impact the existing on-site shoreline access pathway or public parking. In addition, The Residences will not impact access to the adjacent Kapalua (Fleming's) Beach, or any other public shoreline access points, related parking, and facilities.

§226-13 Objectives and policies for the physical environment—land, air, and water quality.

(a) Planning for the State's physical environment with regard to land, air, and water quality shall be directed towards achievement of the following objectives:

(1) Maintenance and pursuit of improved quality in Hawaii's land, air and water resources.

(b) To achieve the land, air, and water quality objectives, it shall be the policy of this State to:

(2) Promote the proper management of Hawaii's land and water resources.

(3) Promote effective measures to achieve desired quality in Hawaii's surface, ground, and coastal waters.

(5) Reduce the threat to life and property from erosion, flooding, tsunamis, hurricanes, earthquakes, volcanic eruptions, and other natural or man-induced hazards and disasters.

(6) Encourage design and construction practices that enhance the physical qualities of Hawaii's communities.

(7) Encourage urban developments in close proximity to existing services and facilities.

(8) Foster recognition of the importance and value of land, air, and water resources to Hawaii's people, their cultures and visitors.

Discussion: Changes from the existing hotel to The Residences are not expected to have significant adverse long-term effects on the land, air, or water quality as The Residences are a substantially similar use.

Relative to the existing hotel and facilities, The Residences will be set back further from the shoreline, thereby reducing risks associated with hurricanes, tsunamis, and floods.

Compared to the existing hotel, The Residences represents a substantial physical upgrade and will enhance the physical quality of the Kapalua Resort, one of Hawaii's primary resort communities. All infrastructure needs and other services and facilities are available to the site.

§226-15 Objectives and policies for facility systems—solid and liquid wastes.

(a) Planning for the State's facility systems with regard to solid and liquid wastes shall be directed towards the achievement of the following objectives:
(2) Provision of adequate sewerage facilities for physical and economic activities that alleviate problems in housing, employment, mobility, and other areas.
(b) To achieve solid and liquid waste objectives, it shall be the policy of this State to:
(2) Promote re-use and recycling to reduce solid and liquid wastes and employ a conservation ethnic.

Discussion: The average sewer volume for The Residences is estimated to decrease by approximately 10 percent compared to the existing volume generated by the hotel and related facilities. Therefore, additional wastewater disposal capacity at the Lahaina Wastewater Treatment Facility will not be required.

The Kapalua Resort is an active participant in recycling programs and plans to continue its participation with the addition of The Residences. A primary goal in the demolition of the Kapalua Bay Hotel is to recycle or reuse 90 to 95 percent of the materials. After demolition, during construction, a job-site waste management and recycling program will be implemented to maximize recycling of construction wastes.

§226-16 Objective and policies for facility systems—water.

(a) Planning for the State's facility systems with regard to water shall be directed towards achievement of the objective of the provision of water to adequately accommodate domestic, agricultural, commercial, industrial, recreational, and other needs within resource capacities.
(b) To achieve the facility systems water objective, it shall be the policy of the State to:
(1) Coordinate development of land use activities with existing and potential water supply.

Discussion: The Residences will receive water from Kapalua Resort's dual water system, which provides potable and non-potable water. Average daily potable water demand for The Residences is estimated to increase by approximately 27 percent compared to the hotel and related facilities; however, the Kapalua Resort's potable water sources have available capacity to supply this demand. Average daily non-potable water demand for The Residences is estimated to decrease by approximately 1.8 percent compared to the average daily non-potable water demand of the hotel and related facilities.

§226-17 Objectives and policies for facility systems—transportation.

(a) Planning for the State's facility systems with regard to transportation shall be directed towards the achievement of the following objectives:
(2) A statewide transportation system that is consistent with and will accommodate planned growth objectives throughout the State.
(b) To achieve the transportation objectives, it shall be the policy of this State to:
(6) Encourage transportation systems that serve to accommodate present and future development needs of communities.
(12) Coordinate intergovernmental land use and transportation planning activities to ensure the timely delivery of supporting transportation infrastructure in order to accommodate planned growth objectives.

Discussion: The Residences will reduce traffic 48 percent during the AM peak hour and 43 percent during the PM peak hour, compared to the existing hotel. The proposed paved coastal trail fronting The Residences will eventually extend to other areas within the Kapalua Resort, facilitating pedestrian access to restaurants, shops, and other facilities, thereby reducing trips by car. In addition, facilities within The Residences site, such as a restaurant, a spa, and recreational amenities, will reduce the need for trips outside of the property.

§226-23 Objective and policies for socio-cultural advancement—leisure.

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

(b) To achieve the leisure objective, it shall be the policy of this State to:

(4) Promote the recreational and educational potential of natural resources having scenic, open space, cultural, historical, geological, or biological values while ensuring that their inherent values are preserved.

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

Discussion: A new paved public coastal trail is planned to run through The Residences site and beyond, providing continuous lateral coastal access within the Kapalua Resort when all segments are completed. This trail will increase public shoreline access and coastal recreational opportunities accessible to the public.

The Residences will not impact the existing on-site shoreline access pathway or public parking. In addition, The Residences will not impact access to the adjacent Kapalua (Fleming's) Beach, or any other public shoreline access points, related parking, and facilities.

Part II. Planning, Coordinating and Implementation

Part II of the Hawaii State Plan pertains to the administrative structure and implementation process of the Plan. As such, comments are not deemed appropriate.

Part III. Priority Guidelines

The Priority Guidelines section of the *Hawaii State Plan* establishes overall priority guidelines to address areas of Statewide concern. The *Hawaii State Plan* notes that the State shall strive to improve the quality of life for Hawai'i's present and future population through the pursuit of desirable courses of action in five major areas of Statewide concern which merit priority attention: 1) economic development, 2) population growth and land resource management, 3) affordable housing, 4) crime and criminal justice, and 5) quality education. The priority guidelines applicable to The Residences at Kapalua Bay are discussed below.

§226-103 Economic priority guidelines.

(a) Priority guidelines to stimulate economic growth and encourage business expansion and development to provide needed jobs for Hawaii's people and achieve a stable and diversified economy.

(1) Seek a variety of means to increase the availability of investment capital for new and expanding enterprises.

(A) Encourage investments which:

(i) Reflect long term commitments to the State;

(ii) Rely on economic linkages within the local economy;

(iii) Reinvest in the local economy;

(iv) Are sensitive to community needs and priorities; and

(v) Demonstrate a commitment to provide management opportunities to Hawaii residents.

(5) Streamline the building and development permit and review process, and eliminate or consolidate other burdensome or duplicative governmental requirements imposed on business, where public health, safety and welfare would not be adversely affected.

(b) Priority guidelines to promote the economic health and quality of the visitor industry:

(1) Promote visitor satisfaction by fostering an environment which enhances the Aloha Spirit and minimizes inconveniences to Hawaii's residents and visitors.

(2) Encourage the development and maintenance of well-designed, adequately serviced hotels and resort destination areas which are sensitive to neighboring communities and activities and which provide for adequate shoreline setbacks and beach access.

(3) Support appropriate capital improvements to enhance the quality of existing resort destination areas and provide incentives to encourage investment in upgrading, repair, and maintenance of visitor facilities.

(4) Encourage visitor industry practices and activities which respect, preserve, and enhance Hawaii's significant natural, scenic, historic, and cultural resources.

(5) Develop and maintain career opportunities in the visitor industry for Hawaii's people, with emphasis on managerial positions.

(7) Maintain and encourage a more favorable resort investment climate consistent with the objectives of this chapter.

Discussion: The Residences reflect a substantial upgrading of the Kapalua Resort, a long-term investment to the State, and substantial reinvestment in the local economy. The construction and on-going operations of The Residences will create numerous economic linkages and provide employment opportunities at all levels, including management positions.

The Residences will contribute to the evolution, maintenance and quality of the Kapalua Resort one Hawaii's most well-designed resort destination areas, which is sensitive to neighboring communities and activities provides substantial shoreline setbacks and beach access points.

The Residences will contribute to increased visitor satisfaction by providing desirable, modern, resort destination facilities. Since the Kapalua Bay Hotel was built, other hotels and resorts in Hawaii and internationally have set new standards for premier vacation accommodations and facilities. With these competing resorts developing new and innovative resorts and market approaches, it is essential to upgrade the Kapalua Resort to maintain Maui's competitive advantage.

The multiple County approvals and permits required for The Residences represents an opportunity for government to consolidate public hearings and provide concurrent processing of applications, thereby streamlining the building and development permit and review process and eliminating burdensome, duplicative governmental requirements without adversely affecting public health, safety, and welfare.

§226-104 Population growth and land resources priority guidelines.

(a) Priority guidelines to effect desired statewide growth and distribution:
(1) Encourage planning and resource management to insure population growth rates throughout the State that are consistent with available and planned resource capacities and reflect the needs and desires of Hawaii's people.
(2) Manage a growth rate for Hawaii's economy that will parallel future employment needs for Hawaii's people.
(b) Priority guidelines for regional growth distribution and land resource utilization:
(12) Utilize Hawaii's limited land resources wisely, providing adequate land to accommodate projected population and economic growth needs while ensuring the protection of the environment and the availability of the shoreline, conservation lands, and other limited resources for future generations.
(13) Protect and enhance Hawaii's shoreline, open spaces, and scenic resources.

Discussion: The de facto population of The Residences at Kapalua Bay is estimated to be approximately 459 persons, of which only 50 are expected to be full-time residents. In the long-term, The Residences at Kapalua Bay and other new facilities at the Kapalua Resort are expected to create additional job opportunities (approximately 263 long-term jobs at The Residences alone) in parallel with future employment needs of Hawaii's people.

The Residences is a wise use of the property in an appropriate setting, as it is a substantially similar use as the existing hotel and is in conformance with the West Maui Community Plan. Further, The Residences will provide for the protection of the environment, and will enhance access to the shoreline and scenic resources for future generations.

5.1.5 State Functional Plans

The *Hawaii State Plan* directs State agencies to prepare functional plans for their respective program areas. There are 13 State Functional Plans that serve as the primary implementing vehicle for the goals, objectives, and policies of the *Hawaii State Plan*. The functional plans applicable to The Residences at Kapalua Bay, along with each plan's applicable objectives, policies, and actions, are discussed below.

Employment

The Employment Functional Plan focuses on the preparation of Hawai'i's workforce for the global, information-based 21st-century economy. It takes a multi-agency approach in providing job training and education services, implementing job placement services, improving the quality of the work environment, and coordinating employment information, analysis, and planning.

Discussion: In the long-term The Residences at Kapalua Bay and other new facilities at the Kapalua Resort are expected to create hundreds of additional job opportunities in parallel with future employment needs of Hawaii's people.

Employment wages associated with The Residences include:

- 263 permanent jobs and $7.5 million in annual wages from operations and maintenance.

- 1,333 "worker years" of direct on-site employment and an additional 1,003 "worker years" of off-site employment during construction.
- $99.7 million in total wages generated over construction.
- $29.3 million per year in discretionary expenditures infused into the island economy from residents and guests

Energy

The Energy Advisory Committee highlights three major concerns for Hawai'i in its Functional Plan: 1) the State's over dependency on oil and fossil fuels; 2) the need for an integrated approach to energy development and management; and 3) energy emergency preparedness.

Discussion: Energy-efficient and conservation measures to reduce the maximum electrical demand will be considered in the design and operation of The Residences, where feasible. Design standards will specify low-impact lighting and will encourage energy-efficient building design and site development practices. Other energy conservation measures, as detailed in Section 4.9.5, will also be considered.

Historic Preservation

The long-term philosophy of the Historic Preservation Functional Plan highlights the importance of maintaining a record of Hawai'i's unique history. History enriches our social, intellectual, aesthetic and economic lives with insights from the past. With the rapid change and development of our island state, our historical resources are at risk. The Historic Preservation Functional Plan attempts to preserve these resources by focusing on three main issue areas: 1) preservation of historic properties; 2) collection and preservation of historic records, artifacts and oral histories; and 3) provision of public information and education on the ethnic and cultural heritages and history of Hawai'i.

Discussion: No human remains whatsoever were observed or encountered within The Residences property during the archaeological survey conducted for this EIS. No subsurface burial features were observed. No historically-significant surface features or sites were found. Additional archaeological survey work will be conducted when the hotel is removed and before construction of The Residences. Kapalua Bay, LLC and its contractors will comply with all laws and rules regarding preservation of archaeological and historic sites should any be found during construction.

Housing

The State Housing Functional Plan, prepared by the State Housing Finance and Development Corporation (now Housing and Community Development Corporation of Hawaii), addresses six major areas of concern: 1) increasing home ownership; 2) expanding rental housing opportunities; 3) expanding rental housing opportunities for the elderly and other special need groups; 4) preserving housing stock; 5) designating and acquiring land that is suitable for residential development; and 6) establishing and maintaining a housing information system. The majority of the objectives, policies, and implementing actions of the State Housing Functional Plan apply to the government sector.

Discussion: The Residences at Kapalua Bay will provide additional resort-residential opportunities at the Kapalua Resort. The market study prepared for The Residences forecasts that Maui will require 1,800 to 3,200 new moderately high-quality to luxury condominium units within resort-residential communities over the next twenty years. While the greater share of the intended market for the proposed project is not in-State residents, the provision of more units, whatever the intended market, reduces the competition for homes in non-resort areas by out-of-State or part-time residents.

At the time the Kapalua Bay Hotel was built, Maui Land & Pineapple Company Inc., provided 174 affordable homes in nearby Napilihau. There no additional affordable housing requirements related to the proposed North Wing expansion, which could add 128 more rooms to the hotel, for a total of 324 rooms.

Recreation

The Recreation Functional Plan outlines the public and private sectors' roles in serving the recreation and open space needs of the public. It organizes objectives, policies, and actions into six major issue areas: 1) ocean and shoreline recreation; 2) mauka, urban, and other recreational opportunities; 3) public access to shoreline and upland recreation areas; 4) resource conservation and management; 5) management of recreation programs, facilities, and areas; and 6) wetlands protection and management.

Discussion: A new paved public coastal trail is planned to run through The Residences site and beyond, providing continuous coastal access within the Kapalua Resort when all segments are completed. This trail will increase public shoreline access and coastal recreational opportunities accessible to the public.

The Residences will not impact the existing on-site shoreline access pathway or public parking. In addition, The Residences will not impact access to the adjacent Kapalua (Fleming's) Beach, or any other public shoreline access points, related parking, and facilities.

Tourism

The Tourism Functional Plan recognizes the delicate balance required between economic growth and strength and the need to preserve and enhance the social and natural environment for Hawai'i's tourism industry to succeed. It discusses six issue areas of particular concern: 1) growth; 2) physical development; 3) environmental resources and cultural heritage; 4) Community, visitor and industry relations; 5) employment and career development; and 6) marketing.

Discussion: The Residences reflect a substantial upgrading of the Kapalua Resort, a long-term investment to the State, and substantial reinvestment in the local economy. The construction and on-going operations of The Residences will create numerous economic linkages and provide employment opportunities at all levels, including management positions.

The Residences will contribute to the evolution, maintenance and quality of the Kapalua Resort one Hawaii's most well-designed resort destination areas which is sensitive to neighboring communities and activities provides substantial shoreline setbacks and beach access points.

The Residences will contribute to increased visitor satisfaction by providing desirable, modern, resort destination facilities. Since the Kapalua Bay Hotel was built, other hotels and resorts in Hawaii and internationally have set new standards for premier vacation accommodations and facilities. With these competing resorts developing new and innovative resorts and market approaches, it is essential to upgrade the Kapalua Resort to maintain Maui's competitive advantage.

Transportation

The overall objective of the Transportation Functional Plan is to provide for the efficient, safe, and convenient movement of people and goods. The Transportation Functional Plan is implemented as a short- to mid-term action agenda by the DOT. It identifies four key issue areas as the most critical concerns relating to transportation in Hawaii. They are: 1) congestion; 2) economic development; 3) funding; and 4) education.

Discussion: The Residences will reduce traffic 48 percent during the AM peak hour and 43 percent during the PM peak hour, compared to the existing hotel. The proposed paved coastal trail fronting The Residences will eventually extend to other areas within the Kapalua Resort, facilitating pedestrian access to restaurants, shops, and other facilities, thereby reducing trips by car. In addition, facilities within The Residences site, such as a restaurant, a spa, and recreational amenities, will reduce the need for trips outside of the property.

5.2 COUNTY OF MAUI

Relevant land use plans and ordinances of the County of Maui that pertain to The Residences at Kapalua Bay include the *General Plan*, the *West Maui Community Plan*, and the Maui County Code.

5.2.1 General Plan

The Residences at Kapalua Bay implements many of the objectives and policies of the *General Plan of the County of Maui 1990 Update*. As required by the County of Maui Charter, the *General Plan of the County of Maui* sets forth the desired sequence, patterns, and characteristics of future development. This is accomplished through long-range objectives focusing on the social, economic, and environmental effects of development coupled with specific policies designed to implement the objectives.

Specific general plan objectives and policies applicable to The Residences at Kapalua Bay are discussed below.

Population

Objective:

(1) To plan the growth of resident and visitor population through a directed and managed growth plan so as to avoid social, economic and environmental disruptions.

Policies:

(a) Manage population growth so that the County's economic growth will be stable and the development of public and private infrastructures will not expand beyond growth limits specified in the appropriate community plans or negatively impact our natural resources.

(b) Balance population growth by achieving concurrency between the resident employee work force, the job inventory created by new industries, affordable resident/employee housing, constraints on the environment and its natural resources, public and private infrastructure, and essential social services such as schools, hospitals, etc.

(c) Maintain a balance between resident and visitor population by controlling and regulating growth of visitor facilities.

Discussion: The Residences at Kapalua Bay is a compatible land use in an appropriate setting. The property is already used for resort facilities in conformance with the Community Plan.

Land Use

Objective:

(1) To preserve for present and future generations existing geographic, cultural and traditional community lifestyles by limiting and managing growth through environmentally sensitive and effective use of land in accordance with the individual character of the various communities and regions of the County.

Policies:

(b) Provide and maintain a range of land use districts sufficient to meet the social, physical, environmental and economic needs of the community.

(c) Identify and preserve significant historic and cultural sites.

Objective:

(2) To use the land within the County for the social and economic betterment of the County's residents.

Policies:

(a) Mitigate environmental conflicts and enhance scenic amenities, without having a negative impact on natural resources.

(b) Encourage land use patterns that foster a pedestrian oriented environment to include such amenities as bike paths, linear parks, landscaped buffer areas, and mini-parks.

Discussion: The Residences at Kapalua Bay is a compatible land use in an appropriate setting. The property is already used for resort facilities in conformance with the Community Plan. The Residences are a substantially similar use as the existing Kapalua Bay Hotel and related facilities and provides for the productive use of the land for the social and economic betterment of the County's residents.

The Residences will not negatively impact the scenic assets or the natural beauty of the site. The Residences represents a substantial upgrade over the existing hotel and creates opportunities for increased view corridors (both mauka and makai) and buildings placed further from the shoreline. Additional positive impacts include modern, well-designed buildings and new landscaping and entry features.

The proposed linear paved coastal trail fronting The Residences will eventually extend to other areas within the Kapalua Resort, facilitating pedestrian access to restaurants, shops, and other

facilities. In addition, facilities within The Residences site, such as a restaurant, a spa, and recreational amenities, will reduce the need for trips outside of the property.

No human remains, subsurface burial features, historically-significant surface features or sites were found, observed, or encountered during the archaeological survey conducted for this EIS. Kapalua Bay, LLC and its contractors will comply with all laws and rules regarding preservation of archaeological and historic sites should any be found during construction.

Based on interviews with people knowledgeable with the Kapalua area and The Residences site, primary cultural concerns pertain to continued access to the shoreline. The Residences will not impact the existing on-site shoreline access pathway or public parking. In addition, The Residences will not impact access to the adjacent Kapalua (Fleming's) Beach, or any other public shoreline access points, related parking, and facilities.

Environment

Objective:

(1) To preserve and protect the county's unique and fragile environmental resources.

Policies:

(a) Preserve for present and future generations the opportunity to experience the natural beauty of the islands.

(b) Preserve scenic vistas and natural features.

Objective:

(2) To use the County's land-based physical and ocean-related coastal resources in a manner consistent with sound environmental planning practice.

Policies:

(a) Preserve, enhance and establish traditional and new environmentally sensitive access opportunities for mountain and ocean resources.

(b) Evaluate all land based development relative to its impact on the County's land and ocean ecological resources.

(d) Discourage all types of shoreline development that impact on traditional community or native activities which include food gathering, religious and recreational uses.

(e) Establish shoreline rules to maintain traditional beach access, beach use and lateral access along shorelines.

Discussion: The design of the Residences is based on sound environmental and ecological practices. Scenic vistas and natural shoreline features will be preserved and protected for future generations.

The marine water quality conducted for this EIS concludes: 1) "The changes in land use [from the existing hotel to The Residences] are not expected to have significant adverse effects on either the existing watershed, downstream properties, or coastal marine waters;" and 2) "it is not likely that there will be substantial differences compared to the existing situation" (Marine Research Consultants 2005a).

The Residences will not impact shoreline access or traditional community or native activities, which include food gathering, religious and recreational uses. The proposed paved public coastal trail planned to run through The Residences site and beyond will increase lateral shoreline access, hence increasing public recreation along the coast.

Cultural Resources

Objective:

(1) To preserve for present and future generations the opportunity to know and experience the arts, culture and history of Maui County.

Policies:

(b) Encourage the recordation and preservation of all cultural and historic resources, to include culturally significant natural resources.

Discussion: Based on interviews with people knowledgeable with the Kapalua area and The Residences site, primary cultural concerns pertain to continued access to the shoreline. The Residences will not impact the existing on-site shoreline access pathway or public parking. In addition, The Residences will not impact access to the adjacent Kapalua (Fleming's) Beach, or any other public shoreline access points, related parking, and facilities. Further, the new paved public coastal trail planned to run through The Residences site and beyond will provide continuous coastal access within the Kapalua Resort when all segments are complete.

No human remains whatsoever were observed or encountered within The Residences property during the archaeological survey conducted for this EIS. No subsurface burial features were observed. No historically-significant surface features or sites were found. Additional archaeological survey work will be conducted when the hotel is removed and before construction of The Residences. Kapalua Bay, LLC and its contractors will comply with all laws and rules regarding preservation of archaeological and historic sites should any be found during construction.

Economic Activity

Objective:

(1) To provide an economic climate which will encourage controlled expansion and diversification of the County's economic base.

Policies:

(a) Maintain a diversified economic environment compatible with acceptable and consistent employment.

Objective:

(2) To provide a balance between visitor industry employment and non-visitor employment for a broader range of employment choices for the County's residents.

Objective:

(3) Utilize an equitable growth management program which will guide the economic well-being of the community.

Policies:

(a) Encourage a sustainable rate of economic development which is linked to the carrying capacity of the infrastructure systems and the fiscal ability of the County to maintain those systems.

Discussion: The Residences reflect a substantial upgrading and improvement of the Kapalua Resort and a substantial investment in the local economy. The construction and on-going operations of The Residences will create numerous economic linkages and provide employment opportunities at all levels, including management positions.

Economic impacts associated with The Residences include:

- $22.4 million in taxes for the State of Hawai'i and ~~$6.1~~ $7.7 million in taxes for the County of Maui during the 4-year build-out period.
- $2.9 million annually in stabilized taxes for the State and approximately ~~$3.4~~ $4.4 million annually for the County after the build-out period.
- $0.4 million annually in net benefits (taxes minus costs) to the State and ~~$2.4~~ $3.4 million annually in net benefits to the County.
- 188 full-time equivalent jobs related to on-site activities, on a stabilized basis, after build-out.
- $99.7 million in total wages over the build-out period.

Visitor Industry

Objective:

(1) To encourage exceptional and continuing quality in the development of visitor industry facilities.

(2) To control development of visitor facilities so that it does not infringe upon the traditional social, economic and environment values of our community.

Policies:

(a) Limit visitor industry development to those areas identified in the appropriate community plans, and to the development of projects within those areas which are in conformance with the goals and objectives of those plans.

(b) Discourage any additional shoreline resort development.

(d) Require that new developments contribute their fair share to infrastructural costs.

(e) Encourage enhancement of existing visitor facilities without substantial increases in room count.

(f) Encourage the use of local manpower in the construction of visitor facilities, and the use of local manpower at facilities at all employment levels including management in the operation of those facilities.

Objective:

(3) To ensure that visitor industry facilities shall not disrupt agricultural and social pursuits and will not be allowed to negatively impact the County's natural and cultural resources.

Policies:

(c) Encourage developers to minimize urban encroachment of ocean front lands by establishing increased shoreline setbacks and by requiring the public dedication of continuous lateral access parallel with the shoreline.

(d) Encourage the preservation of open beach space by maximizing the use of lands presently designated by community plans for visitor facility use and discourage rezoning of other lands for such use.

Objective:

(4) To develop a visitor industry which will enhance the social and economic lifestyles of Maui County's residents.

Policies:

(c) Emphasize the importance of the "Aloha Spirit" as a common good for all, and encourage the visitor industry to be sensitive regarding its impacts on traditional lifestyles, environment and natural resources of each community plan area.

(d) Promote water, beach and open space conservation in areas devoted to services for visitors.

Discussion: The Residences represents a substantial upgrading and improvement of the existing Kapalua resort, while decreasing room count. The Residences will contribute to the maintenance of the Kapalua Resort's world-class status and Maui's preeminence as a desirable, modern, resort destination, thus ensuring the steady growth of Maui's economy. With other competing resorts developing new and innovative resorts and market approaches, it is essential to upgrade the Kapalua Resort to maintain Maui's competitive advantage.

The Residences is a compatible land use in an appropriate setting. The property is already used for resort facilities in conformance with the West Maui Community Plan. The Residences are a substantially similar use, but will be set back further from the shoreline, thereby providing lateral shoreline access and open space.

All infrastructure and services are available to the site, and The Residences provides a reduction relative to many demands, such as traffic generated, sewage flows, and needs for other resources.

Construction and on-going operations of The Residences will enhance the social and economic lifestyles of Maui County's residents by providing numerous economic linkages and providing employment opportunities at all levels, including management positions.

Housing

Objective:

(1) To provide a choice of attractive, sanitary and affordable homes of all our residents.

Policies:

(b) Encourage the construction of housing in a variety of price ranges and geographic locations.

Discussion: The Residences will provide additional resort-residential opportunities at the Kapalua Resort and is a compatible land use in an appropriate setting. At the time the Kapalua Bay Hotel was built, Maui Land & Pineapple Company, Inc., provided 174 affordable homes in nearby Napilihau. There no additional affordable housing requirements related to the proposed North Wing expansion, which could add 128 more rooms to the hotel, for a total of 324 rooms.

Urban Design

Objective:

(1) To see that all developments are well designed and are in harmony with their surroundings.

Policies:

(a) Require that appropriate principles of urban design be observed in the planning of all new developments.

(b) Encourage expansion in the process to require all nonsingle family development to be reviewed by the Urban Design Review Board.

Objective:

(2) To encourage developments which reflect the character and the culture of Maui County's people.

Policies:

(a) Establish urban design guidelines and standards which will reflect the unique traditional architectural values of each community plan area.

(b) Encourage community design which establishes a cohesive community.

(c) Encourage the establishment of continuous green areas, bike-paths, active and passive recreation areas, and mini-parks in new subdivision development.

Discussion: The Residences at Kapalua Bay will be a significant upgrade to the Kapalua Resort that will help to ensure Maui's preeminence as a desirable and modern resort destination. Replacement of the aging Kapalua Bay Hotel with The Residences provides the necessary facilities to maintain the Kapalua Resort's world-class status.

The Residences' quality design provides for the appropriate use of materials, colors, design standards, and landscaping in harmony with the Kapalua Resort. The stepped design allows a gradual transition from low-rise buildings near the ocean, to increased stories further from the shoreline, conforming to the natural contours of the land.

The Residences will also be further from the shoreline compared to the existing Kapalua Bay Hotel. The increased area between buildings and the ocean will facilitate placement of a paved public coastal trail planned to run through the site and beyond, providing continuous coastal access within Kapalua when all segments are completed.

Transportation

Objective:

(1) To support an advanced and environmentally sensitive transportation system which will enable people and goods to move safely, efficiently and economically.

Policies:

(f) Support the development of a county-wide network of bikeways and pedestrian paths.

Discussion: The Residences will reduce traffic by 48 percent during the AM peak hour and 43 percent during the PM peak hour, compared to the existing hotel. The proposed paved coastal trail fronting The Residences will eventually extend to other areas within the Kapalua Resort, facilitating pedestrian access to restaurants, shops, and other facilities, thereby reducing trips by car. In addition, facilities within The Residences site, such as a restaurant, a spa, and recreational amenities, will reduce the need for trips outside of the property.

Water

Objective:

(1) To provide an adequate supply of potable water and irrigation water to meet the needs of Maui County's residents.

(2) To make more efficient use of our ground, surface and recycled water sources.

Discussion: The Kapalua Resort's potable water sources have available capacity to supply the Residences. To reduce potable water demands, non-potable water will be used for landscape irrigation and fire protection. Non-potable water will also be used for dust control and other uses that do not require potable water during construction. Other water conservation measures, as detailed in Section 4.9.3, will also be implemented.

Liquid and Solid Waste

Objective:

(1) To provide, efficient, safe and environmentally sound systems for the disposal and reuse of liquid and solid wastes.

Policies:

(a) Explore new waste disposal methods that are safe, economical, environmentally sound, and aesthetically pleasing, and that minimize the disposal of wastes in landfills.

(e) Encourage and promote public awareness to reduce, reuse, recycle and compost waste materials.

Discussion: The average sewer volume for The Residences is estimated to decrease by approximately 10 percent compared to the existing hotel and related facilities. Therefore, additional wastewater disposal capacity at the Lahaina Wastewater Treatment Facility will not be required.

The Kapalua Resort is an active participant in recycling programs and plans to continue its participation with the addition of The Residences at Kapalua Bay. A primary goal in the demolition of the Kapalua Bay Hotel is to recycle or reuse 90 to 95 percent of the materials. After demolition and during construction, a job-site waste management and recycling program will be implemented to maximize recycling of construction wastes.

Energy

Objective:

(1) To make Maui County more self-sufficient in its need for non-renewable energy and more efficient in its use of energy.

Policies:

(c) Publicize the need to conserve energy.

(f) Encourage the incorporation of energy-saving building design concepts and devices in all new private and public developments by providing energy efficient urban design guidelines and amendments to the Maui County Uniform Building Code.

Discussion: Energy-efficient and conservation measures to reduce the maximum electrical demand will be considered in the design and operation of The Residences, where feasible. Design standards will specify low-impact lighting and will encourage energy-efficient building design and site development practices. Other energy conservation measures, as detailed in Section 4.9.5, will also be considered.

Public Utilities and Facilities

Objective:

(1) To anticipate and provide public utilities which will meet community needs in a timely manner.

Discussion: Adequate public utilities and facilities are available to accommodate The Residences. Compared to the existing hotel, The Residences provides a reduction relative to many demands, such as traffic generated, sewage flows, and needs for other public utilities and facilities.

Recreation and Open Space

Objective:

(1) To provide high quality recreational facilities to meet the present and future needs of our residents of all ages and physical ability.

Policies:

(a) Maintain and upgrade existing recreational facilities to meet the community needs.
(b) Maintain recreational facilities for both active and passive pursuits.
(c) Maintain the natural beauty of recreational areas.
(d) Develop facilities that will meet the different recreational needs of the various communities.

Objective:

(2) To provide a wide range of recreational, cultural and traditional opportunities for all our people.

Policies:

(f) Accelerate the expansion and upgrading of Maui County's beach access facilities, to include parking, and both mauka/makai and lateral access.

Discussion: The Residences is not expected to have a significant impact on regional recreation facilities. Similar to the existing hotel, residents and guests at The Residences are expected to make extensive use of on-site recreation amenities and the Kapalua Resort's many recreation facilities, including golf courses, tennis courts, swimming pool, trails, and related amenities.

A new paved public coastal trail is planned to run through The Residences site and beyond, providing continuous lateral coastal access within the Kapalua Resort when all segments are completed. In addition, The Residences will not impact the existing on-site shoreline access pathway or public parking. Further, The Residences will not impact access to the adjacent Kapalua (Fleming's) Beach, or any other public shoreline access points, related parking, and facilities.

Public Safety

Objective:

(1) To create an atmosphere which will convey a sense of security for all residents and visitors and aid in the protection of life and property.

Policies:

(b) Make more efficient use of the police force by transferring some of its nonprofessional functions to civilian employees.

Discussion: The Kapalua Resort operates its own security service within the Kapalua Resort area with officers on 24-hour patrol, a dispatcher, and several security vehicles. The Resort's security will service The Residences and will be available to respond to a variety of calls that might otherwise be directed to the Police Department.

5.2.2 West Maui Community Plan

The *West Maui Community Plan* is one of nine community plans for Maui County. It reflects current and anticipated conditions in the West Maui region and advances planning goals, objectives, policies, and implementation considerations as a decision-making guide in the region through the year 2010. The *West Maui Community Plan* provides specific recommendations

addressing the goals, objectives, and policies contained in the *General Plan*, while still recognizing the values and unique attributes of the West Maui region. The goals, objectives, policies, and implementing actions of the *West Maui Community Plan* applicable to The Residences at Kapalua Bay are discussed below.

Land Use

Goal: *An attractive, well-planned community with a mixture of compatible land uses in appropriate areas to accommodate the future needs of residents and visitors in a manner that provides for the stable social and economic well-being of residents and the preservation and enhancement of the region's open space areas and natural environmental resources.*

Objectives and Policies:

(1) Protect and enhance the quality of the marine environment.

(2) Preserve and enhance the mountain and coastal scenic vistas and open space areas of the region.

(10) Provide and maintain parks and beach access for the present and future needs of residences and visitors.

Discussion: The Residences is a compatible land use in an appropriate setting. The property is already used for resort facilities in conformance with the Community Plan. The Residences are a substantially similar use as the existing Kapalua Bay Hotel and related facilities.

The Residences will provide for the future needs of residents and visitors in a manner that provides for stable social and economic well-being by upgrading and enhancing the Kapalua Resort to maintain its world-class status and Maui's preeminence as a desirable, modern, resort destination, thus ensuring economic growth for both government and residents.

The marine water quality conducted for this EIS concludes: 1) "The changes in land use [from the existing hotel to The Residences] are not expected to have significant adverse effects on either the existing watershed, downstream properties, or coastal marine waters;" and 2) "it is not likely that there will be substantial differences compared to the existing situation" (Marine Research Consultants 2005a).

A new paved public coastal trail is planned to run through The Residences site and beyond, providing continuous coastal access within the Kapalua Resort when all segments are completed. This trail will increase public shoreline access, hence increasing public viewing of the coast and ocean.

The Residences will not impact the existing on-site shoreline access pathway or public parking. In addition, The Residences will not impact access to the adjacent Kapalua (Fleming's) Beach, or any other public shoreline access points, related parking, and facilities.

Environment

Goal: *A clean and attractive physical, natural and marine environment in which man-made developments on or alterations to the natural and marine environment are based on sound environmental and ecological practices, and important scenic and open space resources are preserved and protected for public use and enjoyment.*

Objectives and Policies:

(3) Protect the quality of nearshore and offshore waters. Monitor outfall systems, streams, and drainage ways and maintain water quality standards. Continue to investigate, and implement appropriate measures to mitigate, excessive growth and proliferation of algae in nearshore and offshore waters.

(5) Encourage soil erosion prevention measures and the installation of siltation basins to minimize downstream sedimentation and degradation of nearshore and offshore water quality.

(9) Promote recycling programs to reduce solid waste disposal in landfills.

(13) Promote the planting of trees and other landscape planting to enhance streetscapes and the built environment.

(14) Protect the shoreline and beaches by preserving waterfront land as open space wherever possible. This protection shall be based on a study and analysis of the rate of shoreline retreat plus a coastal hazard buffer zone. Where new major waterfront structures or developments are to be approved, preservation should be assured for 50-100 years by employing a shoreline setback based on the rate established by the appropriate study.

(15) Promote drainage and stormwater management practices that prevent flooding and protect coastal water.

Discussion: The Residences will contribute to a clean and attractive physical, natural, and marine environment. The design of the Residences is based on sound environmental and ecological practices, and important scenic and open space resources will be preserved and protected for public use and enjoyment.

The marine water quality conducted for this EIS concludes: 1) "The changes in land use [from the existing hotel to The Residences] are not expected to have significant adverse effects on either the existing watershed, downstream properties, or coastal marine waters;" and 2) "it is not likely that there will be substantial differences compared to the existing situation" (Marine Research Consultants 2005a). Further, the introduced red algae *Hypnea musciformis,* which has colonized much of the coastline of West Maui south of Kapalua and resulted in nuisance blooms, was not observed in any of the Kapalua embayments.

A primary goal in the demolition of the Kapalua Bay Hotel is to recycle or reuse 90 to 95 percent of the materials. In addition, The Residences' design incorporates provisions for recycling, such as collection systems and space for bins for recyclables.

The Residences will include new landscaping appropriate to the resort-residential setting. New landscaping will include non-invasive species and, where feasible, native and indigenous plants. Drought-tolerant, hardy plants and grasses will also be used where feasible to minimize the need for irrigation.

The buildings of the Residences at Kapalua Bay will not be in the shoreline setback area and will be farther from the shoreline than the existing structures of the Kapalua Bay Hotel, as required under the current shoreline setback rules of the County, which were not in effect at the time the Kapalua Bay Hotel was built. The increased area between buildings and the ocean will facilitate placement of a paved public coastal trail planned to run through The Residences site and beyond, providing continuous coastal access within Kapalua when all segments are completed.

The Residences' on-site storm drainage system will consist of a combination of drainlines, drain inlets, catch basins, storm drain manholes, and underground detention basins. The proposed

improvements will direct flow from the newly constructed drainlines to underground detention basins. All additional runoff over existing conditions will be retained on-site.

Economic Activity

Goal: *A diversified economy that provides a range of stable employment opportunities for residents, allows for desired commercial services for the community, and supports the existing visitor and agricultural industries, all in a manner that will enhance both the community's quality of life and the environment.*

Objectives and Policies:

(1) Promote a diversified economic base which offers long term employment to West Maui residents, and maintains overall stability in economic activity in the areas of:

(a) Visitor accommodations.

(b) Visitor-related service/commercial services.

(4) Maintain a stable and viable visitor industry.

(a) Limit visitor facilities to the existing planned resorts of Kaanapali and Kapalua as designated on the land use map and coordinate future growth with development of adequate infrastructure capacity.

(b) Encourage the renovation and improvement of existing visitor facilities without a substantial increase in the room count. Promote activities and industries that compliment and support the use of existing visitor industry facilities, such as sporting events, eco-tourism and conferences.

Discussion: The Residences at Kapalua Bay represents a substantial upgrading and improvement of the existing Kapalua resort, while decreasing room count. The Residences will contribute to the maintenance of the Kapalua Resort's world-class status and Maui's preeminence as a desirable, modern, resort destination, thus ensuring economic growth for both State and County governments and Maui residents.

The Residences will diversify the range of visitor accommodations on Maui by providing innovative resort accommodations and facilities consistent with competitive market preferences.

Economic impacts associated with The Residences include:

- $22.4 million in taxes for the State of Hawai'i and ~~$6.1~~ $7.7 million in taxes for the County of Maui during the 4-year build-out period.
- $2.9 million annually in stabilized taxes for the State and approximately ~~$3.4~~ $4.4 million annually for the County after the build-out period.
- $0.4 million annually in net benefits (taxes minus costs) to the State and ~~$2.4~~ $3.4 million annually in net benefits to the County.
- 188 full-time equivalent jobs related to on-site activities, on a stabilized basis, after build-out and 75 jobs off-site.
- $99.7 million in total wages over the build-out period.
- $7.5 million in stabilized annual wages after build-out.

Cultural Resources

Goal: *To preserve, protect and restore those cultural resources and sites that best represent and exemplify the Lahaina region's pre-contact, Hawaiian Monarchy, missionary and plantation history.*

Objectives and Policies:

(1) Preserve and protect significant archaeological, historical and cultural resources that are unique in the State of Hawaii and Island of Maui.

(3) Encourage and protect traditional shoreline and mountain access, cultural practices and rural/agricultural lifestyles. Ensure adequate access to our public shoreline areas for public recreation, including lateral continuity.

(5) Promote distinct cultural resources as an identifying characteristic of the region.

(6) Ensure that new projects or developments address potential impacts on archaeological, historical, and cultural resources and identify all cultural resources located within the project area as part of initial project studies. Further require that all proposed activity adequately mitigate potential adverse impacts on cultural resources.

(8) Support public and private efforts to inventory, evaluate and register historic and archaeological sites to expand the public's knowledge of the region's cultural resources.

(10) Ensure that site identification and interpretation is not damaging to any historical or archaeological sites.

(16) General site types and areas that should be flagged for possible preservation include the following:

(d) Nearshore marine cultural resources.

Discussion: No human remains whatsoever were observed or encountered within The Residences property during the archaeological survey conducted for this EIS. No subsurface burial features were observed. No historically-significant surface features or sites were found. Additional archaeological survey work will be conducted when the hotel is removed and before construction of The Residences. Kapalua Bay, LLC and its contractors will comply with all laws and rules regarding preservation of archaeological and historic sites should any be found during construction.

Based on interviews with people knowledgeable with the Kapalua area and The Residences site, primary cultural concerns pertain to continued access to the shoreline. The Residences will not impact the existing on-site shoreline access pathway or public parking. In addition, The Residences will not impact access to the adjacent Kapalua (Fleming's) Beach, or any other public shoreline access points, related parking, and facilities. Further, a new paved public coastal trail is planned to run through The Residences site and beyond, providing continuous coastal access within the Kapalua Resort when all segments are completed.

Housing

Goal: *A sufficient supply and choice of attractive, sanitary and affordable housing accommodations for a broad cross section of residents.*

Discussion: The Residences will provide additional resort-residential opportunities at the Kapalua Resort and is a compatible land use in an appropriate setting. At the time the Kapalua Bay Hotel was built, Maui Land & Pineapple Company, Inc., provided 174 affordable homes in nearby Napilihau. There no additional affordable housing requirements related to the proposed North Wing expansion, which could add 128 more rooms to the hotel, for a total of 324 rooms.

Urban Design

Goal: *An attractive and functionally integrated urban environment that enhances neighborhood character, promotes quality design at the resort destinations of Ka'anapali and Kapalua, defines a unified landscape planting and beautification theme along major public roads and highways, watercourses, and at major public facilities, and recognizes the historic importance and traditions of the region.*

Objectives and Policies:

(2) Maintain a high level of design quality for West Maui resort destination areas.

(3) Improve pedestrian and bicycle access within the region.

(4) Establish, expand and maintain parks, public facilities, and public shoreline areas outside of Lahaina Town.

(10) Incorporate drought-tolerant plant species in future landscape planting.

(14) Require all future subdivisions, construction projects and developments to comply with the Maui County Planting Plan.

(15) Emphasize contrasting earth-tone color schemes for buildings and avoid bright or garish colors.

(16) Encourage the review of architectural and landscape architectural plans for all public projects by the County's Urban Design Review Board.

Discussion: The Residences at Kapalua Bay will be a significant upgrade to the Kapalua Resort that will help to ensure Maui's preeminence as a desirable and modern resort destination. Replacement of the aging Kapalua Bay Hotel with The Residences provides the necessary facilities to maintain the Kapalua Resort's world-class status.

The Residences' quality design provides for the appropriate use of materials, colors, design standards, and landscaping in character with the Kapalua Resort. The stepped design allows a gradual transition from low-rise buildings near the ocean, to increased stories further from the shoreline conforms to the natural contours of the land.

The Residences will also be further from the shoreline compared to the existing Kapalua Bay Hotel. The increased area between buildings and the ocean will facilitate placement of a paved public coastal trail planned to run through the site and beyond, providing continuous coastal access within Kapalua when all segments are completed.

New landscaping will include non-invasive species and, where feasible, native and indigenous plants. Drought-tolerant, hardy plants and grasses will also be used where feasible to minimize the need for irrigation. In addition, The Residences will be in compliance with the Maui County Planning Plan.

Infrastructure

Goal: *Timely and environmentally sound planning, development, and maintenance of infrastructure systems which serve to protect and preserve the safety and health of the region's residents, commuters, and visitors through the provision of clean water, effective waste disposal and efficient transportation systems which meets the needs of the community.*

Transportation Objectives and Policies:

(5) Promote residential communities that provide convenient pedestrian and bicycle access between residences and neighborhood commercial areas, parks and public facilities, in order to minimize use of the automobile.

Discussion: The paved coastal trail fronting The Residences will eventually extend to other areas within the Kapalua Resort, facilitating pedestrian access to restaurants, shops, and other facilities, thereby reducing trips by car. In addition, facilities within The Residences site, such as a restaurant, a spa, and recreational amenities, will reduce the need for trips outside of the property.

Water and Utilities Objectives and Policies:

(1) Protect groundwater resources in the region.
(3) Reduce potable water consumption outside urban areas.
(5) Study the feasibility of integrating all regional water systems into a public water system to be managed and operated by the County.
(8) Promote water conservation and education programs.

Water and Utilities Implementing Actions:

(2) Develop a plan for the eventual acquisition by the County of Maui of all private water systems within the region.

Discussion: The Residences is not expected to impact groundwater resources in the region. While The Residences will increase potable water demands compared to the existing hotel, the Kapalua Resort's potable water sources have available capacity to supply this demand. To reduce potable water demands, non-potable water will be used for landscape irrigation and fire protection. Non-potable water will also be used for dust control and other uses that do not require potable water during construction. Other water conservation measures, as detailed in Section 4.9.3, will also be implemented.

In regard to planning for eventual acquisition by the County of Maui of all private water systems within the region, Maui Land & Pineapple Company, Inc., will cooperate with the County of Maui Department of Water Supply in the development of an acceptable feasibility study framework for water system integration.

Liquid and Solid Waste Objectives and Policies:

(2) Reduce the disposal of solid waste in landfills through expanded recycling programs and the provision of convenient drop-off facilities.

Discussion: The Kapalua Resort is an active participant in recycling programs and plans to continue its participation with the addition of The Residences at Kapalua Bay. A primary goal in the demolition of the Kapalua Bay Hotel is to recycle or reuse 90 to 95 percent of the materials. After demolition and during construction, a job-site waste management and recycling program will be implemented to maximize recycling of construction wastes.

Drainage Objectives and Policies:

(3) Insure that new developments will not result in adverse flooding conditions for downstream properties by requiring onsite retention facilities for stormwater run-off generated by the development.

Discussion: The Residences will not result in adverse flooding. All additional runoff over existing conditions will be retained on-site. The on-site storm drainage system will consist of a combination of drainlines, drain inlets, catch basins, storm drain manholes, and underground detention basins. The proposed improvements will direct flow from the newly constructed drainlines to underground detention basins.

Energy Objectives and Policies:

(1) Promote energy efficiency as the energy resource of first choice and seek to increase energy efficiency in all sectors of the community.

(4) Promote energy conservation and education programs.

(5) Support energy efficient technologies in conjunction with new urban development and encourage efficient building design and site development practices.

Energy Implementing Actions

(1) Develop incentives and requirements for energy-efficient building design and site development practices, including modifications to building, zoning, and subdivision codes.

Discussion: Energy-efficient and conservation measures to reduce the maximum electrical demand will be considered in the design and operation of The Residences, where feasible. Design standards will specify low-impact lighting and will encourage energy-efficient building design and site development practices. Other energy conservation measures, as detailed in Section 4.9.5, will also be considered.

Social Infrastructure

Goal: *Develop and maintain an efficient and responsive system of public services which promotes a safe, healthy, and enjoyable lifestyle, and offers opportunities for self improvement and community well-being.*

Recreation and Open Space Objectives and Policies

(3) Provide resource-oriented regional park facilities and public access along the shoreline for picnicking, camping, informal play, swimming, sunbathing, and other coastal-related activities along coastal lands makai of the existing or future realigned coastal highways from Honokahua Bay to the district's north boundary and from Puamana to the district's south boundary, except for the agriculture designated lands makai of the highway at Olowalu.

(7) Ensure adequate public access to shoreline areas, including lateral access to establish the continuity of public shorelines.

Discussion: A new paved public coastal trail is planned to run through The Residences site and beyond, providing continuous lateral coastal access within the Kapalua Resort when all segments are completed. In addition, The Residences will not impact the existing on-site shoreline access pathway or public parking. Further, The Residences will not impact access to the adjacent Kapalua (Fleming's) Beach, or any other public shoreline access points, related parking, and facilities.

Health and Public Safety Objectives and Policies

(1) Support the appropriate level of police services in consideration of the region's resident and visitor population.

(2) Establish an emergency medical care facility in West Maui.

(3) Enhance fire protection for multi-story buildings.

Discussion: The Kapalua Resort provides a private security service which helps to minimize crime and reduce demand on the County's Police Department.

Currently, there are several proposals for increased medical services on Maui, including two proposals for medical facilities in West Maui.

The modern design of The Residences will comply with all fire protection requirements for multi-story buildings.

Government

Goal: *Government that demonstrates the highest standards of fairness, responsiveness to the needs of the community, fiscal integrity, effectiveness in planning and implementing programs and projects to accommodate a stable social and economic well-being for residents, a fair and equitable approach to taxation, and efficient and results-oriented management.*

Objectives and Policies:

(1) Coordinate and direct future public and private development, including capital improvement projects, consistent with the Community Plan and the island-wide directed and managed growth plan required by the General Plan.

(3) Remove unnecessary delays in the permit process through means such as consolidated public hearings and concurrent processing of applications.

(4) Expedite the review and approval process for projects, which will result in public benefit by "fast-tracking."

(7) Insure that adequate infrastructure is or will be available to accommodate planned development.

Discussion: The Residences at Kapalua Bay site is already used for resort facilities in conformance with the Community Plan. The Residences are a substantially similar use as the existing Kapalua Bay Hotel and related facilities.

The multiple County approvals and permits required for The Residences represents an opportunity for government to implement the above polices to remove unnecessary delays in the permit process through consolidated public hearings and concurrent processing of applications.

Adequate infrastructure is available to accommodate The Residences. Compared to the existing hotel, The Residences provides a reduction relative to many infrastructure demands, such as traffic generated, sewage flows, and needs for other infrastructure resources.

Planning Standards

The following planning standards are specific guidelines or measures for development and design. These standards are essential in clarifying the intent of the land use and town design objectives and policies and the Land Use Map.

1. Land Use Standards

(a) All zoning and land use approvals shall be consistent with the West Maui Community Plan and its land use policies.

(b) Limit multi-family and single-family residential, business commercial, and industrial uses to areas designated for such purposes on the Community Plan Land Use Map.

Discussion: The *West Maui Community Plan* Land Use Map designates specific areas of The Residences site as Hotel (H), Park (PK), and Business/Commercial (B) (Figure 5). The Residences at Kapalua Bay site is already used for resort facilities in conformance with the Community Plan. The Residences are a substantially similar use as the existing Kapalua Bay Hotel and related facilities.

4. Landscape Planting Standards

(c) Incorporate the use of drought-tolerant plant species in future landscape planting.

(d) Require all future subdivisions, construction projects and developments to comply with the Maui County Planting Plan.

Discussion: New landscaping will include non-invasive species and, where feasible, native and indigenous plants. Drought-tolerant, hardy plants and grasses will also be used where feasible to minimize the need for irrigation. In addition, The Residences will be in compliance with the Maui County Planning Plan.

5. Cultural Resources

(a) Ensure that site identification and interpretation is not damaging to any sites.

Discussion: No human remains whatsoever were observed or encountered within The Residences property during the archaeological survey conducted for this EIS. No subsurface burial features were observed. No historically-significant surface features or sites were found. Additional archaeological survey work will be conducted when the hotel is removed and before construction of The Residences. Kapalua Bay, LLC and its contractors will comply with all laws and rules regarding preservation of archaeological and historic sites should any be found during construction.

Based on interviews with people knowledgeable with the Kapalua area and The Residences site, primary cultural concerns pertain to continued access to the shoreline. The Residences will not impact the existing on-site shoreline access pathway or public parking. In addition, The Residences will not impact access to the adjacent Kapalua (Fleming's) Beach, or any other public shoreline access points, related parking, and facilities. Further, a new paved public coastal trail is planned to run through The Residences site and beyond, providing continuous coastal access within the Kapalua Resort when all segments are completed.

6. Environmental Aspects

(d) Insure that new developments will not result in adverse soil erosion or flooding conditions for downstream properties.

Discussion: The Residences will not result in adverse soil erosion or flooding. All additional runoff over existing conditions will be retained on-site. The on-site storm drainage system will

consist of a combination of drainlines, drain inlets, catch basins, storm drain manholes, and underground detention basins. The proposed improvements will direct flow from the newly constructed drainlines to underground detention basins.

5.2.3 Maui County Code

County of Maui Zoning

The County of Maui has zoned specific areas of The Residences site as Hotel (H-M), Resort Commercial (B-R), and Open Space (O) (Figure 6). The Residences will be in conformance with these zoning designations, subject to the Planned Development Approval process.

Planned Development Approval

The Residences at Kapalua Bay site covers multiple zoning districts. Under the Planned Development Approval process (Chapter 19.32, Maui County Code), "Planned developments proposed on lands including more than one zoning district may permit a mixture of uses, densities and/or dwelling units; provided, that the total density and/or dwelling units of the planned development shall not exceed the combined allowable densities of each of the zones."

The purpose of the Planned Development Approval process is to encourage desirable design and land use patterns, protect the natural environment, minimize traffic congestion, and enhance living and working conditions.

A Planned Development Approval is a three-step review and approval procedure:

1. Submittal of a Planned Development application, agency review, and review and rejection/tentative approval by the Maui Planning Commission;
2. Submittal of a preliminary site plan, primary agency review, and rejection/tentative approval by the Maui Planning Commission; and
3. Submittal of a detailed site plan, Maui Planning Commission review and approval.

Kapalua Bay, LLC is seeking a Planned Development Approval for The Residences at Kapalua Bay.

5.2.4 Special Management Area

The Residences at Kapalua Bay site is within the County of Maui Special Management Area (SMA) (Figure 7). Development within the SMA requires a Special Management Area Use Permit. Although established in the Coastal Zone Management Law (Chapter 205A, HRS), SMAs are under the jurisdiction of the counties. Kapalua Bay, LLC is seeking a Special Management Area Use Permit for The Residences, concurrently with the processing of other required County permits and approvals.

According to the Special Management Rules for the Maui Planning Commission (Section 12-202-10), the objectives and policies of the Special Management Area are the same as the objectives and policies of the Coastal Zone Management Program (Section 205A-2, HRS). The Residences' conformance to the objectives and policies of Coastal Zone Management Program (Section 205A-2, HRS) is discussed in Section 5.1.3 of this EIS.

5.2.5 Shoreline Setback Area

The Shoreline Rules for the Maui Planning Commission regulate land use and activities within the shoreline area. The buildings of the Residences at Kapalua Bay will be set back farther from the shoreline than the existing structures of the Kapalua Bay Hotel and will not be in the shoreline setback area, as required under the current shoreline setback rules of the County, which were not in effect at the time the Kapalua Bay Hotel was built.

However, the Planning Department requires a Shoreline Setback Variance for demolition within the shoreline setback area and therefore, Kapalua Bay, LLC will seek a Shoreline Setback Variance for The Residences concurrently with the processing of other required County permits and approvals.

As part of an application for a Shoreline Setback Variance, Section 12-203-14(7) of the Shoreline Rules for the Maui Planning Commission require a justification for a proposed project that addresses the purpose and intent of the rules and the criteria for approval of a variance.

According to Section 12-203-2 of the Shoreline Rules:

> *...the purpose of this chapter is to establish shoreline rules which regulate the use and activities of land within the shoreline environment in order to protect the health, safety, and welfare of the public by providing minimum protection from known coastal natural hazards; and to ensure that the public use and enjoyment of our shoreline resources are preserved and protected for future generations in accordance with the Hawaii coastal zone management law, HRS chapter 205A.*

According to Section 12-203-15, Criteria for Approval of a Variance of the Shoreline Rules:

(a) A shoreline area variance may be granted for a structure or activity otherwise prohibited by this chapter, if the commission finds in writing, based on the record presented, that the proposed structure or activity is necessary for or ancillary to:
- *(1) Cultivation of crops;*
- *(2) Aquaculture;*
- *(3) Landscaping; provided that, the commission finds that the proposed structure or activity will not adversely affect beach processes and will not artificially fix the shoreline;*
- *(4) Drainage;*
- *(5) Boating, maritime, or water sports recreational facilities;*
- *(6) Facilities or improvements by public agencies or public utilities regulated under HRS chapter 269;*
- *(7) Private facilities or improvements that are clearly in the public interest;*
- *(8) Private facilities or improvements which will neither adversely affect beach processes nor artificially fix the shoreline; provided that, the commission also finds that hardship will result to the applicant if the facilities or improvements are not allowed within theshoreline area;*
- *(9) Private facilities or improvements that may artificially fix the shoreline; provided that, the commission also finds that shoreline erosion is likely to cause hardship to the applicant if the facilities or improvements are not allowed within the shoreline area; and provided further that, the commission imposes conditions to prohibit any structure seaward of the existing shoreline unless it is clearly in the public interest; or*
- *(10)Moving of sand from one location seaward of the shoreline to another location seaward of the shoreline; provided that, the commission also finds that the moving of sand will not adversely affect beach processes, will not diminish the size of the public beach, and will be necessary to stabilize an eroding shoreline.*

(b) A structure or activity may be granted a variance upon grounds of hardship if:

(1) The applicant would be deprived of reasonable use of the land if required to fully comply with the shoreline setback rules;
(2) The applicant's proposal is due to unique circumstances and does not draw into question the reasonableness of the shoreline setback rules; and
(3) The proposal is the practicable alternative which best conforms to the purpose of the shoreline setback rules.

(c) Before granting a hardship variance, the commission must determine that the applicant's proposal is a reasonable use of the land. Because of the dynamic nature of the shoreline environment, inappropriate development may easily pose a risk to individuals or to the public health and safety. For this reason, the determination of the reasonableness of the use of land should properly consider factors such as shoreline conditions, erosion, surf and flood conditions and the geography of the lot.

(d) For purposes of this section, hardship shall not include: economic hardship to the applicant; county zoning changes, planned development permits, cluster permits, or subdivision approvals after June 16, 1989; any other permit or approval which may have been issued by the commission. If the hardship is a result of actions by the applicant, such result shall not be considered a hardship for purposes of this section.

(e) No variance shall be granted unless appropriate conditions are imposed:
(1) To maintain and require safe lateral access to and along the shoreline for public use or adequately compensate for its loss;
(2) To minimize risk of adverse impacts on beachprocesses;
(3) To minimize risk of structures failing and becoming loose rocks or rubble on public property; and
(4) To minimize adverse impacts on public views to, from, and along the shoreline. For purposes of this section only, "adversely impacts public views" means the adverse impact on public views and open space resources caused by new building structures exceeding a one-story or thirty-foot height limitation;and
(5) To comply with chapters 19.62 and 20.08, Maui County Code, relating to flood hazard districts and erosion and sedimentation control respectively.

(f) Notwithstanding any provision of this section to the contrary, the commission may consider granting a variance for the protection of a legal habitable structure or public infrastructure; provided that, the structure is at risk of damage from coastal erosion,poses a danger to the health, safety and welfare of the public, and is the best shoreline management option in accordance with relevant state policy on shoreline hardening.

(g) The applicant may apply to the department for an amendment to the variance in a manner consistent with the procedures of section 12-202-17 of the special management area rules of the Maui planning commission.

Discussion: The buildings of the Residences at Kapalua Bay will not be in the shoreline setback area and will be farther from the shoreline than the existing structures of the Kapalua Bay Hotel, as required under the current shoreline setback rules of the County, which were not in effect at the time the Kapalua Bay Hotel was built. Under the new rules, the shoreline setback line for The Residences at Kapalua Bay is calculated to be 150 feet from the shoreline (see Figure 1, Conceptual Master Plan). Under the old rules, the shoreline setback line for the Kapalua Bay Hotel was 40 feet from the shoreline (see Figure 8, Existing Conditions).

The increased area between buildings and the ocean will facilitate placement of a paved public coastal trail planned to run through The Residences site and beyond, providing continuous coastal access within Kapalua when all segments are completed. Landscaping within the setback area may also be included. The trail and landscaping will: 1) facilitate increased public access to the shoreline; 2) facilitate public views to and along the shoreline; and 3) be in conformance with

the Coastal Zone Management Program (Chapter 205A) (see Section 5.1.3 of this EIS). The trail and any associated landscaping will not: 1) adversely affect beach processes; or 2) artificially fix the shoreline.

5.3 APPROVALS AND PERMITS

A listing of anticipated permits and approvals required for The Residences at Kapalua Bay is presented below.

Permit/Approval	Responsible Agency	Status
Chapter 343, HRS Compliance	Maui Planning Commission/Maui Planning Department Office of Environmental Quality Control	Final EIS accepted September 13, 2005 by the Maui Planning Commission
Planned Development Approval	Maui Planning Commission/Maui Planning Department	Submitted June 2, 2005 Action pending
Special Management Area Use Permit	Maui Planning Commission	Submitted June 2, 2005 Action pending
Shoreline Setback Variance	Maui Planning Commission	Submitted June 2, 2005 Action pending
Grading/Building Permits	County of Maui Department of Public Works and Waste Management	Expected submittal January 2006
Demolition & Building Permits	County of Maui Department of Public Works and Waste Management	Expected submittal January 2006
National Pollutant Discharge Elimination System (NPDES)	Hawaii Department of Health – Clean Water Branch	Expected submittal January 2006

6

Alternatives

6.0 ALTERNATIVES

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

As stated in Section 2.3.1, the objectives of The Residences at Kapalua Bay are to:

- Improve and upgrade the Kapalua Resort to ensure Maui's preeminence as a desirable, modern, resort destination;
- Replace the aging Kapalua Bay Hotel and associated infrastructure with modern residences using current standards for sustainable building design and energy efficiency;
- Provide additional resort-residential opportunities in an appropriate location in West Maui to help satisfy the demand for this market;
- Meet changes in tourism accommodation preferences for condominium and fractional ownership versus hotels;
- Create a high-quality residential-resort community that meets the current land use (including shoreline setback) requirements; and
- Provide for the logical and long-planned best management of the Kapalua Resort.

6.1 NO ACTION ALTERNATIVE

Built in 1978, the Kapalua Bay Hotel is currently in need of renovations to maintain or improve its status, appeal, and market share. The no-action alternative would make no changes to the Kapalua Bay Hotel site. This alternative would result in the further deterioration of the hotel, would not meet the stated project objectives, and would not contribute to the upgrading of the Kapalua Resort to maintain its world-class status and Maui's preeminence as a desirable, modern, resort destination.

This alternative also would not be consistent with *West Maui Community Plan* policies to: "Encourage the renovation and improvement of existing visitor facilities without a substantial increase in the room count" and "Maintain a stable and viable visitor industry by limiting visitor facilities to the Ka'anapali and Kapalua resort areas..."

Further, the no-action alternative would deny the State, County, and general public of the potential public benefits associated with The Residences at Kapalua Bay. Some of the benefits include:

- Investment of $300 million in new capital that would not only maintain the real property values at Kapalua Resort, but also the real property taxes collected by the County of Maui from The Residences and surrounding property owners within the resort.
- An increase in construction spending resulting in increased construction employment (leading to increased consumer spending by construction workers within the local economy of $138 million and $151.6 million during the peak years of construction, and increased income taxes of $3.2 million and $2.7 million during the peak years of construction) and increased excise tax collection. The generation of new (income, excise, and real property) tax revenues will exceed expenditures necessary to provide public services, resulting in a net fiscal benefit to the County and State.

- Creation of employment opportunities in the construction industry (approximately 929 and 861 jobs respectively during the two peak years of construction), on-site after completion (188 jobs), and off-site (75 jobs) due to the community's general contributions to Maui's economy.
- Increased shoreline access (by way of a wider shoreline setback for The Residences buildings and the placement of a new paved public coastal trail within this wider shoreline setback–with the new paved coastal trail connecting to the resort's existing network of public trails).

6.2 RENOVATION AND EXPANSION OR CONVERSION OF THE HOTEL

Renovation and Expansion

Currently all entitlements are in place to add a north wing to the Kapalua Bay Hotel (see Section 2.1.8). As approved, the north wing could include 128 rooms and suites, various meeting rooms, and support space, in a new six-story addition. Combined with the existing 196 rooms, the hotel could contain 324 rooms, a 63 percent increase.

Under this alternative, the existing hotel and facilities would require renovations and upgrades to match the quality of the new wing and return the hotel to the stature required to maintain Kapalua Resort's appeal and world-class status.

Since the hotel was built, other hotels and resorts in Hawaii and internationally have set new standards for premier vacation accommodations and facilities. With these competing resorts developing new and innovative resorts and market approaches, it is not economically feasible to upgrade the Kapalua Bay Hotel to modern standards. The renovation and construction would also negatively impact the hotel's occupancy rates, and hence revenues, during the construction period.

In addition, with a 63 percent increase in rooms, a corresponding increase could be expected regarding traffic generated to and from the site, demands for water, sewer, electricity, and other resources. Comparatively, the Residences at Kapalua Bay will decrease many demands relative to the exiting 196-room hotel, such as traffic generated, sewage flows, and the need for other public infrastructure resources and services.

Further, replacing the hotel provides opportunities for new buildings and related facilities to be built to current standards for: 1) increased shoreline setback areas; 2) sustainable building design and energy efficiency; and 3) competitive market preferences.

Given the above, and in consideration with the goals and objectives of The Residences, Kapalua Bay, LLC has rejected the alternative of renovating and expanding the Kapalua Bay Hotel.

Conversion

In recent years, many hotels in Hawaii have been renovated and converted to residential ownership of individual rooms or units. As an alternative to replacing the Kapalua Bay Hotel and related facilities with The Residences, the existing hotel could also be converted to individual ownership of rooms.

This alternative could achieve some goals and objectives of The Residences; however, the design of the Kapalua Bay Hotel, with wide shallow rooms, is not viable for extended residential use. Converting the existing rooms to individual residences would result in small homes (approximately 500 square feet) that would not meet the demands of the intended market, and would not contribute the to the goal of upgrading the Kapalua Resort to maintain its appeal and world-class status and ensure Maui's preeminence as a desirable, modern, resort destination. Similar to the alternative of renovating and expanding the hotel, conversion would also require renovations and upgrades that are not economically feasible.

Given the above, and in consideration with the goals and objectives of The Residences, Kapalua Bay, LLC has rejected the alternative of converting the existing Kapalua Bay Hotel to residential use.

6.3 POSTPONING ACTION PENDING FURTHER STUDY

The alternative of postponing action pending further study may allow some of the objectives of The Residences at Kapalua Bay to be met eventually; however, this alternative is not necessary for the following reasons:

1. This environmental impact statement and its related technical studies provide a thorough evaluation of the impacts of The Residences;
2. Permit processing for The Residences will include a Special Management Area Use Permit, a Planned Development Approval, and a Shoreline Setback Variance. All of these steps provide for agency review and public comments, as well as opportunities for the public and decision-makers to ask for more information; and
3. The Residences at Kapalua Bay will replace the Kapalua Bay Hotel. Both uses are similar in that they primarily provide resort and visitor facilities. Resort uses on the site are consistent with the State Land Use, *West Maui Community Plan*, and County zoning designations for the property. As such, resorts uses on the property have been thoroughly considered and approved through the processes involved with these designations.

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7

Contextual Issues

7.0 CONTEXTUAL ISSUES

Key issues within the context of The Residences at Kapalua Bay are presented in this section.

7.1 RELATIONSHIP BETWEEN THE SHORT-TERM USES OF THE ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The Residences site has been used for the Kapalua Bay Hotel and related facilities for nearly 30 years. With resort-residential homes and amenities, The Residences will be a substantially similar use.

Short-term uses and long-term productivity consists of The Residences' short-term construction phases and long-term benefits after construction. Short-term construction impacts can be mitigated while they occur. In the long-term, the creation of The Residences will contribute to substantial positive economic and other benefits as discussed throughout this EIS. The Residences will contribute to the maintenance and enhancement of long-term productivity by upgrading the Kapalua Resort to maintain its world-class status and Maui's preeminence as a desirable and modern resort destination.

7.2 CUMULATIVE AND SECONDARY IMPACTS

As discussed throughout this EIS, long-term impacts relating to the Residences at Kapalua Bay are expected to be generally less than or substantially similar to the existing Kapalua Bay Hotel and related facilities. The property is already used for resort facilities. The Residences at Kapalua Bay provides a reduction relative to many regional demands compared to the existing 196-room hotel, such as traffic generated, sewage flows, and the need for other infrastructure resources and services.

Since impacts associated with The Residences are expected to be substantially similar to or less than the existing hotel and related facilities, cumulative and secondary impacts are primarily related to growth in West Maui due to other proposed projects.

Proposed Kapalua Resort Projects

As part of Kapalua Resort's evolution, two improvements are currently in the planning and permitting stage:

Kapalua Village. Kapalua Village will be new mixed-use complex in the center of the Kapalua Resort (see Figure 10). Phase I is proposed on an approximately two-acre site at the north eastern corner of the intersection of Office Road and Village Road (TMK 4-2-4: 35 and a portion of 38) 1). Phase I will include two new two-story buildings containing approximately 12,000 square feet of interior area and 2,500 square feet of lanai area. The ground floor of one building will contain various retail shops and the second floor will contain the Kapalua Realty offices. The ground floor of the other building will house a restaurant and the second floor will contain offices. It is expected that some of the existing businesses located at The Kapalua Shops (part of the existing Kapalua Bay Hotel facilities) will relocate to Kapalua Village Phase I. Kapalua Land Company, Ltd., ~~has applied~~ received approval ~~for~~ of a Special Management Area Use Permit for Phase I.

Kapalua Village Phase II is still in conceptual planning stages but is currently conceived as a mixed use complex with retail uses, restaurants, a residential component, and possibly a spa. No applications for approvals or permits have been submitted for Phase II.

Kapalua Mauka. The Kapalua Mauka community is the long-planned expansion of the Kapalua Resort mauka of Honoapi'ilani Highway (see Figure 10). Kapalua Mauka will be a master-planned resort-residential and recreational community containing approximately 690 homes, a golf course (the existing Village Course), and related recreational amenities on approximately 925 acres. Kapalua Mauka has received approvals from the Maui Planning Commission and the State Land Use Commission. Applications for Kapalua Mauka are currently pending approval from the Maui County Council.

Proposed West Maui Projects

In recent years, various landowners and developers have proposed several major new projects in West Maui. These include Pulelehua, Kā'anapali 2020, Waine'e Village, Kā'anapali North Beach, Pu'unoa, The Villages of Leiali'i, and homes on the DHHL Honokōwai property. Other smaller projects are also proposed. These projects are in various stages of the planning or permitting process, but it is unlikely all will proceed or be built as currently proposed. For example the Pu'unoa project has been rejected twice by the Maui County Council, approvals for Kā'anapali 2020 are likely to take many more years, and the Villages of Leiali'i has been tied up in a legal dispute for over 10 years, although an agreement was recently reached to allow the Department of Hawaiian Home Lands to provide 104 homes on the site.

Cumulative Impacts

The Residences at Kapalua Bay is not expected to contribute to substantial negative cumulative impacts relative to, and combined with, other proposed projects in the Kapalua Resort or West Maui in general. With The Residences, the total unit count on the property will be reduced from the existing 196 hotel rooms to a total of 155 resort-residential homes. Compared to the existing Kapalua Bay Hotel, The Residences will:

- Reduce traffic by 48 percent during the AM peak hour and 43 percent during the PM peak hour.
- Decrease sewage flows from the site by approximately 10 percent.
- Decrease average daily non-potable water demand by approximately two percent.
- Increase potable water demands by approximately 27 percent; however, the Kapalua Resort's potable water sources have available capacity to supply this demand.

Positive secondary and cumulative impacts associated with The Residences include:

- Economic "multiplier" impacts to the State and Maui County economies from increased property tax revenues, jobs and related income taxes, and The Residence's full-time residents and visitor expenditures; these positive economic impacts will be infused in to the economy and result in increased capital spending as business, government, and individuals allocate funds and spend discretionary income.
- The upgrading and enhancement of the Kapalua Resort to maintain its world-class status and Maui's preeminence as a desirable, modern, resort destination.

The Residences and Kapalua Village, as well as the many other existing Kapalua Resort amenities, form a symbiotic whole to provide a complete destination resort. The first phase of Kapalua Village will provide opportunities for existing business at The Kapalua Shops to relocate once the Kapalua Bay hotel is closed, and therefore, is not expected to increase the intensity of commercial uses within the Resort, but rather maintain existing services expected at a major resort. Phase II of Kapalua Village is still in the conceptual planning stage, with uses, areas, and other issues still undefined. However, as a whole, Kapalua Village is intended to provide resort restaurants, shops, and other facilities specifically targeted to Kapalua Resort residents and guests. As with Phase I, Phase II will require necessary County review, permits, and approvals before proceeding.

The Kapalua Mauka Final Environmental Impact Statement (EIS) (PBR Hawaii 2002) addressed impacts related to Kapalua Mauka and related cumulative impacts known at the time the EIS was prepared. While The Residences were not proposed at the time, the Kapalua Mauka Final EIS did consider the impacts of Kapalua Mauka in relation to the Kapalua Resort, including the Kapalua Bay Hotel and related facilities. All major issues including infrastructure demands, affordable housing requirements, and other requirements have been addressed through the environmental impact statement process, the Maui Planning Commission hearings and approval, and the Land Use Commission hearings and Decision and Order (Docket Number A03-741, June 29, 2004) reclassifying the land to the appropriate state land use districts. The Maui County Council will provide further review when it considers the County land use entitlement applications for Kapalua Mauka.

Impacts from other proposed West Maui projects will contribute to incremental, cumulative impacts to regional infrastructure, public service systems and facilities, and area resources. However, all of these proposed projects will be subject to regulatory review to ensure compliance with applicable land use and other policies. Projects must have the appropriate State land use designation, the appropriate County zoning, and comply with other applicable regulatory review and approval procedures to ensure that each project will not have major adverse effects on infrastructure, public services, and the natural or socio-economic environment, or result in adverse cumulative and secondary impacts. Developers of other projects in the region will be required to satisfactorily mitigate impacts of their projects before proceeding with development. Growth in West Maui is a natural progression. Careful planning will ensure that growth does not negatively affect and overburden infrastructure systems.

7.3 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

Use of resources related to The Residences at Kapalua Bay is expected to be substantially similar or generally less than the existing Kapalua Bay Hotel and related facilities. The property is already used for resort facilities. Comparatively, The Residences at Kapalua Bay will decrease many demands relative to the existing 196-room hotel, such as traffic, sewage flows, and the need for other public infrastructure resources and services.

Major resource commitments include the money, construction materials, labor, and energy required for the construction of The Residences and ongoing operations after construction. The impacts represented by the commitment of these resources, however, should be weighed against the positive socio-economic benefits that will be derived from The Residences versus the consequences of either taking no action or pursuing another less beneficial use of the property.

7.4 PROBABLE ADVERSE ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED

Air Quality. In the short-term, demolition of the hotel and construction of The Residences will generate fugitive dust. All demolition and construction activities will comply with the provisions of HAR, Chapter 11-60.1, Air Pollution Control, Section 11-60.1-33, "Fugitive Dust". In compliance with these provisions, an effective dust control plan will be implemented.

In the long-term, the air quality assessment conducted for this EIS concludes that after construction: 1) The Residences should have no significant long-term impacts on maximum air pollution levels in the area; and 2) it is extremely unlikely that traffic associated with The Residences will cause any significant detrimental impacts on air quality in the area.

Noise. In the short-term, demolition of the hotel and construction of The Residences will generate noise that may impact nearby residences. The dominant noise sources during demolition and construction will be from equipment such as bulldozers, excavators, and diesel trucks. Increased noise due to demolition will be short-term, limited to daytime hours, and must comply with State Department of Health noise regulations.

In the long-term, traffic-related noise levels are expected to decease and no vehicular-related noise impacts are anticipated due to The Residences. Regarding noise from post-construction operations, the design of The Residences will provide for the location and placement of stationary mechanical equipment (such as chillers, compressors, and air conditioning units) away from neighbors and residential units as much as is practical. Enclosed mechanical rooms may be required for some equipment.

Demolition and Recycling. Demolition of the Kapalua Bay Hotel and related facilities will be done safely and expeditiously while mitigating noise, dust, and disruption to the neighbors and the surrounding community. The goal is to recycle or reuse 90 to 95 percent of the materials from the existing hotel. Materials that cannot be recycled will be taken to the County's construction and demolition landfill near Mā'alaea.

Employment. Currently, the Kapalua Bay Hotel and related facilities support approximately 200 full-time equivalent on-site jobs. In the short-term, the closing of the Kapalua Bay Hotel and related facilities will result in the in the loss of hospitality and other existing jobs on the site. Kapalua Bay, LLC will coordinate job placement within the Kapalua Resort community or at other facilities during the redevelopment. In the long-term, The Residences will support about 188 full-time equivalent on-site jobs and contribute to another 75 off-site positions. ~~The Residences at Kapalua Bay and~~ Further, other proposed new facilities at the Kapalua Resort are expected to create ~~hundreds of~~ additional job opportunities.

7.4.1 Rationale for Proceeding with The Residences at Kapalua Bay Notwithstanding Unavoidable Effects

In light of the above mentioned unavoidable effects, the creation of The Residences at Kapalua Bay should proceed because relatively minor negative impacts will be offset by substantial positive impacts, including: 1) the improvement and upgrade of the Kapalua Resort to ensure Maui's preeminence as a desirable and modern resort destination; 2) conformance with the *West Maui Community Plan*; and 3) the wages, taxes, and overall positive economic impacts of The Residences. On a stabilized basis, project operations will support about 188 full-time equivalent

on-site jobs and contribute to another 75 off-site, with total wages of $7.5 million annually. The project will infuse $11 million in annual business operations into the Maui economy. The State of Hawai'i will receive tax receipts of $3 million annually and the County will receive ~~$3.4~~ $4.4 million annually. In no year does the State or County suffer a revenue shortfall (expenditures exceeding receipts) relative to the project.

7.5 UNRESOLVED ISSUE

Additional archaeological work will be required ~~after the hotel is demolished, but before construction of The Residences~~ following the closure of the existing resort. The scope of the additional testing will be determined in consultation with the SHPD, Maui archaeologist.

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8

Consultation

8.0 CONSULTATION

The preparation of this ~~Draft~~ Final EIS involved communicating with State and County agencies, and individuals, private companies, and community organizations, including those listed below.

State

- Department of Health – Solid and Hazardous Waste Branch
- Department of Land and Natural Resources – Historic Preservation Division (Ms. Melissa Kirkendall, Maui Archaeologist)
- Office of the Governor (Governor Linda Lingle)
- Legislature (Representative Kameo Tanaka)
- Legislature (Senator Rosalyn Baker)

County

- Office of the Mayor (Mayor Alan Arakawa)
- County Council (Mr. G. Riki Hokama, Council Chair)
- County Council (Ms. Jo Anne Johnson, Councilmember)
- Planning Department (Mr. Mike Foley, Director)
- Wastewater Reclamation Division
- Maui Planning Commission
- Department of Fire & Public Safety
- Maui County Police Department

Individuals/Private Companies/ Community Organizations

- Bay Villas Association of Apartment Owners (AOAO)
- Coconut Grove on Kapalua Bay AOAO
- ILWU Leadership
- Kapalua Bay Hotel Bargaining Unit Employees
- Kapalua Bay Hotel Non-bargaining Employees
- Kapalua Bay Hotel Tenants
- Kapalua Property Owners
- Kapalua Shops Tenants (Sansei Restaurant and Sushi Bar, VINO, Kapalua Logo)
- Kapalua Realty Realtors
- Kapalua Land Company/Maui Land & Pineapple employees
- Maui Electric Company
- Maui Hotel Association
- Maui Visitors Bureau
- Mr. Clifford Nae'ole
- Mr. Wesly Nohara
- Ms. Makanani Catugal
- Ms. Yolanda Dukes
- Ms. Sila Kaina
- Ms. Betty Taira
- Oceanic Time Warner Cable
- Verizon Hawaii

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List of Preparers

9.0 LIST OF PREPARERS

The ~~Draft~~ Final EIS has been prepared by PBR HAWAII, 1001 Bishop Street, ASB Tower, Suite 650, Honolulu, Hawai'i, 96813. The staff involved in the preparation of this document include:

Thomas S. Witten, ASLA	President
Vincent Shigekuni	Principal
Thomas Schnell, AICP	Associate/Project Manager
Lacey Kazama	Planner
Audrey Tantamjarik	Planner
Etsuyo Kila	Cartography
Vivaswan Verawudh	Cartography
Chris Chavez	Graphic Design
Jeanne Sumait	Production
Dionne Talia	Production

Several key technical consultants were employed to provide specific assessments of environmental factors for this project. These consultants, their company affiliation, and their specialty are listed below:

Name	Firm	Area of Expertise
Barry D. Neal	B. D. Neal & Associates	Air Quality Assessment
Christopher M. Monahan, Ph.D.	Scientific Consultant Services, Inc.	Archeological Inventory Survey
Leann McGerty, B.A.	Scientific Consultant Services, Inc.	Cultural Impact Assessment
Robert L. Spear, Ph.D.	Scientific Consultant Services, Inc.	Cultural Impact Assessment
Mike Fujita	Wilson Okamoto Corporation	Drainage and Engineering
James E. Hallstrom, Jr.	The Hallstrom Group, Inc.	Economic and Fiscal Impact Assessment
Thomas W. Holliday	The Hallstrom Group, Inc.	Economic and Fiscal Impact Assessment
Phillip L. Bruner	--	Faunal Studies
Steve Dollar	Marine Research Consultants	Marine Water Quality Assessment
Tim Noonan	D.L. Adams Associates, Ltd.	Noise Impact Assessment
Pete Pascua	Wilson Okamoto Corporation	Traffic Impact Assessment

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10

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11

Comments on the Environmental Impact Statement Preparation Notice & Responses

11.0 COMMENTS ON THE ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE AND RESPONSES

The environmental impact statement preparation notice (EISPN) was sent to the following agencies, organizations, and individuals. The public comment period on the EISPN was from January 23, 2005 to February 22, 2005. Where indicated, the agency, organization, or individual submitted comments.

AGENCY		EISPN MAIL DATE	COMMENT DATE
State			
1	Department of Business Economic Development and Tourism – Office of Planning	01-20-05	--
2	Department of Health	01-20-05	--
3	Department of Health – Maui District Health Office	01-20-05	02-24-05
4	Department of Health – Office of Environmental Quality Control	01-20-05	01-25-05
5	Department of Labor and Industrial Relations	01-20-05	--
6	Department of Land and Natural Resources	01-20-05	02-14-05
7	Department of Land and Natural Resources – Historic Preservation Division[1]	01-20-05	06-28-05
8	Department of Transportation	01-20-05	02-15-05
9	Office of Hawaiian Affairs	01-20-05	02-28-05
10	Lahaina Public Library	01-20-05	--
Federal			
11	US Fish and Wildlife Service	01-20-05	--
12	US Natural Resource Conservation Service – Wailuku Field Office	01-20-05	--
County of Maui			
13	Civil Defense Agency	01-20-05	--
14	Department of Fire Control	01-20-05	--
15	Department of Housing and Human Concerns	01-20-05	01-25-05
16	Department of Parks and Recreation	01-20-05	--
17	Department of Planning	01-20-05	02-16-05
18	Department of Public Works and Environmental Management – Development Services Administration[2]	01-20-05	2-17-05
19	Department of Water Supply	01-20-05	02-14-05
20	Office of Economic Development	01-20-05	01-27-05
21	Police Department	01-20-05	02-02-05

[1] Comments on the EISPN from the State Historic Preservation Division (SHPD) are dated June 28, 2005 and were received on June 30, 2005, thus are included in this Final EIS. SHPD also provided an acceptance letter on the archaeological survey, which is included in Appendix D.

[2] Comments on the EISPN from the Department of Public Works and Environmental Management, while dated Feburary 17, 2005, were not received by the EIS preparers until July 5, 2005, and thus are included in this Final EIS.

AGENCY		EISPN MAIL DATE	COMMENT DATE
Private Companies, Organizations, and Individuals			
22	Coconut Grove	01-20-05	--
23	Maui Electric Company, Ltd.	01-20-05	01-31-05
24	The Bay Villas	01-20-05	--
25	The Ridge at Kapalua	01-20-05	--
26	Verizon Hawaii, Inc.	01-20-05	--

LINDA LINGLE
GOVERNOR OF HAWAII

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

LORRIN W. PANG, M. D., M. P. H.
DISTRICT HEALTH OFFICER

STATE OF HAWAII
DEPARTMENT OF HEALTH
MAUI DISTRICT HEALTH OFFICE
54 HIGH STREET
WAILUKU, MAUI, HAWAII 96793-2102

February 24, 2005

Mr. Tom Schnell, AICP
PBR Hawaii
ASB Tower, Suite 650
1001 Bishop Street
Honolulu, Hawai`i 96813

Dear Mr. Schnell:

Subject: **The Residences at Kapalua Bay**
TMK: (2) 4-2-004: 027

Thank you for the opportunity to comment on the proposed Residences at Kapalua Bay project. The following comments are offered:

1. The noise created during the construction phase of the project may exceed the maximum allowable levels as set forth in Hawaii Administrative Rules (HAR), Chapter 11-46, "Community Noise Control". A noise permit may be required and should be obtained before the commencement of work.

2. HAR, Chapter 11-46, sets maximum allowable sound levels from stationary equipment such as compressors and HVAC equipment. The attenuation of noise from these sources may depend on the location and placement of these types of equipment. This should be taken into consideration during the planning, design, and construction of the building and installation of these types of equipment.

3. National Pollutant Discharge Elimination System (NPDES) permit coverage is required for this project. The Clean Water Branch should be contacted at 808 586-4309.

4. Due to the nature and location of the project, there is a significant potential for fugitive dust emissions during site work preparations. It is recommended that a dust control management plan be developed. Implementation of adequate dust control measures during all phases of the project is warranted. Construction activities must comply with the provisions of HAR, Chapter 11-60.

5. HAR, Chapter 501, "Asbestos Requirements", requires owners or operators of a demolition or renovation activity to thoroughly inspect the affected facility or part of the facility where the demolition or renovation will occur for the presence of asbestos using a certified inspector pursuant to HAR, Chapter 504. The Applicant is required to file with the Noise, Radiation and Indoor Air Quality Branch, Asbestos Demolition/Renovation Notification at least ten (10) working days prior to the demolition of each building (regardless of the presence of asbestos) or the disturbance of regulated asbestos containing materials during renovation activities. All regulated quantities and types of asbestos containing materials would be subject to emission control, proper collection, containerizing, and disposal at a permitted landfill by a licensed asbestos contractor using certified persons. Questions concerning asbestos requirements should be directed to Mr. Thomas Lileikis of the Noise, Radiation and Indoor Air Quality Branch at (808) 586-5800.

Should you have any questions, please call me at 984-8230.

Sincerely,

Herbert S. Matsubayashi
District Environmental Health Program Chief

c: Ryan Churchill
Michael Foley
OEQC

PBR HAWAII

LAND PLANNING
LANDSCAPE ARCHITECTURE
ENVIRONMENTAL STUDIES

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HILO LAGOON CENTER SUITE 310
HILO, HAWAI'I 96720-4262
TEL: (808) 961-3333
FAX: (808) 961-4989
E-MAIL: pbrhilo@lava.net

WAILUKU OFFICE
2123 KAOHU STREET
WAILUKU, HAWAI'I 96793-2204
TEL: (808) 242-2878
FAX: (808) 242-2902
E-MAIL: pbrmaui@lava.net

April 22, 2005

Mr. Herbert S. Matsubayashi
District Environmental Health Program Chief
State of Hawaii
Department of Health
Maui District Health Office
54 High Street
Wailuku, Maui, Hawaii 96793

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE FOR THE RESIDENCES AT KAPALUA BAY, TMK: 4-2-04: PARCELS 27, 28, AND 29

Dear Mr. Matsubayashi:

Thank you for your letter dated February 24, 2005 regarding the Environmental Impact Statement Preparation Notice (EISPN) for The Residences at Kapalua Bay. As the planning consultant for the applicant, Kapalua Bay, LLC, we are responding to your comments.

1. A noise permit, if required, will be obtained prior to the commencement of work. All work will comply with regulations set forth in Hawaii Administrative Rules (HAR), Chapter 11-46, "Community Noise Control". .

2. The location and placement of stationary equipment such as compressors and HVAC equipment will be taken into consideration during the planning, design, and construction of The Residences at Kapalua Bay to mitigate noise impacts.

3. We acknowledge that a National Pollutant Discharge Elimination System (NPDES) permit will be required and the State Department of Health (DOH) Clean Water Branch will be contacted.

4. A dust control management program will be developed along with the implementation of adequate dust control measures during all phases of the project. All construction activities will comply with HAR, Chapter 11-60.

5. In compliance with HAR, Chapters 501 and 504, prior to demolition, a certified inspector will inspect the affected existing facilities for the presence of asbestos. An Asbestos Demolition/Renovation Notification will be filed with the DOH Noise, Radiation and Indoor Air Quality Branch at least ten working days prior to the demolition, regardless of the presence of asbestos. All regulated quantities and types of asbestos containing materials will be handled according to all laws and regulations, including emission control, proper collection, containerizing, and disposal at a permitted landfill by a licensed asbestos contractor using certified persons.

Thank you for reviewing the EISPN. Your comments will be included in the draft environmental impact statement.

Sincerely,

for Tom Schnell, AICP
Associate

cc: Ms. Genevieve Salmonson, Office of Environmental Quality Control
Mr. Michael Foley, County of Maui Planning Department
Mr. Ryan Churchill, Kapalua Bay, LLC

O:\JOB16\1634.18\EISPN\Comment Letter Responses\EISPN\DOH -- MDHO.doc

faxed to foley, schnell, churchill

LINDA LINGLE
GOVERNOR OF HAWAII

GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186
E-mail: oeqc@health.state.hi.us

January 25, 2005

Michael Foley
Maui Planning Department
250 South High St.
Wailuku, HI 96793

Attn: Kivette Caigoy

Dear Mr. Foley:

Subject: Environmental impact statement preparation notice (EISPN)
Residences at Kapalua Bay

We have the following comments:

Community consultation: Sections 1.9 and 8.0 both list agencies and organizations *to be* consulted. Which is the correct list? In addition to the community organizations listed in 8.0, we recommend that you keep the local legislator apprised of the upcoming development. In the draft EIS include a list of agencies and organizations that *were* consulted in the preparation of the EISPN and include copies of all correspondence.

Cumulative impacts: What kinds of development are going on or will be going on surrounding the Kapalua site? The environmental impact statement law requires full disclosure, discussion and analysis of cumulative impacts on all geographically-related projects. Factors should include traffic, noise, air quality, water resources, drainage, and flora and fauna.

Shoreline access: During the construction period, will public access to the shoreline be blocked? If so, for how long?

SMA Boundary: Figure 9 shows the SMA boundary in gray, stretching all the way to Honoapiilani Highway. If this is correct, then adjust the legend which shows that the SMA is indicated in white.

Shoreline setback: Will you be applying for a shoreline setback variance? If so add this to the permits and approvals chart in section 5.3.

Lock-out units: Section 2.2 uses this term. In the draft EIS provide a definition.

Michael Foley
January 25, 2005
Page 2

Significance criteria #11: In section 7.1 your listing of the 11th criteria is incomplete. The correct text is: "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." The EISPN notes that the project will be in the tsunami evacuation zone. In the draft EIS discuss the exposure to this natural hazard more fully and indicate what mitigation measures are planned.

Reclaimed water: Will reclaimed water be used for landscaping or any other non-potable uses in the development?

If you have any questions, call Nancy Heinrich at 586-4185.

Sincerely,

Genevieve Salmonson

GENEVIEVE SALMONSON
Director

c: Tom Schnell
Ryan Churchill, Kapalua Bay, LLC

PBR HAWAII

LAND PLANNING
LANDSCAPE ARCHITECTURE
ENVIRONMENTAL STUDIES

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JAMES LEONARD, AICP
PRINCIPAL
HILO OFFICE

GRANT MURAKAMI, AICP
SENIOR ASSOCIATE

TOM SCHNELL, AICP
ASSOCIATE

RAYMOND T. HIGA, ASLA
ASSOCIATE

KEVIN NISHIKAWA, ASLA
ASSOCIATE

HONOLULU OFFICE
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ASB TOWER, SUITE 650
HONOLULU, HAWAI'I 96813-3484
TEL: (808) 521-5631
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WAILUKU, HAWAI'I 96793-2204
TEL: (808) 242-2878
FAX: (808) 242-2902
E-MAIL: pbrmaui@lava.net

April 22, 2005

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

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE FOR THE RESIDENCES AT KAPALUA BAY, TMK: 4-2-04: PARCELS 27, 28, AND 29

Dear Ms. Salmonson:

Thank you for your letter dated January 25, 2005 regarding the Environmental Impact Statement Preparation Notice (EISPN) for The Residences at Kapalua Bay. As the planning consultant for the applicant, Kapalua Bay, LLC, we are responding to your comments.

1. The DEIS will include an accurate list of agencies and individuals consulted in preparation of the DEIS (along with correspondence), as well as an accurate list of agencies and individuals that received a copy of the EISPN.

2. Proposed and ongoing developments in the Kapalua Resort will be identified in the DEIS. The DEIS will also discuss cumulative impacts.

3. Because of the location of the existing public shoreline path near the Bay Villas property boundary, public assess on this path is not expected to be impacted during construction of The Residences. If this pathway cannot be used by the public during construction because of safety concerns, alternative access will be provided.

4. The legend for the Special Management Area map will be corrected in the DEIS. The Special Management Area does extend to Honoapiilani Highway in this area of Maui.

5. The buildings of the Residences at Kapalua Bay will be set back farther from the shoreline than the existing structures of the Kapalua Bay Hotel and will not be in the shoreline setback area, as required under the new shoreline set back rules of the County, which were not in effect at the time the Kapalua Bay Hotel was built.

   However, we understand that the Planning Department requires a Shoreline Setback Variance (SSV) for all demolitions within the shoreline setback area and therefore will apply for and process the SSV concurrent with other required County of Maui permits and approvals. This information will be included in the DEIS.

6. Lock-out units are units which allow a portion of the unit to be "locked out" to create a separate unit. Lock-out units are not currently planned at the Residences at Kapalua Bay. This will be explained in the DEIS.

7. The Draft EIS will more fully discuss potential natural hazards and proposed mitigation measures.

8. The Residences at Kapalua Bay will use non-potable water for landscape irrigation, however, because the Lahaina Waste Water Treatment Facility is approximately four miles to the south, and there are no reclaimed water lines from the facility to the Residences site, the use of reclaimed water is not feasible.

Thank you for reviewing the EISPN. Your comments will be included in the draft environmental impact statement.

Sincerely,

PBR HAWAII

for Tom Schnell, AICP
Associate

cc: Mr. Michael Foley, County of Maui Planning Department
Mr. Ryan Churchill, Kapalua Bay, LLC.

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LINDA LINGLE
GOVERNOR OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

PETER T. YOUNG
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DEPUTY DIRECTOR - WATER

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KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

February 14, 2005
LD-NAV

KAPALUABAYPBR.RCM

PBR Hawaii
Tom Schnell, AICP, Project Manager
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Dear Mr. Schnell:

Subject: The Residence at Kapalua Bay Environmental Impact Statement Preparation Notice, Lahaina, Island of Maui, Hawaii

Thank you for the opportunity to review and comment on the subject matter.

The Department of Land and Natural Resources' (DLNR) Land Division distributed a copy of the document pertaining to the subject matter to the following DLNR Divisions for their review and comment:

- Division of Forestry and Wildlife
- Engineering Division
- Division of State Parks
- Commission on Water Resource Management
- Office of Conservation and Coastal Lands
- Land-Maui District Land Office

Enclosed please find a copy of the Engineering Division and Commission on Water Resource Management's comments.

Based on the attached responses the Department of Land and Natural Resources has no other comment to offer on the subject matter. If you have any questions, please feel free to contact Nicholas A. Vaccaro of the Land Division Support Services Branch at 1-808-587-0384.

Very truly yours,

WARREN F. WEGESEND JR.
Administrator

C: MDLO

LINDA LINGLE
GOVERNOR OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

PETER T. YOUNG
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05 FEB -1 P 3:32

January 25, 2005

LD/NAV
Suspense Date 2/2/05

KAPALUABAY.CMT

MEMORANDUM:

TO: ✓XXX Division of Forestry & Wildlife
XXX Division of State Parks
XXX Engineering Division
XXX Commission on Water Resource Management
XXX Office of Conservation and Coastal Lands
XXX Land-Maui District Land Office

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: The Residences at Kapalua Bay Environmental Impact Statement Preparation Notice (EISPN)
Location: Lahaina, Island of Maui, Hawaii
TMK: (2) 4-2-004: 27, 28 and 29
Consultant: PBR Hawaii

Please review the EISPN (CD PDF File) pertaining to the subject matter and submit your comment (if any) on Division letterhead signed and dated by the suspense date.

Should you have any questions, please contact Nicholas A. Vaccaro at ext.: 7-0384. If this office does not receive your comments by the suspense date, we will assume there are no comments.

(✓) We have no comments.
( ) Comments attached.

Division: _____
Signed: _____

Date: JAN 27 2005
Print Name: PAUL J. CONRY, ADMINISTRATOR
DIVISION OF FORESTRY AND WILDLIFE

LINDA LINGLE
GOVERNOR OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

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

YVONNE Y. IZU
DEPUTY DIRECTOR - WATER

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KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

January 25, 2005

LD/NAV
Suspense Date 2/2/05
Maui 293
MEMORANDUM:

KAPALUABAY.CMT

TO: XXX Division of Forestry & Wildlife
XXX Division of State Parks
✓XXX Engineering Division
XXX Commission on Water Resource Management
XXX Office of Conservation and Coastal Lands
XXX Land-Maui District Land Office

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: The Residences at Kapalua Bay Environmental Impact Statement Preparation Notice (EISPN)
Location: Lahaina, Island of Maui, Hawaii
TMK: (2) 4-2-004: 27, 28 and 29
Consultant: PBR Hawaii

Please review the EISPN (CD PDF File) pertaining to the subject matter and submit your comment (if any) on Division letterhead signed and dated by the suspense date.

Should you have any questions, please contact Nicholas A. Vaccaro at ext.: 7-0384. If this office does not receive your comments by the suspense date, we will assume there are no comments.

'05 JAN 26 PM03:29 ENGINEERING

( ) We have no comments.

(X) Comments attached.

Division: Engineering

Date: 2/1/05

Signed:

Print Name: ERIC T. HIRANO, CHIEF ENGINEER

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LA/NAV
Ref.: KAPALUABAY

COMMENTS

( ) We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Zone ___.

( ) Please take note that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Zone ___.

(X) Please note that the correct Flood Zone Designations for the project site, according to FIRM Community Panel Number 150003 0138 B (June 1, 1981) are Flood Zones C and A4. The National Flood Insurance Program does not have any regulations for development within Zone C; however, it does regulate development within Zone A4 as indicated in bold letters below.

(X) Please note that the project must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol Tyau-Beam, of the Department of Land and Natural Resources, Engineering Division at (808) 587-0267.

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

( ) Mr. Robert Sumimoto at (808) 523-4254 or Mr. Mario Siu Li at (808) 523-4247 of the City and County of Honolulu, Department of Planning and Permitting.

( ) Mr. Kelly Gomes at (808) 961-8327 (Hilo) or Mr. Kiran Emler at (808) 327-3530 (Kona) of the County of Hawaii, Department of Public Works.

(X) Mr. Francis Cerizo at (808) 270-7771 of the County of Maui, Department of Planning.

( ) Mr. Mario Antonio at (808) 241-6620 of the County of Kauai, Department of Public Works.

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

( ) The applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update.

(X) Additional Comments: According to the latest FIRM Community Panel Number 150003 0138 B dated June 1, 1981, the project site is located in Flood Zones C and A4, not in Flood Zones X and A, as shown on Figure 6, Food Insurance Rate Map. Figure 6 indicates that the source is from the Federal Emergency Management Agency (2000), we are not aware of this 2000 update. Please correct information on page 12, Item 3.4, Natural Hazards and Figure 6 of the Environmental Impact Statement Preparation Notice

Should you have any questions, please call Mr. Andrew Monden of the Planning Branch at 587-0229.

Signed:
ERIC T. HIRANO, CHIEF ENGINEER

Date: 2/1/05

LINDA LINGLE
GOVERNOR OF HAWAII

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05 JAN 27 A8:05
DEPT OF LAND & NATURAL RESOURCES

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

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

YVONNE Y. IZU
DEPUTY DIRECTOR - WATER

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LAND
STATE PARKS

January 25, 2005

LD/NAV
Suspense Date 2/2/05

KAPALUABAY.CMT

MEMORANDUM:

TO: XXX Division of Forestry & Wildlife
✓XXX Division of State Parks
XXX Engineering Division
XXX Commission on Water Resource Management
XXX Office of Conservation and Coastal Lands
XXX Land-Maui District Land Office

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: The Residences at Kapalua Bay Environmental Impact Statement Preparation Notice (EISPN)
Location: Lahaina, Island of Maui, Hawaii
TMK: (2) 4-2-004: 27, 28 and 29
Consultant: PBR Hawaii

Please review the EISPN (CD PDF File) pertaining to the subject matter and submit your comment (if any) on Division letterhead signed and dated by the suspense date.

Should you have any questions, please contact Nicholas A. Vaccaro at ext.: 7-0384. If this office does not receive your comments by the suspense date, we will assume there are no comments.

(X) We have no comments. ( ) Comments attached.

Division: State Parks Signed: _____

Date: Jan. 28, 2005 Print Name: Daniel S. Quinn

LINDA LINGLE
GOVERNOR OF HAWAII

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05 JAN 27 P12:57

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
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POST OFFICE BOX 621
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YVONNE Y. IZU
DEPUTY DIRECTOR - WATER

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KAHOOLAWE ISLAND RESERVE COMMISSION
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STATE PARKS

January 25, 2005

LD/NAV
Suspense Date 2/2/05

KAPALUABAY.CMT

MEMORANDUM:

TO: XXX Division of Forestry & Wildlife
XXX Division of State Parks
XXX Engineering Division
✓XXX Commission on Water Resource Management
XXX Office of Conservation and Coastal Lands
XXX Land-Maui District Land Office

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: The Residences at Kapalua Bay Environmental Impact Statement Preparation Notice (EISPN)
Location: Lahaina, Island of Maui, Hawaii
TMK: (2) 4-2-004: 27, 28 and 29
Consultant: PBR Hawaii

Please review the EISPN (CD PDF File) pertaining to the subject matter and submit your comment (if any) on Division letterhead signed and dated by the suspense date.

Should you have any questions, please contact Nicholas A. Vaccaro at ext.: 7-0384. If this office does not receive your comments by the suspense date, we will assume there are no comments.

( ) We have no comments. ( ) Comments attached.

Division: _____ Signed: _____

Date: _____ Print Name: _____

LINDA LINGLE
GOVERNOR OF HAWAII

PETER T. YOUNG
CHAIRPERSON

MEREDITH J. CHING
CLAYTON W. DELA CRUZ
JAMES A. FRAZIER
CHIYOME L. FUKINO, M.D.
LAWRENCE H. MIIKE, M.D., J.D.
STEPHANIE A. WHALEN

YVONNE Y. IZU
DEPUTY DIRECTOR

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

February 3, 2005

TO: Mr. Warren Wegesend, Jr., Administrator
Land Division

FROM: Yvonne Y. Izu, Deputy Director
Commission on Water Resource Management (CWRM)

SUBJECT: The Residences at Kapalua Bay: EISPN

FILE NO.: KAPALUABAY.CMT

Thank you for the opportunity to review the subject document. Our comments related to water resources are marked below.

In general, the CWRM strongly promotes the efficient use of our water resources through conservation measures and use of alternative non-potable water resources whenever available, feasible, and there are no harmful effects to the ecosystem. Also, the CWRM encourages the protection of water recharge areas, which are important for the maintenance of streams and the replenishment of aquifers.

[X] We recommend coordination with the county government to incorporate this project into the county's Water Use and Development Plan.

[ ] We recommend coordination with the Engineering Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.

[ ] We are concerned about the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.

[ ] A Well Construction Permit and/or a Pump Installation Permit from the Commission would be required before ground water is developed as a source of supply for the project.

[ ] The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit from the Commission would be required prior to use of this source.

[ ] Groundwater withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.

[ ] We are concerned about the potential for degradation of instream uses from development on highly erodible slopes adjacent to streams within or near the project. We recommend that approvals for this project be conditioned upon a review by the corresponding county's Building Department and the developer's acceptance of any resulting requirements related to erosion control.

[ ] If the proposed project includes construction of a stream diversion, the project may require a stream diversion works permit and amend the instream flow standard for the affected stream(s).

[ ] If the proposed project alters the bed and banks of a stream channel, the project may require a stream channel alteration permit.

[X] OTHER:

The EIS should identify the water demand in both potable and non-potable aspects, and the sources anticipated for each. The infrastructure discussion should include an accounting of the total existing use from the proposed sources, as well as the additional demand being projected. The specified sources appear to have ample capacity to provide full service for this project.

If there are any questions, please contact Charley Ice at 587-0251.

LINDA LINGLE
GOVERNOR OF HAWAII

Department of Land and Natural Resources
State of Hawaii

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

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

YVONNE Y. IZU
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KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

January 25, 2005

LD/NAV
Suspense Date 2/2/05

KAPALUABAY.CMT

MEMORANDUM:

TO: XXX Division of Forestry & Wildlife
XXX Division of State Parks
XXX Engineering Division
XXX Commission on Water Resource Management
✓ XXX Office of Conservation and Coastal Lands
XXX Land-Maui District Land Office

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: The Residences at Kapalua Bay Environmental Impact Statement Preparation Notice (EISPN)
Location: Lahaina, Island of Maui, Hawaii
TMK: (2) 4-2-004: 27, 28 and 29
Consultant: PBR Hawaii

Please review the EISPN (CD PDF File) pertaining to the subject matter and submit your comment (if any) on Division letterhead signed and dated by the suspense date.

Should you have any questions, please contact Nicholas A. Vaccaro at ext.: 7-0384. If this office does not receive your comments by the suspense date, we will assume there are no comments.

(✓) We have no comments.
( ) Comments attached.

Division: Land
Date: 1/27/05

Signed: Charlene E. Unoki
Print Name: Charlene E. Unoki

PBR HAWAII

LAND PLANNING
LANDSCAPE ARCHITECTURE
ENVIRONMENTAL STUDIES

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JAMES LEONARD, AICP
PRINCIPAL
HILO OFFICE

GRANT MURAKAMI, AICP
SENIOR ASSOCIATE

TOM SCHNELL, AICP
ASSOCIATE

RAYMOND T. HIGA, ASLA
ASSOCIATE

KEVIN NISHIKAWA, ASLA
ASSOCIATE

HONOLULU OFFICE
1001 BISHOP STREET
ASB TOWER, SUITE 650
HONOLULU, HAWAI'I 96813-3484
TEL: (808) 521-5631
FAX: (808) 523-1402
E-MAIL: sysadmin@pbrhawaii.com

HILO OFFICE
101 AUPUNI STREET
HILO LAGOON CENTER SUITE 310
HILO, HAWAI'I 96720-4262
TEL: (808) 961-3333
FAX: (808) 961-4989
E-MAIL: pbrhilo@lava.net

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April 22, 2005

Mr. Warren F. Wegesend, Jr.
Administrator
Department of Land and Natural Resources
Land Division
P.O. Box 621
Honolulu, Hawaii 96809

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE FOR THE RESIDENCES AT KAPALUA BAY, TMK: 4-2-04: PARCELS 27, 28, AND 29

Dear Mr. Wegesend:

Thank you for your letter dated February 14, 2005 regarding the Environmental Impact Statement Preparation Notice (EISPN) for The Residences at Kapalua Bay. As the planning consultant for the applicant, Kapalua Bay, LLC, we are responding to your comments. We acknowledge that the EISPN was distributed to the following divisions for review and comment:

- Division of Forestry and Wildlife (no comments);
- Engineering Division (see responses to comments below);
- Division of State Parks (no comments);
- Commission on Water Resource Management (see responses to comments below);
- Office of Conservation and Coastal Lands (no comments); and
- Land – Maui District Land Office (no comments).

In response to Engineering Division comments:

1. The Flood Insurance Rate Map (FIRM) in the draft environmental impact statement (DEIS) will be revised to show that the project site is within Zones C and A4. We understand that the National Flood Insurance Program (NFIP) does not regulate development within Zone C, but that it does regulate development within Zone A4.

2. The Residences at Kapalua Bay does not involve any development with a Special Flood Hazard Area (Zone A4), as within the site, this area is primarily the shoreline area and all buildings of the Residences will be setback at least 150 feet from the shoreline. In addition, The Residences at Kapalua Bay will with all County of Maui flood regulations.

3. The DEIS will include a revised FIRM as noted in your letter. In addition the Natural Hazards section of the DEIS will be corrected per your comments.

In response to Commission on Water Resource Management comments:

1. We acknowledge that the CWRM strongly promotes the efficient use of water resources through conservation measures and use of alternative non-potable water resources whenever available, feasible, and there are no harmful effects to the ecosystem. The CWRM also encourages the protection of water recharge areas, which are important for the maintenance of streams and the replenishment of aquifers.

   The DEIS will propose appropriate measures to conserve water resources and mitigate impacts to water recharge areas.

2. As recommended, coordination with the county government will take place to incorporate this project into the county's Water Use and Development Plan

3. The Draft EIS will identify the potable and non-potable water demand and the anticipated sources for each. The total existing use from the proposed sources, as well as the additional demand (if any) compared to the existing hotel, will be discussed in the DEIS.

   We acknowledge your statement that the specified sources appear to have ample capacity to provide full service for this project.

Thank you for reviewing the EISPN. Your comments will be included in the draft environmental impact statement.

Sincerely,

PBR HAWAII

for Tom Schnell, AICP
Associate

cc: Ms. Genevieve Salmonson, Office of Environmental Quality Control
Mr. Michael Foley, County of Maui Department of Planning
Mr. Ryan Churchill, Kapalua Bay, LLC.

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LINDA LINGLE
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RODNEY K. HARAGA
DIRECTOR

Deputy Directors
BRUCE Y. MATSUI
BARRY FUKUNAGA
BRENNON T. MORIOKA
BRIAN H. SEKIGUCHI

IN REPLY REFER TO:

STP 8.1584

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

February 15, 2005

Mr. Tom Schnell, AICP
PBR Hawaii
American Savings Bank Tower, Suite 650
1001 Bishop Street
Honolulu, Hawaii 96813

Dear Mr. Schnell:

Subject: Residences at Kapalua Bay, Environmental Preparation Notice

In reply to your request for our review of the environmental preparation notice for the subject project, we have the following comments:

1. The Preparation Notice states that a traffic study is being prepared as part of the draft environmental impact assessment. This assessment should identify the details of the traffic impacts from the proposed project and identify measures to mitigate these impacts.

2. The traffic study should include analyses of the intersections along Honoapiilani Highway and the roads in the Kapalua area. The traffic scenario should reflect the project at full occupancy, including all lock-off units of the fractional ownerships being occupied.

3. We will defer further comment until the traffic study has been submitted for our review.

We appreciate the courtesy of your notice and for the opportunity to provide our comments.

Very truly yours,

RODNEY K. HARAGA
Director of Transportation

c: Ryan Churchill, Kapalua Bay LLC
Michael Foley, Maui County Planning Department
Genevieve Salmonson, Office of Environmental Quality Control

PBR HAWAII

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April 22, 2005

Mr. Rodney K. Haraga
Director of Transportation
State of Hawaii
Department of Transportation
869 Punchbowl Street
Wailuku, Maui, Hawaii 96813-5097

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE FOR THE RESIDENCES AT KAPALUA BAY, TMK: 4-2-04: PARCELS 27, 28, AND 29

Dear Mr. Haraga:

Thank you for your letter dated February 15, 2005 regarding the Environmental Impact Statement Preparation Notice (EISPN) for The Residences at Kapalua Bay. As the planning consultant for the applicant, Kapalua Bay, LLC, we are responding to your comments.

1. A Traffic Impact Analysis Report (TIAR) has been prepared for the Residences at Kapalua Bay. The TIAR concludes that compared to the existing hotel on the site, The Residences will result in a 48 percent reduction in trips (vehicles entering and existing the site) in the AM peak hour and a 43 percent reduction in trips during the PM peak hour.

   The decrease in traffic generation is a result of the reduction in total units, as well as the trip generating characteristics of the proposed types of uses. With The Residences, the total unit count on the property will be reduced from the existing 196 hotel rooms to a total of 155 resort residential homes and fractional ownership units, resulting in less traffic generation, as traffic generation rates for resort residential uses are less than hotel uses. Based on established trip generation rates, the occupants of the Residences' fractional component are also expected to generate less vehicular trips than typical resort hotel guests.

   Since The Residences at Kapalua Bay will generate less traffic than the existing hotel, no traffic mitigative measures are proposed or warranted.

   The TIAR will be included in the draft environmental impact statement (DEIS) for your review.

2. The TIAR includes an analysis of the intersections along Honoapiilani Highway and the roads in the Kapalua area. Trip generation rates used in the TIAR reflect trip generating characteristics of the proposed types of uses. Please note that lock-out units are not currently proposed.

3. We acknowledge that further comment is being deferred until the TIAR is submitted for your review.

Thank you for reviewing the EISPN. Your comments will be included in the draft environmental impact statement.

Sincerely,

PBR HAWAII

for Tom Schnell, AICP
Associate

cc:
Ms. Genevieve Salmonson, Office of Environmental Quality Control
Mr. Michael Foley, County of Maui Planning Department
Mr. Ryan Churchill, Kapalua Bay, LLC

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STATE OF HAWAI'I
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAI'I 96813

HRD05/1725

February 28, 2005

Thomas Schnell, AICP
PBR Hawaii
1001 Bishop Street
ASB Tower, Suite 650
Honolulu, HI 96813-3484

RE: Request for consultation on the Enviornmental Impact Statement Preparation Notice for The Residences at Kapalua Bay, Kapalua, Maui, 4-2-004: parcels 27, 28 and 29

Dear Thomas Schnell,

The Office of Hawaiian Affairs (OHA) is in receipt of your request for comments on the above project, which would include removal of the existing Kapalua Bay Hotel to prepare for construction of approximately 140-150 homes within 11 buildings, a beach club, a spa, and a bar and grill restaurant. OHA has no comments at this time, but looks forward to reviewing your forthcoming Draft Environmental Impact Statement.

Thank you for the opportunity to comment. If you have further questions, please contact Heidi Guth at 594-1962 or e-mail her at heidig@oha.org.

Sincerely,

Clyde W. Nāmu'o
Administrator

PBR HAWAII

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April 22, 2005

Mr. Clyde W. Namuo
Administrator
State of Hawaii
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawaii 96813

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE FOR THE RESIDENCES AT KAPALUA BAY, TMK: 4-2-04: PARCELS 27, 28, AND 29

Dear Mr. Namuo:

Thank you for your letter dated February 28, 2005 regarding the Environmental Impact Statement Preparation Notice (EISPN) for The Residences at Kapalua Bay. As the planning consultant for the applicant, Kapalua Bay, LLC, we acknowledge that you have no comments to offer at this time and look forward to reviewing the draft environmental impact statement.

Thank you for reviewing the EISPN. Your comments will be included in the draft environmental impact statement.

Sincerely,

PBR HAWAII

for Tom Schnell, AICP
Associate

cc: Ms. Genevieve Salmonson, Office of Environmental Quality Control
Mr. Michael Foley, County of Maui Planning Department
Mr. Ryan Churchill, Kapalua Bay, LLC

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DEPARTMENT OF
HOUSING AND HUMAN CONCERNS
COUNTY OF MAUI

ALAN M. ARAKAWA
Mayor

ALICE L. LEE
Director

HERMAN T. ANDAYA
Deputy Director

200 SOUTH HIGH STREET • WAILUKU, HAWAII 96793 • PHONE (808) 270-7805 • FAX (808) 270-7165

January 25, 2005

Mr. Ryan Churchill
Kapalua Bay, LLC
1000 Kapalua Drive
Kapalua, Hawaii 96761

Dear Mr. Churchill:

SUBJECT: THE RESIDENCES AT KAPALUA BAY

We have reviewed the Environmental Impact Statement Preparation Notice (EISPN) for the subject project and would like to offer the following comments:

1. Please include in the Draft Environmental Impact Statement (DEIS) a detailed description and map(s) showing the location of all public beach rights-of-way and related public parking that will be provided to ensure perpetual public access to the point between Fleming Beach and Namalu Bay, Namalu Bay and Hawea Point.

2. Please include in the DEIS, a detailed chronological description of the affordable/employee housing requirements that were imposed on the Kapalua Bay Hotel and the Ritz Carlton Hotel and the affordable/employee housing units that were provided to satisfy these requirements. Please also include any other pertinent data that should be considered in determining if any affordable housing units should be required pursuant to Section 2.94, Maui County Code (MCC) or the Maui County Administrative Affordable Housing Recommended Guidelines For Land Use Approvals.

3. Please be advised that the provisions of Chapter 2.94, MCC, were adopted in 1992 with the passage of Ordinance No. 2093. Therefore, please explain how the affordable housing activities that occurred prior to the effective date of that ordinance were used to satisfy the requirements of Chapter 2.94, MCC.

4. Please include in the DEIS, additional information regarding the planned demolition and re-construction of the Kapalua Bay Hotel.

Thank you for the opportunity to comment.

Very truly yours,

ALICE L. LEE
Director

ETO:hs

c: Housing Administrator
Tom Schnell, PBR Hawaii
Michael Foley, Department of Planning
Genevieve Salmonson, OEQC

PBR HAWAII

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April 22, 2005

Ms. Alice L. Lee, Director
County of Maui
Department of Housing and Human Concerns
200 South High Street
Wailuku, Maui, Hawaii 96793

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE FOR THE RESIDENCES AT KAPALUA BAY, TMK: 4-2-04: PARCELS 27, 28, AND 29

Dear Ms. Lee:

Thank you for your letter dated January 25, 2005 regarding the Environmental Impact Statement Preparation Notice (EISPN) for The Residences at Kapalua Bay. As the planning consultant for the applicant, Kapalua Bay, LLC, we are responding to your comments.

1. The Draft Environmental Impact Statement (EIS) will contain a detailed description and map showing the location of all public shoreline access paths, related public parking, and other facilities (such as restrooms and showers) within the Kapalua Resort (including access to Kapalua (Fleming's) Beach, Namalu Bay, and Hawea Point).

   The Residences will not impact the existing on-site shoreline access pathway (to Namalu Bay/Hawea Point) or public parking. In addition, The Residences will not impact access to the adjacent Kapalua (Fleming's) Beach, or any other public shoreline access points, related parking, and facilities. Further, a new public coastal trail is planned to run through The Residences site and beyond, providing continuous coastal access (including the point between Kapalua Beach and Hawea Point) within the Kapalua Resort when all segments are completed.

2. A chronological description of the affordable/employee housing requirements that were imposed on the Kapalua Bay Hotel and the Ritz Carlton Hotel and the affordable/ employee units that were provided to satisfy these requirements, is shown in the attached table. This information will be included in the draft EIS. Please note that while the Ritz Carlton Hotel is within the Kapalua Resort, changes to or expansion of the Ritz Carlton is not proposed.

   Regarding the Kapalua Bay Hotel, all entitlements have been approved to proceed with the proposed North Wing expansion, which could add 128 more rooms to the existing hotel for a total of 324 rooms. As approved, there are no additional affordable housing requirements related to the North Wing approvals.

Kapalua Bay LLC has decided not to proceed with the North Wing expansion, and will replace the existing hotel with approximately 155 resort residential homes. This is a substantial reduction in the number of units already existing and approved for the Kapalua Bay Hotel.

3. We acknowledge that Chapter 2.94 (Affordable Housing Policies for Hotel-Related Developments) of the Maui County Code (MCC), was adopted in 1992, after the Kapalua Bay Hotel was constructed. Pursuant to Section 2.94.050, MCC, the requirements of Chapter 2.94 are not applicable to the project.

4. The Draft will contain information regarding the planned demolition and reconstruction of the Kapalua Bay Hotel. A primary goal in the demolition is to recycle or reuse 90 to 95 percent of the materials.

Thank you for reviewing the EISPN. Your comments will be included in the draft environmental impact statement.

Sincerely,

PBR HAWAII

for Tom Schnell, AICP
Associate

Attachment

cc: Ms. Genevieve Salmonson, Office of Environmental Quality Control
Mr. Michael Foley, County of Maui Planning Department
Mr. Ryan Churchill, Kapalua Bay, LLC.

Affordable Housing Requirements for the Kapalua Bay Hotel and the Ritz Carlton Hotel Kapalua

Date	Permit/Approval	Affordable Housing Requirement	Affordable Housing Provided/ Condition Satisfied.
Kapalua Bay Hotel			
1976	Original SMA for hotel	No specific condition	174 affordable SF homes provided in Napilihau
1987	SMA for hotel improvements and North Wing expansion of 128 rooms (Note: the North Wing was never built.)	Final Decision & Order approving the SMA stated: "the initial development of housing at Napilihau far exceeds current County requirements that would be applicable to the Kapalua Bay Hotel." Affordable Housing Program required to assist all new employees hired as a result of improvements to obtain affordable housing.	Affordable Housing program developed.
2002	Time extension of 1987 SMA approval	No additional requirements	Affordable housing program implemented/ coordinator hired.
Ritz Carlton Kapalua			
1990	SMA and Phase II Project District Approval	72 units from the Hale NohoSubdivision plus a minimum of 20 additional employee housing units by the dedication of land to meet a 6 to 1 hotel unit/ affordable housing ratio.	38 affordable SF homes provided in the Honokeana residential subdivision 13.5 acres of land in West Maui donated for the County Hale Noho Subdivision (which contains 72 homes built by the County). The County and MLP executed the agreement for the Hale Noho Subdivision on November 27, 1984. The agreement provided a credit of 72 employee housing units to be applied against future employee housing units required for future MLP developments in West Maui.

ALAN M. ARAKAWA
Mayor

MICHAEL W. FOLEY
Director

WAYNE A. BOTEILHO
Deputy Director

COUNTY OF MAUI
DEPARTMENT OF PLANNING

February 16, 2005

Mr. Tom Schnell, AICP
PBR Hawaii
1001 Bishop Street
ASB Tower, Suite 650
Honolulu, Hawaii 96813

Mr. Ryan Churchill
Kapalua Bay, LLC
1000 Kapalua Drive
Lahaina, Hawaii 96761

Dear Mr. Schnell and Mr. Churchill:

RE: Environmental Impact Statement Preparation Notice (EISPN) for The Residences at Kapalua Bay located at TMK: 4-2-004: 027, 028, and 029, Kapalua, Lahaina, Island of Maui, Hawaii (LTR 2005/0148) (EIS 2005/0001)

The Maui Planning Department (Department) has reviewed the above-referenced document and provides the following comments:

1. Section 5.3, Approvals and Permits - the proposed demolition and the construction of structures within the shoreline setback area requires a Shoreline Setback Variance in accordance with Chapter 203, Shoreline Rules for the Maui Planning Commission. As such, please include a Shoreline Survey as certified by the Board of Land and Natural Resources (BLNR) within the past 12 months; site plan indicating proposed and existing structures and the proximity to the shoreline; delineate flood prone areas, if applicable; topography; and shoreline setback calculations.

2. Note the following typographical errors:

   a. Page 5, Section 2.1.2 – The first paragraph should be corrected to state "**Three** contiguous parcels..."

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   b. Page 18, Section 4.6, Potential Impacts and Mitigative Measures - the first paragraph should be corrected to state "...140 to **150 homes** in a resort residential setting."

3. The list of agencies/individuals to be consulted in Section 1.9 does not correspond to Section 8.0. However, the Department recommends providing copies of the DEIS to all agencies listed in both sections.

4. Discuss the feasability of using reclaimed water for irrigation purposes.

5. Discuss the feasability of providing restroom facilities for the general public accessing the shoreline area.

6. Provide site plans illustrating both the existing and proposed structures and uses.

7. Provide a site plan illustrating both the existing and proposed public accessways to the shoreline and parking lots.

8. Provide a regional location map identifying the Kapalua Resort Residential Communities as discussed in Table 1.0.

9. Based on the construction date of the hotel (1978), discuss potential impacts to air quality from asbestos-containing, lead based paint, and arsenic-containing (canec boards) building materials. If such materials are present, discuss mitigative measures.

Thank you for the opportunity to comment. Please include the Department on the mailing list for the DEIS. Should you require additional clarification, please contact Ms. Kivette Caigoy, Environmental Planner, at 270-7735.

Sincerely,

MICHAEL W. FOLEY
Planning Director

MWF:KAC:do
c: Wayne A. Boteilho, Deputy Planning Director
Kivette Caigoy, Environmental Planner
Ann Cua, Staff Planner
OEQC
EA Project File
General File
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PBR HAWAII

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April 22, 2005

Mr. Michael W. Foley
Planning Director
County of Maui
Department of Planning
250 South High Street
Wailuku, Maui, Hawaii 96793

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE FOR THE RESIDENCES AT KAPALUA BAY, TMK: 4-2-04: PARCELS 27, 28, AND 29

Dear Mr. Foley:

Thank you for your letter dated February 16, 2005 regarding the Environmental Impact Statement Preparation Notice (EISPN) for The Residences at Kapalua Bay. As the planning consultant for the applicant, Kapalua Bay, LLC, we are responding to your comments.

1. The buildings of the Residences at Kapalua Bay will be set back farther from the shoreline than the existing structures of the Kapalua Bay Hotel and will not be in the shoreline setback area, as required under the new shoreline set back rules of the County, which were not in effect at the time the Kapalua Bay Hotel was built.

   However, we understand that the Planning Department requires a Shoreline Setback Variance (SSV) for all demolitions within the shoreline setback area and therefore, will apply for and process the SSV concurrent with other required County of Maui permits and approvals.

2. The typographical errors noted will be corrected in the draft environmental impact statement (DEIS).

3. The DEIS will include an accurate list of agencies and individuals consulted in preparation of the DEIS as well as an accurate list of agencies and individuals that received a copy of the EISPN.

4. The Residences at Kapalua Bay will use non-potable water for landscape irrigation, however, because the Lahaina Waste Water Treatment Facility is approximately four miles to the south, and there are no reclaimed water lines from the facility to the Residences site, the use of reclaimed water is not feasible.

Mr. Michael W. Foley
SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE FOR THE RESIDENCES AT KAPALUA BAY, TMK: 4-2-04: PARCELS 27, 28 AND 29
April 22, 2005
Page 2

5. Kapalua Land Company Ltd., already provides (and maintains) restrooms, showers, and 39 public parking stalls and a public access pathway, south of the adjoining Coconut Grove Condominiums. These facilities facilitate public access to Kapalua (Fleming's) Beach. In addition, a public access pathway and public parking is provided within the Kapalua Bay Hotel property and The Kapalua Resort also provides several other shoreline access points and pathways at various locations along the length of the shoreline within the Resort. The Residences at Kapalua Bay will not impact these existing public shoreline accesses and facilities. This will be discussed in the DEIS.

6. & 7. Site plans illustrating the existing and proposed structures and uses will be included in the Draft EIS. These plans will show public access ways to the shoreline and parking lots.

8. A map identifying the Kapalua Resort Residential Communities shown in Table 1 of the EISPN will be included in the Draft EIS.

6. Potential air quality impacts from lead-based paint and asbestos will be addressed in the DEIS, including mitigative measures. Please note that arsenic-containing (Canec boards) building materials have not been identified at the hotel. Canec boards manufactured after the mid-1960's are not assumed to contain arsenic and are not expected have been used in construction of the Kapalua Bay Hotel, which was built in the mid-1970s.

Thank you for reviewing the EISPN. Your comments will be included in the draft environmental impact statement.

Sincerely,

PBR HAWAII

for Tom Schnell, AICP
Associate

cc: Ms. Genevieve Salmonson, Office of Environmental Quality Control
Mr. Ryan Churchill, Kapalua Bay, LLC

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ALAN M. ARAKAWA
MAYOR

GEORGE Y. TENGAN
Director
JEFFREY T. PEARSON, PE
Deputy Director

DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
200 South High Street
WAILUKU, MAUI, HAWAII 96793
Telephone (808) 270-7816 • Fax (808) 270-7833

February 14, 2005

PBR Hawaii
1001 Bishop Street
ASB Tower, Suite 650
Honolulu HI 96813
Attn: Mr. Tom Schnell, AICP

SUBJECT: The Residences at Kapalua Bay (EISPN)
TMK (2) 4-2-004:027, 028 and 029

Dear Mr. Schnell:

Thank you for the opportunity to provide comments on this project proposal.

The project area is served by a private water company. The application material indicated that current water use on the site as well as projected demand for the proposed project will be included in the draft EIS. Based on statewide system standard guidelines, property this size would use about 425,000 gallons per day. Average daily demand for resorts/hotels in the West Maui area tends to be higher than the standard guidelines.

Conservation

In addition to the water conservation measures mentioned in the document, we encourage the applicant to integrate the following in the project design and construction:

Use brackish and /or reclaimed water sources for dust control and for all non-potable water uses during various phases of construction. Reclaimed water is readily available at the Lahaina Wastewater Reclamation Facility.

Limit Irrigated Turf: Limit irrigated turf to 25% or less of total landscaped area. Low-water use shrubs and ground covers can be equally attractive and require substantially less water that turf.

Look for Opportunities to Conserve Water: A few examples of these are as follows: When clearing driveways, etc. of debris, use a broom instead of a hose. When washing cars, use a hand-operated spray nozzle instead of an open hose. Additionally, check for leaks in faucets and toilet tanks.

Pollution Prevention

In order to protect ground and surface water resources, we recommend that the applicant adopt Best Management Practices (BMPs) designed to minimize infiltration and runoff from demolition, construction and vehicle operations. We ask the applicant to take precautionary measures during demolition and construction to prevent construction materials and debris and eroded soils from entering coastal waters. The following are sample BMPs which should be implemented during building demolition:

a. Storm drain covers or a similarly effective containment device must be placed on all nearby drains to prevent dirty runoff and loose particles from entering the storm drainage system. Covers must be placed at the beginning of the work day and the accumulated materials collected and disposed before removing the covers at the end of the work day. If storm drains are not present, dikes, berms or other methods must be used to protect overland discharge paths off runoff.
b. Street gutters, sidewalks, driveways, and other paved surfaces in the immediate area of the demolition must be swept at the end of each work day to collect and properly dispose of loose debris and garbage.

c. Water should be sprayed throughout the site to help control wind blowing fine materials such as soil, concrete dust, and paint chips. The amount of water must be controlled so that runoff from the site does not occur, yet dust control is achieved.
d. Schedule demolition to take place at a dry time of the year.

Should you have any questions, please call our Water Resources and Planning Division at 270-7199.

Sincerely,

George Y. Tengan
Director

eam
c: applicant - Kapalua Bay, LLC
Maui Planning Commission
Office of Environmental Quality Control

encl: Selected BMP's from "Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters"-EPA

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April 22, 2005

Mr. George Y. Tengan
Director
County of Maui
Department of Water Supply
200 South High Street
Wailuku, Maui, Hawaii 96793

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE FOR THE RESIDENCES AT KAPALUA BAY, TMK: 4-2-04: PARCELS 27, 28, AND 29

Dear Mr. Tengan:

Thank you for your letter dated February 14, 2005 regarding the Environmental Impact Statement Preparation Notice (EISPN) for The Residences at Kapalua Bay. As the planning consultant for the applicant, Kapalua Bay, LLC, we are responding to your comments.

1. The current water use on the site, as well as the project demand for the proposed project will be included in the Draft EIS. We acknowledge your calculations that a property this size would use about 425,000 gallons per day (based on statewide system standard guidelines). Average daily demand for resorts/hotels in West Maui tends to be higher than standard guidelines.

2. Non-potable water will be used for dust control and other uses that do not require potable water during construction. We understand that reclaimed water is available at the Lahaina Wastewater Reclamation Facility, however, use of reclaimed water at the Residences site is not feasible as the Lahaina Wastewater Reclamation Facility is approximately four miles south, and there are no reclaimed water lines from the facility to the Residences site.

3. Please note that The Residences at Kapalua Bay will use non-potable water for landscape irrigation. If practical, irrigated turf will be limited to 25 percent or less of the total landscaped area. Low-water use shrubs and ground covers will be considered for use within landscaped areas.

4. Water conservation measures, including those you mentioned, will be considered.

5. Best Management Practices (BMPs) will be implemented to minimize infiltration and runoff from demolition, construction, and vehicle operations. Precautionary measures will be taken to prevent construction materials and debris and eroded soils from entering coastal waters. Suggested BMPs include the following:

- Storm drain covers or other containment devices must be placed on all nearby drains to prevent dirty runoff and loose particles from entering the storm drainage system. Covers must be placed at the beginning of the work day and accumulated materials must be collected and disposed before removing covers at the end of the work day. If no storm drains are present, dikes, berms, or other methods must be used to protect overland discharge paths from runoff.
- Street gutters, sidewalks, driveways, and other paved surfaces in the immediate demolition area must be swept at the end of each work day to collect and dispose of loose debris and garbage.
- Water should be sprayed throughout the site to help control wind blowing fine materials such as soil, concrete dust, and paint chips. The water must be controlled to prevent runoff from the site and control dust.
- Demolition should be scheduled during a dry time of the year.

Thank you for reviewing the EISPN. Your comments will be included in the draft environmental impact statement.

Sincerely,

PBR HAWAII

for Tom Schnell, AICP
Associate

cc: Ms. Genevieve Salmonson, Office of Environmental Quality Control
Mr. Michael Foley, County of Maui Department of Planning
Mr. Ryan Churchill, Kapalua Bay, LLC

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ALAN M. ARAKAWA
Mayor

LYNN A. S. ARAKI-REGAN
Economic Development Coordinator

OFFICE OF ECONOMIC DEVELOPMENT
COUNTY OF MAUI
200 SOUTH HIGH STREET, 6TH FLOOR, WAILUKU, MAUI, HAWAII 96793, USA
Telephone: (808) 270-7710 • Facsimile: (808) 270-7995 • Email: economic.development@co.maui.hi.us

January 27, 2005

PBR Hawaii
1001 Bishop Street
ASB Tower, Suite 650
Honolulu, HI 96813

Kapalua Bay, LLC
1000 Kapalua Drive
Kapalua, HI 96761

SUBJECT: The Residences at Kapalua Bay

Thank you for giving our office the opportunity to review the Environmental Impact Statement Preparation Notice (EISPN) for the above-referenced project.

Upon review of the EISPN, the County of Maui's Office of Economic Development has no objections and expresses support for the proposed project.

If you have any questions, please do not hesitate to contact our office.

Sincerely yours,

Lynn A.S. Araki-Regan
Economic Development Coordinator

cc: Maui Planning Commission
Office of Environmental Quality Control

PBR HAWAII

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April 22, 2005

Ms. Lynn A.S. Araki-Regan
Economic Development Coordinator
County of Maui
Office of Economic Development
200 South High Street, 6th Floor
Wailuku, Maui, Hawaii 96793

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE FOR THE RESIDENCES AT KAPALUA BAY, TMK: 4-2-04: PARCELS 27, 28, AND 29

Dear Ms. Araki-Regan:

Thank you for your letter dated January 27, 2005 regarding the Environmental Impact Statement Preparation Notice (EISPN) for The Residences at Kapalua Bay. As the planning consultant for the applicant, Kapalua Bay, LLC, we acknowledge that you have no objections to the proposed action and we thank you for your support of the project.

Thank you for reviewing the EISPN. Your comments will be included in the draft environmental impact statement.

Sincerely,

PBR HAWAII

for Tom Schnell, AICP
Associate

cc: Ms. Genevieve Salmonson, Office of Environmental Quality Control
Mr. Michael Foley, County of Maui Planning Department
Mr. Ryan Churchill, Kapalua Bay, LLC

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ALAN M. ARAKAWA
MAYOR

OUR REFERENCE
YOUR REFERENCE

POLICE DEPARTMENT
COUNTY OF MAUI

55 MAHALANI STREET
WAILUKU, HAWAII 96793
(808) 244-6400
FAX (808) 244-6411

THOMAS M. PHILLIPS
CHIEF OF POLICE

KEKUHAUPIO R. AKANA
DEPUTY CHIEF OF POLICE

February 2, 2005

Mr. Tom Schnell, AICP
PBR Hawaii
1001 Bishop Street
ASB Tower, Suite 650
Honolulu, HI 96813-3484

Dear Mr. Schnell:

SUBJECT: The Residences at Kapalua Bay
TMK: 4-2-04:2: parcels 27, 28, and 29

Thank you for your letter of January 20, 2005, requesting comments on the above subject.

We have reviewed the proposed summary and have enclosed our comments and recommendations. Thank you for giving us the opportunity to comment on the proposed project.

Very truly yours,

Assistant Chief Sydney Kikuchi
for: Thomas M. Phillips
Chief of Police

Enclosure

c: Michael Foley, Maui County Planning Department
Office of Environmental Quality Control

COPY

TO : THOMAS PHILLIPS, CHIEF OF POLICE, COUNTY OF MAUI

VIA : CHANNELS 02/01/05

FROM : SCOTT Y. MIGITA, P.O. III, LAHAINA BIKE PATROL

SUBJECT : ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE (EISPN)-THE RESIDENCES AT KAPALUA BAY

Sir, this transmittal is being submitted regarding an Environmental Impact Statement Preparation Notice (EISPN) of a proposed residential condominium and home development prepared by PBR Hawaii for Kapalua Bay, LLC. This project named, The Residences At Kapalua Bay will replace the existing Kapalua Bay Hotel and related facilities on the site. It will contain approximately 140 to 150 homes in a resort residential type setting clustered in approximately eleven buildings on the property. Once development for this project is granted it is expected to take approximately twenty four months to complete. The existing roadways and intersections in the vicinity of the existing site include Lower Honoapiilani Road, Kapalua Bay Drive, and Office Road.

In reference to an impact on traffic, a Traffic Impact Assessment Report (TIAR) is being prepared and will be included in the draft environmental impact statement (EIS). Therefore, an assessment regarding the impact on traffic is pending.

Secondly, regarding the issue of public safety from a police perspective, whenever a new project is developed, there is a question on the impact on police services and manpower. As the development of residential areas continues in the Lahaina district, increased police services are needed to effectively respond to the needs of these areas. The possibility for an increase in police patrol officers would need to be addressed with the implementation of this new development.

Submitted for your information and perusal.

1512
1/28/05 1030

Respectfully Submitted,

Scott Y. MIGITA, E-1122
P.O. III, Bike Patrol Officer
01/27/2005 at 2230 hours

INCREASED RESIDENTIAL UNITS WILL REQUIRE ADDITIONAL PUBLIC SAFETY INFRASTRUCTURE.

1/31/05

PBR HAWAII

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RAYMOND T. HIGA, ASLA
ASSOCIATE

KEVIN NISHIKAWA, ASLA
ASSOCIATE

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April 22, 2005

Mr. Sidney Kikuchi, Assistant Chief
County of Maui
Police Department
55 Mahalani Street
Wailuku, Maui, Hawaii 96793

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE FOR THE RESIDENCES AT KAPALUA BAY, TMK: 4-2-04: PARCELS 27, 28, AND 29

Dear Mr. Kikuchi:

Thank you for your letter dated February 2, 2005 regarding the Environmental Impact Statement Preparation Notice (EISPN) for The Residences at Kapalua Bay. As the planning consultant for the applicant, Kapalua Bay, LLC, we are responding to your comments.

In response to your concern regarding the need for increased police services, please note that The Residences at Kapalua Bay will represent in a reduction of units compared to the existing hotel. Currently, the Kapalua Bay Hotel contains 196 units. The Residences at Kapalua Bay will contain a total of 155 resort residential units, or approximately 21 percent less units. A corresponding reduction in the need for police services may be expected.

In addition, the Kapalua Resort maintains its own 24-hour security service, including security personnel on 24-hour patrol, a dispatcher, and several security vehicles to patrol the area. Kapalua's security force is able to respond to a variety of calls that might otherwise be directed to the Police Department. This information will be included in the draft environmental impact statement (DEIS).

Thank you for reviewing the EISPN. Your comments will be included in the DEIS.

Sincerely,

PBR HAWAII

for Tom Schnell, AICP
Associate

cc: Ms. Genevieve Salmonson, Office of Environmental Quality Control
Mr. Michael Foley, County of Maui Planning Department
Mr. Ryan Churchill, Kapalua Bay, LLC.

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Maui Electric Company, Ltd. • 210 West Kamehameha Avenue • PO Box 398 • Kahului, Maui, HI 96733-6898 • (808) 871-8461

January 31, 2005

Mr. Tom Schnell, AICP
PBR Hawaii
1001 Bishop Street
ASB Tower, Suite 650
Honolulu, HI 96813

Dear Mr. Schnell,

Subject: The Residences at Kapalua Bay –
Environmental Impact Statement Preparation Notice (EISPN)
Lower Honoapiilani Road, Lahaina
TMK: (2) 4-2-004:27, 28, and 29

Thank you for allowing us to comment on the Environmental Impact Statement Preparation Notice (EISPN) for the subject project, which was received on January 21, 2005.

In reviewing our records and the information received, Maui Electric Company (MECO) has no objections to the proposed project at this time.

If you have any questions or concerns, please call Ray Okazaki at 871-2340.

Sincerely,

Neal Shinyama
Manager, Engineering

NS/ro:lh

Cc: Mr. Ryan Churchill - Kapalua Bay, LLC

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April 22, 2005

Mr. Neal Shinyama
Manager
Maui Electric Company, Ltd.
P.O. Box 398
Kahului, Maui, Hawaii 96733-6898

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE FOR THE RESIDENCES AT KAPALUA BAY, TMK: 4-2-04: PARCELS 27, 28, AND 29

Dear Mr. Shinyama:

Thank you for your letter dated January 31, 2005 regarding the Environmental Impact Statement Preparation Notice (EISPN) for The Residences at Kapalua Bay. As the planning consultant for the applicant, Kapalua Bay, LLC, we acknowledge that you have no objections to the proposed project at this time.

Thank you for reviewing the EISPN. Your comments will be included in the draft environmental impact statement.

Sincerely,

PBR HAWAII

for Tom Schnell, AICP
Associate

cc: Ms. Genevieve Salmonson, Office of Environmental Quality Control
Mr. Michael Foley, County of Maui Planning Department
Mr. Ryan Churchill, Kapalua Bay, LLC.

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LINDA LINGLE
GOVERNOR OF HAWAII

PETER T. YOUNG
CHAIRPERSON
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COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA
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DEAN NAKANO
ACTING DEPUTY DIRECTOR - WATER

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BOATING AND OCEAN RECREATION
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FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

JUN 30 2005

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

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

June 28, 2005

Mr. Tom Schnell
PBR Hawaii
1001 Bishop Street
ASB Tower, Suite 650
Honolulu, Hawaii 96813

LOG NO: 2005.1245
DOC NO: 0506CD30

Dear Mr. Schnell:

SUBJECT: Chapter 6E-42 Historic Preservation Review – Environmental Impact Statement Preparation Notice for the Proposed the Residences at Kapalua
Napili 2-3 Ahupua`a, Lahaina District, Island of Maui
TMK: (2) 4-2-004:027, -28, & 029

Thank you for the opportunity to provide comments for the Environmental Impact Statement Preparation Notice for the proposed Residences at Kapalua, which was received by our staff on January 21, 2005. Based on the submitted document, we understand the proposed undertaking consists of the construction of approximately 140-150 homes to be clustered in approximately 11 buildings to be located on the subject properties. The development will also include a beach club, a spa, and a bar and grill restaurant. The existing public shoreline access will be maintained and a coastal trail is planned. We further understand The Residences at Kapalua will replace the existing Kapalua Bay Hotel and related facilities.

Earlier this year Scientific Consultant Services (SCS) conducted an archaeological inventory survey of the proposed project areas. During the survey one historic site was identified (SIHP 50-50-01-5565, a cultural layer interpreted as temporary habitation site). We have reviewed and accepted the report (*An Archaeological Inventory Survey Report on Three contiguous Parcels Measuring Approximately 25.3 Acres in Kapalua, Napili 2-3 Ahupua`a, Lahaina District, Maui Island, Hawai`i [TMK 4-2-04: 27, 28, and 29]*...Monahan 2005) (SHPD DOC NO.: 0505MK22/LOG NO.: 1003). In our acceptance letter we concurred with the following statements made in the report:

1) Site 50-50-01-5565 is significant under Criterion "D" and has the potential to yield information important for understanding prehistory. Mitigation commitments will be determined following additional phases of field work, although we wish to preliminarily state that we believe this site should be passively preserved since it is within the shoreline.

2) Additional backhoe testing, as a mitigation measure, is needed. This will allow better definition of the areas of the subject parcel in which "intact" dune deposits may be present. This will occur following the closure of the existing resort. The additional testing will be submitted as an addendum to the current report, as current use of the area precludes additional testing at this time.

3) Archaeological monitoring will be needed for future development activities including the demolition of the existing hotel facilities, and construction of the new residences. It may be that archaeological monitoring of the demolition may be necessary prior to some of the inventory level testing. The specific scope of work will be developed in consultation with Dr. Melissa Kirkendall (SHPD Maui/Lana`i Archaeologist) prior to undertaking any future phases of work.

Given the above information, we request the opportunity to review all permitted actions associated with the subject property.

If you have any questions, please call Cathleen A. Dagher at 692-8023.

Aloha,

Melanie Chinen, Administrator
State Historic Preservation Division

CD:jen

c: Cultural Res Commission, Planning Dept., 250 S. High Street, Wailuku, HI 9679
Burial Sites Program
Chair, Maui/Lana`i Islands Burial Program

PBR HAWAII

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E-MAIL: pbrmaui@lava.net

July15, 2005

Ms. Melanie Chinen
Administrator
Department of Land and Natural Resources
State Historic Preservation Division
601 Kamokila Boulevard, Room 555
Kapolei, Hawaii 96707

SUBJECT: THE RESIDENCES AT KAPALUA BAY ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE

Dear Ms. Chinen:

Thank you for your comments on the Residences at Kapalua Bay Environmental Impact Statement Preparation Notice (EISPN) dated June 28, 2005 (LOG NO. 2005.1245; DOC NO. 0506CD30). Please note that by the time we received your comments on the EISPN, the Draft Environmental Impact Statement (EIS) had already been prepared and sent out for public comment; therefore, your comments will be included in the Final EIS.

Thank you also for your acceptance of the Residences at Kapalua Bay archaeological survey report dated June 7, 2005 (LOG NO. 2005.1003; DOC NO. 0505MK22).

As the consultant for the applicant, Kapalua Bay LLC, we are responding the comments in your letters.

We note that the State Historic Preservation Division (SHPD) did not provide comments specifically on the Draft EIS, which was sent to your office on May 6, 2005, with the public comment period ending on June 22, 2005. While we seek any additional comments you may have on the Draft EIS, in response to your comments on both the EISPN and the archaeological survey report, in the Final EIS, Section 4.1 (Archaeological and Historic Resources) will be revised as follows:

Potential Impacts and Mitigative Measures

The archaeological survey report recommends no further work for the archaeological site (5565) identified during the survey. The site is located on a rocky point between Fleming Beach and Nāmalu Bay and is within the shoreline setback area and not on the portion of the property proposed for The Residences' buildings. ~~The~~ As recommended by the State Historic Preservation Division (SHPD), the site will be placed in "as is" passive preservation.

Additional backhoe testing will be needed in the area (immediately west (*makai*)) of the main lobby ~~when the hotel building is removed~~ following the closure of the existing resort. The scope of the additional testing will be determined in consultation with the ~~State Historic Preservation Division (~~SHPD~~)~~, Maui archaeologist. Results of this additional testing will guide the preparation of an archaeological monitoring plan.

Given a variety of factors—including the documented presence of undisturbed, natural dune sand throughout much of The Residences property—archaeological monitoring will be conducted ~~for future construction activities. Monitoring will be needed~~ during both the demolition of the current hotel facilities and the construction of The Residences. It may be that archaeological monitoring of the demolition may be necessary prior to some of the inventory level testing. ~~Specifics of the~~

~~archaeological monitoring plan will be contingent upon results of the additional testing, which will be conducted after the existing buildings are removed.~~ The specific scope of the work will be developed in consultation with the SHPD Maui archaeologist. The additional archaeological testing will be submitted as an addendum to the current archaeological inventory survey.

If necessary, based on the additional inventory work and the results of monitoring, an archaeological data recovery program will be conducted.

Kapalua Bay, LLC, and its contractors will comply with all laws and rules regarding the preservation of archaeological and historic sites should any sites be found during demolition and construction. Should historic remains such as artifacts, burials, concentrations of shell or charcoal be encountered, work shall cease immediately in the immediate vicinity of the find and the find shall be protected from further damage. The contractor shall immediately contact the SHPD, which will assess the significance of the find and recommend appropriate mitigation measures, if necessary.

The SHPD has reviewed current archaeological inventory survey report and found the report to be acceptable (Appendix D contains the acceptance letter). ~~has been submitted to the SHPD for review.~~

We would appreciate receiving any additional comments you may have on the Draft EIS. Your previous letters will be included in the Final EIS.

Sincerely,

PBR HAWAII

Tom Schnell, AICP
Associate

cc: Mr. Michael Foley, Maui Planning Department
Mr. Ryan Churchill, Kapalua Bay LLC
Ms. Genevieve Salmonson, Office of Environmental Quality Control

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ALAN M. ARAKAWA
Mayor

MILTON M. ARAKAWA, A.I.C.P.
Director

MICHAEL M. MIYAMOTO
Deputy Director

Telephone: (808) 270-7845
Fax: (808) 270-7955

COUNTY OF MAUI
DEPARTMENT OF PUBLIC WORKS AND ENVIRONMENTAL MANAGEMENT
200 SOUTH HIGH STREET, ROOM 322
WAILUKU, MAUI, HAWAII 96793

RALPH NAGAMINE, L.S., P.E.
Development Services Administration

TRACY TAKAMINE, P.E.
Wastewater Reclamation Division

CARY YAMASHITA, P.E.
Engineering Division

BRIAN HASHIRO, P.E.
Highways Division

Solid Waste Division

February 17, 2005

'05 MAR -1 P3:20
DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

Mr. Tom Schnell, A.I.C.P.
PBR HAWAII
1001 Bishop Street
ASB Tower, Suite 650
Honolulu, Hawaii 96813

Dear Mr. Schnell:

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE - THE RESIDENCES AT KAPALUA BAY
TMK: (2) 4-2-004:027,28,29

We reviewed the subject application and have the following comments

1. The architect and owner are advised that the project is subject to possible tsunami and flood inundation. As such, said project must conform to Ordinance No. 1145, pertaining to flood hazard districts.

2. A verification shall be provided by a Registered Civil Engineer that the grading and runoff water generated by the project will not have an adverse effect on the adjacent and downstream properties.

3. A detailed and final drainage report and a Best Management Practices Plan (BMP) shall be submitted with the grading plans for review and approval prior to issuance of grading permits. The drainage report shall include hydrologic and hydraulic calculations and the schemes for disposal of runoff waters. It must comply with the provisions of the "Rules and Design of Storm Drainage Facilities in the County of Maui" and must provide verification that

the grading and runoff water generated by the project will not have an adverse effect on adjacent and downstream properties. The BMP plan shall show the location and details of structural and non-structural measures to control erosion and sedimentation to the maximum extent practicable.

4. All existing features such as structures, driveways, drainage ways, edge of the pavement, etc. shall be shown on the project plat plan.

5. A site plan and a sight distance report to determine required sight distance and available sight distance at existing and proposed street intersections shall be provided for our review and approval.

6. The applicant shall obtain street name approvals from the Commission on Naming Streets, Parks and Facilities and show street names on the map.

7. The 100-year flood inundation limits shall be shown on the project site plans. Lot geometrics cannot be approved until such data is submitted and reviewed.

8. A detailed, final Traffic Impact Assessment Report for the entire subdivision/development shall be submitted for our review and approval. The report shall also address regional traffic impacts and include assessments from the local community police officer.

9. Preliminary construction plan submittal shall include a completed technical assistance review performed by the Disability and Communication Access Board (DCAB) for compliance with the Americans with Disabilities Act Accessibility Guideline (ADAAG) for all facilities. All structural infeasible assessments shall be the responsibility of the developer and an agreement waiving the County of Maui of any future liability, including redesign and reconstruction for said facility, shall be recorded with the State's Bureau of Conveyances.

10. Section 4.8.4 Solid Waste addresses recycling/disposal.

11. Although wastewater system capacity is currently available as of February 14, 2005, the developer should be informed that wastewater system capacity cannot be ensured until the issuance of the building permit.

12. Provide discussion and calculations (sewer impact study) to substantiate that the existing wastewater system is adequate to serve this project.

13. Wastewater contribution calculations are required before building permit is issued.

14. Developer is not required to pay assessment fees for this area at the current time.

15. Developer is required to fund any necessary off-site improvements to collection system and wastewater pump stations.

16. Review of the project construction plans by our office is required before the building permit is issued.

17. The existing wastewater system shall remain privately owned and maintained. Any new sewer improvements shall be privately owned and maintained.

18. Plans should show the installation of a single service lateral and an advance riser for each lot.

19. The developer shall submit a letter from the owner of the existing sewer system agreeing to the connection. A letter agreeing to use the Kapalua allocation will also be required.

20. Kitchen facilities within the proposed project shall comply with pre-treatment requirements (including grease interceptors, sample boxes, screens etc.).

21. Non-contact cooling water, condensate, etc. should not drain to the wastewater system.

22. Indicate on the plans the ownership of each easement (in favor of which party).

23. Hold-Harmless Agreement should be executed. Signed agreement required before the Wastewater Reclamation Division (WWRD) will give recommendations for final subdivision approval.

24. The subject project shall comply with Section 18.04.470 (Subdivision) of the Maui County Code which states, in part:

    ". . . the construction of four or more dwelling units on a lot, parcel, or site shall be subject to the provisions of this title."

25. The subject project shall comply with Section 16.26.3304 (Improvements to Public Streets) of the Maui County Code.

26. All grading/grubbing work for the subject project shall comply with Chapter 20.08 (Soil Erosion and Sedimentation Control) of the Maui County Code. Best Management Practices shall be implemented to the maximum extent practicable to prevent pollutants including dust and sediment from discharging off the project site.

27. The subject project shall comply with the "Rules for the Design of Storm Drainage Facilities in the County of Maui".

Please call Michael Miyamoto at (808) 270-7845 if you have any questions regarding this letter.

Sincerely,

MILTON M. ARAKAWA, A.I.C.P.
Director

MMA:MMM:da
S:\LUCA\C2M\Res_at_Kapalua_42004027_da.wpd

PBR HAWAII

LAND PLANNING
LANDSCAPE ARCHITECTURE
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July 27, 2005

Mr. Milton Arakawa, Director
County of Maui
Department of Public Works and Environmental Management
200 South High Street
Wailuku, Hawai'i 96793

SUBJECT: THE RESIDENCES AT KAPALUA BAY ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE

Dear Mr. Arakawa:

Thank you for your Department's letter dated February 17, 2005 concerning the Residences at Kapalua Bay Environmental Impact Statement Preparation Notice (EISPN). As the consultant for the applicant, Kapalua Bay, LLC, we appreciate your Department's detailed comments on the EISPN and apologize for not including your letter and our response in the Draft Environmental Impact Statement (EIS). However, your letter and this response will be included in the Final EIS. Many of your concerns were already addressed in the Draft EIS. Five copies of the Draft EIS were sent to the Development Services Administration of your Department on May 6, 2005; therefore, where noted the following responses to your comments can be referenced in the Draft EIS.

1. The Residences at Kapalua Bay will conform to Ordinance No., 1145 pertaining to flood hazard districts. As discussed in Section 3.4 (Natural Hazards) of the Draft EIS, the Flood Zone Designations for The Residences at Kapalua Bay site are Flood Zones C and A4. The majority of The Residences site is within Zone C. Limited areas of The Residences site located directly adjacent to the ocean are located in Zone A4. Because the buildings of The Residences will be located in an area of minimal flooding (Zone C), impacts from flooding are not expected. No buildings or improvements will be within Zone A4, which is primarily the shoreline area. Relative to the existing Kapalua Bay Hotel and facilities, The Residences will be set back further from the shoreline, thereby reducing risks associated with hurricanes, tsunamis, and floods.

2. When final plans are prepared, verification will be provided from a Registered Civil Engineer that grading and runoff water generated by The Residences will not have an adverse effect on the adjacent and downstream properties.

3. A detailed and final drainage report and Best Management Practices Plan, meeting all County of Maui requirements, will be submitted with The Residences' grading plans. We acknowledge that these must be reviewed and approved prior to the issuance of grading permits.

4. A plot plan (11x17 size) for The Residences showing all existing features such as structures, driveways, drainage ways, etc., is provided in the Special Management Area (SMA) Use Permit application. Five copies of the SMA Use Permit application were sent to the Development Services Administration of your department on June 22, 2005. Full size plot plans will be provided to upon request.

5. Please note that no new entrances from Lower Honoapiilani Road are proposed for The Residences. The existing entrances to the Kapalua Bay Hotel (Bay Dive and an access to the south) will be retained to provide access to The Residences.

6. No new streets are proposed for The Residences at Kapalua Bay.

7. Final site plans provided to your department will include the 100-year flood inundation limits. We understand that lot geometrics cannot be approved until such data is submitted and reviewed.

8. The Traffic Impact Assessment Report (TIAR) for the Residences is included in the Draft EIS as Appendix F and discussed in Section 4.4 (Transportation). The TIAR addresses regional traffic impacts. The traffic engineer contacted Officer Scott Migita, who requested that we send a formal letter to the Chief of Police. We have not received a response to date. However, the Police Department did respond to the Draft EIS and stated: "minimal impact on traffic in this area is anticipated."

9. The preliminary construction plan submittal will include a completed technical assistance review performed by the Disability and Communication Access Board for compliance with the American with Disabilities Act Accessibility Guideline for all facilities. All structural infeasible assessments will be the responsibility of the developer and an agreement waiving the County of Maui of any future liability, including redesign and reconstruction for the facility, will be recorded with the State's Bureau of Conveyances.

10. Section 4.10 (Solid Waste) of the Draft EIS addresses recycling/disposal during construction and post construction operations. Section 4.11 (Hotel Demolition and Recycling) of the Draft EIS addresses hotel demolition and recycling. Note that the goal is to recycle 90 to 95 percent of the materials from the hotel.

11. Regarding wastewater system capacity, Section 4.9.4 (Wastewater System) of the Draft EIS discuses existing and proposed wastewater systems. The existing average sewer volumes from the Kapalua Bay Hotel and associated uses are estimated to be 68,600 gpd, based on County guidelines for wastewater contribution. The projected average sewer volume for The Residences is estimated to be 61,425 gpd, based on County guidelines for wastewater contribution. This represents a decrease of 10 percent compared to the existing conditions.

    In addition when the Lahaina Wastewater Reclamation Facility was constructed, Kapalua Land Company, Ltd., a subsidiary of Maui Land & Pineapple Company, Inc., paid for an

additional allocation of approximately 219,800 gpd in the new facility. According to records, 185,340 gpd of this allocation, or approximately 84 percent of the total, is currently unused.

12. Detailed wastewater calculations will be provided when detailed architectural and engineering plans are finalized. As noted above, the Residences are projected to decrease wastewater flows by 10 percent over existing conditions with the hotel and Maui Land & Pineapple Company, Inc., has paid for wastewater allocations when the Lahaina Wastewater Reclamation Facility was constructed.

13. We acknowledge that wastewater contribution calculations are required before building permits are issued.

14. We acknowledge that Kapalua Bay, LLC is not required to pay assessment fees for this area at the current time. Please also note responses to 11 and 12 above.

15. As wastewater flows are projected to decease, it is anticipated that off-site improvements to collection system and wastewater pump stations will not be required.

16. We acknowledge that review of the project construction plans by your office is required before the building permit is issued.

17. The existing wastewater system within the Kapalua Resort will remain privately owned and maintained, and any new sewer improvements within the Resort system will be privately owned and maintained.

18. Building plans will show the installation of a single service lateral and an advance riser for each lot as appropriate. Please note that The Residences are proposed as condominium and fractional ownership.

19. Kapalua Bay, LLC will submit a letter from Maui Land & Pineapple Company, Inc., the owner of the existing sewer system, agreeing to the connection, as well as a letter agreeing to use the Kapalua allocation.

20. Kitchen facilities within The Residences will comply with pre-treatment requirements (including grease interceptors, sample boxes, screens, etc.).

21. Non-contact cooling water, condensate, etc., will not drain to the wastewater system.

22. At the appropriate time detailed plans showing the ownership of each easement will be provided to your department.

23. Kapalua Bay, LLC will execute a Hold-Harmless Agreement. We acknowledge that a signed agreement is required before the County Wastewater Reclamation Division will give recommendations for final subdivision approval.

24. Please note that The Residences are proposed as condominium and fractional ownership. To the extent applicable, The Residences will comply with Title 18, Subdivisions, of the Maui County Code.

25. Please note that the primary road bordering The Residences is Lower Honoapiilani Road. The section of Lower Honoapiilani Road within the Kapalua Resort is privately owned and maintained. To the extent applicable, The Residences will comply with Section 16.26.3304 (Improvements to Public Streets) of the Maui County Code.

26. All grading/grubbing work for the Residences will comply with Chapter 20.08 (Soil Erosion and Sedimentation Control) of the Maui County Code. Best Management Practices will be implemented to prevent pollutants including dust and sediment from discharging off the project site.

27. The Residences will comply with the "Rules for the Design of Storm Drainage Facilities in the County of Maui."

Thank you reviewing the EISPN. Again, we apologize for not including your letter and our response in the Draft EIS. We note that we also received your comments on the Draft EIS in a letter dated July 12, 2005. Our responses to those comments will be sent separately.

Thank you again for reviewing the EISPN. Your letter will be included in the Final EIS.

Sincerely,

PBR HAWAII

Tom Schnell, AICP
Associate

cc: Mr. Michael Foley, County of Maui Planning Department
Ms. Genevieve Salmonson, Office of Environmental Quality Control
Mr. Ryan Churchill, Kapalua Bay, LLC

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12

Comments on the Draft Environmental Impact Statements & Responses

12.0 COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT AND RESPONSES

The Draft Environmental Impact Statement (EIS) was sent to the following agencies, organizations, and individuals. The public comment period for the Draft EIS was from May 6, 2005 to June 22, 2005. Where indicated, the agency, organization, or individual submitted comments.

AGENCY		DRAFT EIS MAIL DATE	COMMENT DATE
State			
1	Department of Business Economic Development and Tourism	05-06-05	06-09-05
2	Department of Business Economic Development and Tourism – Strategic Industries Division	05-06-05	05-20-05
3	Department of Business Economic Development and Tourism – Office of Planning, Land Use Division	05-06-05	
4	Department of Agriculture		
5	Department of Health – Environmental Planning Office	05-06-05	
6	Department of Health – Safe Drinking Water Branch	05-06-05	05-17-05
7	Department of Health – Clean Water Branch	05-06-05	05-16-05
8	Department of Health – Wastewater Branch	05-06-05	05-23-05
9	Department of Health – Maui District Health Office	05-06-05	05-19-05
10	Department of Health – Office of Environmental Quality Control	05-06-05	06-13-05
11	Department of Accounting & General Services	05-06-05	06-24-05
12	Department of Land and Natural Resources	05-06-05	
13	Department of Land and Natural Resources – State Historic Preservation Division	05-06-05	
14	Department of Transportation	05-06-05	
15	Office of Hawaiian Affairs	05-06-05	05-26-05
16	Department of Hawaiian Homelands	05-06-05	
17	Department of Defense	05-06-05	
18	UH Environmental Center	05-06-05	
19	UH Water Resources Research Center	05-06-05	
Federal			
20	US Fish & Wildlife Service	05-06-05	
21	US Natural Resource Conservation Service – Wailuku Field Office	05-06-05	
22	US Army Corps of Engineers	05-06-05	
County of Maui			
23	Civil Defense Agency	05-06-05	
24	Department of Fire Control & Public Safety	05-06-05	
25	Department of Housing and Human Concerns	05-06-05	
26	Department of Parks & Recreation	05-06-05	05-20-05
27	Department of Planning/Maui Planning Commission	05-06-05	06-21-05

	AGENCY	DRAFT EIS MAIL DATE	COMMENT DATE
28	Department of Public Works and Environmental Management – Development Services Administration	05-06-05	07-12-05
29	Department of Water Supply	05-06-05	06-21-05
30	Office of Economic Development	05-06-05	
31	Police Department	05-06-05	05-19-05
32	Department of Fire & Public Safety[1]		06-28-05
33	Maui County Cultural Resources Commission		06-03-05
34	County Councilmember JoAnn Johnson	05-06-05	
35	County Councilmember Michelle Anderson	05-26-05	
Libraries			
36	Lahaina Public Library	05-06-05	
37	State Main Library	05-06-05	
38	DBEDT Library	05-06-05	
39	Regional Libraries (Pearl City, Kaneohe, Kaimuki, Lihue, Kahului, & Hilo)	05-06-05	
40	UH Hamilton Library	05-06-05	
41	Legislative Reference Bureau	05-06-05	
42	Maui Community College Library	05-06-05	
Private Companies, Organizations, and Individuals			
43	Coconut Grove	05-06-05	
44	Maui Electric Company, Ltd.	05-06-05	05-11-05
45	The Bay Villas	05-06-05	
46	The Ridge at Kapalua	05-06-05	
47	Kapalua Bay Hotel	05-06-05	
48	Na Kapuna O Maui	05-06-05	
49	Honolulu Advertiser	05-06-05	
50	Honolulu Star Bulletin	05-06-05	
51	Maui News	05-06-05	

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[1] Comments were made by the Department of Fire & Public Safety at a June 23, 2005 meeting with the project's engineer and architect. Meeting memo is dated June 28, 2005.

DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM

LINDA LINGLE
GOVERNOR
THEODORE E. LIU
DIRECTOR
MARK K. ANDERSON
DEPUTY DIRECTOR

No. 1 Capitol District Building, 250 South Hotel Street, 5th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804
Web site: www.hawaii.gov/dbedt

Telephone: (808) 586-2355
Fax: (808) 586-2377

JUN 10 2005

Ref. No. P-10972

June 9, 2005

Mr. Tom Schnell, AICP
PBR HAWAII
1001 Bishop Street
ASB Tower, Suite 650
Honolulu, Hawaii 96813

Dear Mr. Schnell:

Subject: Draft Environmental Impact Statement (DEIS)
The Residences at Kapalua Bay (TMK: 4-2-04: 27, 28, and 29)
West Maui, Island of Maui

We have reviewed the Draft Environmental Impact Statement (DEIS) for the proposed Residences at Kapalua Bay. The DEIS addresses concerns related to the demolition, clearing, and construction of buildings within the shoreline setback area which is part of the existing Urban District. We have no further comments to offer at this time.

Thank you for providing us the opportunity to review and comment on the project. If you have any questions, please contact Judith Henry at 587-2803.

Sincerely,

Laura Thielen
Director

c: Anthony Ching, Land Use Commission

PBR HAWAII

LAND PLANNING
LANDSCAPE ARCHITECTURE
ENVIRONMENTAL STUDIES

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TOM SCHNELL, AICP
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RAYMOND T. HIGA, ASLA
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E-MAIL: pbrmaui@lava.net

July 15, 2005

Ms. Laura Thielen
Department of Business, Economic Development & Tourism
P.O. Box 2359
Honolulu, Hawaii 96804

SUBJECT: THE RESIDENCES AT KAPALUA BAY
DRAFT ENVIRONMENTAL IMPACT STATEMENT

Dear Ms. Thielen:

Thank you for your letter dated June 9, 2005 (Ref No. P-10972). As the consultant for the applicant, Kapalua Bay LLC, we acknowledge that you have no further comments to offer at this time.

Thank you for reviewing the Draft EIS. Your letter will be included in the Final EIS.

Sincerely,

PBR HAWAII

Tom Schnell, AICP
Associate

cc: Mr. Michael Foley, Maui Planning Department
Mr. Ryan Churchill, Kapalua Bay LLC
Ms. Genevieve Salmonson, Office of Environmental Quality Control

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LINDA LINGLE
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THEODORE E. LIU
DIRECTOR
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DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM

Strategic Industries Division
235 South Beretania Street, Leiopapa A Kamehameha Bldg., 5th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804
Web site: www.hawaii.gov/dbedt/ert
Telephone: (808) 587-3807
Fax: (808) 587-3820

May 20, 2005

PBR Hawaii
ASB tower, Suite 650
1001 Bishop Street
Honolulu, Hawaii 96813
Attn: Tom Schnell

Dear Mr. Schnell

Re: Draft Environmental Impact Statement (DEIS)
The Residences at Kapalua Bay, Maui
Tax Map Key: 4-2-004: parcels 27, 28, and 29

In response to your May 6, 2005, notice, thank you for the opportunity to provide comments on the DEIS for The Residences at Kapalua Bay. We note that this is a 155 unit residential resort development that will replace the Kapalua Bay Hotel. We also note that you are including selected energy efficient design and site development practices from the *Guidelines for Sustainable Building Design in Hawai'i: A Planner's Checklist* and that other informational materials have been provided to your company by our office. The mandate for consideration of energy efficiency is found in Chapter 344, HRS ("State Environmental Policy") and Chapter 226 ("Hawaii State Planning Act"). In particular, we would like to call your attention to HRS 226 18(c) (4) which includes a State objective of promoting all cost-effective energy conservation through adoption of energy-efficient practices and technologies.

Other references which are available include the *Hawaii Commercial Building Guidelines for Energy Efficiency* at http://www.archenergy.com/library/general/hawaiigl/ and the sustainability guidelines at http://www.hawaii.gov/dbedt/ert/rebuild/pdfs/momisustainable.pdf.

If you need clarification of any of the above, please do not hesitate to contact me.

Sincerely,

Maurice H. Kaya
Chief Technology Officer

C: Kapalua Bay, LLC
OEQC
Maui Planning Commission

PBR HAWAII

LAND PLANNING
LANDSCAPE ARCHITECTURE
ENVIRONMENTAL STUDIES

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2123 KAOHU STREET
WAILUKU, HAWAI'I 96793-2204
TEL: (808) 242-2878
FAX: (808) 242-2902
E-MAIL: pbrmaui@lava.net

July 15, 2005

Mr. Maurice H. Kaya
Department of Business, Economic Development & Tourism
Strategic Industries Division
235 South Beretania Street
Leiopapa A Kamehameha Bldg., 5th Floor
Honolulu, Hawaii 96813

SUBJECT: THE RESIDENCES AT KAPALUA BAY
DRAFT ENVIRONMENTAL IMPACT STATEMENT

Dear Mr. Kaya:

Thank you for your letter dated May 20, 2005. As the consultant for the applicant, Kapalua Bay LLC, we are responding to your concerns.

In accordance with the mandate for consideration of energy efficiency found in Chapter 344, Hawaii Revised Statutes (HRS) and Section 226-18(c)(4)(C), HRS, The Residences at Kapalua Bay will incorporate energy-efficient practices and technologies. As stated in Section 4.9.5 (Electrical and Communication Systems) of the Draft EIS, "Design standards will specify low-impact lighting and will encourage energy-efficient building design and site development practices." Further energy-saving methods and technologies to be considered are also listed in Section 4.9.5 of the Draft EIS.

Thank you for reviewing the Draft EIS. Your letter will be included in the Final EIS.

Sincerely,

PBR HAWAII

Tom Schnell, AICP
Associate

cc: Mr. Michael Foley, Maui Planning Department
Mr. Ryan Churchill, Kapalua Bay LLC
Ms. Genevieve Salmonson, Office of Environmental Quality Control

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LINDA LINGLE
GOVERNOR OF HAWAII

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

STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O.BOX 3378
HONOLULU, HAWAII 96801-3378

In reply, please refer to:
EMD/SDWB

May 17, 2005

Mr. Tom Schnell
PBR Hawaii
ASB Tower, Suite 650
1001 Bishop Street
Honolulu, HI 96813

Dear Mr. Schnell:

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT
THE RESIDENCES AT KAPALUA BAY

Thank you for the opportunity to comment on the above project.

Safe Drinking Water Branch

The Safe Drinking Water Branch administers programs in the areas of: 1) public water systems; 2) underground injection control; and 3) groundwater protection. Our comments on projects are as follows.

Public Water Systems

- The project will have a dual water systems or the use of a non-potable water system to meet irrigation or other needs. These two systems must be carefully designed and operated to prevent cross-connection of these systems and prevent the possibility of backflow of water from the non-potable system to the potable system. The two systems must be clearly labeled and physically separated by air gaps or reduced pressure principle backflow prevention devices to avoid contaminating the potable water supply. In addition backflow devices must be tested periodically to assure their proper operation. Further, all non-potable spigots and irrigated areas should be clearly labeled with warning signs to prevent the inadvertent consumption on non-potable water. Compliance with Hawaii Administrative Rules, Title 11, Chapter 11-21 titled Cross-Connection and Backflow Control is also required.

- The existing population served by the Kapalua Water System is 4150 persons which requires a minimum of four samples, where the populations is 4901 persons served, the number of microbiological samples shall increase to five samples per month.

Underground Injection Control (UIC)

- If injection wells all used for the subsurface disposal of wastewater, sewage effluent, or surface runoff are subject to environmental regulation and permitting under Hawai`i Administrative Rules, Title 11, Chapter 11-23, titled Underground Injection Control (UIC). The Department of Health's approval must be first obtained before any injection well construction commences. A UIC permit must be issued before any injection well operation occurs.

- Authorization to use an injection well is granted when a UIC permit is issued to the injection well facility. The UIC permit contains discharge and operation limitations, monitoring and reporting requirements, and other facility management and operational conditions. A complete UIC permit application form is needed to apply for a UIC permit.

- A UIC permit can have a valid duration of up to five years. Permit renewal is needed to keep an expiring permit valid for another term.

For further information about the Public Water System or UIC permit, please contact the Safe Drinking Water Branch, at 586-4258.

Sincerely,

William Wong

WILLIAM WONG, P.E., CHIEF
Safe Drinking Water Branch
Environmental Management Division

WW:slm

PBR HAWAII

LAND PLANNING
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July 15, 2005

Mr. William Wong, P.E., Chief
State of Hawai'i
Department of Health EMD/SDWB
Safe Drinking Water Branch
Environmental Management Division
P.O. Box 3378
Honolulu, Hawai'i 96801-3378

SUBJECT: THE RESIDENCES AT KAPALUA BAY
DRAFT ENVIRONMENTAL IMPACT STATEMENT

Dear Mr. Wong:

Thank you for your letter dated May 17, 2005. As the consultant for the applicant, Kapalua Bay LLC, we are responding to your comments.

Public Water Systems

1. In response to your comments regarding the dual potable/non-potable water system, in the Final EIS Section 4.9.3 (Water System) will be revised to include the following:

   The non-potable water system will be carefully designed and operated to prevent cross-connection of the potable and non-potable water systems and backflow of water from the non-potable water system to the potable water system. The two water systems will be clearly labeled and physically separated. In addition, backflow devices will be periodically tested to assure their proper operation. All non-potable spigots and irrigated areas will be clearly labeled with warning signs to prevent inadvertent consumption of non-potable water. The Residences will comply with Hawaii Administrative Rules, Title 11, Chapter 11-21, "Cross-Connection and Backflow Control."

2. We understand that the existing population served by the Kapalua Water System requires a minimum of four microbiological samples per month. Should the population increase to 4,901 people served, the requirement will increase to five samples per month.

Underground Injection Control (UIC)

No injection wells are planned to be used for the subsurface disposal of wastewater, sewage effluent, or surface runoff. An on-site sewer collection system will be built within the Residences at Kapalua Bay. The system will consist of a gravity sewer system and sewer pump stations that will connect to a new sewer line located along the mauka side of Honoapi'ilani Highway. The sewer line will continue south and connect to the Lahaina Wastewater Reclamation Plant.

Thank you for reviewing the Draft EIS. Your letter will be included in the Final EIS.

Sincerely,

PBR HAWAII

Tom Schnell, AICP
Associate

cc: Mr. Michael Foley, Maui Planning Department
Mr. Ryan Churchill, Kapalua Bay LLC
Ms. Genevieve Salmonson, Office of Environmental Quality Control

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LINDA LINGLE
GOVERNOR OF HAWAII

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

STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. BOX 3378
HONOLULU, HAWAII 96801-3378

In reply, please refer to:
EMD / CWB

05065PKP.05

May 16, 2005

Mr. Tom Schnell, AICP
PBR Hawaii
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Dear Mr. Schnell:

Subject: Draft Environmental Impact Statement for The Residences at Kapalua Bay

The Department of Health (DOH), Clean Water Branch (CWB), has reviewed the subject application and offers the following comments:

1. The Army Corps of Engineers should be contacted at 438-9258 to identify whether a Federal license or permit (including a Department of Army permit) is required for this project. Pursuant to Section 401(a)(1) of the Federal Water Pollution Control Act (commonly known as the "Clean Water Act"), a Section 401 Water Quality Certification is required for "[a]ny applicant for Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters..."

2. A National Pollutant Discharge Elimination System (NPDES) general permit coverage is required for the following activities:

   a. Storm water associated with industrial activities, as defined in Title 40, Code of Federal Regulations, Sections 122.26(b)(14)(i) through 122.26(b)(14)(ix) and 122.26(b)(14)(xi).

   b. Construction activities, including clearing, grading, and excavation, that result in the disturbance of equal to or greater than one (1) acre of total land area. The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale. **An NPDES permit is required before the commencement of the construction activities.**

   c. Discharges of treated effluent from leaking underground storage tank remedial activities.

   d. Discharges of once through cooling water less than one (1) million gallons per day.

   e. Discharges of hydrotesting water.

   f. Discharges of construction dewatering effluent.

   g. Discharges of treated effluent from petroleum bulk stations and terminals.

   h. Discharges of treated effluent from well drilling activities.

   i. Discharges of treated effluent from recycled water distribution systems.

   j. Discharges of storm water from a small municipal separate storm sewer system.

   k. Discharges of circulation water from decorative ponds or tanks.

   The CWB requires that a Notice of Intent (NOI) to be covered by an NPDES general permit for any of the above activities be submitted at least 30 days before the commencement of the respective activities. The NOI forms may be picked up at our office or downloaded from our website at: http://www.hawaii.gov/health/environmental/water/cleanwater/index.html

3. The applicant may be required to apply for an individual NPDES permit if there is any type of activity in which wastewater is discharged from the project into State waters and/or coverage of the discharge(s) under the NPDES general permit(s) is not permissible (i.e. NPDES general permits do not cover discharges into Class 1 or Class AA State waters). An application for the NPDES permit is to be submitted at least 180 days before the commencement of the respective activities. The NPDES application forms may also be picked up at our office or downloaded from our website at: http://www.hawaii.gov/health/environmental/water/cleanwater/index.html

4. Hawaii Administrative Rules, Section 11-55-38, also requires the applicant to either submit a copy of the new NOI or NPDES permit application to the State Department of Land and Natural Resources, State Historic Preservation Division (SHPD), or demonstrate to the satisfaction of the DOH that the project, activity, or site covered by the NOI or application has been or is being reviewed by SHPD. Please submit a copy of the request for review by SHPD or SHPD's determination letter for the project.

If you have any questions, please contact Ms. Kris Poentis of the Engineering Section, CWB, at 586-4309.

Sincerely,

for Alec Wong

DENIS R. LAU, P.E., CHIEF
Clean Water Branch

KP:bt

c: Mr. Ryan Churchill, Kapalua Bay, LLC
Mr. Michael Foley, Maui Planning Commission
OEQC

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July 15, 2005

Mr. Denis R. Lau, P.E., Chief
State of Hawaii
Department of Health
Clean Water Branch
P.O. Box 3378
Honolulu, HI 96801-3378

SUBJECT: THE RESIDENCES AT KAPALUA BAY
DRAFT ENVIRONMENTAL IMPACT STATEMENT

Dear Mr. Lau:

Thank you for your letter dated May 16, 2005 (your reference: EMD/CWB 05065PKP.05). As the consultant for the applicant, Kapalua Bay LLC, we are responding to your comments.

1. The Army Corps of Engineers will be contacted to identify if a Federal license or permit (including a Department of Army Permit) is required for The Residences at Kapalua Bay.

2. A National Pollutant Discharge Elimination System (NPDES) permit is required. The need for this permit is stated in the Draft EIS in Section 1.3.4 (Required Permits and Approvals) and Section 5.3 (Approvals and Permits).

   At the appropriate time the Clean Water Branch will be contacted, and a Notice of Intent will be submitted at least 30 days before the commencement of activities requiring the NPDES permit.

3. If it is determined to be required, an individual NPDES permit will be obtained. We understand that an application for an individual NPDES permit must be submitted at least 180 days before commencement of activities.

4. The State Historic Preservation (SHPD) has accepted archaeological inventory survey report prepared for The Residences at Kapalua Bay site. A copy of SHPD determination/acceptance letter is attached.

Thank you for reviewing the Draft EIS. Your letter will be included in the Final EIS.

Sincerely,

PBR HAWAII

Tom Schnell, AICP
Associate

Attachment

cc: Mr. Michael Foley, County of Maui Planning Department
Ms. Genevieve Salmonson, Office of Environmental Quality Control
Mr. Ryan Churchill, Kapalua Bay LLC

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LINDA LINGLE
GOVERNOR OF HAWAII

(527)

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

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

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

ROBERT K. MASUDA
DEPUTY DIRECTOR - LAND

DEAN NAKANO
DEPUTY DIRECTOR - WATER

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

June 7, 2005

Michael Dega, Ph.D.
Scientific Consultant Services
711 Kapiolani Blvd. Suite 975
Honolulu, Hawaii 96813

LOG NO: 2005.1003
DOC NO: 0505MK22

Dear Dr. Dega:

SUBJECT: Historic Preservation Review - 6E-42 - Archaeological Inventory Survey Three Contiguous Parcels Measuring Approximately 25.3 Acres in Kapalua Napili 2-3 Ahupua'a, Lahaina District, Maui Island TMK (2) 4-2-04: 27, 28, and 29

Thank you for the opportunity to review this report which our staff received on March 18, 2005 (Monahan 2005, *An Archaeological Inventory Survey Report on Three contiguous Parcels Measuring Approximately 25.3 Acres in Kapalua, Napili 2-3 Ahupua'a, Lahaina District, Maui Island, Hawai'i [TMK 4-2-04: 27, 28, and 29]*...Scientific Consultant Services, Inc., ms). Initial consultation regarding the proposed scope of work for this project, were held between Dr. Melissa Kirkendall (Maui SHPD), Dr. Chris Monahan (SCS), and Mr. Ryan Churchhill (Kapalua Land Company). It was understood from the outset, that there would most likely be multiple phases of work given the constraints of conducting an archaeological inventory survey in an active resort environment.

The background section acceptably establishes the ahupua'a settlement pattern and predicts the likely site pattern in the project area. The historical information provided summarizes the history of the post-contact period land uses. The summary of previous archaeological work in the area provides a baseline for the current work. The project area consists of a portion of former dune deposit and a rocky point. It is fully developed at this time and has been since 1978.

This phase of the survey has adequately covered the project area (within the above mentioned constraints) documenting one historic property. Subsurface testing (twenty-one backhoe trenches) were excavated. SIHP 50-50-01-5565 was identified within Trenches 17 A and B, and consists of a cultural layer interpreted as temporary habitation. The layer did not yield marine shell, and only two artifacts that can be conceived of having been modified by use (a cutting tool and a hammer-stone). Fire-cracked rock was also identified in this layer, in which a hearth feature was identified. Charcoal collected from the hearth feature yielded a calibrated radiocarbon assay of 1730-1810 AD (58% probability – 210+/-60 BP). The site is within the

shoreline setback area, as were the trenches. The remaining 19 trenches did not yield any evidence of cultural activity. Stratigraphy varied, but all trenches exhibited a "fill layer" associated with construction of the hotel. Several evidenced sand deposits, some of which were intact, while others were clearly associated with the moving and filling of areas prior to hotel development.

We concur that Site 50-50-01-5565 is significant under Criterion "D" and has the potential to yield information important for understanding prehistory. Mitigation commitments will be determined following additional phases of field work, although we wish to preliminarily state that we believe this site should be passively preserved since it is within the shoreline.

We also agree with the more immediate mitigation recommendations that additional backhoe testing is needed. This will allow better definition of the areas of the subject parcel in which "intact" dune deposits may be present. This will occur following the closure of the existing resort. In addition, archaeological monitoring will be needed for future development activities including the demolition of the existing hotel facilities, and construction of the new residences. The additional testing will be submitted as an addendum to the current report, as current use of the area precludes additional testing at this time. It may be that archaeological monitoring of the demolition may be necessary prior to some of the inventory level testing. The specific scope of work will be developed in consultation with Dr. Melissa Kirkendall (SHPD Archaeologist) prior to undertaking any future phases of work.

We find this report to be acceptable. We anticipate future consultation regarding the above mentioned scope. As always, if you disagree with our comments or have questions, please contact Dr. Melissa Kirkendall (Maui/Lana'i SHPD 243-5169) as soon as possible to resolve these concerns.

Aloha,

MELANIE A. CHINEN, Administrator
State Historic Preservation Division

MK: kf

c: Bert Ratte, DPWEM, County of Maui
Michael Foley, Director, Dept of Planning, 250 S. High Street, Wailuku, HI 96793
Maui Cultural Resources Commission, Dept. of Plng, 250 S. High St., Wailuku, HI 96793

LINDA LINGLE
GOVERNOR OF HAWAII

MAY 3 1 2005

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

STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. BOX 3378
HONOLULU, HAWAII 96801

In reply, please refer to:
EMD / WB

May 23, 2005

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W12 wb050350

Mr. Tom Schnell, AICP
PBR Hawaii
ASB Tower, Suite 650
1001 Bishop Street
Honolulu, Hawaii 96813

Dear Mr. Schnell:

Subject: **Draft Environmental Impact Statement (DEIS)**
The Residences at Kapalua Bay
Lahaina, Maui Hawaii
TMK: (2) 4-2-004: parcels 27, 28 and 29 approximately 25 acres

Thank you for allowing us the opportunity to review the subject project which proposes to build a resort residential community, including resort residences, a restaurant, spa facilities, a public shoreline trail, and public shoreline access at Kapalua Bay, Kapalua, West Maui, County of Maui. We have the following comments to offer.

> As the County of Maui's Lahaina Wastewater Reclamation Facility services the Kapalua Bay Hotel, we have no objections to the proposal as long as domestic wastewater generated by the subject development is treated and disposed of at the Lahaina WWRF.

All wastewater plans must conform to applicable provisions of the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater Systems." We do reserve the right to review the detailed wastewater plans for conformance to applicable rules.

Should you have any questions, please contact the Planning & Design Section of the Wastewater Branch at 586-4294.

Sincerely,

HAROLD K. YEE, P.E.
Chief, Wastewater Branch

LNKM:erm

PBR HAWAII

LAND PLANNING
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July 15, 2005

Mr. Harold K. Yee, P.E., Chief
State of Hawaii
Department of Health
Wastewater Branch
P.O. Box 3378
Honolulu, HI 96801

SUBJECT: THE RESIDENCES AT KAPALUA BAY
DRAFT ENVIRONMENTAL IMPACT STATEMENT

Dear Mr. Yee:

Thank you for your letter dated May 23, 2005. As the consultant for the applicant, Kapalua Bay LLC, we are responding to your comments.

We acknowledge that you have no objections to the Residences at Kapalua Bay since domestic wastewater generated will be treated and disposed of at the Lahaina WWRF.

As stated in Section 4.9.4 (Wastewater System) of the Draft EIS, all wastewater plans will conform to applicable provisions of the Department of HAR, Chapter 11-62, "Wastewater Systems".

Thank you for reviewing the Draft EIS. Your letter will be included in the Final EIS.

Sincerely,

PBR HAWAII

Tom Schnell, AICP
Associate

cc: Mr. Michael Foley, Maui Planning Department
Mr. Ryan Churchill, Kapalua Bay LLC
Ms. Genevieve Salmonson, Office of Environmental Quality Control

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LINDA LINGLE
GOVERNOR OF HAWAII

STATE OF HAWAII
DEPARTMENT OF HEALTH
MAUI DISTRICT HEALTH OFFICE
54 HIGH STREET
WAILUKU, MAUI, HAWAII 96793-2102

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

LORRIN W. PANG, M. D., M. P. H.
DISTRICT HEALTH OFFICER

May 19, 2005

Mr. William Frank Brandt, FASLA
PBR Hawaii
ASB Tower, Suite 650
1001 Bishop Street
Honolulu, Hawai'i 96813-3484

Dear Mr. Brandt:

Subject: **The Residences at Kapalua Bay**
Draft Environmental Impact Statement
TMK: (2) 4-2-004: 27, 28, and 29

Thank you for the opportunity to participate in the review of The Residences at Kapalua Bay project. The following comments are offered:

1. National Pollutant Discharge Elimination System (NPDES) permit coverage may be required for this project. The Clean Water Branch should be contacted at 808 586-4309.

2. The noise created during the construction phase of the project may exceed the maximum allowable levels as set forth in Hawaii Administrative Rules (HAR), Chapter 11-46, "Community Noise Control". A noise permit may be required and should be obtained before the commencement of work.

3. HAR, Chapter 11-46 sets maximum allowable sound levels from stationary equipment such as compressors and HVAC equipment. The attenuation of noise from these sources may depend on the location and placement of these types of equipment. This should be taken into consideration during the planning, design, and construction of the building and installation of these types of equipment.

4. Proper disposal of swimming pool discharges is required; plan review and approval of the wastewater disposal systems for the swimming pools by the Department of Health are required.

5. HAR, Chapter 501, "Asbestos Requirements" requires owners or operators of a demolition or renovation activity to thoroughly inspect the affected facility or part of the facility where the demolition or renovation will occur for the presence of asbestos using a certified inspector pursuant to HAR, Chapter 504. The Applicant is required to file with the Noise, Radiation and Indoor Air Quality Branch, Asbestos Demolition/Renovation Notification at least ten (10) working days prior to the demolition of each building (regardless of the presence of asbestos) or the disturbance of regulated asbestos containing materials during renovation activities. All regulated quantities and types of asbestos containing materials would be subject to emission control, proper collection, containerizing, and disposal at a permitted landfill by a licensed asbestos contractor using certified persons. Questions concerning asbestos requirements should be directed to Mr. Thomas Lileikis of the Noise, Radiation and Indoor Air Quality Branch at (808) 586-5800.

Should you have any questions, please call me at 984-8230.

Sincerely,

Herbert S. Matsubayashi
District Environmental Health Program Chief

c: Kapalua Bay, LLC
OEQC
Maui Planning Commission

PBR HAWAII

LAND PLANNING
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E-MAIL: pbrmaui@lava.net

July 15, 2005

Mr. Herbert S. Matsubayashi
District Environmental Health Program Chief
State of Hawaii
Department of Health
Maui District Health Office
54 High Street
Wailuku, HI 96793-2102

SUBJECT: THE RESIDENCES AT KAPALUA BAY
DRAFT ENVIRONMENTAL IMPACT STATEMENT

Dear Mr. Matsubayashi:

Thank you for your letter dated May 19, 2005. As the consultant for the applicant, Kapalua Bay LLC, we are responding to your comments.

1. A National Pollutant Discharge Elimination System (NPDES) permit is required for this project and the Clean Water Branch will be contacted at the appropriate time. The need for this permit is stated in the Draft EIS in Section 1.3.4 (Required Permits and Approvals) and Section 5.3 (Approvals and Permits).

2. If noise created during the construction phase exceeds the maximum allowable levels set forth in Chapter 11-46, HAR, "Community Noise Control," a noise permit will be obtained. This is stated in Section 4.5 (Noise) of the Draft EIS.

3. We understand that HAR, Chapter 11-46 sets maximum allowable sound levels from stationary equipment. Consideration will be taken during the planning, design, and construction of the building and installation of these types of equipment. This is stated in Section 4.5 (Noise) of the Draft EIS.

4. Swimming pool discharges will be disposed of properly. Kapalua Bay LLC will provide swimming pool wastewater disposal system plans to the Department of Health for review and approval. In the Final EIS, Section 4.9.4 (Wastewater System) will be revised to include the following:

   <u>In addition, swimming pool discharges will be disposed of properly. Kapalua Bay LLC will provide swimming pool wastewater disposal system plans to the Department of Health for review and approval.</u>

5. As stated in Section 4.11 (Hotel Demolition and Recycling) of the Draft EIS:

> Regarding asbestos, in compliance with HAR, Chapters 501 and 504, prior to demolition, a certified inspector will inspect the existing facilities for the presence of asbestos. An Asbestos Demolition/Renovation Notification will be filed with the DOH Noise, Radiation and Indoor Air Quality Branch at least ten working days prior to the demolition, regardless of the presence of asbestos. All regulated quantities and types of asbestos-containing materials will be handled according to all laws and regulations, including emission control, proper collection, containerizing, and disposal at a permitted landfill by a licensed asbestos contractor using certified persons.

Thank you for reviewing the Draft EIS. Your letter will be included in the Final EIS.

Sincerely,

PBR HAWAII

Tom Schnell, AICP
Associate

cc: Mr. Michael Foley, Maui Planning Department
Mr. Ryan Churchill, Kapalua Bay LLC
Ms. Genevieve Salmonson, Office of Environmental Quality Control

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LINDA LINGLE
GOVERNOR OF HAWAII

GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186
E-mail: oeqc@health.state.hi.us

June 13, 2005

Michael Foley
Maui Planning Department
250 South High St.
Wailuku, HI 96793

Attn: Kivette Caigoy

Dear Mr. Foley:

Subject: Draft environmental impact statement (DEIS)
The Residences at Kapalua Bay

We have the following comments:

Visual impacts: The second photo in Figure 15 shows The Residences as having a greater massing effect than the existing hotel. If The Residences are to have fewer units than the hotel, why does the complex look bigger?

Permits and approvals: In section 5.3, list the status of each permit and approval. If some applications have not yet been made, indicate the expected application dates.

If you have any questions, call Nancy Heinrich at 586-4185.

Sincerely,

GENEVIEVE SALMONSON
Director

c: Tom Schnell
Ryan Churchill, Kapalua Bay, LLC

PBR HAWAII

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July 15, 2005

Ms. Genevieve Salmonson, Director
State of Hawai'i
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, Hawai'i 96813

SUBJECT: THE RESIDENCES AT KAPALUA BAY DRAFT ENVIRONMENTAL IMPACT STATEMENT

Dear Ms. Salmonson:

Thank you for your letter dated June 13, 2005. As the consultant for the applicant, Kapalua Bay LLC, we are responding to your comments.

Visual Impacts: The Residences at Kapalua Bay will have fewer units than the existing hotel (146 units vs. 196 units); however, the units of the Residences will be larger (2 to 3 bedroom condos) than the hotel rooms (approximately 500 square feet rooms). Therefore, the massing of the Residences is greater than the existing hotel. The Residences buildings will range from three- to six-stories in a general step-down fashion, with the six-story buildings mauka and the three- story buildings closest to the ocean. The visual analysis photograph in the Draft EIS shows the back (mauka, and hence six-story) section of the complex.

Permits and Approvals: In the Final EIS, Table 1 in Section 1.3.4 (Required Permits and Approvals) and the table in Section 5.3 (Approvals and Permits) will be revised as follows:

Permit/Approval	Responsible Agency	Status
Chapter 343, HRS Compliance	Maui Planning Commission/Maui Planning Department Office of Environmental Quality Control	Draft EIS submitted May 8, 2005 Accepted XX-X-05 (to be updated in Final EIS when accepted by the Maui Planning Commission)
Planned Development Approval	Maui Planning Commission/Maui Planning Department	Submitted June 2, 2005 Action pending
Special Management Area Use Permit	Maui Planning Commission	Submitted June 2, 2005 Action pending
Shoreline Setback Variance	Maui Planning Commission	Submitted June 2, 2005 Action pending
Grading/Building Permits	County of Maui Department of Public Works and Waste Management	Expected submittal January 2006
Demolition & Building Permits	County of Maui Department of Public Works and Waste Management	Expected submittal January 2006
National Pollutant Discharge Elimination System (NPDES)	Hawaii Department of Health – Clean Water Branch	Expected submittal January 2006

Thank you for reviewing the Draft EIS. Your letter will be included in the Final EIS.

Sincerely,

PBR HAWAII

Tom Schnell, AICP
Associate

cc: Mr. Michael Foley, Maui Planning Department
Mr. Ryan Churchill, Kapalua Bay LLC

LINDA LINGLE
GOVERNOR

JUN 28 2005

RUSS K. SAITO
COMPTROLLER

KATHERINE H. THOMASON
DEPUTY COMPTROLLER

(P)1183.5

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P.O. BOX 119, HONOLULU, HAWAII 96810

JUN 24 2005

Mr. Tom Schnell, AICP
PBR Hawaii
1001 Bishop Street
ASB Tower, Suite 650
Honolulu, Hawaii 96813-3484

Dear Mr. Schnell:

Subject: The Residences at Kapalua Bay, Lahaina, Maui
Draft Environmental Impact Statement
TMK: 4-2-004: parcels 27, 28, and 29

Thank you for the opportunity to review the Draft Environmental Impact Statement for the Residences at Kapalua Bay, Lahaina, Maui.

This project does not impact any Department of Accounting and General Services' projects or existing facilities. Therefore, we have no comments to offer.

If there are any questions, please have your staff call Mr. Allen Yamanoha of the Planning Branch at 586-0488.

Sincerely,

ERNEST Y. W. LAU
Public Works Administrator

AY:jp
c: Ms. Genevieve Salmonson, OEQC
Mr. Michael Foley, Maui Planning Commission

PBR HAWAII

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July 15, 2005

Mr. Ernest Y.W.Lau
Public Works Administrator
Department of Accounting and General Services
P.O. Box 119
Honolulu, Hawaii 96810

SUBJECT: THE RESIDENCES AT KAPALUA BAY
DRAFT ENVIRONMENTAL IMPACT STATEMENT

Dear Mr. Lau:

Thank you for your letter dated June 24, 2005 ((P)1183.5). As the consultant for the applicant, Kapalua Bay LLC, we acknowledge that the Residences at Kapalua Bay does not impact any Department of Accounting and General Services projects or existing facilities; therefore, you have no comments to offer.

Thank you for reviewing the Draft EIS. Your letter will be included in the Final EIS.

Sincerely,

PBR HAWAII

Tom Schnell, AICP
Associate

cc: Mr. Michael Foley, Maui Planning Department
Mr. Ryan Churchill, Kapalua Bay LLC
Ms. Genevieve Salmonson, Office of Environmental Quality Control

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PHONE (808) 594-1888

FAX (808) 594-1865

RECEIVED
MAY 31 2005
OHA

STATE OF HAWAI'I
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAI'I 96813

HRD05/1725B

May 26, 2005

Tom Schnell
PBR Hawaii
ASB Tower, Suite 650
1001 Bishop Street
Honolulu, HI 96813

RE: The Residences at Kapalua Bay, Lahaina, Maui, Hawai'i, TMK: 4-2-004: parcels 27, 28 and 29.

Dear Mr. Schnell,

The Office of Hawaiian Affairs (OHA) is in receipt of your May 9, 2005 request for comment on the above listed proposed project, 4-2-004: parcels 27, 28 and 29. OHA offers the following comments:

OHA recommends that an Archaeological Monitoring Report be drafted in support of this project. Because there is a possibility of encountering buried human remains, all ground altering activities (i.e. utility excavations, dewatering pits and building footings) should be monitored by a professional archaeologist. It is also advisable that an Archaeological Data Recovery program be conducted to better appreciate the nature of possible adverse effects to cultural properties within the area of proposed development. This will also help to mitigate the impact to the State Site designated cultural layer located within the property.

OHA requests that consideration be given to native Hawaiian gathering and access rights during and after construction activities. Gathering rights and access shall not be restricted except as necessary to ensure safety. If safety-related restrictions are put in place, alternate public access routes must be provided.

Native flora should be incorporated into future landscaping plans for the Residences at Kapalua Bay. This will give the developed area a sense of authenticity and will promote a native ecosystem.

OHA further requests your assurances that if the project goes forward, should iwi or Native Hawaiian cultural or traditional deposits be found during ground disturbance, work will cease, and the appropriate agencies will be contacted pursuant to applicable law.

Thank you for the opportunity to comment. If you have further questions or concerns, please contact Jesse Yorck at 594-0239 or jessey@oha.org.

'O wau iho nō,

Clyde W. Nāmu'o
Administrator

CC: Thelma Shimaoka
OHA Community Affairs Coordinator
140 Hoohana St., Ste. 206
Kahului, HI 96732

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

Michael Foley
Maui Planning Commission
250 South High Street
Wailuku, HI 96793

PBR HAWAII

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July 15, 2005

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

SUBJECT: THE RESIDENCES AT KAPALUA BAY DRAFT ENVIRONMENTAL IMPACT STATEMENT

Dear Mr. Nāmu'o:

Thank you for your letter dated May 26, 2005 (HRD04/1725B). As the consultant for the applicant, Kapalua Bay LLC, we are responding to your comments.

1. Additional archaeological testing will be conducted following the closure of the existing hotel. The additional testing will be submitted as an addendum to the current archaeological survey.

   Further, an archaeological monitoring plan will be prepared and monitoring will be conducted during the demolition of the existing hotel and construction of the new buildings. Archaeological monitoring of the demolition may be necessary prior to some of the inventory level testing. The specific scope of the work will be developed in consultation with Dr. Melissa Kirkendall (SHPD Maui/Lāna'i Archaeologist) prior to undertaking any future phases of work.

   If necessary, based on the additional inventory work and the results of monitoring, an archaeological data recovery program will be conducted.

   As recommended by the State Historic Preservation Division, the one site currently identified on the property (Site 50-50-01-5565), will be passively preserved since it is in the shoreline.

   To reflect the above information and the recommendations of the State Historic Preservation Division, in the Final EIS, Section 4.1 (Archaeological and Historic Resources) will be revised as follows:

   Potential Impacts and Mitigative Measures

   The archaeological survey report recommends no further work for the archaeological site (5565) identified during the survey. The site is located on a rocky point between Fleming Beach and Nāmalu Bay and is within the shoreline setback area and not on the portion of the property proposed for The Residences' buildings. ~~The~~ As recommended by the State Historic Preservation Division (SHPD), the site will be placed in "as is" passive preservation.

   Additional backhoe testing will be needed in the area (immediately west (*makai*)) of the main lobby ~~when the hotel building is removed~~ following the closure of the existing resort. The scope of the additional testing will be determined in consultation with the ~~State Historic Preservation Division (~~SHPD~~)~~, Maui archaeologist. Results of this additional testing will guide the preparation of an archaeological monitoring plan.

   Given a variety of factors—including the documented presence of undisturbed, natural dune sand throughout much of The Residences property—archaeological monitoring will be conducted ~~for future construction activities. Monitoring will be needed~~ during both the demolition of the current hotel facilities and the construction of The Residences. It may be that archaeological monitoring of the demolition may be necessary prior to some of the inventory level testing. ~~Specifics of the archaeological monitoring plan will be contingent upon results of the additional testing, which will be conducted after the existing buildings are removed.~~ The specific scope of the work will be developed in consultation with the SHPD Maui archaeologist. The additional archaeological testing will be submitted as an addendum to the current archaeological inventory survey.

   If necessary, based on the additional inventory work and the results of monitoring, an archaeological data recovery program will be conducted.

   Kapalua Bay, LLC, and its contractors will comply with all laws and rules regarding the preservation of archaeological and historic sites should any sites be found during demolition and construction. Should historic remains such as artifacts, burials, concentrations of shell or charcoal be encountered, work shall cease immediately in the immediate vicinity of the find and the find shall be protected from further damage. The contractor shall immediately contact the SHPD, which will assess the significance of the find and recommend appropriate mitigation measures, if necessary.

   The SHPD has reviewed current archaeological inventory survey report and found the report to be acceptable (Appendix D contains the acceptance letter). ~~has been submitted to the SHPD for review.~~

2. We agree with your recommendation for consideration of native Hawaiian gathering and access rights during construction. As stated in Section 4.3 (Access and Trails) of the Draft EIS:

   Because of the location of the existing public shoreline path near the Bay Villas property boundary, public access on this path is not expected to be impacted during construction of The Residences. If this pathway cannot be used by the public during construction because of safety concerns, alternative access will be provided.

3. We also agree with your recommendation regarding incorporating native flora into future landscaping plans. As stated in Section 3.5 (Botanical Resources) of the Draft EIS: "New landscaping will include non-invasive species and, where feasible, native and indigenous plants."

4. Should iwi or Native Hawaiian cultural or traditional deposits be found during excavation, work will cease, and the appropriate agencies will be contacted pursuant to applicable law. This is stated in Section 4.1 (Archaeological and Historic Resources) of the Draft EIS as noted above.

Thank you for reviewing the Draft EIS. Your letter will be included in the Final EIS.

Sincerely,

PBR HAWAII

Tom Schnell, AICP
Associate

cc: Mr. Michael Foley, Maui Planning Department
Mr. Ryan Churchill, Kapalua Bay LLC
Ms. Genevieve Salmonson, Office of Environmental Quality Control

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ALAN M. ARAKAWA
Mayor

MAY 3 1 2005

GLENN T. CORREA
Director

JOHN L. BUCK III
Deputy Director

(808) 270-7230
Fax (808) 270-7934

DEPARTMENT OF PARKS & RECREATION

700 Hali'a Nakoa Street, Unit 2, Wailuku, Hawaii 96793

May 20, 2005

Tom Schnell, AICP
PBR Hawaii
ASB Tower, Suite 650
1001 Bishop Street
Honolulu, Hawaii 96813

RE: The Residences at Kapalua Bay
TMK: (2) 4-2-004:027, 028, and 029

Dear Mr. Schnell:

Thank you for the opportunity to review and comment on the Draft Environmental Impact Statement for The Residences at Kapalua Bay project.

Our only comment at this time would be that park dedication requirements would need to be fulfilled for all dwelling units or lodging units generated through the project. We will be requesting that the developer satisfy these requirements with a cash payment in lieu of providing land.

Should you have any questions or need of additional comment or clarification, please call me, or Patrick Matsui, Chief of Parks Planning & Development at 808-270-7931.

Sincerely,

Glenn T. Correa
Director

c: Michael Foley, Director, Planning Department
Patrick Matsui, Chief of Parks Planning & Development
Ryan Churchill, Kapalua Bay, LLC
Office of Environmental Quality Control

PBR HAWAII

LAND PLANNING
LANDSCAPE ARCHITECTURE
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July 27, 2005

Mr. Glenn T. Correa
County of Maui
Department of Parks & Recreation
700 Halia Nakoa Street, Unit 2
Wailuku, Hawaii 96793

SUBJECT: THE RESIDENCES AT KAPALUA BAY
DRAFT ENVIRONMENTAL IMPACT STATEMENT

Dear Mr. Correa:

Thank you for your letter dated May 20, 2005. As the consultant for the applicant, Kapalua Bay, LLC, we are responding to your comments.

At the time Kapalua Bay Hotel was developed around 1976, Maui Land & Pineapple Company, Inc (MLP) (master developer of the Kapalua Resort and majority member of Kapalua Bay, LLC) provided significant public recreation and beach access as a result of the development of the hotel site including:

- Kapalua Bay public recreation improvements including 27 paved parking stalls, restrooms, showers and paved path to the beach in 1975, with 12 additional stalls added in 2000.
- DT Fleming Beach Park improvements including 27 paved parking stalls restrooms, showers, and picnic facilities (1976), which, in 1980, was leased to the County of Maui as a 55-year lease for $1 per year.

Based on the above we believe the park dedication requirements have been met for this site. In addition, because less units are proposed for the site, the redevelopment project should not be subject to additional dedication as it would result in a duplicate dedication. Based on Kapalua Bay LLC's discussions with your staff, we understand you will be reviewing this with Corporation Counsel before responding. Representatives of Kapalua Bay LLC are available to meet to discuss this subject if you wish.

Thank you for reviewing the Draft EIS. Your letter will be included in the Final EIS.

Sincerely,

PBR HAWAII

Tom Schnell, AICP
Associate

cc: Mr. Michael Foley, County of Maui Planning Department
Ms. Genevieve Salmonson, Office of Environmental Quality Control
Mr. Ryan Churchill, Kapalua Bay, LLC

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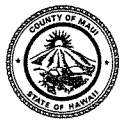
ALAN M. ARAKAWA
Mayor

MICHAEL W. FOLEY
Director

WAYNE A. BOTEILHO
Deputy Director



JUN 24 2005

COUNTY OF MAUI
DEPARTMENT OF PLANNING

June 21, 2005

Mr. Tom Schnell, AICP
PBR Hawaii
1001 Bishop Street
ASB Tower, Suite 650
Honolulu, Hawaii 96813

Mr. Ryan Churchill
Kapalua Bay, LLC
1000 Kapalua Drive
Lahaina, Hawaii 96761

Dear Mr. Schnell and Mr. Churchill:

RE: Draft Environmental Impact Statement (DEIS) for The Residences at Kapalua Bay located at TMK: 4-2-004: 027, 028, and 029, Kapalua, Lahaina, Island of Maui, Hawaii (EIS 2005/0001) (SM1 2005/0001)

At a special meeting held on June 13, 2005, the Maui Planning Commission (Commission) conducted a site visit of the Property and reviewed the Draft Environmental Impact Statement (DEIS).

During the workshop and site visit, the following comments were provided:

1. Provide a current shoreline map as certified by the Board of Land and Natural Resources.

2. Discuss how access to the Kapalua Bay Villas will be maintained.

3. Discuss how the real property tax is assessed for fractional shares and how this will coincide with the recent changes in tax assessments adopted by the County for timeshare units.

4. Provide a comparison of the existing and proposed developments relative to the shoreline access points and public parking.

250 SOUTH HIGH STREET, WAILUKU, MAUI, HAWAII 96793
PLANNING DIVISION (808) 270-7735; ZONING DIVISION (808) 270-7253; FACSIMILE (808) 270-7634

5. Discuss whether the lateral accessway will be continued and established from the Property onto Coconut Grove at Kapalua Bay.

6. Discuss the ownership status and relationship between the perspective buyers of the fractional shares and the landowner, Maui Land & Pineapple.

7. Discuss the changes in employment opportunities with the existing and proposed developments.

8. Identify employee parking areas on the site plan and discuss how these areas will be exclusively maintained for employees.

9. Does the proposed development include any restrictions on public accessways (i.e., gated entrances)?

10. Discuss why potable water consumption increases 25% while the wastewater projected quantities decrease by 10%.

During the special meeting held at Lahainaluna Intermediate School, the following comments were provided:

1. Discuss the employee replacement program as a mitigation measure for the initial loss of jobs. Will the program consider seniority? Will replacement be limited to Maui Land & Pineapple?

2. Traffic Impacts

   a. The DEIS indicates traffic will be reduced by 48%. However, two (2) parking spaces per unit are proposed, which is significantly higher than the existing parking provisions. Discuss how this equates to the conclusion of a reduction in traffic. Are the trip generation rates based on the number of vehicles, uses, or standard engineering methods? Discuss the mechanism used when considering national standards in relation to timeshare/fractional uses.

   b. Identify the location of the restaurant and whether it will be available to residents, as well as, visitors. Provide the approximate square footage of the restaurant. Discuss whether the traffic analysis included use of the restaurant by on-site and off-site users.

   c. Discuss whether the traffic analysis included use of the proposed spa facilities by both on-site and off-site users.

   d. The DEIS indicates the proposed action will create hundreds of additional jobs which is anticipated to effect traffic (page 108, DEIS). Discuss whether this was included in the analysis of the traffic report.

3. Water

   a. Identify the water sources. What is the maximum allowable daily withdrawal from the wells?

   b. Discuss whether Commission on Water Resource Management (CWRM) will require a new water use permit with the change in use.

4. Honokahau Stream

   a. How much water is being diverted from Honokahau Stream, and how much water is being released? How much water can be diverted and still maintain a healthy stream?

   b. How much water is being released per day into the stream, as indicated by the gauges and reported to CWRM?

   c. Provide the monthly reports of water resource management as required by the CWRM.

   d. Discuss the results of the biological surveys conducted for the stream since releasing water. Discuss the scope of the surveys and provide a synopsis. Does the analysis include recruitment?

   e. Discuss whether in-stream flow standards are calculated for the stream.

f. Include the abstract, introduction, summary, conclusions, and Figure 4 of the USGS Report on *Availability and Distribution of Base Flow in Lower Honokohau Stream, Island of Maui, Hawaii*, 2003.

5. Beach Access and Parking

a. Identify public parking areas on the Property and adjacent properties.

b. As recommended in the Cultural Impact Assessment (CIA), the Commission encourages the applicant to continue communicating and consulting with practitioners to identify and maintain accessways to the shoreline. Please identify the practitioners.

c. During the site visit, the applicant has expressed concern that the beaches are currently overused by visitors and/or residents. The applicant further indicated that the desire is to limit access to the beaches by limiting public parking. Discuss how the overuse is assessed.

d. The community has expressed a desire to create a friendly environment for local residents to access to the shoreline. Presently, the environment is perceived by some residents as "trespassing," and inhibits their use of the beaches. As such, the Commission recommends providing more public beach parking to encourage and provide for local residents, as well as, to reduce the overflow parking onto Honoapiilani Highway.

6. The Marine Resources Report indicates a high level of nitrates. Identify potential sources. The Commission encourages the applicant to consider the use of slow release fertilizers in order to slow or reduce the amount of nitrates entering the nearshore coastal waters.

7. The Commission recommends incorporating oil-water separators into the drainage system to reduce the potential for petroleum loaded stormwater from discharging into nearshore coastal waters.

8. The proposed north wing of the hotel received prior SMA approval. Discuss the time limitations of the permit.

9. Comments and concerns raised by the community indicate a preference to maintain the hotel.

10. The Commission recommends consulting with the Fire Department regarding the internal circulation of the roadways for safety measures.

11. Provide the anticipated price of the unit types.

12. Multiple hotels are scheduled for major renovations or complete demolition which poses the potential for a significant increase in municipal solid waste entering the landfills. In order to preserve the space in the landfills, the Commission encourages implementing recycling practices to the maximum extent practicable for items such as, but not limited to, sinks, fixtures, furniture, toilets, lumber, etc.

Thank you for your cooperation. Should you require additional clarification, please contact Ms. Kivette Caigoy, Environmental Planner, at 270-7735.

Sincerely,

MICHAEL W. FOLEY
Planning Director

MWF:KAC:lar
c: Wayne A. Boteilho, Deputy Planning Director
Kivette Caigoy, Environmental Planner
Ann Cua, Staff Planner
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August 3, 2005

Mr. Michael W. Foley
Planning Director
County of Maui
Department of Planning
250 South High Street
Wailuku, HI 96793

SUBJECT: THE RESIDENCES AT KAPALUA BAY DRAFT ENVIRONMENTAL IMPACT STATEMENT

Dear Mr. Foley:

Thank you for your letter dated June 21, 2005, reflecting the comments of the Maui Planning Commission. As the consultant for the applicant, Kapalua Bay, LLC, we are responding to the Commission's comments.

The following are our responses to comments from the Maui Planning Commission workshop and site visit on June 13, 2005:

1. A current shoreline survey map was submitted to the Planning Department on June 2, 2005, as part of The Residences at Kapalua Bay Special Management Area (SMA) Use Permit application. The shoreline survey map was submitted to the State Department of Land and Natural Resources (DLNR) for certification on May 24, 2005. DLNR certification is pending.

2. As shown on Figure 1 (Conceptual Master Plan) and Figure 8 (Existing Conditions) of the Draft Environmental Impact Statement (EIS), access to the Bay Villas will be maintained via the existing access road connecting to Bay Drive approximately 120 feet from the intersection of Bay Drive with Lower Honoapiilani Road.

3. The "fractional units" are legally timeshare units pursuant to State law. Therefore, it is our assumption the County of Maui will assess such units at the new timeshare rate of $14 of tax per $1,000 of value.

   The public costs/benefits assessment report for the Residences at Kapalua Bay was prepared before the Maui County Council passed the timeshare property tax ordinance. As a result of the change in law, the 65 fractional units would be subject to the new, higher "timeshare" tax rate of $14.00 per $1,000.00 of assessed value, as compared to the standard real property tax rate of $8.30 per $1,000.00 of assessed value for resort condominiums.

   Therefore, the total projected property tax revenues received by the County of Maui for The Residences at Kapalua Bay will increase from $26.6 million in the

   first ten years of the project to approximately $34 million, a gain of $7.4 million. On a stabilized basis, the projected tax revenue will increase from $3.4 million per year to approximately $4.4 million per year, a gain of $1 million per year.

   To reflect this information in the Final EIS, Section 4.8.5 (Economic Impacts) of the Final EIS, will be revised as follows:

   > The average daily de facto population of the project is projected at 459 persons, including 50 full-time residents, with annual discretionary expenditures of $29.3 million per year. The project will infuse $300 million in development capital and $11 million in annual business operations into the Maui economy. The State of Hawaii will receive nearly $40 million in primary tax receipts during the first decade of development and operation, and a stabilized amount of $3 million annually. The County of Maui will receive $26.6 million during the first ten years of the project, and $3.4 million per year thereafter on a stabilized basis. In no year does the State or County suffer a revenue shortfall (costs exceeding receipts) relative to the project.
   >
   > Subsequent to the completion of the public costs/benefits assessment report for the Residences at Kapalua Bay (Appendix A), the Maui County Council passed an ordinance making timeshare units subject to a higher real property tax rate. In the case of the Residences, the 65 fractional units would be subject to this new, higher "timeshare" tax rate of $14.00 per $1,000.00 of assessed value, as compared to the standard real property tax rate of $8.30 per $1,000.00 of assessed value for resort condominiums.
   >
   > As a result, the total projected property tax revenues received by the County of Maui for The Residences at Kapalua Bay will increase from $26.6 million in the first ten years of the project to approximately $34 million, a gain of $7.4 million. On a stabilized basis, the projected tax revenue will increase from $3.4 million per year to approximately $4.4 million per year, a gain of $1 million per year.

4. Existing access and parking will be maintained as stated in Section 4.3 (Access and Trails) of the Draft EIS. Access to the shoreline through The Residences site will be provided by an existing public shoreline access pathway on the north side of property near the Bay Villas boundary (refer to Figure 8 in the Draft EIS). The pathway primarily provides access to Namalu Bay and Hawea Point, although other shoreline areas are accessible via this path. Public parking for the shoreline access path is provided in the Kapalua Bay Hotel parking lot, at the start of the path, with signs clearly designating the shoreline access parking area. There are 10 parking stalls allocated for public shoreline access parking.

   In addition to the above access, the 39 parking stalls, public showers and beach path on the south end of Kapalua Bay (next to the Coconut Grove Condominiums) will not be altered.

   The Residences will not impact the access to Namalu Bay and Hawea Point, the adjacent Kapalua Beach Access south of the adjoining Coconut Grove Condominiums, or any

other public shoreline access points, related parking, and other facilities. The existing shoreline access pathway and 10 public parking spaces will be retained. In addition, a new paved public coastal trail is planned to run through The Residences site and beyond, providing continuous coastal access within Kapalua when all segments are completed.

5. The proposed lateral shoreline access path in front of The Residences is planned to connect to an existing walkway running the length of the of the Coconut Grove at Kapalua Bay property between the Coconut Grove buildings and the shoreline.

6. The condominiums and fractional units of the Residences at Kapalua Bay will be sold in fee-simple ownership. As a member of Kapalua Bay, LLC, Maui Land & Pineapple Company will retain ownership interest in common areas and other areas of the property owned by Kapalua Bay LLC.

7. Currently, the Kapalua Bay Hotel and related facilities support approximately 200 full-time equivalent on-site jobs. As discussed in Section 4.8.4 (Employment) of the Draft EIS, The Residences will support about 188 full-time equivalent on-site jobs and contribute to another 75 off-site positions.

   To reflect this information in the Final EIS:

   - Section 4.8.4 (Employment) of the Final EIS, will be revised to include the following:

     Currently, the Kapalua Bay Hotel and related facilities support approximately 200 full-time equivalent on-site jobs.

   - Section 1.3.6 (Executive Summary, Summary of Potential Impacts and Proposed Mitigation Measures) of the Final EIS, will be revised as follows:

     Employment
     Currently, the Kapalua Bay Hotel and related facilities support approximately 200 full-time equivalent on-site jobs. The Residences will generate jobs during construction and after its completion. Approximately 106 jobs will be generated in the second year, with 929 and 861 jobs in the third and fourth year (during the height of construction), respectively. In the fifth year, the number of jobs generated will decline to 284. From the sixth year, full operations will be established and employment will be stabilized at approximately ~~263 jobs~~ 188 full-time equivalent on-site jobs and another 75 off-site positions.

   - Section 1.3.6 (Executive Summary, Probable Adverse Environmental Effects that Cannot be Avoided) of the Final EIS, will be revised as follows:

     The closing of the Kapalua Bay Hotel and related facilities will also result in the short-term loss of hospitality and other existing jobs on the site. Currently, the Kapalua Bay Hotel and related facilities support approximately 200 full-time equivalent on-site jobs. Kapalua Bay, LLC will

     coordinate job placement within the Kapalua Resort community or at other facilities during the redevelopment. In the long-term, The Residences will support about 188 full-time equivalent on-site jobs and contribute to another 75 off-site positions. ~~The Residences at Kapalua Bay and~~ Further, other proposed new facilities at the Kapalua Resort are expected to create ~~hundreds of~~ additional job opportunities.

   - Section 7.4 (Probable Adverse Environmental Effects that Cannot be Avoided) of the Final EIS, will be revised as follows:

     Employment. Currently, the Kapalua Bay Hotel and related facilities support approximately 200 full-time equivalent on-site jobs. In the short-term, the closing of the Kapalua Bay Hotel and related facilities will result in the in the loss of hospitality and other existing jobs on the site. Kapalua Bay, LLC will coordinate job placement within the Kapalua Resort community or at other facilities during the redevelopment. In the long-term, The Residences will support about 188 full-time equivalent on-site jobs and contribute to another 75 off-site positions. ~~The Residences at Kapalua Bay and~~ Further, other proposed new facilities at the Kapalua Resort are expected to create ~~hundreds of~~ additional job opportunities.

8. An existing parking area directly across Lower Honoapiilani Road from the entrance to The Residences site will provide employee parking. This parking area has 308 spaces. In the Final EIS the conceptual master plan (Figure 1) will be revised to indicate the location of this parking area.

9. The Residences at Kapalua Bay does not include any restrictions on public access-ways. The entrance to The Residences at the intersection of Bay Drive and Lower Honoapiilani Road will not be gated. As discussed above and in Section 4.3 (Trails and Access) of the Draft EIS, existing public access and parking will be maintained.

10. The projected water demands and the projected wastewater quantities for The Residences have been calculated using County of Maui Department of Water Supply (DWS) Water System Standards and County of Maui Department of Public Works and Environmental Management (DPWEM) Standards of Wastewater Contributions. The inconsistency regarding the projected increase in potable water demand and the projected decrease in wastewater quantities is the result of inconsistencies between DWS Water System Standards and County of DPWEM Standards of Wastewater Contributions. In short, DWS and DPWEM use different criteria for estimating water demand and sewage generated.

    Under DPWEM sewage flow standards, wastewater flow for hotels is calculated at 350 gallons per day (gpd) per hotel unit, while wastewater for flow condominiums is calculated at 250 gpd per unit. So in calculating the wastewater quantities between the existing hotel compared to the proposed condominiums, there is a projected decrease in wastewater quantities.

For projected water demands, DWS standards increase relative to hotel versus condominium uses. Under DWS standards, water demand for hotel uses is calculated at 350 gpd per unit, while water demand for condominium uses is calculated at 560 gpd per unit.

Section 4.9.3 (Water System) of the Draft EIS provides a summary of projected water demands. Section 4.9.4 (Wastewater System) of the Draft EIS provides a summary of projected wastewater quantities. Appendix I (Preliminary Engineering and Drainage Report) of the Draft EIS provides detailed calculations for both water demands and wastewater quantities.

The following are responses to comments from the special meeting held at Lahainaluna Intermediate School:

1. As discussed in Section 1.3.6 (Executive Summary, Probable Adverse Environmental Effects that Cannot be Avoided) and Section 7.4 (Probable Adverse Environmental Effects that Cannot be Avoided) of the draft EIS, "Kapalua Bay, LLC will coordinate job placement within the Kapalua Resort community or at other facilities during the redevelopment." There is no formal employee replacement program in effect at this time, however as noted in Section 8 of the Draft EIS, Kapalua LLC has consulted with ILWU leadership.

2. Traffic Impacts

a. Traffic generation is based on the number of units and not the number of provided parking spaces. Parking spaces do not generate traffic—the use does. In an extreme case, if 10 parking stalls were provided per unit, that does not necessarily correlate with the ownership of 10 vehicles nor the generation of 10 trips during the peak hour. Likewise, two parking stalls do not reflect two trips for each unit during the peak hour. In addition, trip generation is typically different in resort settings—peak traffic generation in resort settings generally occurs later in the morning and earlier in the afternoon, not during the commuter peak hours of the regional highway. Trip generation projections in the Traffic Impact Analysis Report were based on the proposed uses, including the fractional units, using national standards and verified with similar local uses in the Wailea and Kaanapali areas.

b. As stated in Section 2.3.2 (The Residences at Kapalua Bay Description) of the Draft EIS, "A bar and grill restaurant will be located in the center of the Residences, southwest of the main lobby." At the Planning Commission meeting on June 13, the planning consultant inaccurately noted that the restaurant will be open to the public. Current plans are for the restaurant to be open to The Residences' owners and guests.

To clarify these points in the Final EIS, Section 2.3.2 (The Residences at Kapalua Bay Description) of the Final EIS, will be revised as follows:

> ***Bar and Grill Restaurant***
> A bar and grill restaurant will be located in the center of The Residences, southwest of the main lobby at the mauka end of the pool. Current plans are for the restaurant to be open to The Residences' owners and guests.

In addition, in the Final EIS the conceptual master plan (Figure 1) will be revised to show the location of the restaurant.

The traffic analysis assumes that patrons of the restaurant will be comprised of The Residences' owners and guests, since the restaurant is not proposed to be open to the public. As such, any new trips in the vicinity are either already accounted for in the project trip generation or included in the baseline traffic demands. In addition, peak traffic generation of restaurants typically occurs during off-peak traffic periods—when the traffic on the surrounding roadways is much lower.

c. While it is expected that the majority of spa users will be The Residences' owners and guests, a few off-site users, most likely from other locations within the Kapalua Resort, may use the spa. The amount off-site users is expected to be minimal, with traffic generation within the daily fluctuation of existing traffic demands. In addition, traffic generation of the on-site spa as a result of off-site users most likely would occur during off-peak periods, when traffic volumes on the surrounding roadways are low, resulting in cumulative traffic demands that are lower than the peak periods of traffic analyzed in the traffic report.

d. To clarify the statement on page 108 of the Draft EIS regarding additional jobs, please note that the statement is as follows: "In the long-term The Residences at Kapalua Bay and other new facilities at the Kapalua Resort are expected to create hundreds of additional job opportunities." In the context of the Draft EIS "other new facilities," was in reference to projects proposed or conceptualized for the Kapalua Resort as discussed in the preceding Section 7.2 (Cumulative and Secondary Impacts) starting on page 105 of the Draft EIS.

To clarify the statement on page 108 regarding addition jobs, Section 7.4 (Probable Adverse Environmental Effects that Cannot be Avoided) of the Final EIS, will be revised as follows:

> **Employment.** Currently, the Kapalua Bay Hotel and related facilities support approximately 200 full-time equivalent on-site jobs. In the short-term, the closing of the Kapalua Bay Hotel and related facilities will result in the in the loss of hospitality and other existing jobs on the site. Kapalua Bay, LLC will coordinate job placement within the Kapalua Resort community or at

> other facilities during the redevelopment. In the long-term, The Residences will support about 188 full-time equivalent on-site jobs and contribute to another 75 off-site positions. ~~The Residences at Kapalua Bay and~~ Further, other proposed new facilities at the Kapalua Resort are expected to create ~~hundreds of~~ additional job opportunities.

Regarding traffic impacts from additional jobs created at the Kapalua Resort as a result of future Resort projects, any potential traffic increases associated with future projects would be generated by the specific project, and will not be the result of The Residences. Proposed future projects at the Resort, with the exception of Kapalua Village Phase I, are well beyond the expected completion of The Residences. Potential traffic impacts of future projects will be addressed at the time the projects are proposed.

3. Water

a. As stated in Section 4.9.3 (Water System) in the Draft EIS:

> The source of Kapalua Resort's potable water is two deep wells located between elevations of 768 and 796 feet above mean sea level (msl), approximately 1.5 miles east of The Residences site. Each well has a capacity of 1.0 million gallons per day (mgd). The wells draw water from the Honolua Aquifer.

Also as stated in Section 4.9.3 (Water System) in the Draft EIS: "The Kapalua Resort uses surface water for non-potable needs (irrigation and fire protection) within the Resort." To elaborate, the Honolua Ditch provides non-potable irrigation and fire protection water for the Kapalua Resort. The Honolua Ditch has been providing irrigation water in the region since 1913.

To reflect this information in the Final EIS, Section 4.9.3 (Water System) of the Final EIS, will be revised as follows:

> The Kapalua Resort uses surface water for non-potable needs (irrigation and fire protection) within the Resort. Non-potable irrigation and fire protection water for the Kapalua Resort is provided by the Honolua Ditch. The Honolua Ditch has been providing irrigation water in the region since 1913.

b. The Residences at Kapalua Bay is a substantially similar use as the existing Kapalua Bay Hotel. As discussed in Section 4.9.3 (Water System) of the Draft EIS, while potable water demands for The Residences are projected to increase, non-potable demands are projected to decrease. The Kapalua Resort's potable water sources have available capacity to supply the projected demand of The Residences.

In their comments on the Environmental Impact Statement Preparation Notice, the Commission on Water Resource Management (CWRM) did not state that a new water

use permit for the Residences is required. However, CWRM did state: "The specified sources appear to have ample capacity to provide full service for this project."

Further, as stated in Section 4.9.3 (Water System) in the Draft EIS, "The DLNR Commission on Water Resource Management has not designated the Honolua Aquifer, or the adjoining Honokowai Aquifer, as groundwater management areas." Water use permits are required only for withdrawals of water (i.e., wells or stream diversions) within designated water management areas.

4. Honokohau Stream

The Kapalua Resort uses surface water for non-potable needs (irrigation and fire protection) within the Resort. Water for non-potable irrigation and fire protection for the Kapalua Resort is provided by the Honolua Ditch (also referred to as the Honokohau Ditch, depending on location).

As discussed in Section 4.9.3 (Water System) of the Draft EIS, non-potable water demand for the Residences is projected to decrease 1.8 percent compared to the existing hotel. If The Residences were not built and the hotel continued to operate, surface water from the Honolua Ditch would continue to be used for irrigation of the hotel grounds and for fire protection.

Considering that existing non-potable water use would continue if existing hotel operations continued, and further considering that non-potable water use with The Residences will decrease slightly, a discussion regarding impacts to Honokohau Stream is not relevant to The Residences at Kapalua Bay. The Residences at Kapalua Bay will not contribute to any significant changes related to Honokohau Stream flows over existing conditions.

Regarding the contents of an EIS, Section 11-200-16, Hawaii Administrative Rules states: "The environmental impact statement shall contain an explanation of the environmental consequences of the proposed action." In this case the proposed action is the redevelopment of the existing hotel. Since this action will not result in any change to current conditions related to Honokohau Stream, discussion of ongoing stream restoration efforts is beyond the scope of the EIS.

However, regarding your questions relating to Honokohau Stream, the following responses are provided:

a. Based on data collected from measuring devices in Honokohau, an average of approximately 10.9 million gallons per day (MGD) of water is going over the diversion, 1.0 MGD continues through the diversion at "Aotaki Gate" and 18.1 MGD is being

diverted into the Honolua Ditch. Of the 18.1 MGD being diverted, an additional 1.3 MGD is being placed back into the stream via the "taro gate" (1.0 MGD) and at MacDonalds Dam after use for hydroelectric purposes (0.3 MGD).

There is currently more than adequate flow of water in Honokohau stream to maintain a healthy stream. More water could be diverted and still ensure a healthy stream, however, the diverted amount is currently adequate for the needs of West Maui users.

b. Please see 4.a. above.

c. Attached is the latest CWRM report with water use information. These reports are filed monthly with the CWRM.

d. As part of its resource management efforts, MLP staff and 3rd party consultants initiated a baseline study of the Honokohau Stream and Bay biota in 2004 and are currently completing a follow up study of the stream. The first study was prior to the continued release of water at Aotaki gate and the second is subsequent to the release.

The scope of the second study is to evaluate the status of the stream ecosystem following the release of water at Aotaki Gate. The draft conclusion is that Honokohau Stream continues to represent perhaps the most outstanding habitat for native Hawaiian stream fauna on West Maui. More specifically: 1) frequent large freshets and the release from Aotaki Gate have allowed upstream migration of all characteristic amphidromous Hawaii stream animals with the exception of the hihiwai; 2) barriers in the stream, such as the concrete culvert under the highway bridge, MacDonalds's Dam, or the Honokohau Dam do not represent permanent barriers to the migration of endemic and indigenous Hawaiian stream animals; and 3) the stream above 825 feet remains undisturbed and provides outstanding habitat for large numbers of endemic and indigenous migratory stream animals and for endemic aquatic insects. This study samples the number of species at each size, therefore success of species recruitment is analyzed as part of this study.

e. The calculation of in-stream flow standards is the responsibility of the State Commission on Water Resource Management, which on October 19, 1998 issued Interim Instream Flow Standards for all streams in West Maui, as published in the Commission's Administrative Rules, HAR 13-169-48. That Standard is: "that amount of water flowing in each stream on the effective date of the standard, and as that flow may vary throughout the year and from year to year without further amounts being diverted offstream through new or expanded diversions, and under the stream conditions existing on the effective date of the standard."

The Water Code specifically grants CWRM "exclusive jurisdiction and final authority in all matters relating to implementation and administration of the state water code"[1], and preempts the counties from regulating waters, such as Honokohau stream, that are already regulated by the Water Commission.[2]

f. Because of the sustained release of approximately one million gallons per day through the Aotaki Gate the USGS report titled *Availability and Distribution of Base Flow in Lower Honokohau Stream, Island of Maui*, is dated and its conclusions do not reflect current conditions. In addition, since the redevelopment of the existing hotel will not result in any change to current conditions related to Honokohau Stream, inclusion of sections of the USGS report is not relevant to the potential impacts of The Residences at Kapalua Bay.

5. Beach Access and Parking

a. The Draft EIS provides a thorough identification of public shoreline accesses and public shoreline parking within the Kapalua Resort, including the Residences at Kapalua Bay site. Please refer to Section 4.3 (Trails and Access) and Figure 10 (Kapalua Resort) of the Draft EIS.

b. As stated in Section 4.3 (Trails and Access) of the Draft EIS: "The Residences will not impact the access to Namalu Bay and Hawea Point, the adjacent Kapalua Beach south of the adjoining Coconut Grove Condominiums, or any other public shoreline access points, related parking, and other facilities."

Kapalua Bay, LLC will continue to consult with Clifford Naeole, Cultural Adviser for the Ritz-Carlton Hotel and Sila Kaina, Cultural Adviser for the Kapalua Bay Hotel regarding accessways to the shoreline.

c. Over use of Kapalua Beach was assessed by visual observation, however Maui Land & Pineapple Company, its subsidiaries, and Kapalua Bay LLC have no plans to limit access to any beaches or shoreline areas. All existing public shoreline parking will be maintained and there will be no reduction in the number public shoreline parking spaces.

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[1] Section 174C-7, Hawaii Revised Statutes.

[2] See Section. 174C-7, Hawaii Revised Statutes, which states that "[n]o state or county government agency may enforce any statute, rule or order affecting the waters of the State controlled under the provisions of this chapter, whether enacted or promulgated before or after [the effective date of the Water Code] inconsistent with the provisions of this chapter."

d. As detailed in Section 4.3 (Trails and Access) of the Draft EIS, there are currently 149 public shoreline access parking spaces within the Kapalua Resort. These parking spaces are maintained by Maui Land & Pineapple Company or its subsidiaries.

6. As discussed in Section 3.7 (Marine Resources) of the Draft EIS, high levels of nitrates were only found within 10 meters (approximately 33 feet) of the shoreline. Seaward of this distance, there was no indication of nitrate input from land.

   The situation of nitrates in nearshore waters is very typical for all of West Maui, and anywhere with a large amount of groundwater flow and/or large-scale agriculture. The source of nitrates is: 1) natural groundwater (relative to ocean water); 2) leachate from agricultural fields and possibly golf courses; and 3) possibly, but not likely, leachate from landscaping at existing hotel grounds.

   The Residences will not produce any significant change over existing conditions. As stated in Section 3.7 (Marine Resources) of the Draft EIS:

   > The marine water quality report concludes: 1)"The changes in land use [from the existing hotel to The Residences] are not expected to have significant adverse effects on either the existing watershed, downstream properties, or coastal marine waters;" and 2) "it is not likely that there will be substantial differences compared to the existing situation"

   However, Kapalua Bay, LLC will consider the use of slow release fertilizers for the landscaped grounds of The Residences.

7. All drainage systems for the Residences will be designed, built, and operated in compliance with all State of Hawaii and County of Maui regulations and requirements. In the development of specific drainage plans, Kapalua Bay LLC will consult with applicable agencies concerning the feasibility of other mitigative measures such as oil/water separators. To reflect this information in the Final EIS, Section 4.9.2 (Drainage) of the Final EIS, will be revised to include the following:

   > <u>All drainage systems for the Residences will be designed, built, and operated in compliance with all State of Hawaii and County of Maui regulations and requirements. In the development of specific drainage plans, Kapalua Bay LLC will consult with applicable agencies concerning the feasibility of other mitigative measures such as oil/water separators.</u>

8. As stated in Section 2.1.9 (History of the Property) of the Draft EIS, the original County Special Management Area (SMA) Use Permit for the hotel, granted in 1976, allowed a 390-room hotel, including a north wing. The north wing was not constructed and the Kapalua Bay Hotel opened with 196 rooms. In 1987, an SMA Use Permit was granted for proposed improvements to the hotel, including plans to proceed with the previously abandoned north wing. This 1987 SMA approval was subsequently amended to extend

   the time to complete the construction of the north wing to December 31, 2007. To date, the north wing has not been constructed; however, as approved, the north wing could include 128 rooms and suites, various meeting rooms, and support space in a new four-, five-, and six-story addition to the hotel.

9. We acknowledge that some members of the community indicate a preference to maintain the hotel; however, as discussed in Section 2.2 (Statement of Purpose and Need for The Residences at Kapalua Bay) of the Draft EIS, it is not economically feasible to upgrade and maintain the hotel to resort modern standards.

10. The Residences' architect and engineer met with the Fire Department on June 23, 2005 regarding the internal circulation of the roadways for safety measures. Recommendations from the Fire Department have been incorporated into the site plan.

11. Similar to other oceanfront properties in the area, it is estimated the wholly owned units will sell for $3 to $4 million. A fractional interval is estimated to sell for approximately $340,000 to $500,000.

12. Section 4.10 (Solid Waste) in the Draft EIS discusses demolition recycling measures and the goal is to recycle 90 to 95 percent of the materials from the hotel. Kapalua Bay, LLC will investigate the feasibility of providing items from the hotel for reuse, including sinks, fixtures, furniture, toilets, and other items.

We appreciate the comments of the Maui Planning Commission. Your letter reflecting their comments will be included in the Final EIS.

Sincerely,

PBR HAWAII

Tom Schnell, AICP
Associate

Attachment

cc: Mr. Ryan Churchill, Kapalua Bay LLC
Ms. Genevieve Salmonson, Office of Environmental Quality Control

State of Hawaii
COMMISSION ON WATER RESOURCE MANAGEMENT
Department of Land and Natural Resources
MONTHLY GROUND WATER USE REPORT

For Official Use Only:

Name: Jeff Pearson
Company: Maui Land & Pineapple Company, Inc.
Address: P.O. Box 187
Kahului, HI 96733-6687
Telephone No.: (808) 877-1606 **Fax No.:** (808) 871-4375
Report Month: June **Year:** 2005

C: File
Central File
Barbie Dofa –Honolua
Ian Swezey –Maintenance
Denis Toshikiyo - KWC

INSTRUCTIONS: Please TYPE OR PRINT CLEARLY. Complete this form to report total monthly ground water use, and, if required, other information from each of your well sources. Mail to: Commission on Water Resource Management, P.O. Box 621, Honolulu, HI 96809. For assistance, please call (808) 587-0265.

Well Number	Well Name	Period Beginning (mm/dd/yy)	Period Ending (mm/dd/yy)	Quantity Pumped (Gallons or Cubic Feet)	Method of Measurement	Chloride Level (mg/L)	Date Chloride Measured (mm/dd/yy)	Method of Chloride Measurement
5938-02	#1	6/1/05	6/30/05	9.4 mg	flow meter	24 mg		
5938-03	#2	6/1/05	6/30/05	7.8 mg	flow meter	24 mg		
surface source	Kapalua Water Co. irrigation	6/1/05	6/30/05	59.4 mg	flow meter			
surface source	Kapalua Land Co.	6/1/05	6/30/05	42.1 mg	flow meter			
surface source	Pineapple irrigation	6/1/05	6/30/05	59.5 mg	flow meter			
surface water	DWS Mahinahina	6/1/05	6/30/05	57.6 mg	flow meter			
surface water	Pioneer Mill	6/1/05	6/30/05	see note below	weir (avg.)			

* Flow meter, electrical consumption, weir or flume, not metered (estimated).
** Measurement should be taken while pump is NOT running just prior to a pumping cycle; If measurement is taken while pump is running, please indicate so.

Other comments or additional information (e.g., date and method of chloride measurement, how pumpage amounts are estimated, etc.):

Note: data unavailable

Submitted by (print): Jeff Pearson **Title:** Water Manager

Signature: **Date:** 7/11/05

GWUR-MON FORM (06/10/2004)

ALAN M. ARAKAWA
Mayor

MILTON M. ARAKAWA, A.I.C.P.
Director

MICHAEL M. MIYAMOTO
Deputy Director

Telephone: (808) 270-7845
Fax: (808) 270-7955

COUNTY OF MAUI
DEPARTMENT OF PUBLIC WORKS AND ENVIRONMENTAL MANAGEMENT
200 SOUTH HIGH STREET, ROOM 322
WAILUKU, MAUI, HAWAII 96793

RALPH NAGAMINE, L.S., P.E.
Development Services Administration

TRACY TAKAMINE, P.E.
Wastewater Reclamation Division

CARY YAMASHITA, P.E.
Engineering Division

BRIAN HASHIRO, P.E.
Highways Division

Solid Waste Division

July 12, 2005

Mr. Tom Schnell, A.I.C.P.
PBR HAWAII
ASB Tower, Suite 650
1001 Bishop Street
Honolulu, Hawaii 96813

Dear Mr. Schnell:

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT
THE RESIDENCES AT KAPALUA BAY
TMK: (2) 4-2-004:027,28,29

We reviewed the subject application and have the following comments:

1. Building and Housing Code requirements will be enforced during the building permit processing for the proposed multi-family apartment buildings.

2. The architect and owner are advised that the project is subject to possible tsunami and flood inundation. As such, said project must conform to Ordinance No. 1145, pertaining to flood hazard districts.

3. A verification and final drainage report and a Best Management Practices (BMP) Plan shall be submitted with the grading plans for review and approval prior to issuance of grading permits. The drainage report shall include hydrologic and hydraulic calculations and the schemes for disposal of runoff waters. It must comply with the provisions of the "Rules and Design of Storm Drainage Facilities in the County of Maui" and must provide verification that the grading and runoff water generated by the project will not have an adverse effect on adjacent and downstream properties. The BMP plan shall show the location and details of structural and non-

structural measures to control erosion and sedimentation to the maximum extent practicable.

4. The 100-year flood inundation limits shall be shown on the project site plans. Lot geometrics cannot be approved until such data is submitted and reviewed.

5. A detailed final Traffic Impact Assessment Report for the entire development shall be submitted for our review and approval. The report shall also address regional traffic impacts and include assessments from the local community police officer.

6. All grading/grubbing work shall comply with Chapter 20.08 (Soil Erosion and Sedimentation Control) of the Maui County Code.

7. The project shall comply with Section 16.26.3304 (Improvements to Public Streets) of the Maui County Code.

8. The project shall comply with Section 18.04.470 (Subdivision) of the Maui County Code which states, in part:

   ". . . the construction of four or more dwelling units on a lot, parcel, or site shall be subject to the provisions of this title."

9. Although wastewater system capacity is currently available as of June 21, 2005, the developer should be informed that wastewater system capacity cannot be ensured until the issuance of the building permit.

10. Provide discussion and calculations (sewer impact study) to substantiate that the existing wastewater system is adequate to serve this project.

11. Wastewater contribution calculations are required before building permit is issued.

12. Developer is not required to pay assessment fees for this area at the current time.

13. Developer is required to fund any necessary off-site improvements to collection system and wastewater pump stations.

14. Review of the project construction plans by our office is required before the building permit is issued.

15. The existing private wastewater system shall remain privately owned and maintained. Any new sewer improvements shall be privately owned and maintained.

16. The developer shall submit a letter from the owner of the existing sewer system agreeing to the connection. A letter agreeing to use the Kapalua allocation will also be required.

17. Kitchen facilities within the proposed project shall comply with pre-treatment requirements (including grease interceptors, sample boxes, screens, etc.).

18. Non-contact cooling water, condensate, etc. should not drain to the wastewater system.

19. Indicate on the plans the ownership of each easement (in favor of which party). Note: County will not accept sewer easements that traverse private property.

Please call Michael Miyamoto at 270-7845 if you have any questions regarding this letter.

Sincerely,

MILTON M. ARAKAWA, A.I.C.P.
Director

MMA:MMM:da
xc: Office of Environmental Quality Control
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PBR HAWAII

LAND PLANNING
LANDSCAPE ARCHITECTURE
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SENIOR ASSOCIATE

TOM SCHNELL, AICP
ASSOCIATE

RAYMOND T. HIGA, ASLA
ASSOCIATE

KEVIN NISHIKAWA, ASLA
ASSOCIATE

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July 27, 2005

Mr. Milton Arakawa, Director
County of Maui
Department of Public Works and Environmental Management
200 South High Street
Wailuku, Hawaii 96793

SUBJECT: THE RESIDENCES AT KAPALUA BAY
DRAFT ENVIRONMENTAL IMPACT STATEMENT

Dear Mr. Arakawa:

Thank you for your letter dated July 12, 2005 regarding the Residences at Kapalua Bay Draft Environmental Impact Statement (EIS). As the consultant for the applicant, Kapalua Bay, LLC, we are responding to your comments.

1. We understand that the Building and Housing Code requirements will be enforced during the building permit processing for the proposed multi-family apartment buildings.

2. The Residences at Kapalua Bay will conform to Ordinance No., 1145 pertaining to flood hazard districts. As discussed in Section 3.4 (Natural Hazards) of the Draft EIS, the Flood Zone Designations for The Residences at Kapalua Bay site are Flood Zones C and A4. The majority of The Residences site is within Zone C. Limited areas of The Residences site located directly adjacent to the ocean are located in Zone A4. Because the buildings of The Residences will be located in an area of minimal flooding (Zone C), impacts from flooding are not expected. No buildings or improvements will be within Zone A4, which is primarily the shoreline area. Relative to the existing Kapalua Bay Hotel and facilities, The Residences will be set back further from the shoreline, thereby reducing risks associated with hurricanes, tsunamis, and floods.

3. A detailed and final drainage report and Best Management Practices Plan, meeting all County of Maui requirements, will be submitted with The Residences' grading plans. We acknowledge that these must be reviewed and approved prior to the issuance of grading permits.

4. Final site plans provided to your department will include the 100-year flood inundation limits. We understand that lot geometrics cannot be approved until such data is submitted and reviewed.

5. The Traffic Impact Assessment Report (TIAR) for the Residences is included in the Draft EIS as Appendix F and discussed in Section 4.4 (Transportation). The TIAR addresses regional traffic impacts. The traffic engineer contacted Officer Scott Migita, who requested that we send a formal letter to the Chief of Police. We have not received a response to date. However, the Police Department did respond to the Draft EIS and stated: "minimal impact on traffic in this area is anticipated."

6. All grading and grubbing work will comply with Chapter 20.08 (Soil Erosion and Sedimentation Control of the Maui County Code. In the final FEIS Section 3.3 (Soils) will be revised as follows:

   > Site grading will be segmented and exposed areas will be immediately grassed or landscaped before commencement of grading in the next phase, in compliance with the Maui County grading ordinance and Chapter 20.08 (Soil Erosion and Sedimentation Control) of the Maui County Code.

7. Please note that the primary road bordering The Residences is Lower Honoapiilani Road. The section of Lower Honoapiilani Road within the Kapalua Resort is privately owned and maintained. To the extent applicable, The Residences will comply with Section 16.26.3304 (Improvements to Public Streets) of the Maui County Code.

8. Please note that The Residences are proposed as condominium and fractional ownership. To the extent applicable, The Residences will comply with Title 18, Subdivisions, of the Maui County Code.

9. Regarding wastewater system capacity, Section 4.9.4 (Wastewater System) of the Draft EIS discuses existing and proposed wastewater systems. The existing average sewer volumes from the Kapalua Bay Hotel and associated uses, are estimated to be 68,600 gpd, based on County guidelines for wastewater contribution. The projected average sewer volume for The Residences is estimated to be 61,425 gpd, based on County guidelines for wastewater contribution. This represents a decrease of 10 percent compared to the existing conditions.

   In addition when the Lahaina Wastewater Reclamation Facility was constructed, Kapalua Land Company, Ltd., a subsidiary of Maui Land & Pineapple Company, Inc., paid for an additional allocation of approximately 219,800 gpd in the new facility. According to records, 185,340 gpd of this allocation, or approximately 84 percent of the total, is currently unused.

10. Detailed wastewater calculations will be provided when detailed architectural and engineering plans are finalized. As noted above the Residences are projected to decrease wastewater flows by 10 percent over existing conditions with the hotel and Maui Land & Pineapple Company, Inc., has paid for wastewater allocations when the Lahaina Wastewater Reclamation Facility was constructed.

11. We acknowledge that wastewater contribution calculations are required before building permits are issued.

12. We acknowledge that Kapalua Bay, LLC is not required to pay assessment fees for this area at the current time. Please also note responses to 9 and 10 above.

13. As wastewater flows are projected to decease, it is anticipated that off-site improvements to collection system and wastewater pump stations will not be required.

14. We acknowledge that review of the project construction plans by your office is required before the building permit is issued.

15. The existing wastewater system within the Kapalua Resort will remain privately owned and maintained, and any new sewer improvements within the Resort system will be privately owned and maintained.

16. Kapalua Bay, LLC will submit a letter from Maui Land & Pineapple Company, Inc., the owner of the existing sewer system, agreeing to the connection, as well as a letter agreeing to use the Kapalua allocation.

17. Kitchen facilities within The Residences will comply with pre-treatment requirements (including grease interceptors, sample boxes, screens, etc.).

18. Non-contact cooling water, condensate, etc., will not drain to the wastewater system.

19. At the appropriate time detailed plans showing the ownership of each easement will be provided to your department.

Thank you again for reviewing the Draft EIS. We appreciate your Department's detailed comments. Your letter will be included in the Final EIS.

Sincerely,

PBR HAWAII

Tom Schnell, AICP
Associate

cc: Mr. Michael Foley, County of Maui Planning Department
Ms. Genevieve Salmonson, Office of Environmental Quality Control
Mr. Ryan Churchill, Kapalua Bay, LLC

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ALAN M. ARAKAWA
Mayor

GEORGE Y. TENGAN
Director

DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
200 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793-2155
www.mauiwater.org

JUL 06 2005

June 21, 2005

PBR Hawaii
1001 Bishop Street
ASB Tower, Suite 650
Honolulu HI 96813
Attn: Mr. Tom Schnell, AICP

SUBJECT: The Residences at Kapalua Bay (DEIS)
TMK (2) 4-2-004:027, 028 and 029

Dear Mr. Schnell:

Thank you for the opportunity to provide additional comments on this project proposal.

The project area is outside of DWS service area. According to the applicant the estimated daily demand for the proposed development is 141,800 gallons and consumption on existing facilities averages about 124,600 gpd. This is lower than system standards but may be reasonable as Kapalua is a rainy area. Actual demand will depend on intensity of use, water features, and occupation factors.

The 1996 West Maui Community Plan lists policies and objectives for water and utilities. One of these objectives includes, "Study the feasibility of integrating all regional water system into a public water system to be managed and operated by the County". In order to achieve this, a plan for the eventual acquisition by the County of Maui of all private water systems within the region has to be developed. Integration of water systems may provide improved emergency back-up, reliability and system hydraulics. We are pleased to note that the applicant is willing to cooperate with the Department in the development of an acceptable feasibility study framework for system integration.

In order to protect and preserve our groundwater resources, we would like to reiterate that water conservation measures as well as Best Management Practices (BMPs) mentioned in our previous comment letter be included in the project design and construction.

Should you have any questions, please call our Water Resources and Planning Division at 270-7199.

Sincerely,

George Y. Tengan, Director

eam
c: applicant - Kapalua Bay, LLC
Maui Planning Commission

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"By Water All Things Find Life"

Printed on recycled paper

PBR HAWAII

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E-MAIL: pbrmaui@lava.net

July 27, 2005

Mr. George Tengan, Director
County of Maui
Department of Water Supply
200 South High Street
Wailuku, HI 96793-2155

SUBJECT: THE RESIDENCES AT KAPALUA BAY
DRAFT ENVIRONMENTAL IMPACT STATEMENT

Dear Mr. Tengan:

Thank you for your letter dated June 21, 2005. As the consultant for the applicant, Kapalua Bay LLC, we are responding to your comments.

We acknowledge that The Residences at Kapalua Bay is outside of Department of Water Supply's service area.

Note that the current average daily water demand (combined potable and non-potable of 124,600 gpd) for the existing hotel and related facilities is based on Kapalua Water Company Ltd., records. The projected potable water demand for The Residences stated in the Draft EIS is based on Department of Water Supply Water System Standards for condominium uses. We acknowledge that actual demand will depend on intensity of use, water features, and occupation factors.

As stated in Section 5.2.2 (West Maui Community Plan) of the Draft EIS, "Maui Land & Pineapple Company, Inc., will cooperate with the County of Maui Department of Water Supply in the development of an acceptable feasibility study framework for water system integration."

Thank you for your previous suggestions regarding water conservation and best management practices. Your previous letter, as well as many of your suggestions, have been incorporated in the Draft EIS.

Thank you for reviewing the Draft EIS. Your letter will be included in the Final EIS.

Sincerely,

PBR HAWAII

Tom Schnell, AICP
Associate

cc: Mr. Michael Foley, County of Maui Planning Department
Ms. Genevieve Salmonson, Office of Environmental Quality Control
Mr. Ryan Churchill, Kapalua Bay LLC

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ALAN M. ARAKAWA
MAYOR

OUR REFERENCE
YOUR REFERENCE ti

POLICE DEPARTMENT
COUNTY OF MAUI

55 MAHALANI STREET
WAILUKU, HAWAII 96793
(808) 244-6400
FAX (808) 244-6411

THOMAS M. PHILLIPS
CHIEF OF POLICE

KEKUHAUPIO R. AKANA
DEPUTY CHIEF OF POLICE

May 19, 2005

Mr. Tom Schnell, AICP
PBR Hawaii
1001 Bishop Street
ASB Tower, Suite 650
Honolulu, HI 968133484

Dear Mr. Schnell:

SUBJECT: The Residences at Kapalua Bay
TMK: 4-2-004:2: parcels 27, 28, and 29

Thank you for your letter of May 6, 2005, requesting comments on the above subject.

We have reviewed the Draft Environmental Impact Statement (DEIS) and have enclosed our comments and recommendations. Thank you for giving us the opportunity to comment on the proposed project.

Very truly yours,

Acting Assistant Chief Milton Matsuoka
for: Thomas M. Phillips
Chief of Police

Enclosure

c: Michael Foley, Maui County Planning Department
Office of Environmental Quality Control

COPY

TO : **THOMAS PHILLIPS, CHIEF OF POLICE, MAUI POLICE DEPARTMENT**

VIA : **CHANNELS**

FROM : **SCOTT Y. MIGITA, POLICE OFFICER III, LAHAINA BICYCLE PATROL**

SUBJECT : **DRAFT ENVIRONMENTAL IMPACT STATEMENT-THE RESIDENCES AT KAPALUA BAY**

Sir, this transmittal is being submitted regarding a Draft Environmental Impact Statement of a proposed residential condominium and home development prepared by PBR Hawaii for the Maui Planning Commission and Kapalua Bay, LLC. This project, The Residences At Kapalua Bay will replace the existing Kapalua Bay Hotel and related facilities. It will contain approximately 155 homes in a resort residential type setting clustered in approximately nine buildings. Approximately 90 units will be designed for sole ownership and the remaining 65 units will be for fractional use. The buildings will range between three to six stories. The existing roadways and intersections in the vicinity of the existing site include Lower Honoapiilani Road, Office Road, and Honoapiilani Highway.

On page 39, within Appendix "F" of the Transportation Impact Analysis Report states that this proposed project is "not expected to impact traffic operations in the vicinity". Thus far, I have not heard or received complaints regarding the issue of traffic and safety in this area. Roadways in this area (Kapalua Bay Drive and Office Road) are privately owned and available for public access. Honoapiilani Highway and Lower Honoapiilani Road run parallel with each other on opposing ends of this project. These roadways are located on the outskirts north of Lahaina in a relatively remote area and are not heavily used throughout both daytime and evenings. Therefore, minimal impact on traffic in this area is anticipated.

Also, concern regarding the need for increased police services as mentioned in my To/From dated 01/27/05, according to a response for Mr. Tom SCHNELL, AICP, Associate for PBR Hawaii, The Residences At Kapalua Bay will represent a reduction of units compared to the existing Kapalua Bay Hotel. The Kapalua Bay Hotel currently consists of 196 units versus the 155 resort residential unit proposal or approximately 21 percent fewer units.

Submitted for your information and perusal.

Concur
Sgt. [illegible] 1512
5/13/05 0900
No comment offered.
Concur.
A/Capt. V. [illegible]
5/12/05 @ 0945 hrs

MMM
05/13/05

Respectfully submitted,

Scott Y. MIGITA, E-1122
P.O. III, Bike Patrol Officer
05/12/2005 at 1737 hours

PBR HAWAII

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E-MAIL: pbrmaui@lava.net

July 15, 2005

Mr. Thomas M. Phillips
County of Maui
Police Department
55 Mahalani Street
Wailuku, HI 96793

SUBJECT: THE RESIDENCES AT KAPALUA BAY DRAFT ENVIRONMENTAL IMPACT STATEMENT

Dear Mr. Phillips:

Thank you for your letter dated May 19, 2005. As the consultant for the applicant, Kapalua Bay LLC, we are responding to your comments.

We acknowledge that The Maui County Police Department has not heard or received complaints regarding the issue of traffic and safety in the Kapalua Resort area. We also acknowledge your comment that minimal impact on traffic in this area is anticipated.

To incorporate your comments in the Final EIS, Section 4.4 (Transportation) will be revised to include the following:

> In their comments on the Draft EIS, the Maui Police Department noted that they have not heard or received complains regarding the issue of traffic and safety in the Kapalua Resort area. In addition, they stated that roadways in the vicinity of The Residences (Kapalua Bay Drive, Office Road, Honoapiilani Highway and Lower Honoapiilani Road) "are located on the outskirts north of Lahaina in a relatively remote area and are not heavily used throughout both the daytime and evenings. Therefore, minimal impact on traffic in this area is anticipated."

Thank you for reviewing the Draft EIS. Your letter will be included in the Final EIS.

Sincerely,

PBR HAWAII

Tom Schnell, AICP
Associate

cc: Mr. Michael Foley, Maui Planning Department
Mr. Ryan Churchill, Kapalua Bay LLC
Ms. Genevieve Salmonson, Office of Environmental Quality Control

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WILSON
OKAMOTO
CORPORATION

ENGINEERS
PLANNERS

1907 S. BERETANIA STREET
HONOLULU, HAWAII 96826
PH: (808) 946-2277
FAX: (808) 946-2253

7332-01
June 28, 2005

MEETING MEMO

SUBJECT: Residences at Kapalua Bay

PERSONS PRESENT: Mr. Scott English, Lieutenant, County of Maui Department of Fire Control - Fire Prevention Bureau
Mrs. Jann Nagato, WCIT Architecture
Mr. Michael Fujita, Wilson Okamoto Corporation (WOC)

MEETING LOCATION: County of Maui Department of Fire Control – Fire Prevention Bureau Office

MEETING DATE: June 23, 2005

INFORMATION ITEMS:

1. The conceptual development plan for the proposed project was presented to Mr. English. Fire access to the project site will be provided by the existing driveway access from Lower Honoapiilani Road. The paved on-site roadway system will provide fire truck access to the main lobby and northern wing of the project. Fire truck turnaround area will be provided at all road terminus points. The fire truck access roads should be a minimum 20-ft wide with outside turning radius at least 40.5-feet. Also, the height of the porte cochere needs to be a minimum of 13-feet to clear the fire truck.

2. Mr. English stated that the access to the proposed project and fire truck access lanes looked O.K. Mr. English mentioned that he would like to see the Spa porte cochere re-positioned to provide closer access to the proposed units along the makai-southern boundary of the project site. Mrs. Nagato presented a concept plan that showed the Spa porte cochere positioned closer to the makai-southern wing as desired.

3. In lieu of the re-positioned Spa porte cochere, a grass paved fire access lane was proposed around the northern end of the project site extending along the makai setback area. Mr. English stated that the re-positioned Spa porte cochere was more desirable since it is questionable whether the grass paved fire access lane would be maintained in the future. Additionally, the grade around the northern wing of the project site

appeared too steep. Fire trucks would have a difficult time making the turn and stopping on the grass pavement.

4. Mr. English noted that fire department connections should be provided at the fire access terminus points near the main lobby, northern wing, and spa porte cochere.

5. Mr. English stated if the underground parking is enclosed than it will likely require hose cabinets, sprinkler system, and drystand pipe.

6. Mr. English mentioned that the attic space in the towers would likely require a fire sprinkler system.

7. Fire flow calculations will need to be submitted to the Department of Water Supply for approval.

This is our understanding of the matters discussed and the conclusions reached. Please provide Wilson Okamoto Corporation written notification of any errors or omissions within seven calendar days. Otherwise, this meeting memo shall be deemed an accurate record and directive.

Michael M. Fujita, P.E.
Project Manager

cc: All Attendees
Mr. Rob Centra, Marriott Vacation Club International

Enclosure: NA

PBR HAWAII

LAND PLANNING
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July 15, 2005

Mr. Scott English, Lieutenant
County of Maui
Department of Fire and Public Safety
200 Dairy Road
Kahului, Hawai'i 96732

SUBJECT: THE RESIDENCES AT KAPALUA BAY
DRAFT ENVIRONMENTAL IMPACT STATEMENT

Dear Lieutenant English:

I am writing to request comments from the Department of Fire and Public Safety regarding Kapalua Bay LLC's proposed Residences at Kapalua Bay in West Maui (TMK 4-2-04: 27, 28, & 29) (see attached TMK map). Thank you for meeting with the project's architect from WCIT Architecture and engineer from Wilson Okamoto Corporation on June 23, 2005 (see attached memo).

The final development plan has addressed the Fire Department's concerns for the Residences at Kapalua Bay. Fire Department connections will be provided at the fire access terminus points near the main lobby, northern wing, and spa porte cochere. The attics will contain sprinklers, and fire flow calculations will be submitted to the Department of Water Supply for approval. We have also included a site plan with the fire accesses marked (see attached site plan).

We note that the Maui Department of Fire and Public Safety did not provide comments on the Residences at Kapalua Bay Draft Environmental Impact Statement (EIS), which was sent to your office on May 6, 2005, with the public comment period ending on June 22, 2005.

Prior to scheduling the Final EIS for review with the Maui Planning Commission, the Maui Planning Department requests that we receive written comments from the Department of Fire and Public Safety; therefore, we are requesting your written comments at this time.

If you have any questions regarding the Residences at Kapalua Bay or if you would like to receive another copy of the Draft EIS, please do not hesitate to contact me.

Sincerely,

PBR HAWAII

By: Tom Schnell, AICP
Associate

Attachments
cc: Ms. Ann T. Cua, County of Maui Planning Department
Mr. Ryan Churchill, Kapalua Bay LLC
Ms. Jann Nagato, WCIT Architecture
Mr. Michael Fujita, Wilson Okamoto Corporation

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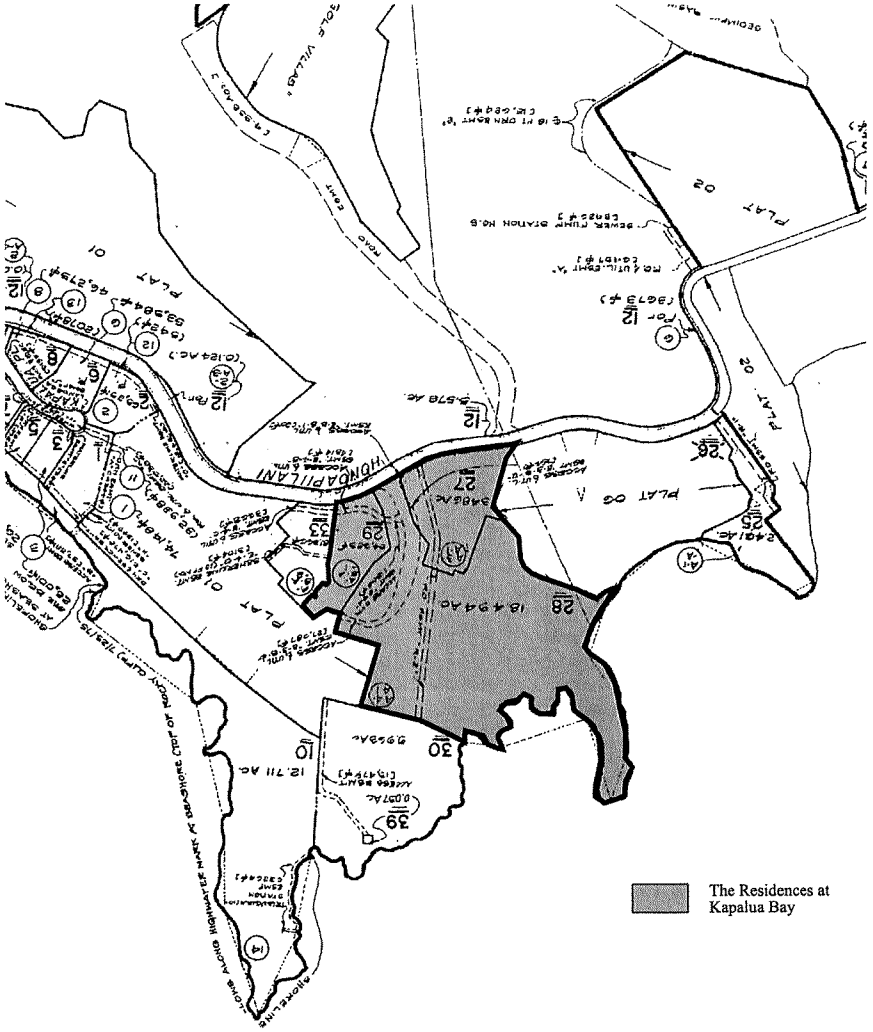

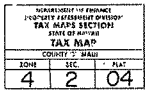

Source:
Tax Maps Bureau

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

Figure 3
Tax Map Key Map

The Residences at Kapalua Bay

KAPALUA BAY LLC — ISLAND OF MAUI

WILSON
OKAMOTO
CORPORATION

ENGINEERS
PLANNERS

1907 S. BERETANIA STREET
HONOLULU, HAWAII 96826
PH: (808) 946-2277
FAX: (808) 946-2253

7332-01
June 28, 2005

MEETING MEMO

SUBJECT: Residences at Kapalua Bay

PERSONS PRESENT: Mr. Scott English, Lieutenant, County of Maui Department of Fire Control - Fire Prevention Bureau
Mrs. Jann Nagato, WCIT Architecture
Mr. Michael Fujita, Wilson Okamoto Corporation (WOC)

MEETING LOCATION: County of Maui Department of Fire Control – Fire Prevention Bureau Office

MEETING DATE: June 23, 2005

INFORMATION ITEMS:

1. The conceptual development plan for the proposed project was presented to Mr. English. Fire access to the project site will be provided by the existing driveway access from Lower Honoapiilani Road. The paved on-site roadway system will provide fire truck access to the main lobby and northern wing of the project. Fire truck turnaround area will be provided at all road terminus points. The fire truck access roads should be a minimum 20-ft wide with outside turning radius at least 40.5-feet. Also, the height of the porte cochere needs to be a minimum of 13-feet to clear the fire truck.

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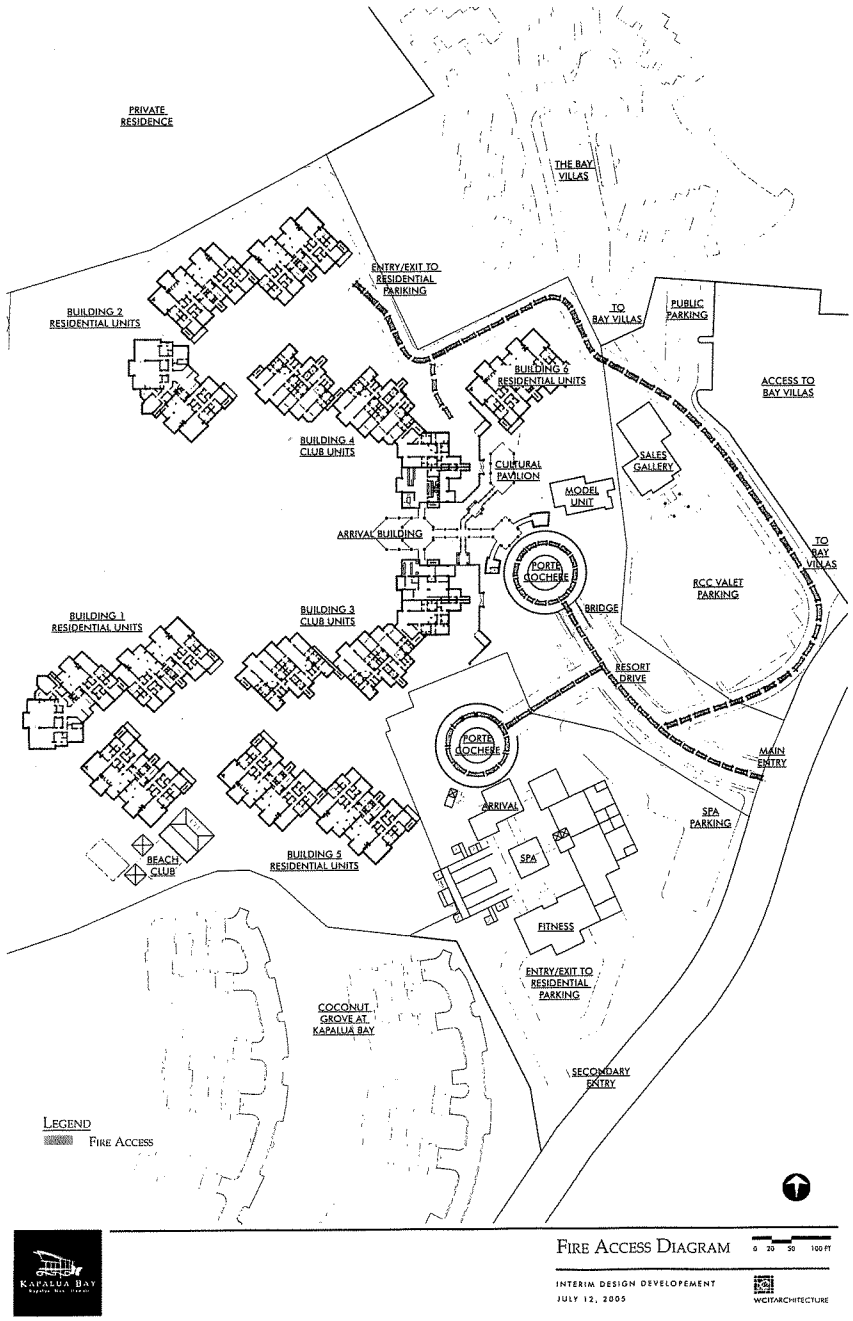
This is our understanding of the matters discussed and the conclusions reached. Please provide Wilson Okamoto Corporation written notification of any errors or omissions within seven calendar days. Otherwise, this meeting memo shall be deemed an accurate record and directive.

Michael M. Fujita, P.E.
Project Manager

cc: All Attendees
Mr. Rob Centra, Marriott Vacation Club International

Enclosure: NA



ALAN M. ARAKAWA
Mayor

MICHAEL W. FOLEY
Director

WAYNE A. BOTEILHO
Deputy Director

COUNTY OF MAUI
DEPARTMENT OF PLANNING

June 3, 2005

Mr. Tom Schnell, AICP
PBR Hawaii
1001 Bishop Street
ASB Tower, Suite 650
Honolulu, Hawaii 96813

Mr. Ryan Churchill
Kapalua Bay, LLC
1000 Kapalua Drive
Lahaina, Hawaii 96761

Dear Mr. Schnell and Mr. Churchill:

RE: Maui County Cultural Resources Commission Comments on the Draft Environmental Impact Statement for The Residences at Kapalua Bay located at TMK: 4-2-004: 027, 028, and 029, Kapalua, Lahaina, Island of Maui, Hawaii (EIS 2005/0001)

At its regular meeting on June 2, 2005, the Maui County Cultural Resources Commission (MCCRC) was presented with the archaeological inventory survey and overall conceptual plans for the above project. The Commission was also given a copy of the May 26, 2005 letter from the Office of Hawaiian Affairs (OHA) on this matter. The Commission concurred with OHA's letter and as such offers the following comments on the DEIS:

1. That an Archaeological Monitoring Report be prepared for this project. Due to the possibility of encountering buried human remains, all ground altering activities should be monitored by a professional archaeologist.

2. That native flora be incorporated into future landscaping plans for the Residences at Kapalua Bay.

3. That should iwi or Native Hawaiian cultural or traditional deposits be encountered during ground disturbance, work will cease, and the appropriate agencies will be contacted pursuant to applicable law.

250 SOUTH HIGH STREET, WAILUKU, MAUI, HAWAII 96793
PLANNING DIVISION (808) 270-7735; ZONING DIVISION (808) 270-7253; FACSIMILE (808) 270-7634

Should you require additional clarification, please contact Ms. Ann Cua, Staff Planner, of this office at 270-7735.

Sincerely,

for MICHAEL W. FOLEY
Planning Director

MWF:ATC:jmu
c: Wayne A. Boteilho, Deputy Planning Director
Kivette Caigoy, Environmental Planner
Ann Cua, Staff Planner
OEQC
EA Project File
General File
K:\WP_DOCS\PLANNING\EIS\2005\0001_ResKapaluaBay\CRCcomments.wpd

PBR HAWAII

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July 27, 2005

Mr. Michael W. Foley
Planning Director
County of Maui
Department of Planning
250 South High Street
Wailuku, HI 96793

SUBJECT: THE RESIDENCES AT KAPALUA BAY DRAFT ENVIRONMENTAL IMPACT STATEMENT

Dear Mr. Foley:

Thank you for your letter dated June 3, 2005 on behalf of the Maui County Cultural Resources Commission. As the consultant for the applicant, Kapalua Bay LLC, we are responding to the Commission's comments. We acknowledge the Commission concurs with the May 26, 2005 letter from the Office of Hawaiian Affairs. We offer the following responses to the Commission's comments.

1. An archaeological inventory survey report has been prepared for The Residences at Kapalua Bay site. The State Historic Preservation (SHPD) accepted the survey report via a letter dated June 7, 2005. In their acceptance letter SHPD recommended additional archaeological testing be conducted following the closure of the existing hotel. We agree with this recommendation and the additional testing will be submitted as an addendum to the current archaeological survey.

   Further, an archaeological monitoring plan will be prepared and monitoring will be conducted during the demolition of the existing hotel and construction of the new buildings. It may be that archaeological monitoring of the demolition may be necessary prior to some of the inventory level testing. The specific scope of the work will be developed in consultation with Dr. Melissa Kirkendall (SHPD Maui/Lana'i Archaeologist) prior to undertaking any future phases of work.

   To reflect the above information and further recommendations of SHPD, in the Final EIS, Section 4.1 (Archaeological and Historic Resources) will be revised as follows:

   Potential Impacts and Mitigative Measures

   The archaeological survey report recommends no further work for the archaeological site (5565) identified during the survey. The site is located on a rocky point between Fleming Beach and Nāmalu Bay and is within the shoreline setback area and not on the portion of the property proposed for The Residences' buildings. ~~The~~ As recommended by the State Historic Preservation Division (SHPD), the site will be placed in "as is" passive preservation.

   Additional backhoe testing will be needed in the area (immediately west (*makai*)) of the main lobby ~~when the hotel building is removed~~ following the closure of the existing resort. The scope of the additional testing will be determined in consultation with the ~~State Historic Preservation Division~~ (SHPD), Maui archaeologist. Results of this additional testing will guide the preparation of an archaeological monitoring plan.

   Given a variety of factors—including the documented presence of undisturbed, natural dune sand throughout much of The Residences property—archaeological monitoring will be conducted ~~for future construction activities. Monitoring will be needed~~ during both the

demolition of the current hotel facilities and the construction of The Residences. It may be that archaeological monitoring of the demolition may be necessary prior to some of the inventory level testing. ~~Specifics of the archaeological monitoring plan will be contingent upon results of the additional testing, which will be conducted after the existing buildings are removed.~~ The specific scope of the work will be developed in consultation with the SHPD Maui archaeologist. The additional archaeological testing will be submitted as an addendum to the current archaeological inventory survey.

If necessary, based on the additional inventory work and the results of monitoring, an archaeological data recovery program will be conducted.

Kapalua Bay, LLC, and its contractors will comply with all laws and rules regarding the preservation of archaeological and historic sites should any sites be found during demolition and construction. Should historic remains such as artifacts, burials, concentrations of shell or charcoal be encountered, work shall cease immediately in the immediate vicinity of the find and the find shall be protected from further damage. The contractor shall immediately contact the SHPD, which will assess the significance of the find and recommend appropriate mitigation measures, if necessary.

The SHPD has reviewed current archaeological inventory survey report and found the report to be acceptable (Appendix D contains the acceptance letter). ~~has been submitted to the SHPD for review.~~

2. We agree with the Commission's recommendation regarding incorporating native flora into future landscaping plans. As stated in Section 3.5 (Botanical Resources) of the Draft EIS: "New landscaping will include non-invasive species and, where feasible, native and indigenous plants."

3. Should iwi or Native Hawaiian cultural or traditional deposits be found during excavation, work will cease, and the appropriate agencies will be contacted pursuant to applicable law. This is stated in Section 4.1 (Archaeological and Historic Resources) of the Draft EIS.

We appreciate the comments of the Maui County Cultural Resources Commission. Your letter reflecting their comments will be included in the Final EIS.

Sincerely,

PBR HAWAII

Tom Schnell, AICP
Associate

cc: Ms. Genevieve Salmonson, Office of Environmental Quality Control
Mr. Ryan Churchill, Kapalua Bay LLC

Maui Electric Company, Ltd. • 210 West Kamehameha Avenue • PO Box 398 • Kahului, Maui, HI 96733-6898 • (808) 871-8461

May 11, 2005

Tom Schnell, AICP
PBR Hawaii
ASB Tower Suite 650
1001 Bishop Street
Honolulu, HI 96813

Ryan Churchill
Kapalua Bay, LLC
1000 Kapalua Drive
Kapalua, HI 96761

Dear Mr. Schnell and Mr. Churchill:

Subject: The Residences at Kapalua Bay – Draft Environmental Impact Statement

Thank you for allowing us to comment on the subject project.

We have no additional comments since our earlier letter dated January 31, 2005 to PBR Hawaii. We further encourage the developer's electrical consultant to meet with us as soon as practical to verify the project's electrical requirements so that service can be provided on a timely basis.

If you have any questions or concerns, please call Dan Takahata at 871-2385.

Sincerely,

Neal Shinyama
Manager, Engineering

NS/dt:lkh

cc: Office of Environmental Quality Control
235 S. Beretania St., Suite 702
Honolulu, HI 96813

Michael Foley
Maui Planning Commission
County of Maui
250 S. High St.
Wailuku, HI 96793

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July 15, 2005

Mr. Neal Shinyama, Engineering Manager
Maui Electic Company, Ltd.
P.O. Box 398
Kahului, Hawaii 96733-6898

SUBJECT: THE RESIDENCES AT KAPALUA BAY
DRAFT ENVIRONMENTAL IMPACT STATEMENT

Dear Mr. Shinyama:

Thank you for your letter dated May 11, 2005. As the consultant for the applicant, Kapalua Bay LLC, we acknowledge that you have no comments to offer in addition to those provided in your January 31, 2005 letter.

Kapalua Bay LLC's electrical consultant for the Residences at Kapalua Bay will meet with MECO as soon as practical to verify the project's electrical requirements and ensure that service is provided on a timely basis.

Thank you for reviewing the Draft EIS. Your letter will be included in the Final EIS.

Sincerely,

PBR HAWAII

Tom Schnell, AICP
Associate

cc: Mr. Michael Foley, Maui Planning Department
Mr. Ryan Churchill, Kapalua Bay LLC
Ms. Genevieve Salmonson, Office of Environmental Quality Control

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A

Market Study & Economic Impact Analysis

THE HALLSTROM GROUP INC.
REAL ESTATE
CONSULTANTS
& APPRAISERS

Market Study,
Economic Impact Analysis
and
Public Costs/Benefits Assessment
of the Proposed

RESIDENCES AT KAPALUA BAY

To be Located at

Kapalua Resort, Maui, Hawaii

Prepared for

Mr. Ryan Churchill
Kapalua Bay LLC

ARBITRATION
VALUATION AND
MARKET STUDIES

PAUAHI TOWER
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April 2005

THE HALLSTROM GROUP INC.
REAL ESTATE
CONSULTANTS
& APPRAISERS

April 8, 2005

Mr. Ryan Churchill
Kapalua Bay LLC
P.O. Box 187
Kahului, Hawaii 96733

Market Study and Economic Impact Analysis
of the Proposed Residences at Kapalua Bay
Kapalua Resort, Maui, Hawaii

Dear Mr. Churchill:

At your request, we have completed a defined-scope market study and economic assessment of the residences at Kapalua Bay, a 155-unit resort/residential project proposed for 27 acres fronting Kapalua Bay, within the Kapalua Resort destination community. The development will offer a mix of whole and interval ownerships within a comprehensive mixed-use resort environment having lodging, dining, spa, beach club and residential components. Ninety of the units will be offered as full-unit (standard) ownerships; the remaining 65 will be sold via 1/12th interest ownerships.

The subject property, identified on State of Hawaii Tax Maps as Second Division Tax Map Key 4-2-04, Parcels 27, 28 and 29, is a level to sloping site extending makai from Lower Honoapiilani Road/Bay Drive. The site is currently improved with the Kapalua Bay Hotel/Shops at Kapalua complex.

The focus of our assignment is embodied in eight tasks:

1. To quantify the demand for resort condominium inventory (whole-unit and interval ownerships) in the subject area and the competitive Maui market using demographic, economic and other analytical techniques.

2. To identify the existing inventory of whole and interval units in the effective market area, and their marketing and absorption histories.

3. To identify current and proposed competitive inventory additions, in regard to timing, likelihood of actualization, and other relevant traits.

4. To assess the appropriateness of the subject holding for the proposed use and ascertain whether it has sufficient attributes to obtain a competitive market share.

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VALUATION AND
MARKET STUDIES

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5. To estimate the speed of absorption for the units in the subject project.

6. To estimate the direct and indirect, on and off-site benefits flowing to the local economy as a result of undertaking the subject development, including job and wage creation, business, operations and profits, and owner/guest discretionary expenditures.

7. To quantify the impact of the project on the public purse over time in regards to revenues generated (real property, income, excise and accommodations taxes) and costs of providing governmental services.

8. To compare the economic and public impacts of the proposed development with the existing operations.

The function of our assignment was to provide market data, analysis of market supply/demand factors, and an informed opinion of the anticipated level of market success the subject inventory can expect to achieve, for use in the entitlement petitioning process and other land use regulatory submittals.

The pertinent results from our study are contained in the following summary report, focusing on tabular presentation with brief narrative conclusions.

In completing this assignment, we visited the subject property, environs, and competitive projects in the study area; interviewed knowledgeable developers, brokers and other parties regarding current sales and market conditions; utilized published and on-line databases; reviewed governmental land use designations, entitlements and policies in the region; and, identified proposed competitive developments for each subject use type and their attributes.

This study was prepared for Kapalua Bay LLC and PBR Hawaii, with Ryan Churchill and Tom Schnell, respective representatives, being the primary client contacts. The purpose of this assignment is to provide market analysis and conclusions regarding the proposed subject development for use in land use entitlement petitions for the property, and for internal planning purposes. The effective date of the study is April 1, 2005.

All conclusions presented herein are subject to the identified limiting conditions, assumptions and certifications of The Hallstrom Group, Inc., in addition to any others set forth in the text or tables. All work has been completed in conformance with the Code of Professional Ethics and Standards of Professional Appraisal Practice of the Appraisal Institute, and the Uniform Standards of Professional Appraisal Practice (USPAP).

Based on our investigation and analysis we conclude:

- The resort condominium market is in a strong demand cycle throughout the State, with rapid absorption and escalating prices for the limited product available. The oceanfront sector is evidencing particular strength, with all competitive inventory on Maui having been absorbed.

- The interval ownership market is also experiencing a major expansion period on Maui, with prices and sales near record levels, and the sector becoming the focus of resort development on the island. Products are moving further upscale and are pursuing a greater range of ownership options.

- The property is well-suited for the proposed development and the master plan will achieve market acceptance by providing high quality, new oceanfront purchase opportunities for residents and second-home and vacation unit buyers.

- Complete market absorption of the 90 full ownership resort condominium units will require less than three years, with sell-out expected via pre-sale offerings before project construction is finished. The 65 interval ownership units (780 total intervals) will also require fewer than three years to be absorbed.

- The construction of the Residences at Kapalua Bay and its on-going operations will create some 3,509 "worker years" of employment on Maui during the first decade of its construction and use, with wages of circa $146 million. On a stabilized basis, project operations will support about 188 full-time equivalent on-site jobs and contribute to another 75 off-site, with total wages of $7.5 million annually.

- The average daily de facto population of the project is projected at 459 persons, including 50 full-time residents, with annual discretionary expenditures of $29.3 million per year. The project will infuse $300 million in development capital and $11 million in annual business operations into the Maui economy.

- The State of Hawaii will receive nearly $40 million in primary tax receipts during the first decade of subject development and operation, and a stabilized amount of $3.0 million annually. The county of Maui will receive $26.6 million during the first ten years of the project, and $3.4 million per year thereafter. In no year does the state or county suffer a revenue shortfall (costs exceeding receipts) relative to the project.

- While there will be some job displacement of existing Kapalua Bay Hotel and Shops employees during the construction period, the net result of redevelopment will be generally positive from an employment, economic impact and tax receipts perspective relative to the current status quo. Further, it will re-establish the prestige of one of West Maui's premier resort sites, and create a fresher, facility and more stable operation than currently exists.

We appreciate the opportunity to be of service in regards to this holding. Please contact us if further detail or discussion in the matter covered herein is required.

Respectfully submitted,

THE HALLSTROM GROUP, INC

James E. Hallstrom, Jr., MAI, CRE

/as

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ASSIGNMENT AND SUMMARY OF CONCLUSIONS

Assignment

The Residences at Kapalua Bay will be a 155-unit luxury-class resort condominium development located on 27 picturesque oceanfront acres within the Kapalua Resort community. The project will offer 90 of the units as whole ownerships, of which 30 are spoken for by venture partners (Exclusive Resorts), and 65 units as 1/12th interval ownerships as part of a Ritz Carlton vacation club. The facility will also contain a restaurant, spa, beach club and extensive amenities.

The purpose of our assignment was to analyze the proposed subject project in light of competitive, regional, prevailing and forecast economic/market conditions in order to answer five foundational study questions:

1. Is there sufficient market demand to absorb the 155 units of the Residences at Kapalua Bay master plan during a reasonable exposure period given competing developments and statewide/regional economic trends?

2. From a market perspective, will the subject project be a favorable use of the site relative to governmental land planning objectives, accepted master plan design characteristics, and the area environs?

3. What will be the general/specific and direct/indirect economic impacts on Maui resulting from the undertaking of the subject development through capital investments, jobs, wages, business revenues and profits, de facto population, and resident/guest discretionary expenditures?

4. What will be the impact on the state and county "public purse" from the project in regards to costs of services required versus increased tax/fee receipts?

5. Is the proposed redevelopment appropriate for the site and resort community, and how will the new project compare with

the existing facility in regards to operational scope, employment, economic impacts and taxes?

These issues were addressed through a comprehensive research and inquiry process utilizing data from market investigation, governmental agencies, various Hawaii-based media, industry spokespersons/ sources, on-line databases, and published public and private documents.

The pertinent results of our assignment are highlighted in this narrative report. Our study findings are divided into eight chapters as follows:

Study Conclusions
The Subject Property and Proposed Development
Environs -- Maui, Lahaina District and the Kapalua Resort
The Resort Condominium Market
The Resort Interval Ownership Market
Subject Site Appropriateness and Absorption Conclusions
Economic Impact Analysis
Public Cost/Benefit Assessment

For this analysis, we have been provided with Residences at Kapalua Bay conceptual master plans, project descriptions, timetables and other analytical data prepared by the owner/developer and PBR Hawaii, Inc. Additional source information regarding the subject was taken from the files of our past studies regarding the subject holding.

Study Conclusions

Based on our inspection of the subject site, its environs and analysis of the historic and forecast West Maui real estate market, we have reached the following conclusions about the proposed Residences at Kapalua Bay project:

The West Maui Region and Kapalua Resort

West Maui, generally, and Kapalua specifically, is among the most desirable resort/residential areas in the state, with an exceptional and diverse visitor plant, a quaint historic village offering a complete line of modern services, superior climate, a lush natural beauty and a variety of recreational resources. Kapalua Resort, a luxury destination development at the northerly end of the high demand Lahaina-Kapalua corridor, has enjoyed strong market demand over the past two decades.

The study area suffered from the early 1990s economic slump to a lesser degree than most Hawaii regions, maintaining a strong commercial base and competitive tourism levels. There has been meaningful economic recovery and upcycle economic activity during the three-plus years since 9/11, with measurable gains in the visitor and real estate industries. Visitor arrivals, expenditures and lodging statistics (rates and occupancies) have all moved strongly upwards in 2003-2004 driven by U.S. West Coast travelers; the prime resort/residential user and purchaser demographic for West Maui.

The high recognition of the West Maui region coupled with a scarcity of developable land has consistently bouyed real estate prices since the mid-1970s. Following a decline in the early 1990s, investor/developer interest has again appeared across the real property spectrum. Regardless of Mainland conditions, virtually all sectors of the Maui market are in a quickly heating upcycle, with available inventory being rapidly absorbed (particularly in the resort market), and widespread appreciation.

The subject property is well-located to benefit from the highly favorable mid to long-term market trends evident in West Maui.

The Maui Resort Condominium Market

A total of some 7,800 resort condominium units have been offered in the major destination resort projects statewide to date. Within the resorts considered directly competitive with the subject property, there have been 4,092 total units constructed. In competitive Maui resorts, a total of 3,565 units have been built.

Maui was the traditional leader in upscale resort condominiums. However, the ultra-luxury units in the new Kona-Kohala resorts became the trendsetters in the 1990s. Several Maui projects have moved towards this high level at Kapalua, Wailea and Makena; and the subject will reinforce this trend.

Generally, Maui resort condominium units are among the highest-priced in the state, with recent "original" selling prices ranging from $600,000 to over $3,000,000, and recent resale prices approaching $5 million. The reason for the higher-than-average prices obtainable in resort communities are two-fold: being in a resort, the project is better located with more proximate amenities and more homogeneous development types adjacent (relative to non-resort "strip" construction); and, destination resorts typically have higher standards (and restrictions) regarding improvements design and densities. The

selling price disparity between physically comparable units within and outside a resort complex can range from several hundred thousand to many millions of dollars.

Without exception, all of the neighbor island in-resort condominium projects developed over the last 15 years have been designed in adherence to the low-key, residential-feel concept, a trend we anticipate to continue. In the newer projects, densities are at four to ten units per acre (instead of the 15 to 20-plus units per acre of prior developments).

A model site for such a resort/residential condominium development would have shoreline or golf course frontage, superior views, spacious units (averaging upwards of 1,600 square feet), sufficient size to permit amenity development in an unintensive setting, access to resort facilities, and an exclusive/secure environment. The units would be detached townhouses, or built in multi-plex buildings. The finish would be at or near the highest quality.

The proposed Residences at Kapalua Bay will embody these characteristics.

Based on our analysis, we forecast the demand for resort condominiums on Maui will be as shown in the following chart.

ESTIMATED MAUI MID-POINT RESORT CONDOMINIUM DEMAND (2005 through 2024)

	Average Annual Demand	Total Periodic Demand	Cumulative Demand
2005 to 2009	110	550	550
2010 to 2014	125	600	1,150
2015 to 2019	130	650	1,800
2020 to 2024	140	700	2,500

The proposed supply of resort/residential condominium development in existing, potentially primary competitive destination resort communities on the neighbor islands is 10,046 units, of which only a fraction are likely to be built during the study period (2005 to 2024) based on historic and announced development trends. If all were constructed, this supply will out-pace demand levels statewide. The number of units approved for Maui resorts total 3,336.

We estimate that on a reasonably optimistic basis no more than 2,048 relatively competitive units will be built on Maui over the next two decades apart from the subject. This will be an insufficient supply to service demand during the study period by more than 450 units.

Not only are long-term (macro) trends favorable for the subject, current (micro) indicators are also favorable. Recent data provided by the Maui Board of Realtors indicates the median price of a condominium on the island of Maui rising to $330,000 from $222,000 in the prior year. Days on market for condominium product has shown similar strength, decreasing to an average of 85 days from 128 a year earlier. When median prices are distributed by area, the Kapalua resort community indicates growth to $775,000 in the current month from $512,500 a year ago.

Two market segments have show exceptional absorption rates in comparison to the market as a whole. The first being oceanfront projects, such as at Wailea Beach Villas, Coconut Grove, and Kolea, which have seen product taken down at quarterly rates of 16.0, 9.0, and 15.0 unit sales, respectively. The second being projects located on the Island of Maui, such as the previously mentioned Wailea Beach Villas and Coconut Grove, as well as Na Hale O Makena (6.7), Wailea Fairway Villas (18.7), and Palms 2 (29.3).

The proposed subject development benefits due to its position in both segments (Oceanfront and Maui).

In evaluating probable market acceptance for the subject inventory, we have considered two factors. The first is a lack of supply. The Residences at Kapalua Bay could be available for presales sometime in 2005 or 2006, a time by which there will still be no remaining competing inventory in the Maui resorts other than resales. Second, we have reviewed recent market trends which indicate strong absorption rates for products having either Maui or oceanfront orientations; the subject has both.

All market indicators show support for the development of the proposed whole-ownership condominium resort units of the Residences at Kapalua Bay project.

The Maui Resort Interval Ownership Market

The "interval ownership" segment of the resort condominium market, wherein multiple persons own fractional interests in a single unit, has

evolved significantly over the past 30-plus years, becoming a leading investment and activity focus in resort real estate over the past decade.

The initial development surge of "timeshare" product in Hawaii began in the late 1960s, focused toward Waikiki and non-resort vacation communities on the neighbor islands such as Kailua-Kona, Kihei and Poipu. The inventory was typically a circa 750-square-foot unit of moderate size and quality one bedroom, one to two baths with full kitchens, within low to mid-rise limited amenity, on and off-water projects. Intervals were generally of one week duration, although longer periods were available in some developments.

Middle-class, West Coast tourists were the primary purchaser demographic. Weekly interval prices during this period ranged from $3,800 to $12,000. Demand grew steadily into the mid-1970s, with specific project demand more a result of sales tactics then project characteristics.

Today, most of intervals are still offered as weekly ownerships, but one week "every other year" and several week intervals are available at many projects. Units are now a mix of upgraded studio, one and two-bedroom styles, of up to 1,800 square feet, with prices ranging from $15,000 to $35,000 weekly.

Continuing the upward evolution, luxury hotel operators (including Four Seasons, Ritz-Carlton and Westin) are aggressively pursuing Maui interval ownership projects; often as part of an exclusive mixed-use facility having whole unit ownerships, single and multifamily models, spa, restaurant, meeting and club facilities. These will be multi-million dollar, ultra luxury units, often in excess of 2,000 square feet, sold at prices ranging upwards from the equivalent of $75,000 per week.

The Residences at Kapalua Bay units which are sold via interval ownerships will embody these leading edge characteristics.

There were a total of 6,026 registered time share units in Hawaii as of the mid-2004 survey by the State (published March 2005), up a significant 16.8 percent from the prior year. Of these, 5,921 were in operation as of the survey date, the remainder under-construction or otherwise out of service.

The number of intervals sold in the islands has increased in each of the last five years, reaching an estimated 19,800 intervals in 2004. The average interval price is now circa $22,500, again the fifth straight year of escalation.

Approximately 31 percent of the total intervals sold statewide during the past five years have been on Maui, placing it between West Hawaii (26 percent) and Kauai (34 percent) among the leading neighbor island destinations.

On Maui, there are 1,432 registered interval ownership units. They are a mix of types, ages, quality, amenities and locational characteristics.

Our forecasts for interval absorption on Maui over the next two decades are as follows:

ESTIMATED MAUI MID-POINT RESORT CONDOMINIUM INTERVAL OWNERSHIP DEMAND

	Average Annual Demand	Total Periodic Demand	Cumulative Demand
2005-2009	6,500	32,500	32,500
2010-2014	6,800	34,000	66,500
2015-2019	7,100	35,500	102,000
2020-2024	7,450	37,250	139,250

There are some 1,167 firmly proposed timeshare/interval units on Maui, including the Residences at Kapalua Bay, totaling up to 54,606 intervals. On a gross basis, the proposed inventory is the equivalent of about six years of supply relative to demand levels; or an insufficient amount of supply to fully meet anticipated demand during the projection period. Further, the projects will be well-spaced to maximize market exposure and minimize overhanging supply.

While the specific interval length product type being considered for the subject units ($1/12^{th}$ ownership) are rare at this time, the overall market indicators are sufficiently favorable and the demand for Maui units so strong, we conclude the macro analytical trends generously support the rapid absorption of the proposed Residences at Kapalua Bay interval ownership units.

Subject Appropriateness and Absorption Estimates

The 27 acre oceanfront subject parcel, a complex landholding fronting Kapalua Bay, is a highly appropriate and favorably competitive location for the proposed Residences at Kapalua Bay mixed-use resort condominium project. We conclude the physical, functional, community, and amenity characteristics of the property are desirable from a market perspective, placing the development at the top of its sector and certainly enhancing the salability of the finished whole and interval unit inventory.

Primary contributing factors to this conclusion include:

- The subject property is one of the more picturesque holdings in the islands.
- Kapalua Resort is a comprehensive, upscale, exclusive destination community.
- The holding has had an established resort use for three decades.
- The parcel is of sufficient size, shape and terrain to support a competitive, leading-edge, luxury class project.

We have quantified absorption rates using three techniques, all of which point to a reasonable sell-out period of circa two to three years for both the whole and interval-ownership subject units.

The gross analysis method indicates there are insufficient competitive units to meet demand regardless of other factors. The residual method demonstrates that the probable levels of competing developments could all achieve a reasonable absorption level and there would still be remaining demand for the subject product. And the market shares method indicates the Residences at Kapalua Bay units would be absorbed in a timely manner based on its competitive penetration in the market.

Economic Impact of the Subject Development(1)

The project will generate some $300 million in direct, new capital investment and spending into the Maui economy during a four-year planning and construction period. This will create an estimated $41.4

(1) All dollar amounts contained in this report are based on constant, uninflated 2005 dollars.

million in profits for local suppliers and provide a needed boost to the commercial construction sector. On a stabilized basis after completion, some 263 maintenance/renovation workers, club employees, restaurant and spa staff, and other on- and off-site positions will earn $7.5 million in wages each year, and resident/guest users of the project will spend $29.3 million annually in the local market.

A total of 2,508 worker/years of direct on-site employment will be created during the 10-year construction and operation study timeframe, along with an additional 1,003 worker/years in associated and indirect off-site employment. The total wages paid during the initial decade of development and use will be $146 million, peaking in year 3 of the project.

The full-time resident population at the subject is estimated to reach 50 persons, with a nominal number of school-aged children (perhaps 10 to 20). Second-home owners, club members, and guests are expected to add a daily average of 409 persons to the community, resulting in a de facto population of 459 persons for the project. The discretionary expenditures by these individuals is expected to reach $29.3 million annually at build-out. The total household income of full-time residents is forecast to reach a stabilized level of $5.8 million per year.

The expenditure of employee wages, business profits, and resident/guest discretionary funds into the Maui market will enhance hundreds of additional off-site, secondary/indirect jobs on the island, and generate several million dollars in additional wages.

The total direct, local economic impact to Maui (dollars flowing into the island market) is estimated to be $343.8 million during the initial decade construction and operation study period, and stabilize at $40.1 million annually thereafter. As these dollars move through the island market, they will have a multiplier effect increasing the economic impact of the Residences at Kapalua Bay to Maui during its first 10 years to some $687.7 million.

Public Cost/Benefit of the Subject Development

The county of Maui will receive $26.6 million in real property tax receipts from the project over the 10-year study projection period, and an estimated $3.4 million per year thereafter. The county government operating costs associated with serving the subject, using a per capita basis, will total $6.0 million for the initial decade timeframe, and be

some $1.0 million on a stabilized basis. The county will enjoy a net revenue benefit (taxes less costs), totaling $20.6 million during the first 10 years of construction and use, and $2.4 million each year after build-out.

The State of Hawaii will also show a positive net revenue benefit from the Residences at Kapalua Bay. The total gross tax revenues during the 10-year modeling period will reach $39.9 million from income, gross excise and transient accommodation taxes, and will stabilize at $3.0 million annually following build-out. State costs associated with the project on a per capita basis will be $15.1 million during the projection timeframe and $2.5 million per year subsequently. The state will experience a net profit of $24.8 million in the 10 years and a stabilized benefit of $450,000 annually after build-out.

In no year does either the county or the state suffer a revenue shortfall due to the subject project.

THE SUBJECT PROPERTY AND PROPOSED DEVELOPMENT

Land

The subject property is an irregularly-shaped 27-acre holding located along the northerly reaches of Kapalua Bay, on the northwest coastline of the island of Maui, within the Kapalua Resort community, eight miles north and 25 miles northwest of Lahaina Town and Kahului Airport, respectively. The site is comprised of three parcels; an 18.645 acre oceanfront lot which contains the existing Kapalua Bay Hotel, and an interior 3.486 acre lot underlying the Shops at Kapalua complex, and an open space parcel of 4.87 acres.

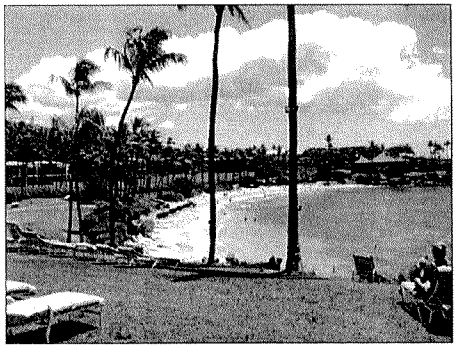
The Hotel parcel is identified on State of Hawaii Tax Maps as Second Division, Tax map Key 4-2-4, Parcel 28, varies in width (north/south) from 150 to 1,100 feet and in depth (mauka/makai) from 420 to 925 feet. The topography is near level in the northerly/mauka area of the property, at an elevation of circa 40 feet above sea level, becoming moderate to steeply sloping moving shoreward.

The shopping center parcel is identified on tax maps as Second Division 4-2-4, Parcel 27, and varies in width from 170 to 380 feet and in depth from 230 to 465 feet. The property slopes downward from its

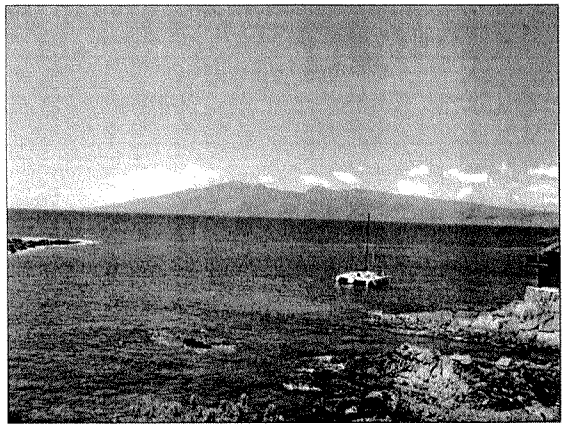
frontage along Bay Drive (circa 50-foot elevation), but is generally level in the central/makai portions where the retail center is located and as it abuts the hotel property. This interior holding has no shoreline.

The open space parcel is identified on tax maps as Second Division TMK 4-2-04, Parcel 29, and varies in width from 100 to 200 feet and in depth from 300 to 400 feet. This property has no ocean frontage.

The combined site has a complex rock and sandy waterfront stretching more than 2,000 feet from Kapalua Bay Beach Park along the northerly coastline of Kapalua Bay towards Hawea Point, encompassing a series of small coves (including Namulu Bay) and inlets. The bay provides superior scenic and recreational amenities, with clear water (low turbidity), significant reef formations, and relative protection from northerly winter swells; overall a classic Hawaiian setting.



The views from the property are considered some of the finest in the state. Makai panoramas extend across the Bay and Pailolo Channel towards the rugged, forested mountains of East Molokai, and across Auau Channel to Lanai. The mauka scenes include the interior of the resort, middle elevation pineapple fields, and the conservation lands of the upper flanks of the West Maui Mountains.



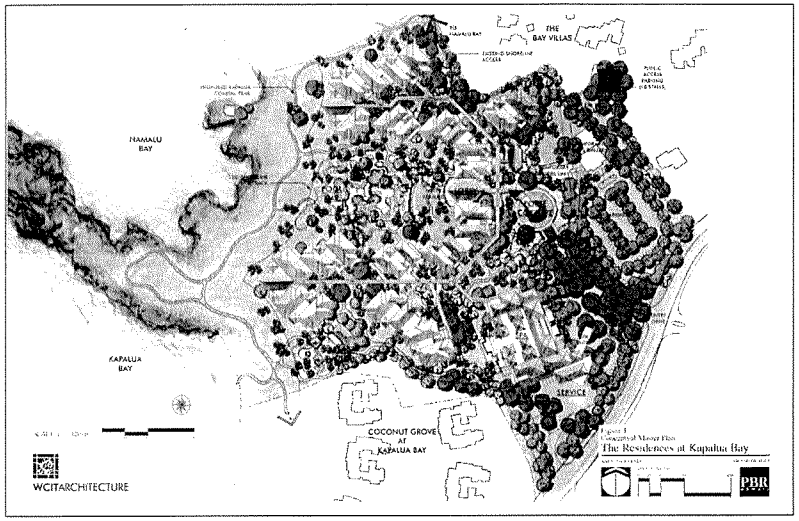
Access to the site is via Bay Drive, a two-lane, asphalt roadway, with a turn-pocket into the subject complex. The roadway is an extension off of Lower Honoapiilani Road which was the main (only) arterial in West Maui, leading from Kaanapali Resort through the shoreline villages to Kapalua, until the opening of the bypass highway in the 1980s.

All utilities are available to the property, including water, sewer, electricity, telephone, cable television, from the resort mains extending from the access road.

This portion of Kapalua Resort is built out according to the existing master plan. Southerly adjacent to the subject, along the central beachfront of Kapalua Bay, is the Coconut Grove resort condominium, a 36-unit luxury project (with current unit prices of upwards of $3 million) built in 2001. On the southerly headland of the bay, is the Kapalua Bay Club, a restaurant/bar which was closed by the resort at the end of 2004. Northerly/makai adjacent to the hotel is a private residence. Further outlying from the subject are the recreational (golf course) and open spaces of the destination resort community.

Proposed Redevelopment

The owners of the property are planning to demolish the existing improvements on the combined site and develop a 155-unit luxury oceanfront resort condominium project.



The residential units are preliminarily planned to range in size up to 3,100 square feet, being a mix of two-bedroom, three-bath and three-bedroom, three and one-half-bath floor plans.

- Ritz Carlton Club Oceanfront -- 2,100 square feet living area, 425 square feet lanai area;
- Residences Oceanfront -- 2,920 square feet living area, 1,353 square feet lanai area;
- Ritz Carlton Club Interior -- 1,600 to 1,927-square feet of living area, 425 square feet lanai area; and

- Residences Interior -- 2,815 square feet living area, 540 square feet lanai area.

Although consisting of a mix of ocean-facing and interior units, all residences are anticipated to have excellent ocean views, and will feature interior finishes comparable to other luxury projects on Maui such as Coconut Grove, Wailea Beach Villas, and Wailea Point.

Each of the units will include separate living and dining areas, and full kitchens with high end appliances. The residences have been designed in order to take advantage of the in-vogue great room concept, maximizing views and the feeling of open space within the unit. Master bedrooms feature walk-in closets and direct access to outside lanai's.

The project is planned to have an extensive landscaped lagoon pool complex for the use of residents and guests. Also slated for construction is a first class beach club, day spa, and bar and grill.

Conceptually, the project will be divided into two parts: (1) the "Ritz Carlton Club," located in the northern portion of the property, which will contain 65 smaller (1,600 to 2,100 square feet in size) units that are intended for interval ownership use; and (2) the "Ritz Carlton Residences," which will be comprised of 90 larger (2,650 to 3,100 square feet in size) traditional resort condominium units.

The Residences at Kapalua Bay will provide additional residential opportunities at the Kapalua Resort. The current plan is for approximately 155 homes to be clustered in buildings containing approximately four homes per structure, similar to the adjoining The Coconut Grove at Kapalua Bay. Homes will range in size from two to three bedrooms. Approximately 90 of the homes will be sold as condominiums, and approximately 65 will be sold under a one-twelfth fractional ownership plan. The existing public shoreline access will be maintained and a new coastal trail is planned near the ocean. Current parking for shoreline access will be retained with no loss of public parking.

Under The Residence's fractional ownership plan buyers will be able to own a home to use for a specified interval. However, unlike a timeshare project, fractional home ownership allows for a larger interval of ownership. Where a timeshare unit may be sold for an interval of as little as one week, resulting in 52 separate owners, The

Residence's fractional homes will be sold in intervals of one-twelfth of a year, resulting in only 12 owners per home. This will allow each owner to enjoy the use of the home for approximately one month per year. Factional ownership usually appeals to buyers who would like a vacation home, but due to infrequent use, do not want to invest in a wholly-owned home that would be vacant much of the year.

The Residences at Kapalua Bay will replace the existing Kapalua Bay Hotel and related facilities on the site. This creates opportunities for reduced density, increased access to the ocean, more open spaces, and buildings placed further from the shoreline compared to the hotel. Under current approvals, an additional 128 rooms could be added to the existing 198 rooms of the hotel for a total of 326 rooms. In contrast The Residences at Kapalua Bay will contain 155 homes in a resort residential setting. Lock-out units will not be permitted, ensuring the de facto number of units will not increase.

While the design of The Residences site is still process, the cluster approach will result in a more residential setting with more open areas, landscaping, and ocean views between buildings. In addition, the new buildings will be set back further from the shoreline under the new shoreline set back rules of the County, which were not in effect at the time the Kapalua Bay Hotel was built. The increased area between buildings and the ocean will facilitate placement of a public costal trail planned to run through the Residences' site and beyond, providing continuous coastal access within Kapalua when all segments are completed.

Creation of the Residences at Kapalua Bay is expected to take approximately 24 months from the time all approvals are received. This time includes the removal of the existing hotel and facilities and construction of the new homes. No explosives will be used for the removal of the existing buildings. As much as possible, concrete and other materials will be recycled for use as the foundation for the new buildings – minimizing solid waste generated.

ENVIRONS

Maui, the second largest island in the Hawaiian chain, lies midway between Oahu and Hawaii. The island is often called the "Valley Island," because of its valley-like central isthmus stretching between

two mountain masses. The island measures 25 miles from north to south, a maximum 38 miles from east to west, and contains 728 total square miles. The western shores of the island of Maui include approximately 20 miles of clean, accessible, sandy beaches.

The Residences at Kapalua Bay holding is located in the northwesterly quadrant of the volcanic-created island, within the coastal corridor of the western flank of the West Maui mountains, approximately 25 miles from the county seat, interisland airport and harbor facilities at Wailuku/Kahului. The area is generally referred to as "West Maui," or the greater Lahaina community.

The region historically was used (on a nominal basis) for sugar cane cultivation, with most holdings devoted to agriculture or conservation. Over the past three decades, the coastal corridor from Olowalu to Kapalua has evolved into a major vacation and commercial community, and the most extensively developed tourism locale in the state outside of Waikiki. The primary draws of the area to tourists are the numerous picturesque bays and beaches along the shoreline, the quaint Lahaina Village, and a superior warm climate that is among the most favorable in the islands.

Wailuku, the historical hub of island business, is the seat of government for Maui County, which includes the major islands of Maui, Molokai, Lanai, and Kahoolawe. Adjacent is Kahului, the headquarters for HC&S, the world's largest sugar plantation, and the site of the primary transshipment facilities at Kahului Harbor and Kahului Airport. The Wailuku/Kahului central windward area of the island is the focus for Maui industrial activity, and the employment and resident population centers of the county outside the destination resorts. Sugar production has traditionally been the island's base industry; however, with the closure of Wailuku Mill in the early 1980s and the pending shut down of Pioneer Mill (Lahaina), alternative agricultural, commercial, and residential opportunities for the land are being pursued, with the tourism-oriented businesses of the leeward side of the island (West and South Maui) coming to dominate the economy and job market.

Currently, the county has a resident population of some 140,000 persons, more than doubled the 1980 total of 62,823, and equating to a compounded annual growth rate of four percent over the past 18 years. Outside the Wailuku/Kahului urban enclave, Kihei and Lahaina are the

largest settlements, both of which have undergone dramatic growth in recent decades due to tourism economic and land use demands.

State of Hawaii population projections call for an increasing population for the county over the next three decades, reaching 199,500 full-time residents by 2030. This would represent an expansion of 42.5 percent and a growth rate of 1.43 percent compounded annually.

The island of Maui has a current resident population of about 125,000; a figure expected to increase by almost half during the next 25 years. Most of this growth is forecast to occur in the three "major" *Community Plan* regions of the island--West Maui (which includes the subject), Wailuku-Kahului, and Kihei-Makena.

Attracted by a thriving tourism plant, some 40,000-plus non-residents additionally populate the island each day--about 43 percent (17,200) in the Lahaina-Kapalua study corridor. The capital expenditures associated with the development and operation of visitor-oriented facilities and services now comprise some 70 percent of the total island economy, and has a ripple effect throughout all governmental and private finances.

Notwithstanding a few minor stagnant periods focused in several submarkets during the early 1980s and from 1991 through late 1994, the Maui economy has generally "boomed" over the last two decades, growing at a long-term rate which places it among the more vibrant regions in the country. As Oahu before it, the island has successfully been transformed from a simple agrarian-based structure to a diversified service model founded on a widely recognized and well-established tourism industry.

Vast potentially habitable areas of the island and significant water resources have been devoted to sugar cane cultivation. Until the past decade, the long-term viability of the sugar industry was unquestioned, and the business remained a major employer and tax payer. As a result, cane land was re-classified for alternative (urban) uses only after lengthy public agency reviews and negotiation with unions.

The impact of this policy, in the face of unmet resident housing needs and off-island capital driven, visitor-oriented land use demands, was large-scale appreciation in real estate prices (due to limited supply) and major dysfunction in the residential sector since the early 1970s.

Maui boasts the world's largest sugar plantation, which apparently remains economically productive and viable. However, there has been a shrinking of the Maui sugar industry over the past 15 years, with the announced closing of the Pioneer Mill and fields in West Maui in mid-1999 being the latest casualty. Discussions and testing are progressing on alternative agricultural crops, and mixed-urban uses for large tracts of now feral land are the source of public debate. Diversified crops (macadamia nut, coffee, cocoa, floral products and others) are viewed as potential sources of agricultural land use and employment. Yet, developing consistent yields, secure markets and product acceptance requires many years; and absorption of sugar lands by other crops has proceeded slowly. Over the long term on a per acre basis, diversified crops offer significantly more employment and return potentials than sugar, benefit more from the Hawaii "name," and are less prone to outside destabilization. But it will take generations to absorb the vast plantation lands by alternative agricultural products.

The county has had one of the lowest unemployment rates in the nation, ranging from 2.2 to 7.6 percent over the last 20 years, and one of the highest incidence of multi-job workers. Only at the depths of the recession in 1992-1994 (when the unemployment rate rose to a record 7.6 percent) has the figure been above six percent during the last 15 years.

The evident movement from "rapid" to "slow" growth stances in the community in the past several years is the latest continuation of a periodic cycle dating back to the "discovery" of Maui by tourists in the early 1970s. Since that time, economic considerations have driven the conflict.

In heated economic periods (such as the late 1970s and late 1980s), rapid development, low unemployment, and large in-migration fuels slow growth sentiment. Conversely, during recessionary episodes, as the job market weakens and capital investment wanes, the community has shown greater support for further and expedited growth.

Overall, we remain optimistic as to the extended prospects for the Maui economy and resident population base, with a generally sustained growth forecast (though moderate by historic standards).

The investment value represented by the existing resort, industrial, commercial and residential components of the real estate market is many billions of dollars, and serves as a strong foundation for the

island's economy far exceeding the other neighbor islands and most tropical resort locales around the world. Base historical indicators support long-term conclusions favoring a vital and growing Maui economy. Further, Maui has a superior natural appearance and attraction which portends well for future growth.

Regional Description - The Lahaina District (West Maui)

Historically acclaimed as the playground of Hawaiian Alii (royalty), and westernized during the boisterous whaling days of the 1880s, the leeward coast of Maui is once again undergoing significant change. During the past two decades, the 40 mile oceanfront corridor stretching from Makena to Kapalua, encompassing Lahaina and the Kapalua, Kaanapali Beach, Wailea and Makena resorts, has been transformed from sleepy villages surrounded by sugarcane fields and livestock range to one of the world's most successful vacation areas--all resulting from the influx of tourist and investor capital.

The subject property is prominently located at the northerly end of this corridor.

The Lahaina District, which comprises the West Maui area, is among the most heavily urbanized outside of the City and County of Honolulu. The resident population of the district has nearly quadrupled over the past 30 years, reaching circa 21,000 persons by year-end 2004. This represents a more than doubling from the 1980 total of 10,284, and a compounded annual rate of increase of more than four percent since 1970.

Equally impressive has been the growth in the de facto population (including tourists) during the same period which expanded by more than 41 percent from 1980 through 1999, after increasing by nearly 300 percent over the previous decade. There are an average of 17,200-plus visitors in West Maui each day, housed in some 9,500 hotel and condominium units, and directly creating demand for nearly one million square feet of retail, restaurant and service businesses (excluding hotel commercial space).

The ten mile urban strand stretching close by the coastline from Puamana to the Ritz Carlton Kapalua has been the economic engine which changed Maui from an isolated agrarian community to a world renown vacation destination boasting the finest in tourism infrastructure. While extensive quality development in the Kihei-

Makena corridor in the 1980s placed that region in a competitive position with greater Lahaina, the South Maui area lacks the historicity and charm of West Maui.

Despite having urban uses utilizing only 6.4 percent (or about 4,000 of 62,471 acres) of the total district land base, which is still dominated by agricultural and conservation holdings, the subject region houses nearly one-quarter of all Maui jobs, generates upwards of $3 billion in economic activity annually, represents almost 30 percent of the island tax base, and more than 20 percent of countywide assessed real property value. Circa 1,591 acres of the urban lands in the district remain undeveloped according to mid-decade county-sponsored studies.

With the sugar industry in the region now defunct, after years of declining importance, tourism dollars have made the entire Lahaina District virtually a single integrated destination project, moving ever further away from its historical standing as a major agricultural-supporting residential community.

This conflict between visitor and resident uses over a very limited available land base has created a dysfunctional real estate market, with tourist-oriented dollars overwhelming the local population. Property and finished unit prices have escalated over the past two decades with development and infrastructure priorities being dictated by off-shore investment.

The primary problem under these conditions is a lack of sufficient affordable housing opportunities to service the workers necessary in the regional tourism, agricultural and service industries; the employees being unable to compete in the high-priced market. This dilemma is common in exclusive resort communities (Palms Springs, Monterey, Aspen, Vail and others), and concerted efforts by private interests and public agencies are required if meaningful long-term stability is to be achieved.

There is no doubt, the resident population in West Maui would be higher were it not for the competition in residential housing units between full-time resident and transient visitor demand. However, for a variety of reasons, including land costs, lack of infrastructure and community concerns, previous county administrations have restrained Lahaina growth in favor of increasing Wailuku, Kahului and Kihei populations.

Yet, the sheer numbers of workers West Maui will require during the next two decades, the continuing decline of the sugar industry, and a heavily over-burdened transportation system leading into the area, require a change of planning directions. State, county and private planners now call for housing demands created by regional economic activity in West Maui to be met "in-district" instead of moving demand elsewhere on the island. Many existing island residents would live in the highly desirable West Maui area regardless of their employment location, if sufficient housing were available and transportation issues were addressed.

Some estimates project a resident Lahaina District population of up to 35,000 by the year 2025, 70-plus percent above the existing total.

The West Maui region has the most extensive visitor plant among all non-Waikiki locales; well developed with restaurant, retail and activity facilities. In fact, a common complaint is that development has continued to the point where the area is losing its rural atmosphere, exclusivity, and traditional standing as a relaxed vacation area.

The anchor destination developments are the Kaanapali Beach and Kapalua Resorts, two of the state's more desirable master-planned vacation communities. Freestanding condominium and single-family units line the six mile coastal strip between the projects.

Currently, more than 5,200 Maui residents are employed at Kaanapali Beach hotels, shops, restaurants, and service centers. The Kapalua Resort presently has about 1,300 employees.

In summary, the Lahaina District is entering the second generational phase of urbanization; continuing its transition from an agricultural-based economy to an intensive destination/residential community. Foundational economic assets are in place to support demand, and the historically tight leash on mauka land development is apparently to be loosened over the long term.

Regardless of short-term economic and political concerns raised over the last three years, there are no significant negative long-term economic or real estate market factors impacting the prospects of West Maui. It is widely considered as one of the world's foremost vacation areas, achieving exceptionally high room rates and occupancy levels, and would be a favored residential location were inventory made available. Demand for commercial, industrial, resort and residential

land was at record levels during the latter half of the 1980s, as were the prices being achieved. Although dampened by a recession in the early to mid-1990s, and the impacts of 9/11, the Maui economy is currently in a major upcycle, with demand, prices and interest in real estate once again moving to all-time levels.

The actual and perceived desirability of West Maui among visitors, residents and investors is strong, leading to a more intensive and stable economy than any other neighbor island district; approached only by West Hawaii.

Neighborhood Description - Kapalua Resort

Offering an exclusive and secluded environment of 750 acres surrounded by more than 23,000 acres of cultivated pineapple fields, Kapalua Resort was opened in 1975, a project of the Maui Land and Pineapple Company. The intent of the master-planned community was to provide a luxurious atmosphere removed from the increasingly congested greater Lahaina-Kaanapali area. In most respects, the quality of design and improvements has achieved those aims. The resort orients its marketing programs towards the upper-income traveler and second home investor.

Due to the vast surrounding holdings of its parent company, the resort (though having intense development adjacent southerly) is assured of maintaining its exclusivity and degree of isolation relative to most West Maui properties.

Located at the northerly leeward extreme of West Maui, the project is susceptible to periodic strong winds, and a generally wetter climate than the Kaanapali Resort, which is approximately five miles south along Honoapiilani Highway. The property is developed on the slopes and rolling coastal plane of the West Maui mountain foothills, with the shoreline areas being rock outcroppings studded with picturesque bays.

To date, improvements include two luxury-class hotels containing 644 total rooms, four condominium projects housing a total of 564 finished units, three exceptionally scenic 18-hole champion golf courses, more than 120 single-family lots, a ten court tennis garden, a 22,000-square-foot (gross leaseable area) shopping village, and several freestanding retail and restaurant buildings.

In order to insure its ambience, the resort is not seeking to achieve the density levels of Kaanapali or other West Maui properties, and is an example of a low-key or conservative resort more closely related to the Mauna Kea Beach Resort type of improvement.

Ocean Frontage -- The resort enjoys shoreline along two excellent beaches, Kapalua Bay and D.T. Fleming Park, as well as strands in Oneloa Bay and other scattered areas. The focal beach of the resort is Kapalua Bay.

The Kapalua Bay beachfront, southerly adjacent to the existing hotel, is representative of the finest beaches in Maui, and experiences minimal wave action or currents, except during severe winter storms. Oceanfront activities include volleyball, sailing, snorkeling, scuba, and windsurfing. The clarity of water in the bay typically approaches 100 feet visibility, and some fine diving grounds are within the resort.

D.T. Fleming Park (on the shores of Makaluapuna Bay) is also a superior white-sand beach, although mainly of an alluvial type (as opposed to the coral variety of Kapalua Bay). There are no significant off-shore coral reefs fronting the beach, however, excellent examples are situated along the headlands at either side of the bay. Because of this trait, and its northerly exposure, the beach is subject to high surf conditions during the winter months. The area offers superior bathing potentials during most of the year.

The remainder of the resort ocean frontage is extremely rocky, with sea cliffs in some places in excess of 80 feet. The promontories permit excellent views for several of the condominium projects and the hotel. However, the shoreline is basically inaccessible except via a stairway fronting the Bay Villas, and a pathway near the Ironwoods condominium.

Climate -- Due to its more northerly location than Kaanapali Beach, the Kapalua Resort is subject to more frequent tradewind conditions, and slightly lower average temperatures than its southern neighbor. Yet, the climate is still generally good to superior, with many qualities (cool, low humidity, morning sun) that upper-income travelers typically find desirable.

View Planes -- The ocean views from the Kapalua resort are among the most desirable in the state. In addition to the makai scenes of the

oceanfront bays and beaches, Molokai and Lanai Islands form a backdrop across the "Lahaina Roads" channels.

The mauka panoramas from Kapalua are substantially better than at most Hawaii resort developments, with the expansive pineapple fields and lush upper slopes of the West Maui mountains visible from many interior parcels.

Topography/Size -- The sloping topography of the resort is generally favorable, permitting ocean views from nearly all mauka locations. The shoreline bluffs permit a variety of view planes and design types.

The underlying geology is of volcanic ash, rock and organic media, sufficient in depth to permit extensive landscaping and lush golf courses without need to import significant amounts of soil.

Even with the low-key development thrust of the community, the existing 750 acres zoned for resort acreage, coupled with the proposed 450-acre Kapalua Mauka expansion area, appears more than sufficient to support a major resort. Of significant note, is that as a low-key luxury-oriented project, the critical mass level is different from that within an intense resort such as Kaanapali, which is dependent upon greater numbers of guests and having a different marketing philosophy.

Archaeological/Other Points of Interest -- There are several archaeological sites and points of interest preserved within the development, most notably the Honokahau Burial Site, along with a small wooden missionary church located adjacent to D.T. Fleming Beach Park.

Transportation/Access -- Being situated at the extreme end of Honoapiilani Highway, Kapalua has often congested access traits as evident throughout West Maui. Although, being at the proverbial end of the road, it has substantially less traffic congestion in the immediate vicinity.

THE RESORT CONDOMINIUM MARKET

Our analysis of the resort condominium market is divided between two perspectives:

- Macro Analysis -- Assessing the overall, long-term demand and supply trends in the Maui sector; and

- Micro Analysis -- Focusing on the current demand/supply levels in the upper-end, oceanfront segment.

The study opens with an overview of the resort condominium market from its inception to current and projected trends, culminating in forecasts of demand and quantification of supply for the Maui sector. To the extent demand exceeds supply on the island, the general (or macro) climate for the proposed subject development is favorable.

The second part of the study reviews market trends specific to the destination resort, luxury, oceanfront segment for Maui, and whether sufficient demand exists relative to potential supply to successfully absorb the subject in the near to mid-term. If the market is rapidly absorbing competitive units and inventory is limited, the conditions are favorable for the Residences at Kapalua Bay.

From the 1960s through the 1980s, condominiums were the focal point of resort/residential development on the neighbor islands. At times, particularly in the late 1970s, the market has become so heated the sector moved from the real property to the pure commodity realm, with pre-selling units being sold by lottery and reservation rights heavily traded.

Large, dense oceanfront projects were the norm (particularly in West Maui), with a major attraction for the investor/buyer being intense transient rental pool operations within the projects. These operations effectively transformed the development into a "hotel," a move which revolutionized the neighbor island lodging industry.

Rental pools typically offered a significantly greater return to the unit purchaser than long-term tenant leasing, and increased the exposure of the unit to potential re-sale investors.

Before the late 1980s, units solely for "second home" ownership were a rarity, and full-time resident owners almost non-existent. Despite their claims to "luxury," most condominium units were standard, intense visitor-oriented projects, that did not attract the full upper-end of the market, and few buyers wanted to be living in a virtual hotel situation, and many seemed to need the rental income to off-set debt service.

Only a select few in-resort projects, initially at Wailea and Kapalua then later on the Kohala Coast, offered the low-key, exclusive setting appealing to upper-income purchasers not driven by transient rental prospects.

For a variety of recessionary and tax reasons, the resort/residential condominium market slumped early in the 1980s. Spurred by the general hyper-activity in the real estate market late in the decade, the sector began to recover albeit in a markedly different form. Resort development became focused away from multi-family towards hotel, golf and (particularly) single-family projects.

Although some projects attempted to reach the higher-end purchasers by building larger, better finished "residences" within lower density projects (10 to 20 per acre) outside the standard "box car", hotel-feel concept, not all attempts were successful, particularly at the less competitive destination communities. The surge in Japanese investment late in the 1980s spurred acceptance for a period, and the number of units controlled by second (or third) home purchasers, meaning they were typically vacant and not in a rental pool, increased.

Partially from the enhanced quality/style of the units, and mostly from the vast pool of Asian capital, condominiums were beginning to evolve into a competitive project for single-family resort homes. While not experiencing the "feeding frenzy" demand of the late 1970s, the sector was nonetheless vibrant by the end of the up-cycle in 1988-90, with average prices at record highs, the quality of inventory at unmatched levels, and developer and purchase interest strong.

However, as with all sectors of the resort-oriented market, sales activity for condominium units dropped dramatically beginning in late 1990. Sales within the major resorts dropped by 75 percent from the peak of 1989 to the depth of 1992. Among the projects considered most competitive with the subject, sales dropped from 348 units (new and resale) in 1989 to only 86 in 1992. Among lesser quality or more poorly located products, many units were sold/leased for full-time, local residential housing, a further sign of a stumbling sector. The trend paralleled the movement seen within all resort-oriented markets during the some "bubble-bursting period, echoing the similar collapse of the sector in 1980-1981.

Recovery was slow in the sector until the late 1990s, then stimulated by an increasingly healthy visitor market, the absorption of

overhanging inventory, the development of diverse new product, and a flood of western U.S. purchasers seeking "ultra-luxury" units in low-intensity golf-oriented resorts. By 1996, sales had doubled from four years earlier, but were still only half of the late 1980s.

The 1997 Asian economic crises caused sales to slump by 10 to 20 percent during that year, but activity rebounded strongly with 1998 through 2000 being the best period in a decade.

The economic impacts of the 9/11 terrorist attacks and subsequent recession threatened to end the strong upcycle being enjoyed by Hawaii tourism and resort real estate in 2000 and early 2001. But low interest rates, instability in the equities markets, declining travel costs and quality new product, provided a stimulating combination an the resort residential sector continued into a major upcycle which continued through 2004.

Virtually all resort condominium product offered, whether existing inventory for re-sale or proposed units via pre-sale, has been rapidly sold over the past several years, with appreciation taking prices to record levels. Although marginally rising mortgage rates has some analysts concerned, prices continue to escalate, there is an acute shortage of product, and pre-sale commitments remain solid. By year-end 2004, the neighbor island resort condominium sector was on a pace for about 850 total sales (new and resales). The Maui upper-end and "new" unit markets are continuing to enjoy vibrant demand.

The resort condominium market has historically been among the most cyclical in the state, with high demand and appreciation periods mixed with steep activity decline and soft price periods in a pattern stretching over six to ten years. Timing of inventory development has been the crucial factor in achieving rapid absorption. As such, it is essential to consider both near- and extended-term indicators when assessing demand for a project.

With most prime oceanfront in-resort sites developed, and others hampered by nearby intensive hotel development (considered as detrimental by many in today's market), resort condominium development has meaningfully evolved.

Whether called "condominium residences," "villas" or "detached town homes," the movement to smaller, low density, high amenitied, membership/resort privilege projects have moved to the forefront of

the sector. The units range from multi-plexes (up to four units) to virtual single-family homes, built with central architectural designs, features, amenities, theme and exclusivity. Successful examples include all five of the projects (totaling 80 units) at Hualalai; the Uplands at Mauna Kea, a 57-unit community with duplex and single-family units; Coconut Grove at Kapalua Bay with 36 units in nine oceanfront buildings; and The Vintage at Kaanapali, a 73-unit detached condominium development. Prices for these units range up to $3-plus million.

Most new projects are adopting the lower intensity, up-scale, multi-plex unit concept, with several (such as Makena Place and Maluhia at Wailea) pushing the envelope even further towards single-family type development. Other "condominium residence" units have recently been built at Kaanapali (The Summit), Waikoloa Beach (Kamalani Villas) and elsewhere. For off-water multi-family sites, spacious residences not mere "units," featuring exclusive secure environments at the interior of resorts, fronting the golf course and having desirable views, are now the dominant design type.

The proposed Residences at Kapalua Bay will embody these concepts, featuring large "residential" quality units built in a series of discreet pods at densities of less than seven units per acre.

This will be keeping with evolutions in buyer preference profiles. Rather than mere investors, most in-resort condominium (and virtually all oceanfront unit) purchasers are now upper-income buyers not always dependent upon unit rental income. Demographics have moved strongly towards second-home users, full-time residents, retirees, or other often childless households, who favor a low-key setting, a full-range of recreational amenities, more expansive landscaped grounds, and exclusivity apart from intensive transient populations.

While buyers are seeking access to the benefits of a resort, they do not wish to be constantly immersed in a dense resort atmosphere.

Retiree/senior purchasers are also moving strongly into the Hawaii resort/residential condominium market, particularly in older, lesser expensive off-water projects. Historically this group has not been well represented in the state due to the lack of available services in/near resort communities (primarily geriatric-oriented medical facilities), the

distance from mainland families, and the high cost of the island lifestyle.

With the increase in health service development throughout the state, coupled with the familiarity of travelers with Hawaii, the number of retirees who are purchasing units is on the increase, and they represent a large scarcely tapped sector. Most of these buyers, from the West Coast, have been visiting the state for several decades (often with their children) and are middle to upper-income households; typically moving out of an upper-end West Coast home.

They now represent a significant share of purchasers at Keauhou, Kaanapali Beach and Princeville.

In essence, the condominium purchaser of today is seeking the "feel" of a single-family residence for personal lifestyle gratification, not the "hotel" sought by buyers of years past for income return potentials.

Most of the newer generation projects have developed some form of secondary rental pool operation. They are more discreet than past rental pool efforts, often being administered from off-site and with multi-day minimum stay requirements.

Yet, as the market continues upward, and scarce prime oceanfront sites are developed with increasingly luxurious product, a greater range of amenities and services are desired. Spa, restaurant, housekeeping, valet and concierge amenities are becoming standard.

Without exception, all of the neighbor island in-resort condominium projects developed over the last 15 years have been designed in adherence to the low-key, residential-feel concept, a trend we anticipate to continue. In the newer projects, densities are at four to ten units per acre (instead of the 15 to 20-plus units per acre of prior developments).

A model site for such a resort/residential condominium development would have shoreline or golf course frontage, superior views, spacious units (averaging upwards of 1,600 square feet), sufficient size to permit amenity development in an unintensive setting, access to resort facilities, and an exclusive/secure environment. The units would be detached townhouses, or built in multi-plex buildings. The finish would be at or near the highest quality.

The proposed Residences at Kapalua Bay will embody these characteristics.

A total of some 7,800 condominium units have been offered in the major destination resort projects statewide to date. Within the resorts considered directly competitive with the subject property, there have been 4,092 total units constructed. In competitive Maui resorts, a total of 3,565 units have been built.

Maui was the traditional leader in upscale resort condominiums. However, the ultra-luxury units in the new Kona-Kohala resorts became the trendsetters in the 1990s. Several Maui projects have moved towards this high level at Kapalua, Wailea and Makena; and the subject will reinforce this trend.

Generally, Maui resort condominium units are among the highest-priced in the state, with recent "original" selling prices ranging from $300,000 to over $3,500,000, and recent resale prices approaching $5 million. The reason for the higher-than-average prices obtainable in resort communities are two-fold: being in a resort, the project is better located with more proximate amenities and more homogeneous development types adjacent (relative to non-resort "strip" construction); and, destination resorts typically have higher standards (and restrictions) regarding improvements design and densities. The selling price disparity between physically comparable units within and outside a resort complex can range from several hundred thousand to many millions of dollars.

The term "luxury" in regard to Hawaii condominiums had lost much of its credibility becoming a marketing catch-word for many overpriced units. The word began taking on a new definition with the most recently constructed and proposed projects at Hualalai, Kapalua, and Mauna Kea which have a superior evident quality.

Projects within resorts are, on an overall basis, usually of a better quality of design, material, and craftsmanship. Prior to the mid-1980s, the most favored unit types were one and two bedroom units; however, commensurate with the upscale move of recent years towards less intensive project development, larger two and three-bedroom units are predominant in newer developments. The net effect is that while fewer numbers of resort condominium units may be successfully sold relative to the late 1970s, the units are larger with much higher average selling prices.

Historic Development and Sales

We have completed an analysis of the eight major neighbor island resorts considered as comprising the "resort condominium" market in which the proposed subject would generally compete. Although the Residences at Kapalua Bay will be of the highest quality relative to the vast majority of units, the evident long-term trends are insightful. The communities studied include:

1. Wailea
2. Kaanapali Beach
3. Kapalua
4. Makena
5. Mauna Lani
6. Mauna Kea Beach
7. Hualalai at Kaupulehu
8. Waikoloa Beach

Condominium development and sales for each of these destination resorts is summarized on Table 1.

The condominium developments at Keauhou and Princeville Resorts were generally judged to be inferior (lacking in quality and appeal) to the proposed subject development.

As noted, the majority of these projects are not considered as being primarily competitive with the proposed subject development. Kaanapali Beach, despite its success with upland "detached residences" in its South Beach mauka area, is an aging, dense community which does not enjoy the exclusivity or quality of Kapalua and does not attract as upscale a demographic. Waikoloa Beach condominium development is also of a lesser grade in quality (although the most recent projects show more exclusivity).

The five remaining destination resorts (including Kapalua) comprise the directly competitive sector for the proposed subject development, and we have focused on these projects.

General Demand Trends

Historic activity of resort condominium units must be viewed in two perspectives, offering diverse demand indicators.

TABLE 1

SUMMARY OF COMPETITIVE NEIGHBOR ISLAND RESORT CONDOMINIUM DEVELOPMENT & ACTIVITY
Market Study of the Proposed Residences at Kapalua Bay
Kapalua, Maui, Hawaii

Development	Total Finished or In-Construction Units	Number of Projects	Recent Avg. Sales Price Range		Average Annual Sales	
			Low	High	Original Sales (1)	1/1986 through 12/2004 (2)
Wailea (3)	1,414	7	$488,000	$4,150,000	40.4	247.8
Kaanapali Beach (4)	1,535	10	$308,000	$1,507,000	41.49	260.1
Kapalua	564	5	$490,000	$3,510,000	21.7	51.1
Makena	52	2	$1,596,000	$3,480,000	17.3	19
Mauna Lani (5)	381	3	$775,000	$2,290,000	17.3	27.1
Hualalai @ Kaupulehu (6)	121	5	$975,000	$2,050,000	13.4	24.2
Mauna Kea Beach (7)	97	3	$725,000	$2,930,000	4.6	9.3
Waikoloa Beach	589	5	$365,000	$1,500,000	19.5	26.2
	4,092					

(1) Average new units sold since first product made available.
(2) Average units sold yearly from January 1986 through year-end 2004, original and resales, or since unit sales began.
(3) Includes Maluhia at Wailea detached 14 condominium homes.
(4) Includes the Summit at Kaanapali (55 units) and the Vintage at Kaanapali (73 units) which are classified as one and two story "detached-home condominiums".
(5) Includes Na Hale at Pauoa Beach detached 9 condominium homes.
(6) Excludes The Hales at Ke Alalua (17 units) to be offered for pre-sale in early 2002.
(7) Excludes "The Bluffs" project which is fundamentally a single family project with some units/homes pre-built. Includes the Uplands multi (40 units) & single family homes (17) which were all sold as finished residences within "condominium-type" community.

Source: Various, and The Hallstrom Group, Inc.

The first perspective is the velocity original unit sales achieved only during the actual marketing period; pre-sale and following construction (if necessary). Each project is considered individually, even though several may be undergoing sale concurrently. As condominium developers are generally very sensitive to market demand trends, marketing/constructing units only when there is a demonstrated probability of rapid absorption, the ratio of unit sales per marketing period year are rather high. Invariably, during the strong demand (or upward) portion of the cycle, units are quickly marketed, often in the course of days or months. However, in the stagnant or (downward) portion of the cycle, there remains an overhang of new units built by developers committed prior to the commencing of the slow period.

Analysis of destination resort industry condominium market based only on actual sales periods results in annual demand ranges from a low of 16.2 units at Mauna Kea Beach, to a high of 148 units per year at Kapalua. Weighted average market sales were just over 60 units annually.

Yet, this figure is not fully representative, because the activity has not been maintained consistently over time; the sales being the product of periodic development cycles. We have calculated original absorption trends using minimum marketing periods of one year, as all sales programs (even those achieving "one day sell-out") require extensive setup, pre-contacts, and closing times. A successful one month or less sales period is the result of a well-developed program.

The second perspective of resort condominium sales market activity is based on average original finished unit sales over time. In this analysis, demand is calculated based on the total number of units sold during the history of the individual resorts (the time lapse from the first condominium offering to the present).

This approach is founded on the assumption that developers are sensitive to the market, and will maximize the number of units constructed and offered over time if any measurable demand exists. The lack of offerings periodically is due to a weak market, which should also be reflected in making long-term demand calculations. In this respect, as often there are no new projects available (or only those having undesirable traits), the demand may be slightly misstated. However, we consider this method more appropriate than that employing the first perspective. According to this technique, yearly

demand on a weighted basis for the analyzed resorts has been more than 100 units annually.

Because of the evolution that has occurred in this sector from a design and purchaser perspective, long-term demand figures (which have been highly cyclical) can be misleading. Since 1975, the average annual number of units sold on an original and resale basis in the identified projects has been at circa 1,000 units, with most activity occurring from 1975 through 1980. Over the following 15 years, the average sales per year was at 869 units. Since 1996 the average has been at nearly 800 per year.

A summary of selected Maui project-by-project sales trends for the developments within the directly (or primary) competitive resorts for the last 27 months are summarized on Table 2.

Projected Demand Trends

In consideration of this transformation in the market sector, and our analysis of demographic and economic factors, we have concluded the mid-point demand for additional resort condominium units will be as shown in the chart below over the coming two decades:

NEIGHBOR ISLAND RESORT CONDOMINIUM NEW UNIT DEMAND (2005 through 2024)

	Average Annual Demand	Total Periodic Demand	Cumulative Demand
2005 to 2009	210	1,050	1,050
2010 to 2014	240	1,200	2,250
2015 to 2019	250	1,250	3,500
2020 to 2024	270	1,350	4,850

While the majority of demand has historically been oriented towards Maui (more than 60 percent to date), development is occurring in West Hawaii, but slowing on Kauai as quality land resources become scarce. Product on Lanai is very limited and non-competitive on Molokai. We anticipate the significant majority of future demand, about 95 percent, will be directed towards leeward Maui and West Hawaii. We anticipate sales will move from a Maui majority to a more equitable division between the two locations, say 55 percent to Maui and 45 percent to West Hawaii. The resulting demand for moderately-high

TABLE 2

SUMMARY OF SELECTED MAUI RESORT CONDOMINIUM SALES SINCE 1/1/2003
Market Study of the Proposed Residences at Kapalua Bay
Kapalua, Maui, Hawaii

Project	Resort	Year Built	Average Living Area SF	# Sales	Average Price	Avg Price Per SqFt
Ocean/Near-Ocean Projects						
Wailea Point First Tier	Wailea	1987	2,160	8	$4,149,167	$1,921
Coconut Grove First Tier	Kapalua	2000	2,516	9	$3,511,429	$1,396
Ironwoods	Kapalua	1979	2,568	9	$3,019,063	$1,218
Wailea Point Second Tier	Wailea	1987	1,723	14	$1,820,750	$1,057
Wailea Beach Villas	Wailea	2004	2,419	98	$2,409,592	$996
Ka'anapali Alii	Ka'anapali	1982	1,565	44	$1,506,369	$963
Coconut Grove Second Tier	Kapalua	2000	2,553	5	$2,184,200	$855
The Whaler	Ka'anapali	1976	995	31	$849,667	$854
Bay Villas Two Bedroom	Kapalua	1977	1,559	19	$1,213,316	$777
Na Hale O Makena	Makena	2002	2,175	36	$1,596,204	$717
Bay Villas One Bedroom	Kapalua	1977	1,036	28	$665,804	$643
	Overall Oceanfront Average		**1,934**		**$2,084,142**	**$1,036**
Interior Projects						
One Bedroom						
Kapalua Golf Villas	Kapalua	1979	931	15	$492,633	$528
Palms at Wailea II	Wailea	1992	1,029	4	$518,438	$503
The Ridge Villas	Kapalua	1979	1,137	16	$554,219	$488
Palms at Wailea I	Wailea	1990	1,022	11	$454,182	$444
	Overall One-Bedroom Average		**1,030**		**$504,868**	**$491**
Two Bedroom						
Palms at Wailea II	Wailea	1992	1,439	19	$834,738	$567
Wailea Fairway Villas	Wailea	1998	949	37	$487,607	$514
Palms at Wailea I	Wailea	1990	1,237	29	$620,002	$504
The Ridge Villas	Kapalua	1979	1,756	11	$841,264	$477
Kapalua Golf Villas	Kapalua	1979	1,360	15	$613,633	$452
	Overall Two-Bedroom Average		**1,348**		**$679,449**	**$503**
Three Bedroom						
Wailea Fairway Villas	Wailea	1998	1,568	6	$729,833	$465
	Overall Three-Bedroom Average		**1,568**		**$729,833**	**$465**

Source: Hawaii Information Service and The Hallstrom Group, Inc.

quality to luxury condominium units within destination resort/residential communities on Maui is projected at 1,800 to 3,200 during the coming 20 years with a mid-point of 2,500, divided into five-year periods as follows:

ESTIMATED MAUI MID-POINT RESORT CONDOMINIUM DEMAND (2005 through 2024)

	Average Annual Demand	Total Periodic Demand	Cumulative Demand
2005 to 2009	110	550	550
2010 to 2014	125	600	1,150
2015 to 2019	130	650	1,800
2020 to 2024	140	700	2,500

Proposed Supply Trends

As displayed on Table 3, the proposed supply of resort/residential condominium development in existing, potentially primary competitive destination resort communities on the neighbor islands is 10,046 units, of which only a fraction are likely to be built during the study period (2005 to 2024) based on historic and announced development trends. If all were constructed, this supply will out-pace demand levels statewide.

The number of units approved for Maui resorts total about 3,500. Of these proposed units, the large majority of those planned for Kaanapali Beach are within the North Beach Mauka development, which has yet to be fully approved at state and county levels. Makena has yet to build any condominium product within the resort community; although high quality product is appearing on northerly adjacent lands, and final in-resort development approvals are evolving. Wailea, despite having approvals for about 1,750 additional units, does not have sufficient remaining lands to build this number in a competitive low density manner.

We estimate that on a reasonably optimistic basis no more than 2,048 relatively competitive units will be built on Maui over the next two decades apart from the subject. This liberally includes 448 units at Makena; 500 at Kaanapali Beach, many of which may never be approved; and it allows for 300 units at Wailea, even though there may be insufficient lands, and 500 more at Wailea 670 (mauka of the

TABLE 3

SUMMARY OF PRIMARY PROPOSED NEIGHBOR ISLAND RESORT CONDOMINIUM DEVELOPMENT
Market Study of the Proposed Residences at Kapalua Bay
Kapalua, Maui, Hawaii
Includes Only Master Planned Resort Communities In-Development

Project	Condominium Development To Begin	Condominium Units Existing	Proposed/ Approved	Total
MAUI				
Wailea	Underway	1,414	1,638	3,052
Kaanapali Beach (1)	Underway	1,535	500	2,035
Kapalua	Underway	564	750	1,314
Makena	Underway	52	448	500
BIG ISLAND				
Mauna Kea Beach (2)	Underway	97	403	500
Mauna Lani	Underway	381	2,804	3,185
Waikoloa Beach	Underway	589	2,625	3,214
Hualalai @ Kaupulehu	Underway	121	409	530
TOTAL ALL PRIMARY PROJECTS		**4,753**	**9,577**	**14,330**
By Competitive Area				
Maui Only		**3,565**	**3,336**	**6,901**
Kohala Coast		**1,188**	**6,241**	**7,429**

(1) Proposed units will be part of North Beach Mauka increment. Total may range from 300 to 800 units. Not yet approved.
(2) Proposed units based on estimate of density of development parcels.

Source: Various, and The Hallstrom Group, Inc.

resort) which has not achieved final approvals. Also included in the estimate are the 300 multi-family units proposed at Kapalua Mauka, which is in the final approval process. These units will be unable to meet projected demand, and even with the inclusion of the 90 whole ownership Residences at Kapalua Bay units, the sector will still be undersupplied, particularly in the near term, during the current upcycle, while supply is limited. This is the period in which the subject units would be offered.

Therefore, on a macro analysis basis, the market conditions favorably support the subject development.

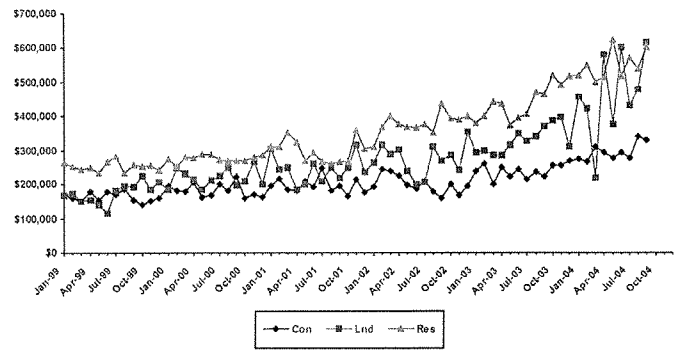
On a micro analytical basis, the current Maui resort condominium sector is also quite favorable.

Recent data provided by the Maui Board of Realtors (shown on the following page) indicates the median price of a condominium on the island of Maui rising to $330,000 from $222,000 in the prior year. Days on market for condominium product has shown similar strength, decreasing to an average of 85 days from 128 a year earlier. When median prices are distributed by area, the Kapalua resort community indicates growth to $775,000 in the current month from 512,500 a year ago.

Selling prices for resort condominiums are now typically in the range of $400,000 to $3 million. The chart shown at the bottom of the following page, summarizes Maui's resort condominium pricing since January 2003. The data includes all projects (both oceanfront and interior) within the Kapalua resort and all Maui oceanfront resort products built since 1975 (secondary resort areas such as Kahana and Lahaina are not included). Oceanfront and Near-Ocean projects were specifically analyzed for comparison with the proposed subject inventory, while sales at interior resort developments built after 1990 were considered as collateral data.

Sales Median By Month

For Month Ending 9/30/2004



	1999			2000			2001			2002			2003			2004		
Month	Single Family	Condo	Land	Single Family	Condo	Land	Single Family	Condo	Land	Single Family	Condo	Land	Single Family	Condo	Land	Single Family	Condo	Land
Jan	264000	170500	166000	275000	193750	185000	310760	194000	304450	310000	191000	262760	379500	239810	292500	520000	275000	454500
Feb	251209	158050	172500	292000	182000	250250	310000	218000	244500	367000	245000	315000	400000	260000	298500	550000	287450	421500
Mar	244900	152000	150000	280000	170000	230000	351250	185000	250000	400000	238000	287500	442000	199750	284750	499000	310000	218750
Apr	250000	175000	155000	278250	205000	215000	325000	181750	183480	375000	226250	301501	436739	250000	285000	512500	295000	580000
May	233500	155000	139500	266000	160900	185000	270000	210000	199250	369000	199000	237760	372500	222500	316450	622500	276500	377000
Jun	265500	178000	115000	289500	166500	212500	293000	191000	260000	365000	187880	200000	395000	243000	350000	516000	295000	600000
Jul	283500	169000	180000	272500	200000	225000	265000	247500	210000	375000	210000	205000	408500	214000	328000	571000	277425	430000
Aug	234305	187500	194000	268000	180000	250000	280000	180000	250000	352000	179500	310000	468500	235000	340000	537500	339500	478000
Sep	256500	155000	192500	269050	222000	197000	265000	184750	220000	437000	159500	268000	464500	222000	389500	600000	330000	615000
Oct	251850	140900	225000	269000	160000	210000	270000	165250	248500	391220	200000	284775	520000	255000	368000			
Nov	255000	151500	185000	280000	170000	265000	358500	214000	315000	388500	168000	242500	492500	255000	398200			
Dec	242227	160000	205000	285000	161250	200000	304000	176000	295000	400000	196000	355000	515000	260000	310150			

SOURCE: REALTORS Association of Maui - www.MauiBoard.com
MLS Sales data - Information deemed reliable, however not guaranteed

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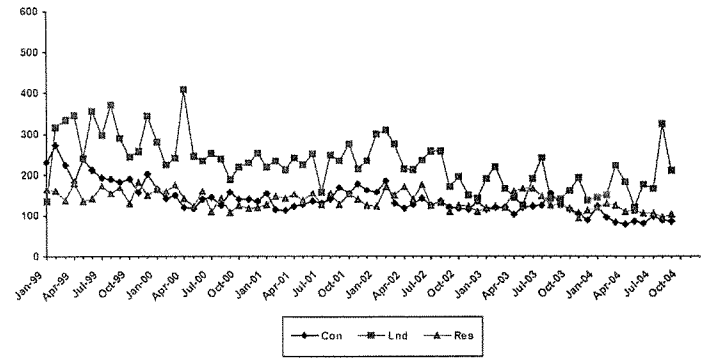
Sales Days on Market By Month

For Month Ending 9/30/2004



	1999			2000			2001			2002			2003			2004		
Month	Single Family	Condo	Land	Single Family	Condo	Land	Single Family	Condo	Land	Single Family	Condo	Land	Single Family	Condo	Land	Single Family	Condo	Land
Jan	164	232	134	163	167	280	128	153	220	122	156	299	117	116	191	120	121	143
Feb	162	273	318	159	142	226	147	114	234	169	185	310	122	119	219	130	95	148
Mar	136	226	334	175	148	242	141	113	212	150	130	275	120	120	165	124	83	221
Apr	180	184	348	141	120	408	151	122	242	170	117	215	158	103	145	109	79	183
May	135	240	241	122	116	247	138	127	226	139	127	212	167	119	125	113	86	119
Jun	141	213	357	159	139	233	153	134	252	176	142	236	167	122	190	106	80	175
Jul	174	192	298	110	143	254	127	129	155	125	124	258	146	125	242	105	96.5	166
Aug	154	190	370	142	124	239	153	138	248	131	135	259	125	153	141	95	87.5	325
Sep	168	183	291	108	156	189	128	169	234	109	120	170	128	128	140	103	85	210
Oct	129	190	245	124	138	220	152	154	276	125	117	195	116	115	161			
Nov	182	157	259	118	140	230	138	179	215	123	114	148	93	106	192			
Dec	148	202	345	119	133	254	124	162	233	109	134	142	113	88	138			

SOURCE: REALTORS Association of Maui - www.MauiBoard.com
MLS Sales data - Information deemed reliable, however not guaranteed

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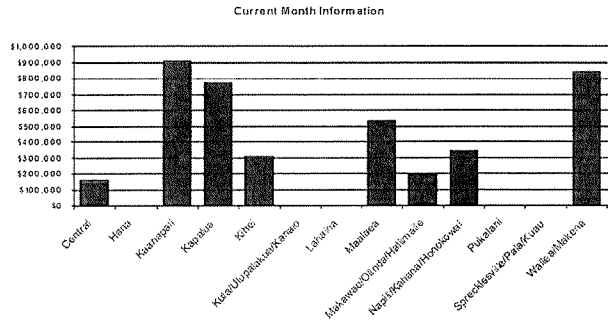
Condominium Median Prices by Area

For Month Ending 9/30/2004



Area	Current Month	Previous Month	Year Ago Month
Central	$160,500	$229,000	$157,000
Hana	$0	$240,000	$100,000
Kaanapali	$907,500	$630,000	$390,000
Kapalua	$775,000	$825,000	$512,500
Kihei	$309,000	$280,000	$199,000
Kula/Ulupalakua/Kanaio	$0	$0	$475,000
Lahaina	$0	$762,000	$147,450
Maalaea	$535,000	$444,000	$235,500
Makawao/Olinda/Haliimaile	$195,000	$0	$0
Napili/Kahana/Honokowai	$345,000	$402,000	$237,500
Pukalani	$0	$0	$385,000
Sprecklesville/Paia/Kuau	$0	$230,000	$900,000
Wailea/Makena	$837,500	$682,500	$494,500

SOURCE: REALTORS Association of Maui - www.MauiBoard.com
MLS Sales data - Information deemed reliable, however not guaranteed

Comparable/Competitive Unit Absorption

Hawaii resort condominium projects and corresponding absorption from their initial sales programs are shown on Table 4.

Units priced above $1 million have averaged a sale rate of 6.9 per quarter per project, while those priced under $1 million predictably have absorbed at the much higher velocity of approximately 20.8 sales per quarter per project.

Two market segments have show exceptional absorption rates in comparison to the market as a whole. The first being oceanfront projects, such as at Wailea Beach Villas, Coconut Grove, and Kolea, which have seen product taken down at quarterly rates of 16.0, 9.0, and 15.0 respectively. The second being projects located on the Island of Maui, such as the previously mentioned Wailea Beach Villas and Coconut Grove, as well as Na Hale O Makena (6.7), Wailea Fairway Villas (18.7), and Palms 2 (29.3).

The proposed subject development benefits due to its position in both segments (Oceanfront and Maui).

Indicated Subject Absorption

In evaluating probable absorption for the subject inventory, we have considered two factors. The first is a lack of supply. The Residences at Kapalua Bay could be available for presales sometime in 2005 or 2006, a time by which there will still be no remaining competing inventory in the Maui resorts other than resales. Second, we have reviewed recent market trends which indicate strong absorption rates for products having either Maui or oceanfront orientations; the subject has both. In light of these considerations, micro analysis trends indicate a stabilized absorption rate of 12 to 20 units per quarter (48 to 80 annually) is readily achievable.

THE RESORT INTERVAL OWNERSHIP MARKET

The "interval ownership" segment of the resort condominium market, wherein multiple persons own fractional interests in a single unit, has evolved significantly over the past 30-plus years, becoming a leading investment and activity focus in resort real estate over the past decade.

Sixty of the Residences at Kapalua Bay units would be sold via 1/12th interval ownerships (totaling 720 available intervals), and operated as a Ritz-Carlton vacation club. As with the whole unit subject offerings, the demand for the intervals will be a function of:

- Macro Analysis -- How interval ownership demand and supply factors have historically, currently, and as forecast correlate on Maui and throughout the state; and
- Micro Analysis -- What are the prevailing market trends in the Maui oceanfront luxury interval ownership sector in which the subject product will compete.

The initial development surge of "timeshare" product in Hawaii began in the late 1960s, focused toward Waikiki and non-resort vacation communities on the neighbor islands such as Kailua-Kona, Kihei and Poipu. The inventory was typically a circa 750-square-foot unit of moderate size and quality one bedroom, one to two baths with full kitchens, within low to mid-rise limited amenity, on and off-water projects. Intervals were generally of one week duration, although longer periods were available in some developments.

Middle-class, West Coast tourists were the primary purchaser demographic. Weekly interval prices during this period ranged from $3,800 to $12,000. Demand grew steadily into the mid-1970s, with specific project demand more a result of sales tactics then project characteristics.

During this period it was rare that projects were constructed to be exclusively interval ownership resorts. Timeshare units typically were blocks within larger "whole unit" projects; often those less desirable or unsold after initial sales programs. Due to questionable sales practices, financial instability of some operators, unclear ownership titles, and inventory/quality control issues, the industry was viewed as being the lower end of the resort condominium market, falling into widespread disrepute in the late 1970s.

Several factors contributed to the restoration and ensuing growth of interval ownership in Hawaii:

- The State of Hawaii enacted a series of stringent codes covering timeshare ownership, sales practices, buyers rights, registration requirements and other regulations.

Table 4

SUMMARY OF ORIGINAL ABSORPTION FOR BUILT PRODUCT IN SELECTED RESORT CONDOMINIUM PROJECTS CONSTRUCTED IN HAWAII FROM 1996 THROUGH 2004 BASED ON RECORDED TRANSACTIONS
Market Study of the Proposed Residences at Kapalua Bay
Kapalua, Maui, Hawaii

Resort	Project	Avg Price In Sales Period	Total Number of Units	Total Number of Sales	Date of First Sale	Original Sales by Quarter: QTR 1	QTR 2	QTR 3	QTR 4	QTR 5	QTR 6	QTR 7	QTR 8	QTR 9	QTR 10	Indicated Average Quarterly Absorption
Resort Built Product Priced Over $1 Million																
Hualalai	Golf Villas	$1,642,500	20	20	Oct-96	5	2	4	4	0	3	2 Sold Out				2.9
Hualalai	Ka Ulu Villas	$1,522,750	20	20	May-00	9	10	1 Sold Out								6.7
Kapalua	Coconut Grove	$1,911,111	36	36	Mar-01	3	11	15	7 Sold Out							9.0
Mauna Lani	Villages at Mauna Lani	$1,180,475	130	39	Feb-02	1	8	1	6	6	5	3	3	6 Sales Ongoing		4.3
Hualalai	Ke Alaula Villas	$2,060,000	17	15	Jul-02	4	2	3	0	1	2	2	1 Sales Ongoing			1.9
Makena	Na Hale O Makena	$1,317,225	40	40	Aug-02	10	4	17	2	4	3 Sold Out					6.7
Wailea	Wailea Beach Villas*	$2,500,000	98	96	Jan-03	86	4	4	1	1	0 Sales Ongoing					16.0
Hualalai	Waiulu Villas	$1,715,870	24	24	Feb-03	8	9	2	0	2	0	2	0	0	1 Sold Out	2.4
Mauna Lani	Na Hale at Pauoa Beach*	$2,290,556	9	9	Mar-03	8	1 Sold Out									4.5
Waikoloa	Kolea Villas Phase 1*	$1,500,000	125	45	Apr-03	14	11	20 Sales Ongoing								15.0
	Totals	**$1,764,049**	**519**	**344**		**148**	**62**	**67**	**20**	**14**	**13**	**9**	**4**	**6**	**1**	
					% of Overall Total Sold	**43.0%**	**18.0%**	**19.5%**	**5.8%**	**4.1%**	**3.8%**	**2.6%**	**1.2%**	**1.7%**	**0.3%**	
															Indicated Quarterly Absorption Per Project	**6.9**
Resort Built Product Priced Under $1 Million																
Ko Olina	Kai Lani	$480,912	116	116	Feb-03	23	31	31	23	8 Sold Out						28.3
Waikoloa	Colony Villas	$464,904	168	109	Dec-02	10	20	20	25	21	13 Sales Ongoing					18.2
Waikoloa	Fairway Villas	$409,904	165	139	Aug-02	12	22	22	35	24	21	3 Sales Ongoing				18.7
Princeville	Villas of Kamalii	$494,661	59	59	Nov-01	51	6	0	0	0	0	2 Sold Out				19.0
Princeville	Villas on the Prince	$461,168	41	41	Nov-01	12	21	8 Sold Out								13.7
Wailea	Fairway Villas	$476,920	118	118	Mar-99	19	11	26	35	23	4 Sold Out					18.7
Wailea	Palms 2**	$476,920	88	88	Nov-96	18	45	25 Sold Out								29.3
	Totals	**$466,484**	**755**	**670**		**145**	**156**	**132**	**118**	**76**	**38**	**5**	**0**	**0**	**0**	
					% of Overall Total Sold	**21.6%**	**23.3%**	**19.7%**	**17.6%**	**11.3%**	**5.7%**	**0.7%**	**0.0%**	**0.0%**	**0.0%**	
															Indicated Quarterly Absorption Per Project	**20.8**

(*) Figures are based on reports from project realtors and are not included in overall absorption calculation.

(**) First sale for Wailea Palms 2 transacted on 11/24/92, but project was not successfully marketed until November 1996. Absorption shows sell out of the 88 units remaining as of November 1996.

Source: The Hallstrom Group, Inc., 2004

- "Name" vacation companies began to prominently expand into the interval ownership field, such as Marriott, Hilton, Fairfield, and others, bringing recognition, trust, quality and service into the industry.

- Product was being specifically developed to be used for interval ownerships, with larger, higher quality, more serviceable units having lower densities and a residential "feel".

- Inventory was developed within destination resort communities; in many cases converting towers of existing upper-end hotels.

- The costs associated with whole unit condominium ownership was quickly becoming too high for all but upper-income purchasers, and interval holdings provided a sense of island ownership and vacationing commitment on a reasonably limited basis.

- Interval ownership was viewed as a hedge against escalating luxury hotel daily room rates, with the lower intensity, larger unit, club-like ambience viewed by many as providing a superior vacation experience; one which allows for families and guests.

Most of the intervals are still offered as weekly ownerships, but one week "every other year" and several week intervals continued to be available at many projects. Units are now a mix of upgraded studio, one and two-bedroom styles, of up to 1,800 square feet, with prices ranging from $15,000 to $35,000 weekly.

Continuing the upward evolution, luxury hotel operators (including Four Seasons, Ritz-Carlton and Westin) are aggressively pursuing Maui interval ownership projects; often as part of an exclusive mixed-use facility having whole unit ownerships, single and multifamily models, spa, restaurant, meeting and club facilities. These will be multi-million dollar, ultra luxury units, often in excess of 2,000 square feet, sold at prices ranging upward from the equivalent of $75,000 per week.

The Residences at Kapalua Bay units which are sold via interval ownerships will embody these leading edge characteristics.

Although disparaged in the past, timeshare/interval ownership is now considered a favorable vacation lodging alternative for the host community for many reasons, including:

- Timeshare guests have longer average length-of-stays (by nearly two days) and spend more money during their trip than do average visitors. Although the average expenditures per day by timeshare guests are currently just less than for other tourists, the gap has shrunk rapidly in recent years, and the new generation of up-scale timeshare resorts will result in higher daily expenditures than the average tourist.

- Timeshare units typically achieve occupancy in the 90s percentile, and are virtually full on Maui, some 10 to 20-plus points higher than other visitor units. Further, occupancy is stable throughout the year (non-seasonal) and is not as susceptible to disruption due to outside events or recession as are hotels. This was strongly evidenced during the post-9/11 recovery.

- As a result, timeshare resorts are more stable employers than hotels which have fluctuating worker demands due to seasonality, economic, ownership and other factors. With more than 35,000 children becoming of working age on Maui over the next two decades, increasing numbers of stable employment opportunities are needed. And, the visitor expenditures flowing into Maui businesses from timeshare guests are less erratic than hotel users.

- Interval owners are stakeholders in the community, and are more apt to show concern, stewardship, and support for local assets and issues to a far greater degree than typical tourists. Timeshare is the way for the middle-income visitor to own a piece of Maui.

- Timeshare guests patronize a greater range of local businesses throughout the island than do hotel visitors who are oriented to resort community shops. This spreads the tourism dollar across a wider spectrum of the economy.

- Timeshare owners and their guests return year-after-year without additional incentives or development, mitigating the

TABLE 5

SUMMARY OF ESTIMATED RESORT CONDOMINIUM INTERVAL ABSORPTION
Market Study of the Proposed Residences at Kapalua Bay
Kapalua, Maui, Hawaii

	1980	1990	1995	2000	2002	2003	2004
Total Timeshare Units in State	**400**	**1,500**	**2,700**	**4,500**	**5,000**	**5,159**	**6,026**
Percent Annual Change		55.00%	16.00%	13.33%	5.56%	3.18%	16.81%
Total Timeshare Units In Maui	**650**	**900**	**900**	**977**	**1,207**	**1,407**	**1,512**
Percent Annual Change		7.69%	0.00%	1.71%	11.77%	16.57%	7.46%
Maui as a Percent of State Total		**60.0%**	**33.3%**	**21.7%**	**24.1%**	**27.3%**	**25.1%**
Total Intervals Sold in State	**3,250**	**9,445**	**10,380**	**14,600**	**17,480**	**18,500**	**19,800**
Percent Annual Change		38.12%	1.98%	8.13%	9.86%	5.84%	7.03%
Total Intervals Sold in Maui	**1,300**	**2,800**	**900**	**4,300**	**6,900**	**5,700**	**6,200**
Percent of State Total	40.0%	29.6%	8.7%	29.5%	39.5%	30.8%	31.3%
Equivalent Whole Unit Sales (1)							
State of Hawaii	64	185	204	286	343	363	388
Maui	25	55	18	84	135	112	122

(1) Assuming 51 saleable weeks per unit. New sales only.

Source: State of Hawaii, and The Hallstrom Group, Inc.

"Disneyland effect" at a vacation destination (requiring new attractions every year to maintain visitor levels).

- Timeshare is a superior economic opportunity for interior (off-water) resort lands. Few other visitor-oriented uses have the potential to create as much employment, spending, tax revenues and visitor counts through development of a secondary site.
- Real Property taxes from a timeshare/condominium project are greater than for a comparable hotel facility.
- The hotel development sector has been stagnant for more than a decade, and will continue to be so until further growth restores economic balance between construction costs and market values. Conversely, the timeshare sector is surging and shows strong long-term expansion potentials, particularly as projects move upscale and name operators become more prominent.
- Visitors want timeshare purchase opportunities. The concept is no longer a pariah, the last refuge for failed developments and hustlers, but a well-marketed, increasingly respected and financially stable industry. Failure to provide building sites will close Maui off to this expanding share of the visitor market.

Macro Industry Analysis

There were a total of 6,026 registered time share units in Hawaii as of the mid-2004 survey by the State (published March 2005), up a significant 16.8 percent from the prior year. Of these, 5,921 were in operation as of the survey date, the remainder under-construction or otherwise out of service.

The number of intervals sold in the islands has increased in each of the last five years, reaching an estimated 19,800 intervals in 2004, as shown on Table 5. The average interval price is now circa $22,500, again the fifth straight year of escalation.

Approximately 31 percent of the total intervals sold statewide during the past five years have been on Maui, placing it between West Hawaii

(26 percent) and Kauai (34 percent) among the leading neighbor island destinations.

The sales data for selected recent/current offerings is displayed on Table 6. The absorption velocity at the various programs ranges from 6 to 335 interval sales per month, averaging about 225 monthly in the major projects. The large majority of these sales are weekly intervals, with 50 or 51 intervals per unit.

On Maui, there are 1,432 registered interval ownership units. The projects are listed on Table 7. They are a mix of types, ages, quality, amenities and locational characteristics.

Our forecasts for statewide interval absorption and Maui interval absorption over the next two decades is as follows:

STATEWIDE RESORT CONDOMINIUM INTERVAL OWNERSHIP DEMAND (2005 THROUGH 2024)

	Average Annual Demand	Total Periodic Demand	Cumulative Demand
2005-2009	21,000	105,000	105,000
2010-2014	22,000	110,000	215,000
2015-2019	23,000	115,000	330,000
2020-2024	24,000	120,000	450,000

ESTIMATED MAUI MID-POINT RESORT CONDOMINIUM INTERVAL OWNERSHIP DEMAND

	Average Annual Demand	Total Periodic Demand	Cumulative Demand
2005-2009	6,500	32,500	32,500
2010-2014	6,800	34,000	66,500
2015-2019	7,100	35,500	102,000
2020-2024	7,450	37,250	139,250

We consider these forecasts to be conservative relative to the upside potentials of the industry. Maui is consistently rated as the leading vacation destination in the world, with the highest visitor satisfaction index, and interval ownerships on the island are among the most prized, being marketed worldwide using a myriad of sales techniques.

TABLE 6

ANALYSIS OF MAJOR TIMESHARE PROGRAM ABSORPTION & PRICING
Market Study of the Proposed Residences at Kapalua Bay
Kapalua, Maui, Hawaii

	1999	2000	2001	2002	2003	2004
Average Per Interval Price (Statewide)	**$17,975**	**$18,440**	**$18,850**	**$19,775**	**$20,900**	**$22,500**
Percent Annual Increase		2.59%	2.22%	4.91%	5.69%	7.66%

	Low	High	Est. Avg.
Average Monthly Interval Absorption (per Project Statewide)	6	335	225

Selected Project Comparisons (Offering new product since 1996)	Interval Sales/Mo.	Sales/Year	Number of Full Units	Average Price
Kona Hawaiian Village	36	432	8	$22,000
Alii Kai Resort	8	96	2	$14,900
Marriott's Maui Ocean Club	285	3,420	67	$31,000
Marriott's Waiohai Beach Club	205	2,460	48	$32,300
Bay Club at Waikoloa Beach Resort	92	1,104	22	$24,500
Mauna Loa Village by the Sea	80	960	19	$17,000
HGVC at Hilton Hawaiian Village	280	3,360	66	$41,475
Westin Kaanapali Ocean Villas	256	3,072	105	$45,000
WorldMark at Kihei	335	4,020	200	$23,500
Embassy Vacation Resorts Maui	240	2,880	237	$28,800

Source: Various and The Hallstrom Group, Inc.

In light of the on-going vitality and expansion of the sector, growth in tourism, the limited number of existing and potential hotels on the island, the diversifying of the inventory of timeshares being offered, the increasing prices of Maui real estate, and the inherent scarcity of development sites, demand could readily exceed these forecasts.

There are some 1,167 firmly proposed timeshare/interval units on Maui, including the Residences at Kapalua Bay, totaling up to 54,606 marketable intervals. The major projects are summarized on Table 8.

On a gross basis, the proposed inventory is the equivalent of about six years of supply relative to demand levels; or an insufficient amount of supply to fully meet anticipated demand during the projection period.

Further, the projects will be well-spaced to maximize market exposure and minimize overhanging supply. Several are nearing or recently completed and are basically sold out (Worldmark at Kihei, Kaanapali Ocean Villas I), are preparing to start building (Ocean Villas II), or are likely in the near to mid-term (Four Seasons Makena) or mid to long-term (Maui Lu Redevelopment).

While the specific interval length product type being considered for the subject units (1/12th ownership) are rare at this time, the overall market indicators are sufficiently favorable and the demand for Maui units so strong, we conclude the macro analytical trends generously support the rapid absorption of the proposed Residences at Kapalua Bay interval ownership units.

Micro Subject Analysis

There are two projects which we consider as being insightful into specific subject market potentials. They are representative of the high quality, full-amenitied, exclusive facility and operations envisioned for the subject development. Both have had initial success via sales or response to proposals.

The Westin Kaanapali Ocean Villas project in the North Beach Makai area of Kaanapali Resort is the most luxurious and expensive interval ownership project built on Maui to date. The first phase of the development, contains 105 units and was fully sold-out within two years of initial pre-sales (256 intervals per month). The units were sold in one week intervals at prices averaging about $45,000 per week.

Table 7

EXISTING RESORT CONDOMINIUM INTERVAL OWNERSHIP INVENTORY ON MAUI
Market Study of the Proposed Residences at Kapalua Bay
Kapalua, Maui, Hawaii

ISLAND	AREA	PROPERTY	TYPE	REG. UNITS	OPER. UNITS
MAUI	HANA AREA	HANA KAI MAUI RESORT CONDOMINIUM	Condo/hotel	16	16
	LAHAINA/KA'ANAPALI/	KULEANA CONDOMINIUM	Apt/hotel	30	2
	NAPALI/KAPALUA	ASTON AT PAPAKEA	Condo/hotel	35	10
		ASTON PAKI MAUI	Condo/hotel	7	7
		HOLOLANI RESORT	Condo/hotel	9	9
		KAHANA VILLA MAUI	Condo/hotel	35	35
		ONE NAPILI WAY	Condo/hotel	14	14
		SANDS OF KAHANA, THE	Condo/hotel	120	120
		VALLEY ISLE RESORT	Condo/hotel	35	35
		WHALER ON KAANAPALI BEACH, THE	Condo/hotel	50	50
		GARDENS AT WEST MAUI, THE	Hotel	34	34
		MAUI MARRIOTT RESORT & OCEAN CLUB	Hotel	196	196
		WESTIN KAANAPALI OCEAN RESORT VILLAS	IVU	105	105
		EMBASSY VACATION RESORT MAUI	Other	237	217
		KAHANA FALLS RESORTS	Other	70	70
	WAILEA/KIHEI AREA	LEILANI KAI RESORT	Apt/hotel	8	8
		KAMAOLE BEACH CLUB	Condo/hotel	37	36
		KAUHALE MAKAI, VILLAGE BY THE SEA	Condo/hotel	12	12
		KIHEI AKAHI	Condo/hotel	10	6
		KIHEI KAI NANI	Condo/hotel	8	6
		KIHEI SURFSIDE RESORT	Condo/hotel	7	7
		MAUI BEACH RESORT	Condo/hotel	45	45
		MAUI HILL RESORT	Condo/hotel	76	76
		MAUI SCHOONER RESORT	Condo/hotel	58	58
		MAUI SUNSET	Condo/hotel	45	45
		WORLDMARK AT KIHEI	Hotel	200	200
		KAPULANIKAI	IVU	12	12
		MENEHUNE SHORES	IVU	1	1
	TOTAL			1,512	1,432

TABLE 8

SUMMARY OF MAJOR PROPOSED RESORT CONDOMINIUM INTERVAL OWNERSHIP DEVELOPMENT ON MAUI
Market Study of the Proposed Residences at Kapalua Bay
Kapalua, Maui, Hawaii

Project Name	Location	No. of Units	No. of Intervals	Probable Weekly Avg. Price (Current $)	Projected Opening Date
Westin Kaanapali Ocean Villas Phase II	In Resort Beachfront	258	13,287	$60,000	2006
Four Seasons Makena	In Resort Interior	69	1,794	$100,000	Late Decade
Residences at Kapalua Bay (Subject)	In Resort Beachfront	65	780	$100,000	2008
Maui Lu Site	Non-Resort Mostly Interior	275 (1)	14,025	$25,000	Late Decade (earliest)
Kamaole Site	Non-Resort Mostly Interior	200	10,200	$25,000	Late Decade (earliest)
Intrawest Kaanapali (North Beach Makai Lot 4)	In Resort Beachfront	300 (2)	15,300	$55,000	Late Decade (earliest)
TOTALS		**1,167**	**55,386**		

(1) Preliminary estimates forwarded by purchaser. Zoning would permit up to 700 units, but community would not.
(2) Up to 700 units, maximum, are master planned for the site; although the actual number built will undoubtedly be m It is commonly accepted that at least a portion will be interval ownership units. Our figures are allowances based densities of nearby projects.

Source: County of Maui, Various, and The Hallstrom Group, Inc.

The second phase of the development will carry the luxury concept even further, and include 258 two-bedroom units of 1,443 square feet each, housed in four guest wings of four to six stories on an 11.4 acre site. The full-amenity, high-quality project will also contain a 3,000 square foot restaurant, 12,000 square foot spa/salon, and sundry store.

The units would be marketed via 13,287 weeklong intervals (51.5 per unit). The anticipated average price will be approaching $60,000 per week. The developer anticipates full absorption of the intervals in about four years (277 units sold monthly).

The second comparable project is the proposed 81-unit Four Seasons Private Estates and Residences Club Maui at Makena. The resort/residential project will be located on a non-waterfront, hotel-zoned site of approximately 40 acres just south of the Maui Prince Hotel, overlooking the 18th hole of the Makena Resort South Course, Maluaka Beach and across the Alalakeiki Channel.

The mixed-use community will include 12 single family "estate" homes (in the makai portion of the property), 69 triplex multifamily "residence" condominiums, a Spa and Fitness Center, Reception/Golf Facility, Residence Club and Country Store. The homes would be sold in fee simple to single purchasers, the condominiums would be marketed in multi-week intervals, and the other assets would serve the on-going lodging/resort club operations.

The interval condominium units would be two and three bedroom models upwards of 2,000 square feet, with top end finishes. The developer reports exceptional initial interest, with full absorption of the some 1,725 interval ownerships (maximum count assuming all two-week periods) within a three-year development time-frame; or about 50 sales per month. The expected average price per week will be between $85,000 and $125,000.

Additional supply of comparable product beyond these two projects will be limited due to the scarcity of sites capable of supporting a competitive class of development. After the completion of the subject and the Four Seasons project, all of the high quality central resort sites in Kapalua, Wailea and Makena Resorts will be filled; only the last parcel at North Beach Kaanapali will remain.

Although the specific comparable market for the subject may be limited at this time, the micro analysis indicators provide meaningful support for interval ownership units at the Residences at Kapalua Bay.

SUBJECT SITE APPROPRIATENESS AND ABSORPTION CONCLUSIONS

Appropriateness of the Subject Site for the Proposed Use

The 27 acre oceanfront subject parcel, a complex landholding fronting Kapalua Bay, is a highly appropriate and favorably competitive location for the proposed Residences at Kapalua Bay mixed-use resort condominium project. We conclude the physical, functional, community, and amenity characteristics of the property are desirable from a market perspective, placing the development at the top of its sector and certainly enhancing the salability of the finished whole and interval unit inventory.

Primary contributing factors to this conclusion include:

- The subject property is one of the more picturesque holdings in the islands, with an extensive shoreline (more than 2,000 lineal feet) having a wide variety of features (beach, coves, cliffs) along the northerly reaches of Kapalua Bay; which is a classic crescent-shaped Hawaiian landform offering excellent ocean recreation opportunities. The view panoramas are exceptional, extensive and varied. No Maui resort condominium project recently completed, currently in sales, or proposed, whether offering whole or interval ownerships, has as physically desirable and prominent location as the subject parcel. These attributes were the reason it was selected as the site for the first hotel in the resort.

- Kapalua Resort is a comprehensive, upscale, exclusive destination community providing a complete line of infrastructure, facilities, amenities, services, open spaces and ambience competitive with other top resort developments on Maui and throughout the State. The subject site does not lack in any regard to community support for the proposed development, and there are few available sites on Maui or other neighbor islands that are competitive with the subject.

- The holding has had an established resort use for three decades, and the underlying State and County land use designations are supportive of the proposed Residences at Kapalua Bay. Were the site vacant and available on the open market, a potential purchaser would undoubtedly identify mixed-use resort (likely residential-oriented) as being the fundamental highest and best use of the property.

- The parcel is of sufficient size, shape and terrain to support a competitive, leading-edge, luxury class project. The densities will be low (6.1 units per acre), the grounds expansive, the elongated shape and gradual slope will maximize view potentials, and entry/egress is limited enhancing exclusivity. Few sites in Hawaii, built or vacant, have as favorable fundamental characteristics.

Subject Absorption Estimates

Given the evident level of support for the proposed subject inventory as demonstrated by our market studies of the resort condominium sectors (whole and interval ownerships), and that the underlying site is highly appropriate for the envisioned development, it can be reasonably concluded the 90 "whole" and 65 "interval" units at the Residences at Kapalua Bay will be rapidly absorbed upon offering. Certainly, the basic analysis supports full sell-out by the time the project is fully completed.

This conclusion can be demonstrated through summary application of several techniques, as discussed following.

- The Gross Analysis Method. This is both the simplest and most fundamentally insightful method. It is a mere comparison between demand (for additional units) and supply (proposed units) indicators. If there is more potential demand than potential units, it can be asserted there will be sufficient demand to absorb portions or all of the proposed subject units.

  On a whole-unit basis, as our market analysis demonstrated, without the 90 proposed subject units, the supply of resort condominium units in West and South Maui will be insufficient to meet forecast regional requirements. If only approved, and likely to be developed units within competitive Maui resort communities that are reasonably moving forward

are considered, the supply shortage would be several hundred units over the projection timeframe.

Further, the timing of most of the proposed/potential inventory is many years away (Makena, Kapalua Mauka and Wailea Ranch), well beyond the market exposure period for the subject. Also, none of the major proposed developments will have available oceanfront sites.

Subject interval ownership unit absorption is also well supported by the gross analysis method. With demand for some 139,250 intervals on Maui over the next two decades and only 54,606 proposed (excluding the subject), there will be unmet demand in the study period.

And, again the timing of the subject inventory relative to the proposed supply is also advantageous with limited competition during the probable market exposure period.

This gross analysis indicates the subject units could be absorbed within a one to three-year projection timeframe, regardless of any additional competitive advantage the inventory may have.

- The Residual Method. In this technique, all of the identified competitive approved whole and interval condominium projects in Maui destination resorts are placed on a time-line depicting the sales absorption anticipated by the developers, as evidenced by our market survey, or as can be reasonably assumed through historic activity. To the extent these projects fall short of the forecast periodic demand for units in the study region, or exceed the total demand, an undersupply or oversupply situation respectively exists.

  By accounting for the total of the units likely to be built in the competitive market during the projection period, it can be reasonably asserted the subject development will "capture" a significant portion of any residual demand. This approach is generally conservative, as it assumes the subject will capture only what is leftover after the other projects garner their anticipated share.

The tabular presentation of this method for the subject whole-ownership condominium units is shown on Table 9. The interval ownership analysis is displayed on Table 10.

Each of the identified sources of competitive additional supply are shown at the top of the tables along with the reasonably anticipated number of units we consider likely to be constructed in each category, and their periodic absorption over the projection period timeframe. The total periodic whole unit or interval demand forecast is shown at the bottom of the respective table, with the resulting periodic over/under supply totals for each period and the residual demand level for the subject product under several capture rate assumptions.

In no single period for either whole or interval condominium units is there an oversupply situation. In every period during the two-decade projection timeframe demand will exceed supply without the subject inventory.

This method indicates the subject whole-ownership units will require one to three years to be absorbed, and the interval units within one to two years.

- The Market Shares Method accounts for the probable competitiveness of the subject residential product regardless of the total level of other inventory being offered. In essence, it is an estimate of how much of the total new resort condominium whole and interval unit demand on Maui the subject could expect to achieve on an annual basis in light of its locational, pricing, and amenity characteristics.

  This "pure competitiveness" technique is generally moderate to optimistic in application and requires some subjective variables, but is perhaps the most appropriate and "classic" approach.

  This technique is suitable for the subject as it allows for the differentiation of absorption rates between whole and interval ownership unit types, according to their individual competitiveness.

  Given the luxury type, oceanfront location and amenities of the proposed subject product and competitive market, we believe

TABLE 10

QUANTIFICATION OF SUBJECT INTERVAL UNIT DEMAND USING THE RESIDUAL METHOD BASED ON TOTAL DEMAND FOR RESORT CONDOMINIUM INTERVAL OWNERSHIPS ON MAUI
Market Study of the Proposed Kapalua Mauka Development
Kapalua. Maui, Hawaii

USING MID-POINT DEMAND TRENDS AND MAJOR PLANNED INVENTORY ADDITION ASSUMPTIONS

Project	TOTAL INTERVALS	Periodic Lot Absorption 2005-2009	2010-2014	2015-2019	2020-2024
Westin Kaanapali Ocean Villas II	13,287	13,287			
Market Share Percentage		65%			
Four Seasons Makena	1,794	1,794			
Market Share Percentage		9%			
Intrawest Kaanapali	15,300	5,300	10,000		
Market Share Percentage			41%		
Kamaole Site	10,200		10,200		
Market Share Percentage			42%		
Maui Lu Site	14,025		4,025	10,000	
Market Share Percentage			17%	100%	
Totals	**54,606**	**20,381**	**24,225**	**10,000**	**0**
Competitive Maui Lot Demand	**139,250**	**32,500**	**34,000**	**35,500**	**37,250**
Shortage or (Excess) Supply	**84,644**	**12,119**	**9,775**	**25,500**	**37,250**
Potential Residual Subject Interval Demand					
at 100% Capture Rate	84,644	12,119	9,775	25,500	37,250
at 95% Capture Rate	80,412	11,513	9,286	24,225	35,388
at 90% Capture Rate	76,180	10,907	8,798	22,950	33,525

Source: Identified projects & The Hallstrom Group, Inc.

TABLE 9

QUANTIFICATION OF SUBJECT WHOLE-UNIT DEMAND USING THE RESIDUAL METHOD BASED ON TOTAL DEMAND FOR RESORT CONDOMINIUM UNITS IN MAUI DESTINATION RESORTS
Market Study of the Proposed Residences at Kapalua Bay
Kapalua. Maui, Hawaii

USING MID-POINT DEMAND TRENDS AND PROBABLE INVENTORY ADDITION ASSUMPTIONS (1)

Project	TOTAL CONDOMINIUM UNITS	Periodic Unit Absorption 2005-2009	2010-2014	2015-2019	2020-2024
Wailea Resort (2)	800	100	150	275	275
Market Share Percentage		25%	27%	50%	50%
Kaanapali Beach Resort	500	125	125	125	125
Market Share Percentage		31%	23%	23%	23%
Makena Resort	448	75	75	150	148
Market Share Percentage		19%	14%	27%	27%
Kapalua Mauka	300	100	200		
Market Share Percentage		25%	36%		
Totals	**2,048**	**400**	**550**	**550**	**548**
Competitive Maui Unit Demand	**2,500**	**550**	**600**	**650**	**700**
Shortage or (Excess) Supply	**452**	**150**	**50**	**100**	**152**
Potential Residual Subject Unit Demand					
at 100% Capture Rate	452	150	50	100	152
at 95% Capture Rate	429	143	48	95	144
at 90% Capture Rate	407	135	45	90	137

(1) Probable unit count based on available sites, historic/prevailing densities, and master plan. May differ widely from maximum total
(2) Including Wailea 670 project.

Source: Identified projects & The Hallstrom Group, Inc.

the whole-unit condominium component could readily achieve a maximum annual market share of 22 to 35 percent of the total competitive demand.

This capture rate, which is reasonable given historic sales standards and the competitiveness of the limited alternatives (Kaanapali and Wailea/Makena), would equate to a 22.6 percent share during a mid-point 2.8-year sell-out period. This equates to an average absorption of 32 units annually.

The interval-ownership component would be anticipated to achieve maximum market shares of 3.5 to 6.0 percent of the entire Maui segment demand (a nominal amount).

This level of market share, which would result in an average capture rate of 3.4 percent of the total sector demand over the absorption timeframe, is imminently achievable, particularly if there are entitlement problems at Makena or the Maui Lu site. The mid-point absorption period for this subject type would be 2.7 years, with average sales of 5.6 intervals per year. When converted into weeks, this is still well below the rate of sales at the existing leading projects.

We consider these stabilized market share rates to be moderate based on the availability of competitive inventory (or limited/lack thereof). As shown in the residual method, during the subject sales period, there will be only a handful of projects competing for market shares, and just achieving a "fair split" of the demand (regardless of the superior competitiveness of the subject inventory) will generate capture rates at the projected levels.

Table 11 displays the subject whole-ownership condominium unit market capture absorption forecasts. Table 12 shows the absorption of the subject interval-ownership units using the market shares method.

Based on our analysis, we forecast the resort condominium whole-ownership units will be absorbed in a two to three-year timeframe from initial offering, with the interval-ownership units also requiring about two to three years.

TABLE 11

SUMMARY OF PROJECTED SUBJECT WHOLE-UNIT RESORT CONDOMINIUM DEMAND LEVELS USING THE MARKET SHARES METHOD
Market Study of the Proposed Residences at Kapalua Bay
Kapalua, Maui, Hawaii
Assuming 90 Units Beginning Sales in 2007

Scenario One: Using Conservative Market Share Rates

Sales Year	Total Competitive Maui Demand	Effective Subject Share	Indicated Total Subject Absorption
1	110	22.00%	24
2	110	25.00%	28
3	125	25.00%	31
4	125	6.00%	8
Totals	**470**	**19.24%**	**90**

Scenario Two: Using Optimistic Market Share Rates

Sales Year	Total Competitive Maui Demand	Effective Subject Share	Indicated Total Subject Absorption
1	110	33.00%	36
2	110	35.00%	39
3	125	12.00%	15
Totals	**345**	**26.03%**	**90**

ANALYSIS MID-POINT

2.8 Years	**408**	**22.64%**	**90**

Source: The Hallstrom Group, Inc

TABLE 12

SUMMARY OF PROJECTED SUBJECT INTERVAL-UNIT RESORT CONDOMINIUM DEMAND LEVELS USING THE MARKET SHARES METHOD
Market Study of the Proposed Residences at Kapalua Bay
Kapalua, Maui, Hawaii
Assuming 780 Intervals Beginning Sales in 2007

Scenario One: Using Conservative Market Share Rates

Sales Year	Total Competitive Maui Demand	Effective Subject Share	Indicated Total Subject Absorption
1	6,500	3.50%	228
2	6,500	4.00%	260
3	6,800	4.00%	272
4	6,800	0.30%	20
Totals	26,600	2.93%	780

Scenario Two: Using Optimistic Market Share Rates

Sales Year	Total Competitive Maui Demand	Effective Subject Share	Indicated Total Subject Absorption
1	6,500	4.50%	293
2	6,500	6.00%	390
3	6,800	1.45%	99
Totals	19,800	3.94%	781

ANALYSIS MID-POINT

2.7 Years	23,200	3.44%	781

Source: The Hallstrom Group, Inc

These conclusions based on mid to long-term forecasting models are understated relative to existing vibrancy of the Maui real estate market. Certainly, the current up-cycle could rapidly absorb the whole unit inventory if the pre-sale program is timed correctly. And, as a rare, high quality, well located product, the interval inventory could achieve an elevated market status resulting in an enhanced sales rate.

ECONOMIC IMPACT OF THE PROPOSED DEVELOPMENT

The development of the Residences at Kapalua Bay community will generate significant efforts and expenditures that will favorably impact the Maui economy on both a direct and indirect basis, increasing the level of capital investment, capital growth and capital flow in the region. The project will pump millions of dollars into West and Central Maui, expanding the economy, widening the tax base and creating stable long-term employment opportunities.

From a direct perspective, the proposed mixed used, 155-unit resort condominium project will create numerous construction, equipment operator and specialty trade jobs on- and off-site during the planning and emplacement of the infrastructure, and building of the improvements. After completion of the units and club facilities over an estimated four-year development period, there will be significant additional employment positions created by the lodging operation and component businesses in the club, and via the buildings themselves (landscape, service, maintenance, and renovation needs in the course of their use).

Numerous local businesses will enjoy significant profit opportunities arising for contracting companies constructing the improvements, and for local businesses which would supply a substantial portion of the materials needed in the building efforts.

The general island economy also will benefit from the subject development and its employees and businesses, which will spend large amounts of wage income in off-site shops, restaurants, and service establishments throughout Maui, and in purchasing goods and services.

Indirectly, as these wages, profits, and expenditures move through the regional economy, they will have a ripple, or "multiplier," effect--

increasing the amount of capital flowing to the entire community as a result of the subject.

Construction, operational and other workers earning wages from the Residences at Kapalua Bay and associated off-site efforts will spend the majority of their income on living and entertainment expenses while supporting and patronizing other island businesses, as will the upper income guests and residents of the club community. Much of this spending would then be re-directed by these businesses to other island industries, with significant portions of these secondary profits in turn being put back through the region's economic and tax structure.

These substantial direct and indirect economic impacts associated with the proposed subject project, as quantified in the following sections, are all the result of the capital investment and entrepreneurship necessary to develop a working mixed-use resort/condominium community. The Maui economy will be meaningfully stimulated by the capital investments and business requirements of the club and its members and guests.

Given the subject project will constitute the redevelopment of an intensely built, mixed-use resort site, we have also summarily compared the economic impacts of the existing (Kapalua Bay Hotel and Shops) with the proposed facility (Residences at Kapalua Bay).

However, there are other considerations beyond numerical comparisons. The Hotel and Shops are nearly three decades old, have suffered from inherent operating inefficiencies, and have been in decline for several years. The modernization and freshening of such a premier site is critical to the long-term health of the visitor industry.

Capital Investment and Construction Costs

The subject development will bring an estimated $300 million in direct construction capital into Maui over the four-year design, planning and construction period forecast for the project. A breakdown of the basic expense items, their respective costs and expenditure over time is summarized on Table 13. As with all our models, a ten-year total projection timeframe is used depicting the development, absorption and stabilized use of the community over the initial decade.

TABLE 13

DEVELOPMENT COSTS AND CONTRACTOR AND SUPPLIER PROFIT ESTIMATES
Market Study of the Proposed Residences at Kapalua Bay
Kapalua, Maui, Hawaii
In Constant Year 2005 Dollars

Development Year	2005 1	2006 2	2007 3	2008 4	Totals
Status	Entitlements & Planning	Final Approvals & Eng. Demolition & Site Work	Building Construction	Building Construction	
Development Costs "All In" Costs (1)	$2,000,000	$17,000,000	$146,000,000	$135,000,000	$300,000,000
TOTAL DEVELOPMENT COSTS	$2,000,000	$17,000,000	$146,000,000	$135,000,000	$300,000,000
CONTRACTOR'S PROFIT (2)		$1,500,000	$14,600,000	$13,500,000	$29,600,000
SUPPLIER'S PROFIT (3)		$600,000	$5,840,000	$5,400,000	$11,840,000

(1) Estimates are "all in", including direct, indirect, professional, and FF&E costs.
(2) Estimated at 10% of construction costs.
(3) Estimated at 4% of construction costs

Source: Kapalua Bay LLC, and The Hallstrom Group, Inc.

Also shown are anticipated contractor and supplier profits flowing to local businesses as a result of the project. All costs were taken from estimates provided by the development team, as cited on the table.

Design, legal and entitlement and demolition/sitework expenses are projected at $19 million, spread over two years as the development moves from its current status to the start of new unit construction.

Building construction costs were estimated at a total of $281 million in current dollars.

Not included in the totals are indirect costs such as marketing and sales expenses, developer fees, Ritz Carlton royalties, loan interest and other non-real property items. The inclusion of these "soft cost" could result in a total capital investment undertaking of more than $350 million.

The direct costs of subject development will infuse an anticipated $75 million annually into the Maui building industry on average over the build-out period. This is the equivalent of a more than 20 percent boost over recent yearly construction levels. Indirect expenditures could reach an additional $10 million-plus per year.

Employment Opportunities Created

Based on indicators provided by the construction of comparable sized projects and Hawaii industry averages, we have estimated the demand for on- and off-site, full-time equivalent employment positions associated with construction of initial infrastructure systems, building of the finished resort condominium and club structures, the on-going businesses comprising the club, lodging and commercial elements, and in providing continuing services to the occupied buildings.

The employment opportunities created by the construction of the subject will not all be "new" jobs but will be enhanced opportunities for resident "commercial" construction trade workers, youths reaching employment age, and existing local businesses. The stabilized (long-term), permanent jobs in the club operations will be replacement positions for the existing Kapalua Bay Hotel jobs.

It is assumed the off-site/indirect work created will be steered towards existing Maui supply, equipment providers, and other service companies, which despite the upward movement in the county

economy over the past several years remain in an under capacity period relative to the massive development upcycle of the late 1980s.

The subject will provide needed employment opportunities in the commercial construction sector, and supply and building support industries during an estimated four-year planning, site development and building construction period. The final design, survey and entitlements are anticipated to require approximately one year, with the demolition of existing buildings and site infrastructure taking the second year, followed by the finish construction of the units and club facilities, and sales, occurring in a relatively continuous single phase over the subsequent two years.

Our employment estimates are based on full-time equivalent "worker/years," although one worker/year (or circa 2,000 working hours) may be comprised of many employees involved in specialized tasks of a much shorter duration.

Estimates are based on a 10-year modeling period of project construction (four years) followed by club use (six years). Stabilized operations will be reached in year 6 of the model. The associated number of employment opportunities created are displayed on the top of Table 14.

Included in our projections on the table are the full-time equivalent (FTE) off-site and support employment opportunities which will be provided to Maui businesses as a result of the project. Also shown are the total number of employees within the operating departments of the on-going club businesses (lodging, spa and restaurant) including maintenance/landscaping workers which will be required to service the project improvements and grounds over time.

The projections are founded on examples provided by various resort condominium (whole and interval ownership) developments undertaken on Maui and the Big Island over the past decade, and via formulae expressing relationships between total worker wages/benefits and construction/operating tasks and costs.

We have also included the sales/marketing positions created by the interval and whole-unit disposal program in years three through five of the development model. It is estimated the sales program will require a staff of 15 full-time equivalent positions during the sales period. Estimates are that more than $15 million in commissions and wages to

the marketing staff will be paid. This number does not include any off-site (or off-island) positions employed in the sales program.

Development, infrastructure and building construction employment forecasts are taken from estimates by the developer, review of project budgets and ratios of direct costs to job creation (assuming an average wage of $60,000/year plus benefits equal to 25 percent of wages). Our analysis assumes one worker/year per $225,000 in construction contract spending for both infrastructure and finish positions.

The club operation is forecast to require 188 total permanent employee positions at stabilized levels.

Off-site employees were estimated at 40 percent of on-site workers, and are comprised of three groups:

- Numerous off-site building industry positions will also be enhanced by the Residences at Kapalua Bay development, including such jobs as administration, office help, material providers, equipment maintenance and specialty tasks. Analysis of Maui County labor trends from 1980 through 2004 demonstrate a linkage equal to about 20 to 30 percent between the creation of on-site construction positions and direct off-site employment.
- Off-site support businesses, including contractor/retail/counter sales, fuel providers, shipping, storage and professional services will also benefit. A conservative job creation relationship of five to ten percent relative to on-site positions was used (or, one off-site support worker/year for each ten to 20 on-site worker/years).
- Extrapolation of state Department of Business Economic Development and Tourism (DBEDT) data, along with indicators provided by other state agencies and First Hawaiian Bank studies, demonstrate that each Hawaii worker creates demand for services (and related employment) during and directly attributable to the work day at up to a ten percent ratio. These positions include food businesses, providers of tools and trade goods, payroll/financial and insurance businesses, medical requirements and other secondary indirect/off-site employment.

TABLE 14

EMPLOYEE JOB COUNT AND WAGE ESTIMATES
Market Study of the Proposed Residences at Kapalua Bay
Kapalua, Maui, Hawaii
In Constant Year 2005 Dollars

Development Year	2005 1	2	3	4	5	6	7	8	9	10	Total 1 Through 10	Stabilized
Worker Requirements (1)												
Construction/Development (2)	9	76	649	600							1,333	
Local Sales and Marketing (3)			15	15	15						45	
Operational Departments (4)					188	188	188	188	188	188	1,128	188
Off-Site Employees (5)	4	30	266	246	81	75	75	75	75	75	1,003	75
TOTAL EMPLOYMENT CREATED	12	106	929	861	284	263	263	263	263	263	3,509	263
Worker Wages												
Construction/Development (6)	$533,333	$4,533,333	$38,933,333	$36,000,000							$80,000,000	
Local Sales and Marketing (7)			$1,155,000	$1,155,000	$1,155,000						$3,465,000	
Operational Departments (8)					$5,076,000	$5,076,000	$5,076,000	$5,076,000	$5,076,000	$5,076,000	$34,563,516	$5,076,000
Off-Site Employees (9)	$113,778	$967,111	$8,497,778	$7,872,000	$2,598,400	$2,406,400	$2,406,400	$2,406,400	$2,406,400	$2,406,400	$32,081,067	$2,406,400
TOTAL ANNUAL WAGES PAID	$647,111	$5,500,444	$48,586,111	$45,027,000	$8,829,400	$7,482,400	$7,482,400	$7,482,400	$7,482,400	$7,482,400	$146,002,067	$7,482,400

(1) All job counts expressed as "full-time" equivalent positions.
(2) Estimated at one worker/year per $225,000 in contract spending.
(3) Local sales staff estimated at average full time employment of 15 persons during three year sales period. Does not include off-site marketing on Maui.
(4) Includes 125 "Ritz Club" employees (front desk, operations and bar & grill), 30 spa employees, and 15 beach club/other positions..
(5) Includes all off-site jobs created by work efforts at the project; direct and indirect. Estimated at 0.4 off-site positions per on-site position.
(6) Average annual wage of $60,000/worker year.
(7) Average annual wage of $77,000/worker year.
(9) Average annual wage of $27,000/worker year.
(9) Average annual wage of $32,000/worker year.

Source: Various, and The Hallstrom Group, Inc.

During the 10-year building and operations modeling period of the project, the number of worker/years created on - and off - site by the development varies from 12 to 929 positions annually, totaling 3,509 worker/years over the entire projection timeframe. Of this total, 1,333 worker/years (an annual average of 333 positions during the four-year construction period) are direct construction-oriented, 1,128 total (or 188 per operating year) are on-going business operating positions; and 1,003 are off-site worker requirements.

On a stabilized basis after the modeling timeframe, the project will generate some 263 permanent full-time equivalent and/or enhanced employment opportunities--188 directly related to on-site activities, and 75 indirect positions throughout the island.

The average annual on-site job count during the 10-year subject study period of 251 positions represents about a 0.38 percent increase from the total jobs presently available in Maui County (251 additional jobs per year to the average in February 2005 job count of 66,700). This number can be readily absorbed by the currently available employment pool.

Additional secondary and/or supplementary employment will be created as a result of the club lodging, spa, restaurant and beach activity operations. Much of the cash flow of the component businesses will be re-spent in the Maui economy, and are forecast to reach $9.9 million per year on a stabilized basis (quantified in a subsequent section). Based on DBEDT data stating each $100,000 to $150,000 spent creates one aggregate employee position, an additional 66 to 99 secondary jobs will be supported on the island as a result of the subject.

Wage Income Generated

In accordance with data compiled by the state Department of Labor and Industry Relations and Kapalua Bay, LLC, we have estimated the personal income (in the form of wages) which will flow to Maui workers as a result of the Residences at Kapalua Bay project.

The average wage of a full-time infrastructure construction worker is estimated at $60,000 per year based on DLIR data for early 2005. For finished building construction workers, the average annual pay will also be about $60,000. Local sales and marketing workers were projected to have base wages equivalent to $77,000 annually. Club

operating and maintenance personnel are forecast to be paid an average of $27,000 per year on average ($13.50 per hour). Off-site building and support industry jobs were estimated to receive an average pay of $32,000 annually.

Overall project average wages are equal to $41,608 per worker/year created during the model period, and $28,450 on a stabilized basis.

Application of these wage estimates to the employment forecasts generates personal income (wage) projections directly resulting from subject development, which were shown at the bottom of Table 14. The wage figures are all presented in constant 2005 dollars, and will undoubtedly escalate over time in accordance with inflationary pressures.

In the first year of development, the "Total Annual Wages Generated" by the subject development effort would be $647,111, increasing to a high of $48.6 million, as the number of construction workers peak in year 3. After completion of all construction, the on-going operational, maintenance, off-site/indirect and other employment would result in average annual wages of $7.5 million thereafter.

Over the first 10 years of the development and operation period, on- and off-site, direct and indirect worker wages would total $146 million.

Development Costs as Profit Income

While the significant majority of the materials needed to build the subject industrial and commercial structures must be imported to Maui, a portion of the construction costs spent in the development will flow to local businesses in the form of contractor profits and supplier profits.

Typically, within the industry net contractor profit margins are expected to be at 8 to 20 percent of total construction costs. We have used a conservative ten percent figure. Supplier profits were extrapolated at four percent of total costs; generally supplies/materials equate to 50 to 60 percent of total cost, with a profit margin for the supplier of six to eight percent.

Application of these estimates to the forecast development parameters of the subject project was shown on Table 13.

The total Contractor's Profit ranges from $1.5 to $14.6 million per year, with a cumulative profit of $29.6 million over the three-year construction period. The total annual Supplier's Profit ranges from a low of $600,000 to a high of $5,840,000, and equates to $11,840,000 over the development time-frame.

Population, Income and Expenditures

The 65 interval-ownership condominiums will be marketed entirely on an interval basis with the resulting on-site population being comprised of interval owners and their guests on a transient basis. The 90 whole-ownership units will be a collection of investor holdings (and placed into the lodging pool), and primary and second home residences, primarily comprised of the latter. Together these groups and club guests will contribute to the Maui economy during the use of the subject units in the form of discretionary expenditures and (for full-time residents) household income levels.

Table 15 displays our population, discretionary expenditures, and household income estimates for the subject project.

The interval ownership units will be expansive for this market segment (1,600 to 2,100 square feet) capable of hosting larger than average guest parties. Interval (or timeshare) units are heavily used, with occupancy typically at the 90 to 95 percent level on Maui. We have assumed an average party size of 3.8 persons, about 120 percent the statewide average, and a mid-range occupancy of 92 percent. This results in a stabilized de facto population in these units of 227 persons daily on average. None of these individuals would be permanent residents.

The whole-ownership units will range in size from 1,600 to 3,100 square feet. We project a maximum of 20 percent of these residences in the development will be used by full-time resident households, with the remaining 80 percent being second/vacation ownerships. The overall ratio of full-time resident use of units/homes varies widely among resort communities statewide, ranging from less than three percent in several of the more upscale projects to as high as 40-plus percent in some subdivisions at Wailea and Keauhou.

For the full-time resident units, the average household size is forecast at 2.8 persons, so that by project build-out there will be 50 permanent residents added to the island total. For the second home/vacation

TABLE 15

POPULATIONS, RESIDENT HOUSEHOLD INCOME AND DISCRETIONARY EXPENDITURE
Market Study of the Proposed Residences at Kapalua Bay
Kapalua, Maui, Hawaii
In Constant Year 2005 Dollars

Development Year	2008						Stabilized
Cumulative Development (1)	4	5	6	7	8	9	10
Total Condominium Units Sold	25	60	90	90	90	90	90
Total Interval Units Absorbed	20	45	65	65	65	65	65
Total Units Sold/Absorbed	45	105	155	155	155	155	155
Average Daily Resident/Guest Population							
Condominium Residents/Guests (2)	64	155	232	232	232	232	232
Interval Guests (3)	70	157	227	227	227	227	227
Total De Facto Population	134	312	459	459	459	459	459
ANNUAL RESIDENT HOUSEHOLD TAXABLE INCOME (4)	$1,610,000	$3,864,000	$5,796,000	$5,796,000	$5,796,000	$5,796,000	$5,796,000
Total Years 1 -10	$34,454,000						
ANNUAL DISCRETIONARY (TAXABLE) EXPENDITURES (5)	$8,579,690	$19,921,355	$29,323,735	$29,323,735	$29,323,735	$29,323,735	$29,323,735
Total Years 1 -10	$175,119,700						

(1) Assumes first units close and are used by last quarter of Year 4 of projection peri
(2) Assumes 20 percent of units are full-time residences with average household size of 2.8 persons, with remainder occupied 60% of the time with average party size of 4.2 persons.
(3) Based on estimated occupancy of 92% with average party size of 3.8 persons.
(4) Estimated at $115,000 per resident annually.
(5) Estimated at $175 per capita daily for guest population.

Source: Various, and The Hallstrom Group, Inc

estates, the average party size using the home is estimated at 4.2 persons, with the unit occupied 60 percent of the time. By completion of development, this will create a daily average of 182 second-home users and lodging guests in the whole-ownership units in addition to the full-time residences.

The total average daily de facto resident population of the Residences at Kapalua Bay upon completion of development will be 459 persons. Of the full-time residents, it is estimated approximately 10 to 20 will be in the juvenile school age group.

The population of the project will place significant discretionary expenditure dollars into the Maui economy. In light of the cost of the finished homes and intervals, the residents and other users will be in the top household income brackets with substantial available income for such spending. The vacation/guest orientation of the users will further contribute to the high amount of discretionary funds.

We estimate that full-time resident households will spend about 50 percent of their total income on local discretionary items based on the most recent data. The daily per capita spending by second-home users, interval owners, and their guests in the Maui economy will be on average $175, which is moderately above what the typical Maui visitor spends daily on non-lodging purchases (commensurate with the relative upscale subject project quality). This pays for all food, entertainment, household goods, locally purchased fixtures and furnishings, utilities, clothing and other daily items.

By build-out, the total resident/interval owner/guest discretionary expenditures made by subject project users in the local market will be at $29.3 million annually on a stabilized basis, in 2005 dollars. During the 10-year development and operation model period, the total sum of these expenditures will be $175.1 million.

The total full-time resident income amount was quantified for use in estimating discretionary expenditures and state income taxes to be paid. In order to conventionally qualify for a unit with prices likely to be sought for the subject estate homes, a household income of upwards of $400,000 per year is minimally necessary. We have assumed a resident per capita income of $115,000. We recognize this amount could range widely upwards, and consider this projection conservative.

On a stabilized basis after build-out, the total annual full-time taxable resident income at the subject would be some $5.8 million. Much of the resident and virtually all of the guest expenditures will be "new" dollars on Maui, providing a true economic expansion.

Summary of Direct, Local Economic Impacts

The various direct, local economic impacts which will flow to the subject region as a result of the subject development are summarized on Table 16.

The wages, profits and expenditures figures are taken from previously presented tables. The restaurant, spa and lodging operational revenues were calculated based on gross sales experienced at facilities of similar scale and quality in the state. The gross annual revenues of the restaurant were estimated at $4.75 million (250 covers per day at $40 per cover, plus $3,000 daily in bar/beverage, room service, and banquet/other revenues); the spa at $1.8 million per year ($3,500 daily); the lodging operation at $3 million annually,[2] and the beach club at $365,000 in income per year ($1,000 per day).

The total gross annual operating revenues for the constituent businesses at the subject are estimated at $9,940,000 on a stabilized basis.

The amount spent by owners/guests of the subject project at the club facilities are already accounted for in the "discretionary expenditures" category, so it was necessary to account for only the non-guest revenues of these club businesses. It was assumed that one-third of the patronage would come from outside the subject community.

The annual Total Base Economic Impact increases from $647,111 in year 1 of the development effort to a high of $75.8 million in year 4 (in 2005 dollars). Over the decade long development and operation modeling period, the total is $343.8 million. Fueled by club operations and resident/guest expenditures, the estimated stabilized annual base impact thereafter is $40.1 million.

(2) Assumes the lodging operation rents 20 units daily (circa 7 interval and 13 whole-owner units) at a rate of $300 per night; or $6,000 in revenues daily. Housekeeping and other requested services by unit users throughout the project are estimated at $1,300 per day, and "other" income at $1,000 daily.

These dollars will be spent, then re-spent, on goods and services on the island, diminishing in impact on the local economy with each turnover as a portion flows off Maui for goods, services and financing commitments. First Hawaiian Bank studies have concluded the appropriate economic multiplier rates in Hawaii are from 1.2 to 3.5 times (or 20 to 250 percent) of the base impact amount. Mainland studies (by the Urban Institute and others) tend toward the upper end of this range, and reach multipliers as high as 4.0.

Due to the need to import more than 85-plus percent of supplies/goods used on Maui, the multiplier impact for the island is not as great as for mainland locales, particularly for construction-based expenditures. We have therefore tested multiplier rates at the mid-point of the market spectrum, ranging from 1.5 to 3.5 times.

On a conservative basis, using a relatively low-end multiplier effect ratio of 2.0, the total overall direct impact on the Maui island economy resulting from the Residences at Kapalua Bay project would be $687.7 million over the 10-year projection period (in constant 2005 dollars). On a stabilized annual basis thereafter, the overall impact would be at $80.2 million.

PUBLIC COSTS/BENEFITS ASSESSMENT

The purpose of this analysis is to delineate the direct areas in which the proposed subject mixed-use resort condominium development will potentially impact the sphere of public agency resources, and quantify (where possible) the costs of providing expanded services to the project, versus the economic benefits that accrue to the community through an increase in local and state tax payments.

For most developments, potential direct costs to governmental services and programs include:

- Police Protection
- Fire Protection
- Public Oversight Agencies
- Infrastructure Services
- Recreational Demands
- Educational Needs

TABLE 16

SUMMARY OF ECONOMIC IMPACTS ASSOCIATED WITH DEVELOPMENT
Market Study, Economic Impact Analysis and Public Costs/Benefits Assessment of the Proposed Residences at Kapalua Bay
Kapalua, Maui, Hawaii
In Constant Year 2005 Dollars

Development Year	1	2	3	4	5	6	7	8	9	10	Total Years 1 Through 10	Stabilized
ANNUAL WAGES GENERATED	$647,111	$5,500,444	$48,586,111	$45,027,000	$8,829,400	$7,482,400	$7,482,400	$7,482,400	$7,482,400	$7,482,400	$139,315,667	$7,482,400
CONTRACTOR'S PROFIT		$1,500,000	$14,600,000	$13,500,000							$29,600,000	
SUPPLIER'S PROFIT		$600,000	$5,840,000	$5,400,000							$11,840,000	
RESTAURANT AND SPA OPERATIONAL REVENUES (1)				$3,313,333	$3,313,333	$3,313,333	$3,313,333	$3,313,333	$3,313,333	$3,313,333	$23,193,333	$3,313,333
DISCRETIONARY EXPENDITURES				$8,579,690	$19,921,335	$29,323,735	$29,323,735	$29,323,735	$29,323,735	$29,323,735	$139,877,490	$29,323,735
TOTAL BASE ECONOMIC IMPACT	$647,111	$7,600,444	$69,026,111	$75,820,023	$32,064,068	$40,119,468	$40,119,468	$40,119,468	$40,119,468	$40,119,468	$343,826,490	$40,119,468
Multiplier Effect Ratio	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
TOTAL OVERALL IMPACT	$1,294,222	$15,200,889	$138,052,222	$151,640,047	$64,128,137	$80,238,937	$80,238,937	$80,238,937	$80,238,937	$80,238,937	$687,652,980	$80,238,937

(1) Non-guest revenues only (assumed to be 33 percent of total gross revenues). Guest/Resident sales included in discretionary expenditures category.
Total stabilized annual gross revenues estimated at $4.75 M for restaurant, $3.0 M for lodging operations, $1.825 M for spa, and $365,000 for beach club.

Source: Various, and The Hallstrom Group, Inc.

-- Infrastructure Costs
-- Various Other Services and Financial Commitments

However, as a privately built resort-oriented project many of these costs will not be increased on the state or county levels as a direct result of the proposed Residences at Kapalua Bay. There will be negligibly increased educational or recreational needs directly attributable to the subject development; the major off-site public infrastructure items (highway and primary water/sewer mains) are already in place; and the development will require no specific public subsidies, welfare services, bonding or capital improvements.

In fact, the true new net cost to the state and county will be nominal, as the project is replacing a similarly intensive use that is already in-place and serviced by government agencies.

Direct tax benefits to the state and county coffers will primarily flow from the project and its operation over time from three major sources:

-- Real Property Taxes
-- Gross Excise Tax Receipts
-- State Income Taxes
-- Transient Accommodations Taxes

Some cost/benefit issues are considered as off-setting, or "a wash," as the cost of the services to the government is theoretically directly reimbursed in the form of user fees. Building permits and utility hook-up fees are two prime examples. Other such items include workers compensation premiums and benefits, utility operations and associated use billing rates, and business oversight/registration verses licensing fees. These items are excluded from this study.

A concern of this analysis is the integration of the subject project into the overall state and Maui governmental services plan on both an actual and pro rata perspective.

From an actual public service cost perspective to Maui and state agencies, the subject will represent only a fraction of the county and state resort plant and overall urban lands in use. Given the vast number of housing units, resorts, businesses, and agricultural lands on the island, it is difficult to assert that of themselves the subject club and users will create the need for meaningful expansion of existing

public services. Particularly since the full range of services are already being provided to the existing hotel and shops.

No new schools, parks, highways, recreational facilities, service agencies, hospitals, or other public enterprises will be required specifically because of this project. The impact on the total regional land base will be minimal. Public safety facilities in Lahaina are reasonably proximate, generally have the personnel and equipment to service the businesses and buildings in the club, and will expand with overall community growth over the next decade as the project is built. Further, the infrastructure systems in the Kapalua Resort were designed with the capacity to service development in the master planned community.

However, the need for additional services is a cumulative effect, each project, each resident, tourist and, to a lesser degree, business adds a little bit to the community base until increased "need thresholds" are reached.

In regard to some services, the effective actual impact may not be apparent from a cost perspective, merely creating nominally greater demands which can be readily met through existing agencies and facilities without the need for additional workers or funds.

Our analysis of Maui County and state budgets indicate the actual effect of governmental services relating to the subject would not create the need to expand county and state services in and of itself. At worst, it would merely be a replacement of existing service demand.

As an alternative to actual cost estimates, which are often disparate as they inherently cannot provide for unexpected and/or atypical items, it is most common to project public costs on a per capita allocation.

This approach is generally appropriate for resort and residential developments, as public costs and services generally accrue to where a person lives (or in the case of a tourist, where they are lodging).

Government services are holistic in nature, providing a foundation throughout a community, regardless of actual, specific impact on any given land holding. A resort development or business may not have a need for parks or schools, but they are essential to the patrons and workers and create the climate in which the resort or business operates. Similarly, government administration, capital projects and

public welfare items may have no direct relation to a particular project, but provide the economic underpinnings that enhances overall economic success.

In order to meaningfully quantify public costs that may be associated with the subject development, we have therefore looked at the issue from both perspectives, on an actual cost basis and on a per capita allocation basis.

For the remainder of the costs/benefits analysis, we are concerned about services and receipts only in regard to the subject project as if a new addition to the Maui urban inventory, with the associated fiscal implications. In actuality, as the subject project will be a replacement use, this section of the analysis is generally rendered moot.

Public Costs

Actual Costs

Were the subject a new project, Maui County would directly incur several areas of cost increases as a result of the Residences at Kapalua Bay, primarily in regards to emergency services. Based on analysis of response frequencies, time/cost data, and past discussions with affected agencies, we have made general allowances for these items as summarized below.

Police/Enforcement -- The Maui County police department made 193,486 total responses in 2003, resulting in a total budget requirement of $32,158,001. The average cost per response was at $166 and the cost per capita of de facto population (175,000 persons) was $183.76.

Application of this per capita estimate to the subject de facto population (459 persons) results in a projected additional police program cost to the county of about $85,000 per year in 2005 dollars. Generally, tourist areas have higher policing costs than residential developments, for a variety of reasons, and the actual cost could be marginally higher.

The per capita cost figure is supported by projections of subject-specific responses based on typical allowances made in the budgeting process. Using a base cost of $140 per hour for a responding officer (wages and benefits for responding/support/administrative personnel, overhead, capital costs, and amortized equipment), we estimate the

annual additional police/enforcement cost to Maui County on a stabilized basis after project build-out will be about $79,250.

This is comprised of:

- Two miscellaneous calls per week at an average of two total officer hours each. (2 hrs. x $140/hr. x 2 x 52 = $29,120)
- Two "minor" incidents/traffic accidents each month requiring on average five hours of officer time. (5 hrs. x $140 x 2 x 12 = $16,800)
- One "major" incident/traffic accident each month requiring on average of 20 hours of officer time. (20 hrs. x $140 x 12 = $33,600)

This demand of 568 hours is the equivalent to 28.4 percent of one new officer position (2,000 total hours).

Fire Protection -- Overall, Maui County fire control and emergency serviced some 4,285 responses in 2003, with a commensurate budget demand of $17,116,382. This equates to $3,994.49 per response or $97.81 per year for each person of countywide de facto population.

Application of this per capita figure to the subject population results in an additional cost to the county of $45,000 annually.

Again, these figures can be supported by estimating specific subject direct response needs. Our forecasts are based on a crew cost of $800/hour (four to five firemen, wages, benefits, overhead and amortized equipment). Using this method, we estimate that at build-out, the yearly additional costs to Maui County resulting from the Residences at Kapalua Bay is $54,400 per year.

This is comprised of:

- One "minor" fire/rescue event per month requiring one crew for a total of three hours (response and/or clean-up). (3 hrs. x $800/hr. x 12 = $28,800)
- One "major" fire/rescue event every six months requiring two crews for a total of eight hours each. (2 crews x 8 hrs. x $800/hr. x 2 = $25,600)

Emergency Medical Response -- This is based on average cost per response of $500, with an average of two calls per month. The total cost to the county would be $12,000 per year on a stabilized basis after build-out. ($500/response x 2 per month x 12 = $12,000)

Road Maintenance -- An allowance of $20,000 per year was made for this item.

The total annual "actual" cost to the county on a stabilized basis at build out of the subject development is estimated at $165,920. This cost would be reached on an escalating basis over time, beginning in year 3 and increasing as the club is finished and populated.

State of Hawaii costs would include highway frontage work, health inspections of food service establishments and other minor oversight duties. An allowance of $60,000 per year was made for these items, increasing to the stabilized level as the club is built out.

Additionally, while we consider it highly unlikely that any full-time resident children would attend public school (given the economic status of estate owners), it is possible that up to 10 resident children (the count projected by the demographic formula) could enter the public school system. The cost per student in public schools statewide is presently at about $7,500 per year. We have used a stabilized allowance of $8,000 per potential student, or $80,000 in maximum student costs to the state each year.

The total state costs on an "actual" stabilized basis would be about $140,000 annually.

Per Capita Costs

An alternative method for determining public costs is through per capita expenditures incurred by the State of Hawaii and Maui County in accordance with the de facto population area of the jurisdiction. This is founded on the principal that each individual on the island equitably benefits from all governmental costs, regardless of type or focus throughout the day, with each new member of the community (whether resident or visitor) creating a proportionate new cost burden in their daily home and working life.

As previously noted, this is the standard method for resort and residential application as most costs are viewed as accruing to the housing or lodging aspects of a persons lifestyle and land use. We have included it as a means of demonstrating the overall public fiscal

impact potential of the proposed subject project even when viewed from this maximum potential cost perspective. We consider this approach as setting the absolute upper limit on all public costs (actual, indirect and inferred).

According to the state Department of Budget and Finance database, the state expects to spend a total of $8.0 billion on services, salaries, infrastructure, and financing in fiscal 2005. The total de facto population in the state on an average daily basis at year-end 2004 was about 1,450,000 persons, including residents, tourists, and military personnel.

The per capita expenditure by the state will thus be about $5,520 for 2005, a nominal increase from 2004. From 1979 through 2004, state government expenditures increased at a rate of just under five percent annually compounded.

The stabilized average de facto population on-site at the subject at build-out will be 459 persons, a figure reached in year 6 of the development model. Using the allocated state cost per de facto "resident" of $5,520 per year, the total annual "costs" to the state purse at stabilization by the project using the per capita allowance method would be $2,534,333 in constant year 2005 dollars.

Analyzed on a similar basis, Maui County's budget for the local government in fiscal year 2005 is $393,312,908, which represents an escalation over time of more than four percent compounded annually since 1995.

The current de facto population in Maui County is some 180,000 persons. The resulting de facto per capita county expenditure for this year is therefore anticipated to be $2,185.

Application of this figure to the total on-site de facto population at the Residences at Kapalua Bay at build out would be about $1,003,123 annually in costs to the county government on a stabilized basis (459 de facto residents x $2,185).

Total Public Costs -- On a per capita allowance cost basis, the state and county expenses associated with the subject development would range from $1,035,007 in year 4 of the project (the first year of unit occupancy) to a stabilized maximum of $3,537,456 at build-out in year 6 and beyond in year 2003 dollars.

On an actual cost basis, which we acknowledge may be an atypical perspective and a minimized accounting of direct expenditures, the total governmental costs at build-out to the state and county would be $306,000 annually.

Public Fiscal Benefits

Real Property Taxes -- Property taxes paid by landowners in the subject project were calculated using the 2005 tax rates for both land and buildings, improved or unimproved.

The assessed values for the improvements were based upon the direct costs provided by the development team, plus an allowance of 20 percent for indirect, financing, profits and other costs which would inure to the structures. The total estimated assessed values of the finished units and club facilities upon completion is $360.0 million.

The assessed values for the land component was estimated at $50 million (commensurate with allocated land contribution of the recent purchase price) for the site in its pre-subject developed state during years 1 and 2 of our model. This equates to an underlying assessed land value equal to $322,600 per unit.

It was assumed the land would be classified as resort and be taxed at the rate of $8.30 annually per $1,000 of assessed value. The improvements are also assumed to have a "resort" tax rate of $8.30 per $1,000 of assessment.

All real property value of the subject holding is assumed to be vested in the completed "salable" and operating components, with no assessment placed against open spaces, roads, or other systems.

The total real property tax to be paid to Maui County in 2005 dollars ranges from $415,000 in year 1 of development, to a stabilized level of $3,403,000 at build-out in year 4 and beyond. The aggregate real property taxes paid over the 10-year study time-frame will be $26.6 million.

State Income Tax -- The state will receive income taxes from three sources:

- the wages of the workers associated with the construction, maintenance, and operation of the Residences at Kapalua Bay components;

- the household incomes of full-time residents in the community; and
- the corporate profits from contractors and suppliers serving the construction phase of the development, and as generated by on-going club operations.

According to DBEDT data, individual State of Hawaii income tax liability as a ratio to gross income has ranged from 5.5 to 5.9 percent during the past decade, with the more current figures tending toward the mid to upper-end of the range. We have employed an effective tax rate of 5.80 percent of gross income for individual workers and full-time residents.

The effective tax rate for the corporate income is estimated at 2.00 percent of gross operating profits, based on available DBEDT statistics.

The total income tax revenues to be received by the state are projected at $79,532 in the first year of construction increasing to a maximum level at year 3 of $3.2 million annually in constant 2005 dollars.

On a stabilized basis, after build-out, the permanent on-site club employees, off-site workers, full-time project residents, and subject operating businesses, would pay an annual state income tax of $834,096. Over the 10-year modeling period, the cumulative income taxes paid are estimated at $11.7 million.

We have not included any corporate income or other taxes which will be paid by the developers as a result of their profits from undertaking the subject development, or from the secondary jobs created by the discretionary spending of workers and businesses. Such items have the potential to be substantial contributions to the state coffers.

Transient Accommodations Tax -- A transient accommodations tax of 7.25 percent of lodging revenues (real or implied) must be paid by the club operations.

For non-member guests staying in a subject unit, it would be applied against the prevailing Average Daily Rate and collected as part of the hotel bill. We estimate this segment of the operation would generate stabilized annual taxable "rooms department" revenues of $2,190,000.

This is calculated assuming an average of 20 rented rooms nightly with an ADR of $300.

Interval unit users are also responsible for paying a transient accommodations tax based on the implied ADR of the unit. The assessment is typically collected by the front desk or as part of the property tax/maintenance fees for the interval ownership.

At stabilization, there will be a total of 21,827 occupied room nights per year in the interval units (65 total units x 365 days x 92% occupancy). Assuming an implied ADR of $300, the total taxable interval "lodging revenues" will be $6,548,000 annually.

The total estimated transient accommodation taxes paid by the project will range from $304,848 in year 3 (first occupancy year) to $633,512 per year on a stabilized basis. The total collected by the state during the 10-year model period is forecast at $4,593,361.

State Gross Excise Tax -- This 4.166 percent of expenditures tax was applied against:

- the total estimated construction contract costs;
- the total gross sales of the club operations; and
- the discretionary expenditures of the de facto resident and worker populations of the subject.

The anticipated state excise tax receipts arising from the subject development grow from an estimated $638,379 in the first year of development to a peak of $6.6 million. Over the 10-year study period, the receipts total $23.6 million and stabilize at circa $1,515,519 per year.

We have not included any excise tax revenues associated with the direct, local "multiplier effect" expenditures on Maui, or those created in the secondary market by the suppliers to the operating businesses or secondary worker expenditures.

Total Public Benefits (Revenues) -- In constant 2005 dollars, the aggregate annual tax revenues flowing from the subject development at full project build-out range from:

- $415,000 to $3,403,000 per year for Maui County, stabilizing over time at the higher figure, totaling $26.6 million over the 10-year development projection model;
- $717,912 to $12 million annually for the State of Hawaii, stabilizing at $2,983,127 per year, and cumulatively at $39.9 million over the 10-year forecast period; and
- $1,132,912 to $12,045,991 per year for total tax receipts (county and state), totaling $66.5 million for the initial 10 years of the FSM community, and stabilizing at $6.4 million per year.

Correlation

Our public cost/benefit assessment model is displayed on Table 17, depicting the correlation of public service costs (per capita allocation basis) with the anticipated tax revenue benefits.

Table 18 summarizes our costs/benefits findings on both an actual cost and per capita allowance basis for the Residences at Kapalua Bay.

As can be seen, regardless of the cost methodology adopted, in no single year do public coffers suffer a net loss.

Comparison of Existing and Proposed Uses of the Subject Site

The primary economic impacts and tax receipts associated with the existing use of the subject property (Kapalua Bay Hotel and Shops) and the proposed use (Residences at Kapalua Bay) are summarized on Table 19. As can be seen, the net impacts from redeveloped are generally favorable, with virtually no change in the effective stabilized job count, and gains in all other categories.

It should be noted, Kapalua Resort has plans for an expansive new resort shopping center to replace the existing shops. The modern facility will be larger, better located, and support a larger work force in more tenant businesses than the current center.

Employment gains will also be made due to maintenance/renovation requirements by private unit owners, and on a temporary basis during construction (an average of 333 full-time equivalent jobs during the four year process).

TABLE 18

SUMMARY OF ANNUAL PRIMARY GOVERNMENTAL TAX RECEIPTS AND PUBLIC SERVICE COSTS
Market Study of Proposed Residences at Kapalua Bay
Kapalua, Maui, Hawaii
In Constant Year 2005 Dollars

State of Hawaii

On Stabilized Basis At Build-Out	Actual Cost Comparison: Receipts	- Costs	= Net Benefits or (Costs)	Per Capita Allocation Comparison: Receipts	- Costs	= Net Benefits or (Costs)
Amount per Year	$2,983,127	($140,000)	$2,843,127	$2,983,127	($2,534,333)	$448,794

Maui County

On Stabilized Basis At Build-Out	Actual Cost Comparison: Receipts	- Costs	= Net Benefits or (Costs)	Per Capita Allocation Comparison: Receipts	- Costs	= Net Benefits or (Costs)
Amount per Year	$3,403,000	($165,920)	$3,237,080	$3,403,000	($1,003,123)	$2,399,877

Source: The Hallstrom Group, Inc.

TABLE 17

PUBLIC COST/BENEFIT SUMMARY TABLE
Market Study of the Proposed Residences at Kapalua Bay
Kapalua, Maui, Hawaii
In Constant Year 2005 Dollars

Development Year	1	2	3	4	5	6	7	8	9	10	Total Years 1 Through 10	Stabilized
PUBLIC BENEFITS (Revenues)												
1. REAL PROPERTY TAXES												
Cumulative Assessed Values (1)												
Improvements			$180,000,000	$360,000,000	$360,000,000	$360,000,000	$360,000,000	$360,000,000	$360,000,000	$360,000,000		$360,000,000
Land	$50,000,000	$50,000,000	$50,000,000	$50,000,000	$50,000,000	$50,000,000	$50,000,000	$50,000,000	$50,000,000	$50,000,000		$50,000,000
Total Assessed Value	$50,000,000	$50,000,000	$230,000,000	$410,000,000	$410,000,000	$410,000,000	$410,000,000	$410,000,000	$410,000,000	$410,000,000		$410,000,000
TOTAL REAL PROPERTY TAXES	**$415,000**	**$415,000**	**$1,909,000**	**$3,403,000**	**$3,403,000**	**$3,403,000**	**$3,403,000**	**$3,403,000**	**$3,403,000**	**$3,403,000**	**$26,560,000**	**$3,403,000**
2. STATE INCOME TAXES												
Taxable Personal Income	$647,111	$3,500,444	$48,586,111	$46,637,000	$12,693,400	$13,278,400	$13,278,400	$13,278,400	$13,278,400	$13,278,400	$180,456,067	$13,278,400
Taxable Corporate Profits	$2,100,000	$20,440,000	$18,900,000	$1,123,036	$2,257,200	$3,197,440	$3,197,440	$3,197,440	$3,197,440	$3,197,440	$60,807,437	$3,197,440
Personal Taxes Paid	$37,532	$319,026	$2,817,994	$2,704,946	$736,217	$770,147	$770,147	$770,147	$770,147	$770,147	$10,466,452	$770,147
Corporate Taxes Paid	$42,000	$408,800	$378,000	$22,461	$45,144	$63,949	$63,949	$63,949	$63,949	$63,949	$1,216,149	$63,949
TOTAL STATE INCOME TAXES	**$79,532**	**$727,826**	**$3,195,994**	**$2,727,407**	**$781,361**	**$834,096**	**$834,096**	**$834,096**	**$834,096**	**$834,096**	**$11,682,601**	**$834,096**
3. TRANSIENT ACCOMMODATIONS TAX												
Annual Intervals Occupied			6,716	15,111	21,827	21,827	21,827	21,827	21,827	21,827		21,827
Applied Market Rental Rate			$300	$300	$300	$300	$300	$300	$300	$300		$300
Total Implied Interval Revenues			$2,014,800	$4,533,300	$6,548,100	$6,548,100	$6,548,100	$6,548,100	$6,548,100	$6,548,100		$6,548,100
Other Lodging Revenues			$2,190,000	$2,190,000	$2,190,000	$2,190,000	$2,190,000	$2,190,000	$2,190,000	$2,190,000		$2,190,000
Total Taxable Revenues			$4,204,800	$6,723,300	$8,738,100	$8,738,100	$8,738,100	$8,738,100	$8,738,100	$8,738,100		$8,738,100
Effective Tax Rate			7.25%	7.25%	7.25%	7.25%	7.25%	7.25%	7.25%	7.25%		7.25%
TOTAL ACCOMMODATIONS TAX			**$304,848**	**$487,439**	**$633,512**	**$633,512**	**$633,512**	**$633,512**	**$633,512**	**$633,512**	**$4,593,361**	**$633,512**
4. STATE GROSS EXCISE TAX												
Taxable Transactions												
Construction Contracts	$15,000,000	$146,000,000	$135,000,000								$296,000,000	
Disposable Income Purchases	$323,556	$2,750,222	$24,293,056	$31,093,190	$24,336,935	$33,064,935	$33,064,935	$33,064,935	$33,064,935	$33,064,935	$248,120,733	$104,385,926
Club Operations				$3,313,333	$3,313,333	$3,313,333	$3,313,333	$3,313,333	$3,313,333	$3,313,333	$23,193,333	$3,313,333
Total Taxable Transactions	$15,323,556	$148,750,222	$159,293,056	$34,406,523	$27,649,268	$36,378,268	$36,378,268	$36,378,268	$36,378,268	$36,378,268	$567,314,067	$36,378,268
TOTAL STATE EXCISE TAX	**$638,379**	**$6,196,934**	**$6,636,149**	**$1,433,376**	**$1,151,873**	**$1,515,519**	**$1,515,519**	**$1,515,519**	**$1,515,519**	**$1,515,519**	**$23,634,304**	**$1,515,519**
TOTAL GROSS PUBLIC REVENUES												
To Maui County (Item #1)	$415,000	$415,000	$1,909,000	$3,403,000	$3,403,000	$3,403,000	$3,403,000	$3,403,000	$3,403,000	$3,403,000	$26,560,000	$3,403,000
To State (Items #2 , 3 & 4)	$717,912	$6,924,760	$10,136,991	$4,648,222	$2,566,746	$2,983,127	$2,983,127	$2,983,127	$2,983,127	$2,983,127	$39,910,265	$2,983,127
AGGREGATE TAX REVENUES	**$1,132,912**	**$7,339,760**	**$12,045,991**	**$8,051,222**	**$5,969,746**	**$6,386,127**	**$6,386,127**	**$6,386,127**	**$6,386,127**	**$6,386,127**	**$66,470,265**	**$6,386,127**
PUBLIC COSTS (Expenses)												
By Maui County				$293,499	$681,480	$1,003,123	$1,003,123	$1,003,123	$1,003,123	$1,003,123	$5,990,593	$1,003,123
By State of Hawaii				$741,508	$1,721,721	$2,534,333	$2,534,333	$2,534,333	$2,534,333	$2,534,333	$15,134,895	$2,534,333
TOTAL PUBLIC COSTS				**$1,035,007**	**$2,403,201**	**$3,537,456**	**$3,537,456**	**$3,537,456**	**$3,537,456**	**$3,537,456**	**$21,125,488**	**$3,537,456**
TOTAL NET PUBLIC BENEFITS												
To Maui County	$415,000	$415,000	$1,909,000	$3,109,501	$2,721,520	$2,399,877	$2,399,877	$2,399,877	$2,399,877	$2,399,877	$20,569,407	$2,399,877
To State of Hawaii	$717,912	$6,924,760	$10,136,991	$3,906,715	$845,025	$448,794	$448,794	$448,794	$448,794	$448,794	$24,775,370	$448,794
AGGREGATE NET BENEFITS	**$1,132,912**	**$7,339,760**	**$12,045,991**	**$7,016,215**	**$3,566,545**	**$2,848,671**	**$2,848,671**	**$2,848,671**	**$2,848,671**	**$2,848,671**	**$45,344,778**	**$2,848,671**

(1) Assessed value for improvements are based on estimated total ("All In") construction cost plus 20% (profit/other).

Source: The Hallstrom Group, Inc.

TABLE 19

COMPARISON OF EXISTING AND PROPOSED SUBJECT SITE OPERATIONS
Market Study of the Proposed Residences at Kapalua Bay
Kapalua, Maui, Hawaii
Values Stated in Constant 2005 Dollars

Item	Existing Kapalua Bay Hotel & Shops	Proposed Residences at Kapalua Bay	Comments
Employment			
Operations (Stabilized)	200 (Hotel)	188	New project has slightly fewer positions, but lodging operation will be much more stable.
	80 (Shops)	80-Plus (New Center)	New, better located commercial center in resort will create many more jobs than in existing Shops.
Unit Maintenance (Stabilized)	Included in Hotel Count	10 to 20	Privately-owned units will create additional maintenance and minor renovation opportunities.
Construction	None	333	Average jobs created annually during 4-year planning and construction period.
Economic Impacts (Stabilized)			
Average Daily Guest Population	361	459	The new project will have larger user/guest parties and higher occupancy than hotel.
Annual Discretionary Expenditures	$26,984,888	$29,323,735	Average daily amount is higher for hotel, but upwards of 70% stays in hotel. 80+% of new project would flow off-site.
Tax Revenues (Stabilized)			
Real Property Assessed Value	$57,932,700	$410,000,000	Individually saleable new units results in significantly higher assessed value than aging hotel. Also, value is more stable and should appreciate faster.
Real Property Taxes	$468,954	$3,403,000	
State Income Taxes	$463,200	$834,096	While hotel has more employees, poor performance of Hotel & Shops limits corporate taxes.
Transient Accommodations Taxes	$1,026,957	$633,512	Focus of hotel is transient use. However, new project daily rates will rise faster and more units may be in rental pool, lessening the difference.
State Gross Excise Taxes	$1,438,834	$1,515,519	Higher discretionary expenditures for new project. New shopping center in resort will result in even greater excise taxes than currently.

Source: The Hallstrom Group, Inc.

Discretionary expenditures flowing into the Maui economy will increase by one-third, real property tax receipts (to Maui County) will increase seven-fold, and total primary taxes paid to the state will escalate from $2.7 million to $3.0 million annually.

Thus, redevelopment of the subject property is not only readily supported by the market and a vital "freshening" of a critical prestigious site, it will also enhance the economic and tax impacts flowing from the holding.

CERTIFICATION

The undersigned do hereby certify that, to the best of our knowledge and belief, the statements of fact contained in this report are true and correct. It is further certified that the reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and are our personal, impartial, and unbiased professional analyses, opinions, and conclusions. We further certify that we have no present or prospective interest in the property that is the subject of this report, and have no personal interest with respect to the parties involved. We have no bias with respect to the property that is the subject of this report or the parties involved with this assignment. Our engagement in this assignment was not contingent upon developing or reporting predetermined results. Our compensation for completing this assignment is not contingent upon the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal. The appraisal analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the requirements of the Code of Professional Ethics and Standards of Professional Appraisal Practice of the Appraisal Institute, and the Uniform Standards of Professional Appraisal Practice. The use of this report is subject to the requirements of the Appraisal Institute relating to review by duly authorized representatives. The undersigned certify that they have made personal inspections of the property that is the subject of this report. No other persons provided significant real property appraisal assistance other than the undersigned.

The Appraisal Institute conducts programs of continuing education for their designated members. As of the date of this report, James E. Hallstrom, Jr. has completed the requirements of the continuing education program of the Appraisal Institute.

James E. Hallstrom, Jr., MAI, CRE
Hawaii State Certified
General Appraiser, CGA-178
Exp. Date December 31, 2005

Tom W. Holliday

/as

4253ER01

THE HALLSTROM GROUP INC.
REAL ESTATE CONSULTANTS & APPRAISERS

PROFESSIONAL BACKGROUND AND SERVICES

The Hallstrom Group, Inc. is a Honolulu based independent professional organization that provides a wide scope of real estate consulting services throughout the State of Hawaii with particular emphasis on valuation studies. The purpose of the firm is to assist clients in formulating realistic real estate decisions. It provides solutions to complex issues by delivering thoroughly researched, objective analyses in a timely manner. Focusing on specific client problems and needs, and employing a broad range of tools including after-tax cash flow simulations and feasibility analyses, the firm minimizes the financial risks inherent in the real estate decision making process.

The principals and associates of the firm have been professionally trained, are experienced in Hawaiian real estate, and are actively associated with the Appraisal Institute and the Counselors of Real Estate, nationally recognized real estate appraisal and counseling organizations.

The real estate appraisals prepared by The Hallstrom Group accomplish a variety of needs and function to provide professional value opinions for such purposes as mortgage loans, investment decisions, lease negotiations and arbitrations, condemnations, assessment appeals, and the formation of policy decisions. Valuation assignments cover a spectrum of property types including existing and proposed resort and residential developments, industrial properties, high-rise office buildings and condominiums, shopping centers, subdivisions, apartments, residential leased fee conversions, special purpose properties, and vacant acreage, as well as property assemblages and portfolio reviews.

Market studies are research-intensive, analytical tools oriented to provide insight into investment opportunities and development challenges, and range in focus from highest and best use determinations for a specific site or improved property, to an evaluation of multiple (present and future) demand and supply characteristics for long-term, mixed-use projects. Market studies are commissioned for a variety of purposes where timely market information, insightful trends analyses, and perceptive conceptual conclusions or recommendations are critical. Uses include the formation of development strategies, bases for capital commitment decisions, evidence of appropriateness for state and county land use classification petitions, fiscal and social impact evaluations, and the identification of alternative economic use/conversion opportunities.

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PROFESSIONAL QUALIFICATIONS OF JAMES E. HALLSTROM, JR., MAI, CRE

Business Background

President	The Hallstrom Group, Inc. Honolulu, Hawaii (1980 - Present)
Former Senior Vice President and Treasurer	Hastings, Martin, Hallstrom and Chew, Ltd., Honolulu, Hawaii (1972-1980)
Former Real Property Appraiser and Analyst	Administration, Inc., a subsidiary of C. Brewer and Company, Limited Honolulu, Hawaii (1971-1972)
Former Senior Real Property Appraiser and Analyst	Opitz Realty, Madison, Wisconsin (1969-1971)

National Designations and Memberships

- CRE Designation (1998) - The Counselors of Real Estate
- MAI Designation (1976) - American Institute of Real Estate Appraisers
- SRPA Designation (1975) - Society of Real Estate Appraisers

The American Institute of Real Estate Appraisers (AIREA) and the Society of Real Estate Appraisers (SREA) consolidated in 1991, forming the Appraisal Institute (AI).

Education

- M.S. (Real Estate Appraisal and Investment Analysis) 1971, University of Wisconsin at Madison
- B.A. (Economics) 1969, Brigham Young University at Provo
- Additional numerous specialized real estate studies in connection with qualifying for national professional designations, and uninterrupted Continuing Education.
- Completed Continuing Education requirements with the Appraisal Institute through 2004.

Professional Involvement

- Former President and Officer for Hawaii AIREA and SREA Chapters
- Instructor for Society of Real Estate Appraisers Course 101, "Introduction to Appraising Real Property" and Course 201, "Principles of Income Property Appraising"
- Contributing author to the "Hawaii Real Estate Investor"
- Lecturer at many professional seminars and clinics.
- Appointed numerous times as an Arbitrator and Mediator.

Qualified Expert Witness

Federal and State Courts
State Land Use and County Hearings
Arbitration Proceedings

State of Hawaii Certification

Certified General Appraiser, License Number CGA-178, Exp. Date December 31, 2005

Community Service

Active registered member of the Boy Scouts of America; former Director of Le Jardin Academy; former Advisory Board Member of the School of Business, Brigham Young University, Hawaii Campus; Director of Hawaii Reserves, Inc.

PROFESSIONAL QUALIFICATIONS OF THOMAS W. HOLLIDAY

Business Background

Supervisor/ Senior Analyst	The Hallstrom Group, Inc. Honolulu, Hawaii
Former Staff Appraiser	Davis-Baker Appraisal Co. Avalon, Santa Catalina Island, California

Education

- B.A. (Communications/Journalism) 1978 California State University at Fullerton
- SREA Course 201- Principles of Income Property Appraising
- Expert witness testimony before State of Hawaii Land Use Commission and various state and county boards and agencies since 1983.
- Numerous professional seminars and clinics
- Contributing author to Hawaii Real Estate Investor, Honolulu Star Bulletin

On January 1, 1991, the American Institute of Real Estate Appraisers (AIREA) and the Society of Real Estate Appraisers (SREA) consolidated, forming the Appraisal Institute (AI).

Recent Maui Assignments (since 2000)

- Market Study, Economic Impact Analyses and Public Costs/Benefits Assessments
  - -- Wailea Ranch (Master Planned Community)
  - -- Palauea Bay (Resort/Residential)
  - -- Upcountry Town Center (Mixed-Use Planned Development)
  - -- Maui Lani (Residential and Industrial Components of Master Planned Community)
  - -- Maui Business Park, Phase II (Industrial/Commercial)
  - -- Four Seasons Private Estates and Residences Club (Resort/Residential)
  - -- Kualono Subdivision (Residential)
  - -- Kapalua Mauka (Master Planned Community)
  - -- Hailiimailii (Commercial)
- Major Valuation Assignments
  - -- Sheraton Maui Hotel
  - -- Outrigger Wailea Resort Hotel
  - -- Maui Lu Hotel
  - -- Coconut Grove Condominiums
  - -- Palauea Bay Holdings
  - -- Wailea Ranch
  - -- Maui Coast Hotel
  - -- Westin Maui Hotel
  - -- Maui Marriott Hotel
  - -- Waihee Beach

B

Avifaunal & Feral Mammal Field Survey

AVIFAUNAL AND FERAL MAMMAL FIELD SURVEY OF LAND ASSOCIATED WITH THE RESIDENCES AT KAPALUA BAY PROJECT, KAPALUA, MAUI

Prepared for: PBR-Hawaii
and
Maui Land & Pineaple Company, Inc.

Prepared by:

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12 January 2005

INTRODUCTION

This report presents the findings of a two day (8, 9 January 2005) field survey of approximately 27 acres involved in the Residences at Kapalua Bay Project located at Kapalua, Maui. References to pertinent published sources are also included in order to provide a broader perspective of the birds and mammals known from this region on Maui. The goals of the field survey were to:

1- Document the species of birds and mammals presently found on the property.

2- Focus the survey primarily on native and migratory species.

DESCRIPTION OF THE SITE

This site presently contains the Kapalua Bay Hotel. The grounds are landscaped in grass and ornamental trees and shrubs. A rocky shoreline provides additional habitat.

FIELD SURVEY METHODS

Data on birds were collected by walking the entire site during early morning and late afternoon hours when birds were most active and thus more easily detected. A tally was kept of all birds seen or heard. The data form the basis of the relative abundance estimates for each species. One night was devoted to searching the site for the native

endangered Hawaiian Hoary Bat (*Lasiurus cinereus semotus*). No trapping of mammals such as rats, mice, cats or the Small Indian Mongoose (*Herpestes auropunctatus*) was attempted. Such an effort would have required more time and effort than was justified by this survey. All mammal observations were in the form of visual sightings or tracks. A Pettersson Elektronik AB Ultrasound Detector D 100 was used on the night survey to listen for echolocating bats.

The scientific and common vernacular names used in this report follow Pyle (2002) and Honacki et al. (1982). These sources employ names used in the current scientific literature. Weather during the survey was highly variable with clear, calm conditions on 8 January to windy, raining weather on the 9 January.

RESULTS OF THE FIELD SURVEY

Native Birds:

No native birds were observed over the course of the survey. Given the location of the property, and available habitats, no native birds would be expected. (Pratt et al. 1987, Hawaii Audubon Society 1997).

Migratory Birds:

Three species of migratory shorebirds were recorded on the survey. Five Ruddy Turnstones (*Arenaria interpres*) were seen on the rocky shoreline on 8 January. Three Wandering Tattler (*Heteroscelus incanus*) were seen in the same area on both the 8 and 9 January. A total of 16 Pacific Golden-Plover (*Pluvialis fulva*) were counted on both days of the survey. While in Hawaii plover are territorial and forage on lawns during August through April. The Hawaiian name of the Pacific Golden-Plover is Kolea. This species has received extensive study both here in Hawaii and in Alaska (Johnson et al. 1981, 1989, 1993, 2001a, 2001b, 2004). None of these three migratory shorebirds are listed as threatened or endangered.

Alien (introduced) Birds:

Table One lists the alien birds found on this survey. A total of ten species were recorded. None of these birds are listed as threatened or endangered. No unexpected species were recorded. Avifaunal surveys in this region of Maui have encountered a similar array of alien birds (Bruner 1986, 1988, 1989, 1994, 2001a, 2001b, 2002).

Feral Mammals:

One Small Indian Mongoose (*Herpestes auropunctatus*) was seen on the survey. No feral cats (*Felis catus*), rats (*Rattus spp.*) or mice (*Mus musculus*) were seen but likely

occur in this area. An ultra sound detector was used on the night of 8 January to listen for any vocalizing Hawaiian Hoary Bats. None were recorded. Relatively small numbers of bats are believed to occur on Maui (Tomich 1986, Kepler and Scott 1990. Duvall and Duvall (1991) suggest, however, that there may be more bats on Maui than have been reported. The Hawaiian name of the bat is 'Ope'ape'a. They forage for flying insects in a wide variety of habitats including: native forest; agricultural lands; as well as urban areas (pers. observ.). Reynolds et al. (1998) notes seasonal changes in elevation by bats on the Big Island. This species prefers to roost solitarily in trees rather than in large groups in caves or other shelters as do many microchiroptera.

CONCLUSIONS

The absence of native birds and mammals was not unexpected due to the elevation and type of available habitats. The migratory shorebirds recorded on the site was typical of their occurrence in Hawaii at this time of year. Loss or reduction of existing lawn habitat will result in the displacement of territorial Pacific Golden-Plover. The number of plover compared to the amount of lawn area on and around this site was relatively low. There may be sufficient lawn habitat in the surrounding area to accommodate those plover displaced by the proposed development.

The Hawaiian Hoary Bat was not found on the survey but could forage and roost on this site. This should not be viewed as a negative instead the presence of the bat, the

only native land mammal in Hawaii, should be welcomed. The fact that they are not restricted from using altered landscapes, even urban habitats, is encouraging. By comparison so many of our native birds are restricted to native forest. The bat on the other hand can be found from sea level to 10,000 ft. elevation on Maui (pers. observ.). Given their ability to use a wide variety of foraging habitats development of this site would not restrict them from this area.

TABLE ONE

Alien (introduced) birds found on the field survey conducted on 8, 9 January 2005 at Kapalua Bay Hotel property. Relative abundance estimates are based on the number of individuals observed. A= Abundant (20+), C= Common (6-19), U= Uncommon (1-5).

Common Name	Scientific Name	Relative Abundance
Cattle Egret	*Bubucus ibis*	U
Gray Francolin	*Francolinus pondicerianus*	U
Spotted Dove	*Streptopelia chinensis*	U
Zebra Dove	*Geopelia striata*	C
Japanese White-eye	*Zosterops japonicus*	C
Common Myna	*Acridotheres tristis*	A
Red-crested Cardinal	*Paroaria coronata*	U
Northern Cardinal	*Cardinalis cardinalis*	U
House Finch	*Carpodacus mexicanus*	A
House Sparrow	*Passer domesticus*	A

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C

Marine Environment Assessment Report

ASSESSMENT OF THE MARINE WATER QUALITY

IN THE VICINITY OF THE

RESIDENCES AT KAPALUA BAY

KAPALUA , WEST MAUI, HAWAII

Prepared for

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January 2005

I. INTRODUCTION AND PURPOSE

The proposed Residences at Kapalua Bay is a resort residential project comprised of resort residences, a restaurant, spa facilities, a public shoreline trail, and public shoreline access. The project site encompasses approximately 25 acres on the site currently occupied by the Kapalua Bay Hotel (Figure 1). The Residences at Kapalua Bay will replace the existing Hotel and related facilities. The new buildings will provide for increased shoreline set-back.

The changes in land use are not expected to have significant adverse effects on either the existing watershed or coastal marine waters. While changes to post-development runoff have yet to be determined, it is not likely that there will substantial differences compared to the existing situation.

As part of the planning process for the Residences at Kapalua Bay, a field investigation was conducted in December 2004 to evaluate existing marine water quality off the project site. Four series of samples were collected in two embayments (Kapalua Bay and Namalu Bay) directly off the project site for the purpose of developing a baseline set of conditions. Establishment of such a baseline will provide the capability to evaluate potential changes to nearshore water quality that might result from the proposed project.

It is also important to note that similar evaluations of nearshore marine water quality have been conducted by Marine Research Consultants in several other areas of the Kapalua Resort in conjunction with existing or planned projects. The other sites include Honolua Bay, Napili Bay, Honokahua Bay and Honokohau Bay. Thus, the investigations of Kapalua and Namalu Bays build on the region-wide data set for the Kapalua West Maui area.

II. ANALYTICAL METHODS

Sampling methodology is identical to that of the monitoring programs listed in the section above. Water quality was evaluated along two transects each in Kapalua and Namalu Bays that extended from the shorelines at the "back" of the Bays (in the vicinity of the beach) out to the open coastal ocean, a distance of approximately 400 m (1,300 feet). Transects were oriented parallel to the "sides" of the Bay, with one transect running along the northern shore (N), and the other transect along the southern shore (S) (Figure 2).

Water samples were collected at eight stations along each transect. Sample locations were selected from NOAA charts, and located in the field using differential GPS (Global Positioning System). Sampling was concentrated in the innermost portions of the Bays, as these are the regions which are most likely to

receive inputs from land. Water samples were collected at two depths; a surface sample was collected within approximately 20 cm (8 inches) of the surface, and a bottom sample was collected within 0.5 m (1.6 foot) of the sea floor. At the sampling stations located within 10 m (30 feet) from the shoreline, only surface samples were collected.

Water quality parameters evaluated included the specific criteria designated for open coastal waters and embayments in Chapter 11-54, Section 06 (Open Coastal waters) of the State of Hawaii, Department of Health (DOH) Water Quality Standards. These criteria include: total nitrogen (TN), nitrate + nitrite nitrogen (NO_3^- + NO_2^-), ammonium (NH_4^+), total phosphorus (TP), chlorophyll a (Chl *a*), turbidity, temperature, pH and salinity. In addition, orthophosphate phosphorus (PO_4^{-3}) and silica (Si) were also reported because these parameters are sensitive indicators of biological activity and the degree of groundwater mixing. Dissolved organic phosphorus (TOP) and dissolved organic nitrogen (TON) were calculated as the difference between TP and inorganic P (PO_4^{-3}), and TN and inorganic N (NO_3^- + NH_4^+), respectively.

All fieldwork was conducted on December 12, 2004 with sampling personnel working from a small boat. Water samples from stations within 10 m of the shoreline were collected by swimmers opening triple-rinsed 1-liter polyethylene bottles at the desired location. Samples from stations located beyond 10 m from shore were collected using a 1.8-liter, Niskin-type oceanographic sampling bottle. These bottles were lowered to the desired sampling depths with spring-loaded endcaps cocked in an open position ensuring complete flow-through of water. When the bottle reached the desired sampling depth (determined by traces on boat-mounted depth-recorder), a messenger released from the surface that triggered closure of the endcaps.

Following field collection, subsamples for nutrient analyses were immediately placed in 125-milliliter (ml) acid-washed, triple rinsed, polyethylene bottles and stored on ice until returned to Honolulu. Analyses for NH_4^+, PO_4^{-3}, and NO_3^- + NO_2^- were performed using a Technicon Autoanalyzer according to standard methods for seawater analysis (Strickland and Parsons 1968, Grasshoff 1983). TN and TP were analyzed in a similar fashion on unfiltered samples following oxidative digestion. Detection limits for nutrients are 0.01 µM (0.14 µg/L) for NO_3^- and NH_4^+, 0.01 µM (0.31 µg/L) for PO_4^{-3}, 0.1 µM (1.4 µg/L) for TN and 0.1 µM (3.1 µg/L) for TP.

Water for other analyses was subsampled from 1-liter polyethylene bottles and kept chilled until analysis. Chl *a* was measured by filtering 300 ml of water through glass fiber filters; pigments on filters were extracted in 90% acetone in the dark at -20o C for 12-24 hours, and the fluorescence before and after acidification of the extract was measured with a Turner Designs fluorometer. Salinity was determined using an AGE Model 2100 laboratory salinometer with a precision of 0.0003‰. In-situ field measurements of pH, temperature, dissolved oxygen and turbidity were acquired with an RBR Model 450 CTD calibrated to

factory specifications. The CTD provided in-situ data with readability of 0.01 pH units, 0.01°C, 0.01% dissolved oxygen saturation. Turbidity was measured on a HACH Model 2100P calibrated with factory standards, with a readability of 0.01 nepthelometric turbidity units (ntu). Field measurements of temperature and dissolved oxygen were not conducted on samples collected by swimmers owing to the relatively long period of time between sample collection and return to the work boat during which values could change substantially.

All laboratory water chemistry analyses were conducted by Marine Analytical Specialists (Honolulu, HI). Marine Analytical Specialists possesses the appropriate approval ratings for these analyses from the State of Hawaii Department of Health, and the U.S. Environmental Protection Agency.

III. RESULTS

a. Environmental Conditions

Weather conditions that occur in the area are distinguished primarily by the strength of tradewinds, and size of breaking surf along the outer perimeter of the embayments. The December 2004 sampling took place during a period of slack winds, and a moderate northerly swell.

b. Horizontal and Vertical Stratification

Tables 1 and 2 show results of water chemistry analyses for samples collected during December 2004 along the four transects shown in Figure 2. Figures 3 and 4 show plots of twelve water chemistry constituents as functions of distance from the back shoreline of the bays extending to the open ocean. Results of water chemistry analyses indicate a distinct horizontal gradient in both Kapalua and Namalu Bays. Plots of Si and NO_3^- exhibit a peak at the most shoreward stations (within 10 m of the shoreline), followed by steep decreases moving seaward (Figure 3). Conversely, salinity shows a marked decrease within 10 m of the shoreline with sharp increases moving seaward (Figure 4). These gradients were most pronounced on the south transect of Kapalua Bay and least pronounced on the north transect of Namalu Bay (Tables 1 and 2, Figures 3 and 4).

As no springs or streams were visible near the origins of any of the transects, the sharp gradients of Si, NO_3^- and salinity indicate groundwater entering the ocean near the shoreline. Groundwater with essentially zero salinity typically contains concentrations of Si and NO_3^- several orders of magnitude greater than ocean water which has salinity of approximately 35‰ (see values for wells in Tables 1 and 2). Hence, where groundwater flows to the ocean, a zone of mixing is created with intermediate values of salinity and inorganic nutrient concentrations. In Kapalua and Namalu Bays, the zone of mixing is extremely narrow, extending only about 10 m from the shoreline. Seaward of the zone of mixing (beyond 10 m from the shoreline) concentrations of salinity, Si and NO_3^-

were essentially constant at levels typically found in open coastal waters (Tables 1 and 2, Figures 3 and 4).

Concentrations of PO_4^{3-}, TP and TN showed slight trends relative to distance from the shoreline with peak values closest to the shoreline (Figure 3). Concentrations of NH_4^+, TON and TOP were essentially constant across the entire horizontal range of sampling (Figure 3). Such patterns are consistent with the low concentrations of these organic constituents in groundwater relative to ocean water (see well data in Tables 1 and 2). Turbidity and Chl a in surface waters was distinctly elevated in the samples collected within 10 m of the shoreline on all three transects (Figure 4).

Figures 3 and 4 also show concentrations of water chemistry constituents as functions of distance offshore from the back of the bays with respect to vertical stratification. As low salinity groundwater is less dense than ocean water, the incoming freshwater forms a low density, high nutrient content surface lens. Beyond 10 m from the shoreline there was essentially no vertical stratification of any constituents on any of the four transects.

Overall, patterns of water chemistry within Kapalua and Namalu Bays exhibit steep gradients close to the shoreline of salinity and several nutrient constituents that occur in high concentrations in groundwater. Beyond 10 m from shore, concentrations of water quality constituents were relatively constant both within, and between the two embayments. The lack of horizontal gradients beyond 10 m from the shoreline indicates water quality within the Bays is typical open coastal water with little effect from material inputs originating on land.

c. Conservative Mixing Analysis

A useful treatment of water chemistry data for interpreting the extent of material inputs from land is application of a hydrographic mixing model. It is possible to evaluate the extent of nutrient input from sources other than groundwater efflux by plotting the concentration of the dissolved material as a function of salinity (Officer 1979, Smith and Atkinson 1994, Dollar and Atkinson 1992). Comparison of the curves produced by such plots with conservative mixing lines provide an indication of the origin and fate of the material in question.

Figure 5 shows plots of concentrations of four constituents (Si, NO_3^-, NH_4^+, PO_4^{3-}) as functions of salinity for the samples collected in Kapalua and Namalu Bays in December 2004. Each graph also shows conservative mixing lines that are constructed by connecting the endpoint concentrations of open ocean water and groundwater from two potable wells located upslope of Kapalua that were sampled in December 2004 (Tables 1 and 2). The average well concentrations of NO_3^- (20.85 µM) and Si (605 µM) used to construct the mixing lines from data collected in 2004 is similar to the average values from the same wells measured in 2001 (NO_3^- =18 µM and Si = 608 µM). The 2004 values were also similar to the average values of five wells in the Napili-Honokohua sampled from 1993-1997 as

shown in Soicher and Peterson (1997) (average NO_3^- = 18.7 µM; average Si = 654 µM). These similarities indicate that the nutrient concentrations in pristine groundwater flowing to the ocean in the Kapalua area has not changed substantially over the last decade.

If the parameter in question displays purely conservative behavior (no input or removal from any process other than physical mixing of two water masses), data points should fall on, or near, the conservative mixing line. If, however, nutrients are added to the system through processes such as leaching of fertilizers to groundwater, data points will fall above the mixing line. If material is being removed from the system by processes such as biological uptake, data points will fall below the mixing line.

Dissolved Si represents a check on the model as this material is present in high concentration in groundwater, but is not a major component of fertilizer, and is generally not utilized rapidly within the nearshore environment by biological processes. It can be seen in Figure 5 that when concentrations of Si are plotted versus salinity, data points prescribe a straight line that falls above the conservative mixing line. Linear regression of Si as a function of salinity yields significant correlation with R^2 's of 0.99 for both transects in Kapalua Bay and the South Namalu transect, and 0.86 for the North Namalu transect. However, the upper and lower confidence limits around the y-intercept of regressed data from each transect are far greater than the mean concentration of Si in the two wells (605 µM). The Y-intercept can be regarded as the concentration of Si at salinity of zero. Hence, it is clear that the concentrations of Si in the water samples collected within Kapalua and Namalu Bays are not a mixture of only ocean water and groundwater. These data indicate that either a third water source, with substantially higher concentrations of Si is mixing with ocean water near the shoreline, or that there is some form of Si used on land that leaches to groundwater which subsequently reaches the ocean. These subsidies are similar on all four of the Kapalua Bay and Namalu Bay transects. However, these subsidies have not been evident during past monitoring surveys in other areas of Kapalua (Honolua, Napili and Honokahua Bays). In these other areas, repetitive sampling has revealed that concentrations of Si fall on the conservative mixing line, with no indication of a subsidy of Si.

In fact, recent sampling in Honolua Bay produced plots of Si versus salinity with a trend of data points below the conservative mixing lines. It is likely that the deviation of the data from the mixing line was a result of input of surface water from Honolua stream into Honolua Bay. As surface water has a lower concentration of Si than potable groundwater, data points fell below the mixing line. This situation was clearly the opposite of what has been observed in the present study within Kapalua and Namalu Bays.

While there is an anomaly with respect to unknown subsidies of Si, the overall linear distribution of the Si data points in Figure 5 indicates that the mixing model provides a valid representation of the system under investigation.

The plots of NO_3^- versus salinity for the December 2004 data from the Kapalua/Namalu transects show a similar pattern as the linear distributions of dissolved Si (Figure 5). Data points from the Kapalua/Namalu Bay transects fall in a linear array substantially above the conservative mixing lines. Linear regression of NO_3^- versus salinity resulted in significant correlation at all transects, and y-intercepts substantially greater than the mean value of groundwater (20 µM). The linear array above the mixing line indicates a substantial subsidy of NO_3^- to the ocean from sources other than natural groundwater.

As NO_3^- is the form of nitrogen most common in fertilizer mixes, it is likely that the source of the subsidy that is evident from the mixing model is leaching of fertilizers from golf courses, landscaped areas, and agriculture, all of which occur inland of Kapalua and Namalu Bays. It is important to note, however, that all of the samples that fall above the mixing line are within 10 m of the shoreline.

If biotic uptake of nutrients was an important factor in controlling nutrient concentrations in the water column, distinct upward concave curvilinearity would be evident. With no such curvilinearity apparent on any of the transects, it does not appear that biotic processes are resulting in detectable net nutrient uptake. Such a result is important in that it indicates that marine plants are not removing nutrients from the water column to a detectable degree. Hence, the nutrient subsidies from land to the ocean are not being taken up by algae or plankton in the nearshore zone, but rather are mixed by physical processes with ocean water to background levels.

The other form of dissolved inorganic nitrogen, NH_4^+, does not occur in elevated concentrations in groundwater relative to ocean water. The conservative mixing lines in Figure 5 are essentially "flat" with similar concentrations in groundwater and open ocean water. For the December 2004 survey, plots of NH_4^+ as functions of salinity result in a scatter of data above the mixing line with no significant linearity (Figure 5). Most of the highest concentrations of NH_4^+ occur at the highest salinities, indicating that there is little influence from land on the concentrations of NH_4^+. The lack of a relationship between salinity and NH_4^+ suggests that concentrations within the Bays are primarily a consequence of biotic activity rather than input from sources on land.

PO_4^{3-} is also a component of fertilizer but is usually not found to leach to groundwater to the extent of NO_3^-, owing to a high absorptive affinity of phosphorus in soils. As with NH_4^+, there is little linear relationship between salinity and concentration of PO_4^{3-} (Figure 5). The lack of a linear distribution of data points above the mixing lines, as occurred with NO_3^- indicates that there is not a distinct subsidy of PO_4^{3-} to the ocean.

d. Compliance with DOH Standards

Also shown in Tables 1 and 2 are DOH water quality standards for embayments under "dry" conditions. Kapalua and Namalu Bays are considered embayments because they have restricted openings to coastal waters defined by a ratio of total bay volume to the cross-sectional entrance area of seven hundred to one or greater. The criteria for dry conditions are applied to Kapalua and Namalu Bays because these areas likely do not receive at least 3 million gallons per day of freshwater discharge per shoreline mile. DOH standards include specific criteria for three situations; criteria that are not to be exceeded during either 10% or 2% of the time, and criteria that are not to be exceeded by the geometric mean of samples. With only one sample set collected from each sampling station, comparison of the 10% or 2% of the time for any sample is not statistically meaningful. However, comparing sample concentrations to these criteria provide an indication of whether water quality is near the stated specific criteria.

During the December 2004 survey, the 10% criterion for NO_3^- was exceeded at both transects within Kapalua Bay and the south transect in Namalu Bay within one meter of the shoreline. Even with the high input of NO_3^- at the shoreline, water from samples along the majority of the transects did not contain concentrations of NO_3^- above the DOH limits. TN at the shoreline of the South Kapalua transect also exceeded the 10% limit. No other constituent measured within either of the Bays exceeded the DOH standards

NO_3^- is normally found in high concentrations in uncontaminated groundwater. As discussed above, however, the application of the data to a conservative mixing model indicates extraneous subsidies of NO_3^- from activities on land.

IV. SUMMARY

- As part of the planning process for the Residences at Kapalua, an assessment of marine water quality was carried out in Kapalua Bay and Namalu Bay in December 2004. Forty-eight water samples were collected along four transects that extend from the shoreline out to the open ocean; transects were located at each corner of the two bays. Water samples were also collected from two potable wells above the Kapalua developments in order to determine the composition of naturally occurring groundwater that enters the bays. The survey was conducted during a period of calm winds and moderate north swell.
- Results of water chemistry analyses reveal steep horizontal gradients of salinity, nitrate nitrogen (NO_3^-), and Silica (Si) that extend from the shoreline to a distance of only about10 m (33 ft) offshore. Gradients were steeper in Kapalua Bay compared to Namulu Bay. The steep nearshore gradients are a result of inflow of low salinity groundwater that contains high

concentrations of Si and NO_3^- compared to ocean water. While there is evidence of increased nutrients close to the shoreline, the extent of the mixing zone is so narrow that there is virturally no possibility of impact to marine biota.

- Seaward of 10 m, water within both bays is well mixed to near background oceanic levels, and does not exhibit any substantial vertical or horizontal gradients. Water chemistry constituents that do not occur in high concentrations in groundwater do not display distinct gradients of distribution, but are often slightly higher in the inner regions of the two bays relative to open coastal waters. Turbidity and Chl a were elevated only at the sampling stations within 10 m of the shoreline.
- Scaling nutrient concentrations to salinity provides important data on groundwater input to the coastal ocean within the two bays under study. When plotted as a function of salinity, concentrations of Si prescribe a highly significant linear relationship. However, the position of data points above the conservative mixing line indicates a substantial subsidy of Si in the nearshore zone. As most fertilizers do not contain large volumes of Si, the source of the subsidy to Kapalua and Namalu Bays is not clear at present. The occurrence of similar subsidies of Si is not evident in other embayments along the Kapalua shoreline where similar water quality monitoring projects have been ongoing for several years.
- Subsidies of NO_3^- are also evident within the innermost region of Kapalua Bay, and to a much lesser extent Namalu Bay. The most likely sources of the subsidies of NO_3^- are leaching of fertilizer nutrients from agriculture, the golf course and landscaping. Results of the surveys from other embayments along the Kapalua shoreline reveal similar results. It is important to note that the observed subsidies are restricted to the innermost portion of the bays and do not extend more than 10-25 m offshore. Because of the narrow width of the zone of nutrient subsidies, there is virtually no potential for impact to marine biota.
- The only measurements of water quality constituents from the December 2004 survey that were found to exceed State of Hawaii DOH standards were NO_3^- and TN within one meter of the shoreline.

- Follow-up monitoring studies during various phases of construction of the Residences at Kapalua using the same methods described in this report should provide important information of the effects of the project to existing water quality.

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ASSESSMENT OF THE MARINE WATER QUALITY

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The changes in land use are not expected to have significant adverse effects on either the existing watershed or coastal marine waters. While changes to post-development runoff have yet to be determined, it is not likely that there will substantial differences compared to the existing situation.

As part of the planning process for the Residences at Kapalua Bay, a field investigation was conducted in December 2004 to evaluate existing marine water quality off the project site. Four series of samples were collected in two embayments (Kapalua Bay and Namalu Bay) directly off the project site for the purpose of developing a baseline set of conditions. Establishment of such a baseline will provide the capability to evaluate potential changes to nearshore water quality that might result from the proposed project.

It is also important to note that similar evaluations of nearshore marine water quality have been conducted by Marine Research Consultants in several other areas of the Kapalua Resort in conjunction with existing or planned projects. The other sites include Honolua Bay, Napili Bay, Honokahua Bay and Honokohau Bay. Thus, the investigations of Kapalua and Namalu Bays build on the region-wide data set for the Kapalua West Maui area.

II. ANALYTICAL METHODS

Sampling methodology is identical to that of the monitoring programs listed in the section above. Water quality was evaluated along two transects each in Kapalua and Namalu Bays that extended from the shorelines at the "back" of the Bays (in the vicinity of the beach) out to the open coastal ocean, a distance of approximately 400 m (1,300 feet). Transects were oriented parallel to the "sides" of the Bay, with one transect running along the northern shore (N), and the other transect along the southern shore (S) (Figure 2).

Water samples were collected at eight stations along each transect. Sample locations were selected from NOAA charts, and located in the field using differential GPS (Global Positioning System). Sampling was concentrated in the innermost portions of the Bays, as these are the regions which are most likely to

receive inputs from land. Water samples were collected at two depths; a surface sample was collected within approximately 20 cm (8 inches) of the surface, and a bottom sample was collected within 0.5 m (1.6 foot) of the sea floor. At the sampling stations located within 10 m (30 feet) from the shoreline, only surface samples were collected.

Water quality parameters evaluated included the specific criteria designated for open coastal waters and embayments in Chapter 11-54, Section 06 (Open Coastal waters) of the State of Hawaii, Department of Health (DOH) Water Quality Standards. These criteria include: total nitrogen (TN), nitrate + nitrite nitrogen (NO_3^- + NO_2^-), ammonium (NH_4^+), total phosphorus (TP), chlorophyll a (Chl *a*), turbidity, temperature, pH and salinity. In addition, orthophosphate phosphorus (PO_4^{-3}) and silica (Si) were also reported because these parameters are sensitive indicators of biological activity and the degree of groundwater mixing. Dissolved organic phosphorus (TOP) and dissolved organic nitrogen (TON) were calculated as the difference between TP and inorganic P (PO_4^{-3}), and TN and inorganic N (NO_3^- + NH_4^+), respectively.

All fieldwork was conducted on December 12, 2004 with sampling personnel working from a small boat. Water samples from stations within 10 m of the shoreline were collected by swimmers opening triple-rinsed 1-liter polyethylene bottles at the desired location. Samples from stations located beyond 10 m from shore were collected using a 1.8-liter, Niskin-type oceanographic sampling bottle. These bottles were lowered to the desired sampling depths with spring-loaded endcaps cocked in an open position ensuring complete flow-through of water. When the bottle reached the desired sampling depth (determined by traces on boat-mounted depth-recorder), a messenger released from the surface that triggered closure of the endcaps.

Following field collection, subsamples for nutrient analyses were immediately placed in 125-milliliter (ml) acid-washed, triple rinsed, polyethylene bottles and stored on ice until returned to Honolulu. Analyses for NH_4^+, PO_4^{-3}, and NO_3^- + NO_2^- were performed using a Technicon Autoanalyzer according to standard methods for seawater analysis (Strickland and Parsons 1968, Grasshoff 1983). TN and TP were analyzed in a similar fashion on unfiltered samples following oxidative digestion. Detection limits for nutrients are 0.01 µM (0.14 µg/L) for NO_3^- and NH_4^+, 0.01 µM (0.31 µg/L) for PO_4^{-3}, 0.1 µM (1.4 µg/L) for TN and 0.1 µM (3.1 µg/L) for TP.

Water for other analyses was subsampled from 1-liter polyethylene bottles and kept chilled until analysis. Chl *a* was measured by filtering 300 ml of water through glass fiber filters; pigments on filters were extracted in 90% acetone in the dark at -20o C for 12-24 hours, and the fluorescence before and after acidification of the extract was measured with a Turner Designs fluorometer. Salinity was determined using an AGE Model 2100 laboratory salinometer with a precision of 0.0003‰. In-situ field measurements of pH, temperature, dissolved oxygen and turbidity were acquired with an RBR Model 450 CTD calibrated to

factory specifications. The CTD provided in-situ data with readability of 0.01 pH units, 0.01°C, 0.01% dissolved oxygen saturation. Turbidity was measured on a HACH Model 2100P calibrated with factory standards, with a readability of 0.01 nepthelometric turbidity units (ntu). Field measurements of temperature and dissolved oxygen were not conducted on samples collected by swimmers owing to the relatively long period of time between sample collection and return to the work boat during which values could change substantially.

All laboratory water chemistry analyses were conducted by Marine Analytical Specialists (Honolulu, HI). Marine Analytical Specialists possesses the appropriate approval ratings for these analyses from the State of Hawaii Department of Health, and the U.S. Environmental Protection Agency.

III. RESULTS

a. Environmental Conditions

Weather conditions that occur in the area are distinguished primarily by the strength of tradewinds, and size of breaking surf along the outer perimeter of the embayments. The December 2004 sampling took place during a period of slack winds, and a moderate northerly swell.

b. Horizontal and Vertical Stratification

Tables 1 and 2 show results of water chemistry analyses for samples collected during December 2004 along the four transects shown in Figure 2. Figures 3 and 4 show plots of twelve water chemistry constituents as functions of distance from the back shoreline of the bays extending to the open ocean. Results of water chemistry analyses indicate a distinct horizontal gradient in both Kapalua and Namalu Bays. Plots of Si and NO_3^- exhibit a peak at the most shoreward stations (within 10 m of the shoreline), followed by steep decreases moving seaward (Figure 3). Conversely, salinity shows a marked decrease within 10 m of the shoreline with sharp increases moving seaward (Figure 4). These gradients were most pronounced on the south transect of Kapalua Bay and least pronounced on the north transect of Namalu Bay (Tables 1 and 2, Figures 3 and 4).

As no springs or streams were visible near the origins of any of the transects, the sharp gradients of Si, NO_3^- and salinity indicate groundwater entering the ocean near the shoreline. Groundwater with essentially zero salinity typically contains concentrations of Si and NO_3^- several orders of magnitude greater than ocean water which has salinity of approximately 35‰ (see values for wells in Tables 1 and 2). Hence, where groundwater flows to the ocean, a zone of mixing is created with intermediate values of salinity and inorganic nutrient concentrations. In Kapalua and Namalu Bays, the zone of mixing is extremely narrow, extending only about 10 m from the shoreline. Seaward of the zone of mixing (beyond 10 m from the shoreline) concentrations of salinity, Si and NO_3^-

were essentially constant at levels typically found in open coastal waters (Tables 1 and 2, Figures 3 and 4).

Concentrations of PO_4^{3-}, TP and TN showed slight trends relative to distance from the shoreline with peak values closest to the shoreline (Figure 3). Concentrations of NH_4^+, TON and TOP were essentially constant across the entire horizontal range of sampling (Figure 3). Such patterns are consistent with the low concentrations of these organic constituents in groundwater relative to ocean water (see well data in Tables 1 and 2). Turbidity and Chl *a* in surface waters was distinctly elevated in the samples collected within 10 m of the shoreline on all three transects (Figure 4).

Figures 3 and 4 also show concentrations of water chemistry constituents as functions of distance offshore from the back of the bays with respect to vertical stratification. As low salinity groundwater is less dense than ocean water, the incoming freshwater forms a low density, high nutrient content surface lens. Beyond 10 m from the shoreline there was essentially no vertical stratification of any constituents on any of the four transects.

Overall, patterns of water chemistry within Kapalua and Namalu Bays exhibit steep gradients close to the shoreline of salinity and several nutrient constituents that occur in high concentrations in groundwater. Beyond 10 m from shore, concentrations of water quality constituents were relatively constant both within, and between the two embayments. The lack of horizontal gradients beyond 10 m from the shoreline indicates water quality within the Bays is typical open coastal water with little effect from material inputs originating on land.

c. Conservative Mixing Analysis

A useful treatment of water chemistry data for interpreting the extent of material inputs from land is application of a hydrographic mixing model. It is possible to evaluate the extent of nutrient input from sources other than groundwater efflux by plotting the concentration of the dissolved material as a function of salinity (Officer 1979, Smith and Atkinson 1994, Dollar and Atkinson 1992). Comparison of the curves produced by such plots with conservative mixing lines provide an indication of the origin and fate of the material in question.

Figure 5 shows plots of concentrations of four constituents (Si, NO_3^-, NH_4^+, PO_4^{3-}) as functions of salinity for the samples collected in Kapalua and Namalu Bays in December 2004. Each graph also shows conservative mixing lines that are constructed by connecting the endpoint concentrations of open ocean water and groundwater from two potable wells located upslope of Kapalua that were sampled in December 2004 (Tables 1 and 2). The average well concentrations of NO_3^- (20.85 µM) and Si (605 µM) used to construct the mixing lines from data collected in 2004 is similar to the average values from the same wells measured in 2001 (NO_3^- =18 µM and Si = 608 µM). The 2004 values were also similar to the average values of five wells in the Napili-Honokohua sampled from 1993-1997 as

shown in Soicher and Peterson (1997) (average NO_3^- = 18.7 µM; average Si = 654 µM). These similarities indicate that the nutrient concentrations in pristine groundwater flowing to the ocean in the Kapalua area has not changed substantially over the last decade.

If the parameter in question displays purely conservative behavior (no input or removal from any process other than physical mixing of two water masses), data points should fall on, or near, the conservative mixing line. If, however, nutrients are added to the system through processes such as leaching of fertilizers to groundwater, data points will fall above the mixing line. If material is being removed from the system by processes such as biological uptake, data points will fall below the mixing line.

Dissolved Si represents a check on the model as this material is present in high concentration in groundwater, but is not a major component of fertilizer, and is generally not utilized rapidly within the nearshore environment by biological processes. It can be seen in Figure 5 that when concentrations of Si are plotted versus salinity, data points prescribe a straight line that falls above the conservative mixing line. Linear regression of Si as a function of salinity yields significant correlation with R^2 's of 0.99 for both transects in Kapalua Bay and the South Namalu transect, and 0.86 for the North Namalu transect. However, the upper and lower confidence limits around the y-intercept of regressed data from each transect are far greater than the mean concentration of Si in the two wells (605 µM). The Y-intercept can be regarded as the concentration of Si at salinity of zero. Hence, it is clear that the concentrations of Si in the water samples collected within Kapalua and Namalu Bays are not a mixture of only ocean water and groundwater. These data indicate that either a third water source, with substantially higher concentrations of Si is mixing with ocean water near the shoreline, or that there is some form of Si used on land that leaches to groundwater which subsequently reaches the ocean. These subsidies are similar on all four of the Kapalua Bay and Namalu Bay transects. However, these subsidies have not been evident during past monitoring surveys in other areas of Kapalua (Honolua, Napili and Honokahua Bays). In these other areas, repetitive sampling has revealed that concentrations of Si fall on the conservative mixing line, with no indication of a subsidy of Si.

In fact, recent sampling in Honolua Bay produced plots of Si versus salinity with a trend of data points below the conservative mixing lines. It is likely that the deviation of the data from the mixing line was a result of input of surface water from Honolua stream into Honolua Bay. As surface water has a lower concentration of Si than potable groundwater, data points fell below the mixing line. This situation was clearly the opposite of what has been observed in the present study within Kapalua and Namalu Bays.

While there is an anomaly with respect to unknown subsidies of Si, the overall linear distribution of the Si data points in Figure 5 indicates that the mixing model provides a valid representation of the system under investigation.

The plots of NO_3^- versus salinity for the December 2004 data from the Kapalua/Namalu transects show a similar pattern as the linear distributions of dissolved Si (Figure 5). Data points from the Kapalua/Namalu Bay transects fall in a linear array substantially above the conservative mixing lines. Linear regression of NO_3^- versus salinity resulted in significant correlation at all transects, and y-intercepts substantially greater than the mean value of groundwater (20 µM). The linear array above the mixing line indicates a substantial subsidy of NO_3^- to the ocean from sources other than natural groundwater.

As NO_3^- is the form of nitrogen most common in fertilizer mixes, it is likely that the source of the subsidy that is evident from the mixing model is leaching of fertilizers from golf courses, landscaped areas, and agriculture, all of which occur inland of Kapalua and Namalu Bays. It is important to note, however, that all of the samples that fall above the mixing line are within 10 m of the shoreline.

If biotic uptake of nutrients was an important factor in controlling nutrient concentrations in the water column, distinct upward concave curvilinearity would be evident. With no such curvilinearity apparent on any of the transects, it does not appear that biotic processes are resulting in detectable net nutrient uptake. Such a result is important in that it indicates that marine plants are not removing nutrients from the water column to a detectable degree. Hence, the nutrient subsidies from land to the ocean are not being taken up by algae or plankton in the nearshore zone, but rather are mixed by physical processes with ocean water to background levels.

The other form of dissolved inorganic nitrogen, NH_4^+, does not occur in elevated concentrations in groundwater relative to ocean water. The conservative mixing lines in Figure 5 are essentially "flat" with similar concentrations in groundwater and open ocean water. For the December 2004 survey, plots of NH_4^+ as functions of salinity result in a scatter of data above the mixing line with no significant linearity (Figure 5). Most of the highest concentrations of NH_4^+ occur at the highest salinities, indicating that there is little influence from land on the concentrations of NH_4^+. The lack of a relationship between salinity and NH_4^+ suggests that concentrations within the Bays are primarily a consequence of biotic activity rather than input from sources on land.

PO_4^{3-} is also a component of fertilizer but is usually not found to leach to groundwater to the extent of NO_3^-, owing to a high absorptive affinity of phosphorus in soils. As with NH_4^+, there is little linear relationship between salinity and concentration of PO_4^{3-} (Figure 5). The lack of a linear distribution of data points above the mixing lines, as occurred with NO_3^- indicates that there is not a distinct subsidy of PO_4^{3-} to the ocean.

d. Compliance with DOH Standards

Also shown in Tables 1 and 2 are DOH water quality standards for embayments under "dry" conditions. Kapalua and Namalu Bays are considered embayments because they have restricted openings to coastal waters defined by a ratio of total bay volume to the cross-sectional entrance area of seven hundred to one or greater. The criteria for dry conditions are applied to Kapalua and Namalu Bays because these areas likely do not receive at least 3 million gallons per day of freshwater discharge per shoreline mile. DOH standards include specific criteria for three situations; criteria that are not to be exceeded during either 10% or 2% of the time, and criteria that are not to be exceeded by the geometric mean of samples. With only one sample set collected from each sampling station, comparison of the 10% or 2% of the time for any sample is not statistically meaningful. However, comparing sample concentrations to these criteria provide an indication of whether water quality is near the stated specific criteria.

During the December 2004 survey, the 10% criterion for NO_3^- was exceeded at both transects within Kapalua Bay and the south transect in Namalu Bay within one meter of the shoreline. Even with the high input of NO_3^- at the shoreline, water from samples along the majority of the transects did not contain concentrations of NO_3^- above the DOH limits. TN at the shoreline of the South Kapalua transect also exceeded the 10% limit. No other constituent measured within either of the Bays exceeded the DOH standards

NO_3^- is normally found in high concentrations in uncontaminated groundwater. As discussed above, however, the application of the data to a conservative mixing model indicates extraneous subsidies of NO_3^- from activities on land.

IV. SUMMARY

- As part of the planning process for the Residences at Kapalua, an assessment of marine water quality was carried out in Kapalua Bay and Namalu Bay in December 2004. Forty-eight water samples were collected along four transects that extend from the shoreline out to the open ocean; transects were located at each corner of the two bays. Water samples were also collected from two potable wells above the Kapalua developments in order to determine the composition of naturally occurring groundwater that enters the bays. The survey was conducted during a period of calm winds and moderate north swell.
- Results of water chemistry analyses reveal steep horizontal gradients of salinity, nitrate nitrogen (NO_3^-), and Silica (Si) that extend from the shoreline to a distance of only about10 m (33 ft) offshore. Gradients were steeper in Kapalua Bay compared to Namulu Bay. The steep nearshore gradients are a result of inflow of low salinity groundwater that contains high

concentrations of Si and NO_3^- compared to ocean water. While there is evidence of increased nutrients close to the shoreline, the extent of the mixing zone is so narrow that there is virturally no possibility of impact to marine biota.

- Seaward of 10 m, water within both bays is well mixed to near background oceanic levels, and does not exhibit any substantial vertical or horizontal gradients. Water chemistry constituents that do not occur in high concentrations in groundwater do not display distinct gradients of distribution, but are often slightly higher in the inner regions of the two bays relative to open coastal waters. Turbidity and Chl *a* were elevated only at the sampling stations within 10 m of the shoreline.
- Scaling nutrient concentrations to salinity provides important data on groundwater input to the coastal ocean within the two bays under study. When plotted as a function of salinity, concentrations of Si prescribe a highly significant linear relationship. However, the position of data points above the conservative mixing line indicates a substantial subsidy of Si in the nearshore zone. As most fertilizers do not contain large volumes of Si, the source of the subsidy to Kapalua and Namalu Bays is not clear at present. The occurrence of similar subsidies of Si is not evident in other embayments along the Kapalua shoreline where similar water quality monitoring projects have been ongoing for several years.
- Subsidies of NO_3^- are also evident within the innermost region of Kapalua Bay, and to a much lesser extent Namalu Bay. The most likely sources of the subsidies of NO_3^- are leaching of fertilizer nutrients from agriculture, the golf course and landscaping. Results of the surveys from other embayments along the Kapalua shoreline reveal similar results. It is important to note that the observed subsidies are restricted to the innermost portion of the bays and do not extend more than 10-25 m offshore. Because of the narrow width of the zone of nutrient subsidies, there is virtually no potential for impact to marine biota.
- The only measurements of water quality constituents from the December 2004 survey that were found to exceed State of Hawaii DOH standards were NO_3^- and TN within one meter of the shoreline.

- Follow-up monitoring studies during various phases of construction of the Residences at Kapalua using the same methods described in this report should provide important information of the effects of the project to existing water quality.

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FIGURE 2. Aerial photograph showing locations of water sampling transects in Kapalua and Namalu Bays adjacent to the Residences at Kapalua Bay project. Circles on transect lines indicate water sampling stations. "N" and "S" indicate north and south transects, respectively, in each bay.

Figure 1
Regional Location Map

Residences at Kapalua Bay

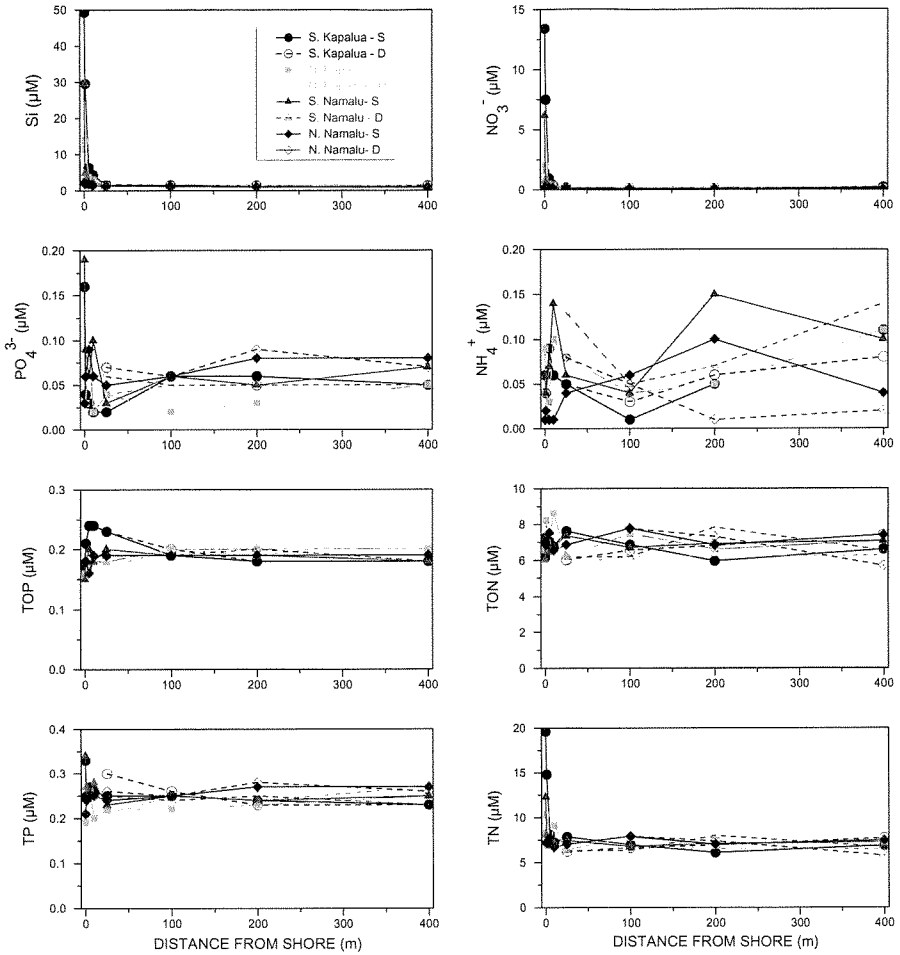

FIGURE 3. Plots of dissolved nutrients in surface (S) and deep (D) samples collected along transects in Kapalua and Namalu Bays on December 12, 2004 as a function of distance from the shoreline. For transect locations, see Figure 1.

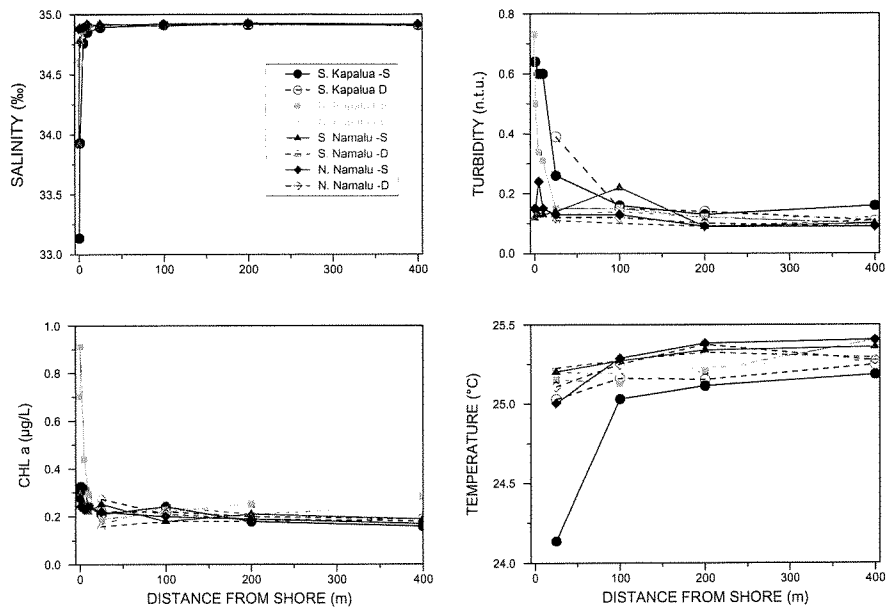

FIGURE 4. Plots of water chemistry constituents in surface (S) and deep (D) samples collected along transects in Kapalua and Namalu Bays on December 12, 2004 as a function of distance from the shoreline. For transect locations, see Figure 1.

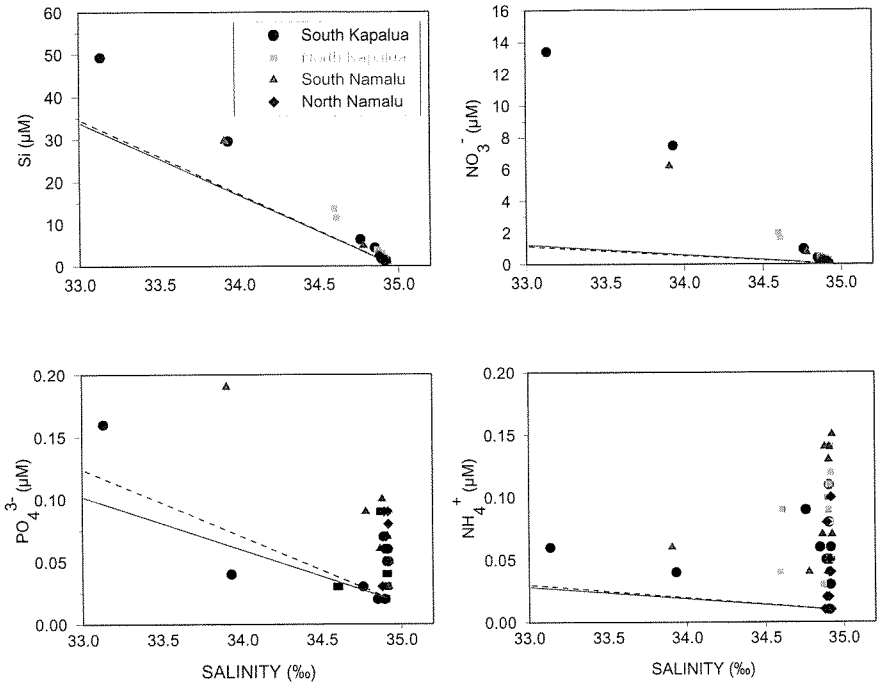

FIGURE 5. Mixing diagram showing concentration of dissolved nutrients from samples collected along transects in Kapalua and Namalu Bays in December 2004 as functions of salinity. Straight lines in each plot are conservative mixing lines constructed by connecting the concentrations in open ocean water with water from two groudwater wells upslope of the sampling area (red solid line = State Well ID #5938-02, blue dashed line = State Well ID #5938-03). For transect locations, see Figure 1.

D

Archaeological Inventory Survey Report

LINDA LINGLE
GOVERNOR OF HAWAII

(527)

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June 7, 2005

Michael Dega, Ph.D.
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LOG NO: 2005.1003
DOC NO: 0505MK22

Dear Dr. Dega:

SUBJECT: Historic Preservation Review - 6E-42 - Archaeological Inventory Survey Three Contiguous Parcels Measuring Approximately 25.3 Acres in Kapalua Napili 2-3 Ahupua'a, Lahaina District, Maui Island TMK (2) 4-2-04: 27, 28, and 29

Thank you for the opportunity to review this report which our staff received on March 18, 2005 (Monahan 2005, *An Archaeological Inventory Survey Report on Three contiguous Parcels Measuring Approximately 25.3 Acres in Kapalua, Napili 2-3 Ahupua'a, Lahaina District, Maui Island, Hawai'i [TMK 4-2-04: 27, 28, and 29]*...Scientific Consultant Services, Inc., ms). Initial consultation regarding the proposed scope of work for this project, were held between Dr. Melissa Kirkendall (Maui SHPD), Dr. Chris Monahan (SCS), and Mr. Ryan Churchhill (Kapalua Land Company). It was understood from the outset, that there would most likely be multiple phases of work given the constraints of conducting an archaeological inventory survey in an active resort environment.

The background section acceptably establishes the ahupua'a settlement pattern and predicts the likely site pattern in the project area. The historical information provided summarizes the history of the post-contact period land uses. The summary of previous archaeological work in the area provides a baseline for the current work. The project area consists of a portion of former dune deposit and a rocky point. It is fully developed at this time and has been since 1978.

This phase of the survey has adequately covered the project area (within the above mentioned constraints) documenting one historic property. Subsurface testing (twenty-one backhoe trenches) were excavated. SIHP 50-50-01-5565 was identified within Trenches 17 A and B, and consists of a cultural layer interpreted as temporary habitation. The layer did not yield marine shell, and only two artifacts that can be conceived of having been modified by use (a cutting tool and a hammer-stone). Fire-cracked rock was also identified in this layer, in which a hearth feature was identified. Charcoal collected from the hearth feature yielded a calibrated radiocarbon assay of 1730-1810 AD (58% probability – 210+/-60 BP). The site is within the

shoreline setback area, as were the trenches. The remaining 19 trenches did not yield any evidence of cultural activity. Stratigraphy varied, but all trenches exhibited a "fill layer" associated with construction of the hotel. Several evidenced sand deposits, some of which were intact, while others were clearly associated with the moving and filling of areas prior to hotel development.

We concur that Site 50-50-01-5565 is significant under Criterion "D" and has the potential to yield information important for understanding prehistory. Mitigation commitments will be determined following additional phases of field work, although we wish to preliminarily state that we believe this site should be passively preserved since it is within the shoreline.

We also agree with the more immediate mitigation recommendations that additional backhoe testing is needed. This will allow better definition of the areas of the subject parcel in which "intact" dune deposits may be present. This will occur following the closure of the existing resort. In addition, archaeological monitoring will be needed for future development activities including the demolition of the existing hotel facilities, and construction of the new residences. The additional testing will be submitted as an addendum to the current report, as current use of the area precludes additional testing at this time. It may be that archaeological monitoring of the demolition may be necessary prior to some of the inventory level testing. The specific scope of work will be developed in consultation with Dr. Melissa Kirkendall (SHPD Archaeologist) prior to undertaking any future phases of work.

We find this report to be acceptable. We anticipate future consultation regarding the above mentioned scope. As always, if you disagree with our comments or have questions, please contact Dr. Melissa Kirkendall (Maui/Lana'i SHPD 243-5169) as soon as possible to resolve these concerns.

Aloha,

MELANIE A. CHINEN, Administrator
State Historic Preservation Division

MK: kf

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SCS Project 527-1

AN ARCHAEOLOGICAL INVENTORY SURVEY REPORT ON THREE CONTIGUOUS PARCELS MEASURING APPROXIMATELY 25.3 ACRES IN KAPALUA, NAPILI 2–3 AHUPUA`A, LAHAINA DISTRICT, MAUI ISLAND, HAWAI`I [TMK: 4-2-04: 27, 28, AND 29]

Prepared by:
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March 2005

Prepared for:
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ABSTRACT

Scientific Consultant Services (SCS), Inc., conducted Archaeological Inventory Survey on three contiguous parcels of land measuring approximately 25.3 acres in Kapalua, Napili 2–3 Ahupua'a, Lahaina District, Maui Island, Hawai'i [TMK: 4-2-04: 27, 28, and 29]. The work consisted of historical background and archival research; pedestrian survey and inspection of the parcel; mapping and description of site features; subsurface testing (excavation by backhoe); consultation with state archaeologist Dr. Melissa Kirkendall; and, analysis, interpretation, and reporting of all relevant data. The main objectives of the project were to determine if significant cultural and/or historic resources, and/or human burials, occurred on the parcel; and, to provide significance assessments and recommendations.

The main results of this study were as follows: First, no human remains were observed or encountered. No subsurface, burial features were observed. Second, there are no historically-significant *surface* features or sites. Third, subsurface excavations (20 backhoe trenches) led to the identification of one significant site (SIHP No. 50-50-01-5565), a buried cultural layer located in sandy deposits between 80–150 cm (31.5–59.1 in.) below the present ground surface, on the prominent rocky point just north of Kapalua Bay Beach. This site consists of charcoal-stained sediment, diffuse and concentrated charcoal, fire-cracked rock, and one or two simple stone tools. A radiocarbon date of 210 ± 60 BP was obtained from this buried layer, which is significant under Criterion D. No further work is recommended at this site. Fourth, although significant portions of the project area have been disturbed and filled, natural sand dune deposits underlie much of the project area, starting at approximately 50–100 cmbs. Finally, portions of the project area were unavailable for subsurface testing (excavation), because the hotel is still fully functioning, and additional testing will have to be conducted before the parcel can be fully documented and assessed for historic significance.

The following actions are recommended. First, additional backhoe testing is needed in the area immediately west (*makai*) of the main lobby of the hotel. The scope of the additional testing will be determined in consultation with the SHPD-Maui archaeologist (Kirkendall). Results of this additional testing will guide the preparation of an Archaeological Monitoring Plan. Second, Archaeological Monitoring is recommended for future construction activities. Monitoring will be needed during both the demolition of the current hotel facilities and the construction of the planned residences. Specifics of the monitoring will be contingent upon results of the additional testing, which will be submitted as an Addendum to this Archaeological Inventory Survey.

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INTRODUCTION

Scientific Consultant Services (SCS), Inc., conducted Archaeological Inventory Survey (AIS) on three contiguous parcels of land measuring approximately 25.3 acres in Kapalua, Napili 2–3 Ahupua'a, Lahaina District, Maui Island, Hawai'i [TMK: 4-2-04: 27, 28, and 29] (Figures 1 and 2). The work consisted of historical background and archival research; pedestrian survey and inspection of the parcel; mapping and description of site features, including one subsurface layer; subsurface testing (excavation by backhoe); consultation with state archaeological Dr. Melissa Kirkendall; and, analysis, interpretation, and reporting of all relevant data. Fieldwork was conducted on January 17–21, 2005 by Christopher M. Monahan, Ph.D., and James Powell, B.A.

Archaeological work in the project area was conducted to determine the presence/absence of archaeological deposits in surface and subsurface contexts through complete survey and representative subsurface testing. The ultimate goals of the project were to determine if significant cultural and/or historic resources, and/or human burials, occurred on the parcel; and, to provide significance assessments and recommendations to the State Historic Preservation Division (SHPD). The project area, which is currently the site of the Kapalua Bay Hotel and the Kapalua Shops, is planned for development of approximately 145 resort residential homes. The hotel and shops will be demolished in order to make room for the planned Residences at Kapalua Bay. The current landowner of the hotel and parking lot parcels is Kapalua Bay LLC. The landowner of Kapalua Shops is Maui Land & Pineapple Company, Inc. (MLP). There are two managing entities: the hotel and parking lot are managed by Marriott; the Shops parcel is managed by the Kapalua Land Co. (KLC), a subsidiary of MLP.

One of the overriding concerns of this Archaeological Inventory Survey was the possibility of encountering unmarked (subsurface) burials and/or buried human remains. This issue is particularly sensitive at the Kapalua Bay Hotel, given its proximity to the Honokahua Burial Site (located approximately 1.0 km, or 0.6 miles, to the east-northeast), one of the two largest Native Hawaiian burial grounds ever discovered. Archaeological work at the Honokahua Burial Site helped raise public awareness of burial issues in Hawai'i. The current project area is also sensitive because it consists mostly of dune sands in a coastal/near-coastal setting; these geomorphological and sedimentary conditions always require special attention in Hawai'i because they frequently yield unmarked, traditional Native Hawaiian burials. Two burial features, containing at least three individuals, have been documented in Archaeological

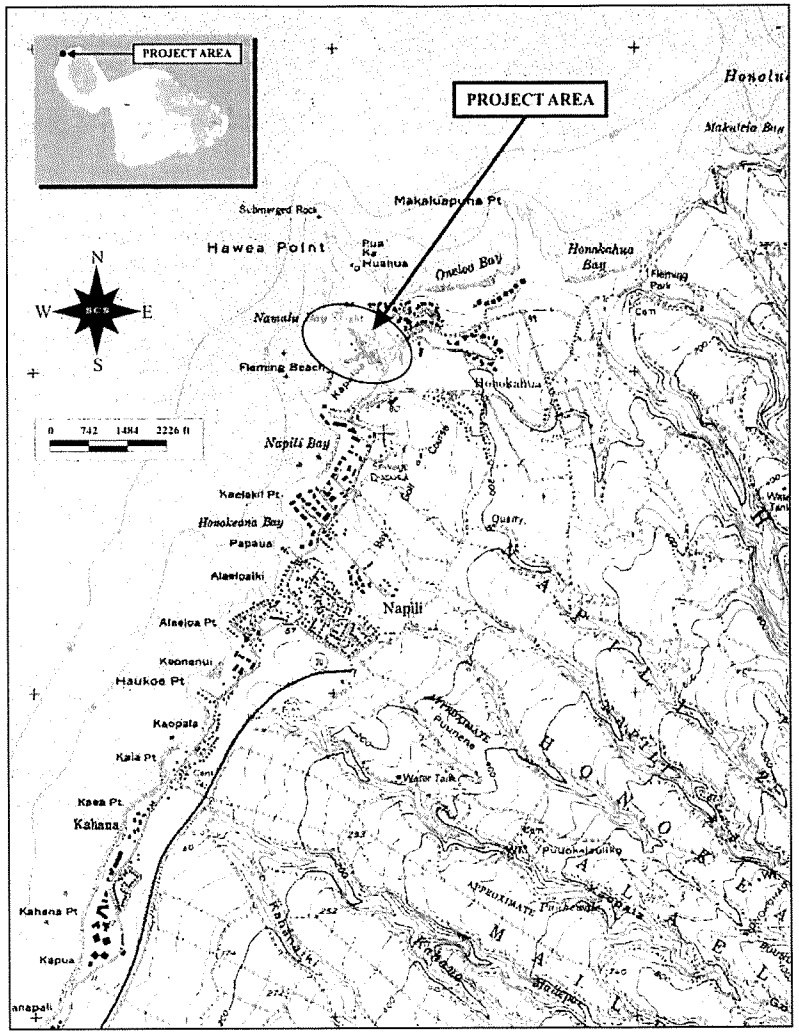

Figure 1: USGS Napili Quadrangle Showing Project Area Location.

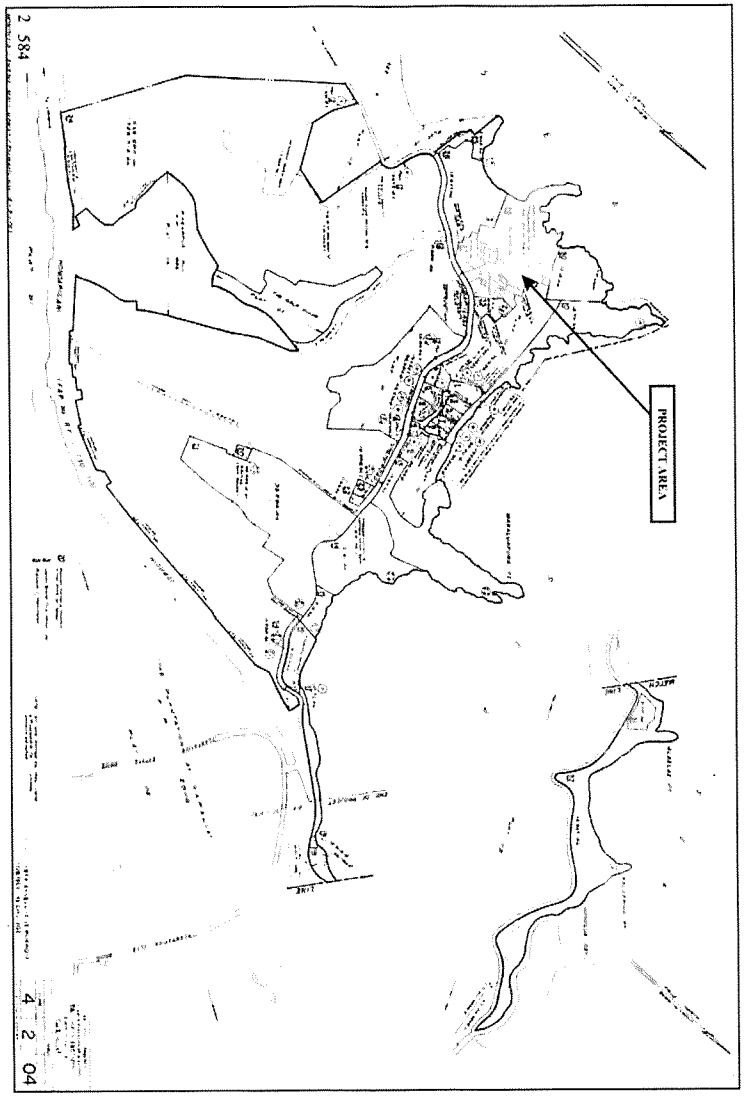

Figure 2: Tax Map Key [TMK] Showing Project Area Location.

Monitoring (Fredricksen 2001) on an adjacent parcel (*i.e.,* the Coconut Grove condominiums at TMK: 4-2-04: 26).

Results of the survey are as follows. First, no human remains whatsoever were observed or encountered in the project area. No subsurface, burial features (*e.g.,* soil anomalies) were observed. Second, because the project area consists entirely of a built and/or landscaped environment, there are no historically-significant *surface* features or sites. An archaeological survey by Kirch (1973a), preceding the construction of the Kapalua Bay Hotel, did not record any significant sites in the project area, although no subsurface testing (excavation) was conducted. Third, during the present round of testing, subsurface investigations (20 backhoe trenches) led to the identification of one significant site (SIHP No. 50-50-01-5565), a buried cultural layer. The buried layer is located between 80–150 cm (31.5–59.1 in.) below the present ground surface (cmbs), in sandy deposits on the rocky point between Kapalua Bay Beach and Namalu Bay (see Figures 1 and 2). The buried layer consisted of charcoal-stained sediment, diffuse and concentrated charcoal (including a small hearth feature), fire-cracked rock, and one or two informal (*i.e.,* expediently manufactured) stone tools. A radiocarbon date of 210 ± 60 BP was obtained from the buried hearth. Site –5565 is significant under Criterion D, but no further work is recommended at this site. Fourth, although significant portions of the project area have been disturbed and filled, natural sand dune deposits underlie much of the project area, starting at approximately 50–100 cmbs. Finally, portions of the project area were unavailable for subsurface testing (excavation), because the resort is still fully functioning, and additional testing will have to be conducted before the parcel is fully documented and assessed for historic significance.

Based on these results, the following actions are recommended. First, additional backhoe testing will be needed in the area (mapped and described in more detail in the body of this report) immediately west (*makai*) of the main lobby. The scope of the additional testing will be determined in consultation with the SHPD-Maui archaeologist (Kirkendall). Results of this additional testing will guide the preparation of an Archaeological Monitoring Plan (AMP). Second, given a variety of factors—including the documented presence of undisturbed, natural dune sand throughout much of the project area, Archaeological Monitoring is recommended for future construction activities. Monitoring will be needed during both the demolition of the current hotel facilities and the construction of the planned residences. Specifics of the AMP will be contingent upon results of the additional testing, which will be submitted as an Addendum to this Archaeological Inventory Survey.

ENVIRONMENTAL SETTING

PROJECT AREA DESCRIPTION AND LOCATION

The project area consists of three contiguous parcels of land measuring approximately 25.3 acres in Kapalua, Napili 2–3 Ahupua'a, Lahaina District, Maui Island, Hawai'i [TMK: 4-2-04: 27, 28, and 29] (see Figures 1 and 2)]. The oceanfront project area consists of the grounds of the existing Kapalua Bay Hotel (parcel 28, 18.5 acres), the Kapalua Shops (parcel 27, 3.5 acres), and a parking lot (parcel 29, 3.3 acres) used by hotel employees and guests. Parcel 28 (the hotel) is located at a rocky point between Kapalua Bay Beach and Namalu Bay, just north of the village of Napili. The hotel was built in the middle 1970s, and first opened for business in 1978. According to aerial photographs and archival records, the project area was not formally used to grow commercial agricultural crops (PBR 2005); the lower limits of the agricultural zone were probably located at the Lower Honoapiilani Road (*i.e.*, the *mauka* boundary of the project area).

The Kapalua area is part of the lower terminus of the Napili Dissected Uplands physiographic division, which is characterized by relatively deep, widely-spaced erosional gullies draining the northwestern flanks of West Maui (Armstrong 1983). The coast in this general area consists of volcanic cliffs, interspersed with occasional sand beaches. The closest sandy beach is located in the adjacent (to the south-southwest) parcel, fronting the Coconut Grove condominium development. Honokahua Bay is located approximately 1.0 km (1.6 miles) to the east-northeast.

The three parcels form an irregularly-shaped project area, bounded to the west by the seashore, to the south by the Coconut Grove condominiums, to the east by the Lower Honoapiilani Road, and to the north by a parking lot, the Kapalua Bay Villas, and a private residence (*i.e.*, the shorefront parcel). In general, the terrain slopes moderately down from the Lower Honoapiilani Road (east), at approximately 25 m (80 ft.) above mean annual sea level (amsl), to the seashore *pali* (west), at approximately 3–12 m (10–40 ft.) amsl. Much of the project area (probably 25–35 percent) consists of a 'built' environment, and all outdoor grounds are thoroughly landscaped. There are variations in local gradients throughout the parcels, including some obviously graded (flattened) areas, *e.g.*, in and around the footprint of some of the buildings. It is clear, however, from even a cursory pedestrian survey, that the basic 'lay of the land' (*i.e.*, its natural, pre-development, grade from *mauka* to *makai*) is more or less intact. For this reason, there was a strong probability of finding minimally-disturbed, natural dune sands in at least some of the project area (especially the western half). Although there are currently no natural drainages in the subject parcel, there was probably (based on topographic data) at least an ephemeral drainage emptying into Namalu Bay. Its course would have run more or less through

the main lobby of the current hotel. A long-time employee of the KLC (Larry) who has extensive local knowledge of the project area indicated that a drainage did, in fact, previously exist in this general location.

CLIMATE AND VEGETATION

Coastal Kapalua, in general, is classified as a '*Kiawe* and Lowland Shrubs' vegetation zone, and common, local plants include: *kiawe* (*Prosopis pallida*), *koa haole* (*Leucaena glauca*), finger grass, and *pili* grass, (the latter is a native species) (Armstrong 1983). The KLC employee cited above (Larry) indicated that the entire project area consisted of *kiawe* forest before development of the Kapalua Bay Resort (*i.e.*, before the middle 1970s). In traditional times, *i.e.*, before the historic-era introduction of *kiawe* and *koa haole*, the project area was probably covered with indigenous grasses (Kirch 1973a). Today, vegetation in the project area includes beach *naupaka* (*Scaevola taccada*), coconut palm (*Cocus nucifera*), beach heliotrope (*Heliotropium* sp.), plumeria (*Plumeria acuminate*), *wiliwili* (*Erythrina sandwicensis*), yellow hibiscus (Family, Malvaceae), and bougainvillea (*Bougainvillea spectabilis*) as well as various other introduced tropical flowering plants and extensive grassy lawns.

The project area receives an average amount of precipitation, compared with other settled parts of Maui and the Hawaiian Islands, in general. According to Armstrong (1983), mean annual rainfall in the Kapalua area is approximately 76 cm (30 in.). Giambelluca *et al.* (1986) report *median* annual rainfall for the area of approximately 100 cm (40 in.). Part of the discrepancy between these rainfall data is probably due to the steeply increasing precipitation gradient east and southeast of the project area, as one moves up into the relatively wet flanks of West Maui. Regardless of which of these (30 or 40 in.) numbers is more typical of the local rainfall, a tremendous amount of through-flowing water from the West Maui uplands would have been available in traditional times in the Honokahua Stream and the (smaller, but much closer) Napili Stream. As outlined below (see TRADITIONAL AND HISTORIC SETTING), Native Hawaiians utilized extensive irrigation techniques in this general region, as a way of capturing this great surplus of potable water.

SOILS

According to Foote *et al.* (1972), soils in the project area are classified as Dune Land (DL) and Kahana Silty Clays (KbB and KbC) (Figure 3). Dune Land consists of hills and ridges of sand-size particles drifted and piled by aeolian (wind) deposition. These hills and ridges are actively shifting and/or recently stabilized such that little or no soil horizons are observable. These sands derive mostly from coral and marine shells, and thus, are typically light in color. Dune Lands comprise approximately 80 percent of the project area, covering the entire area from

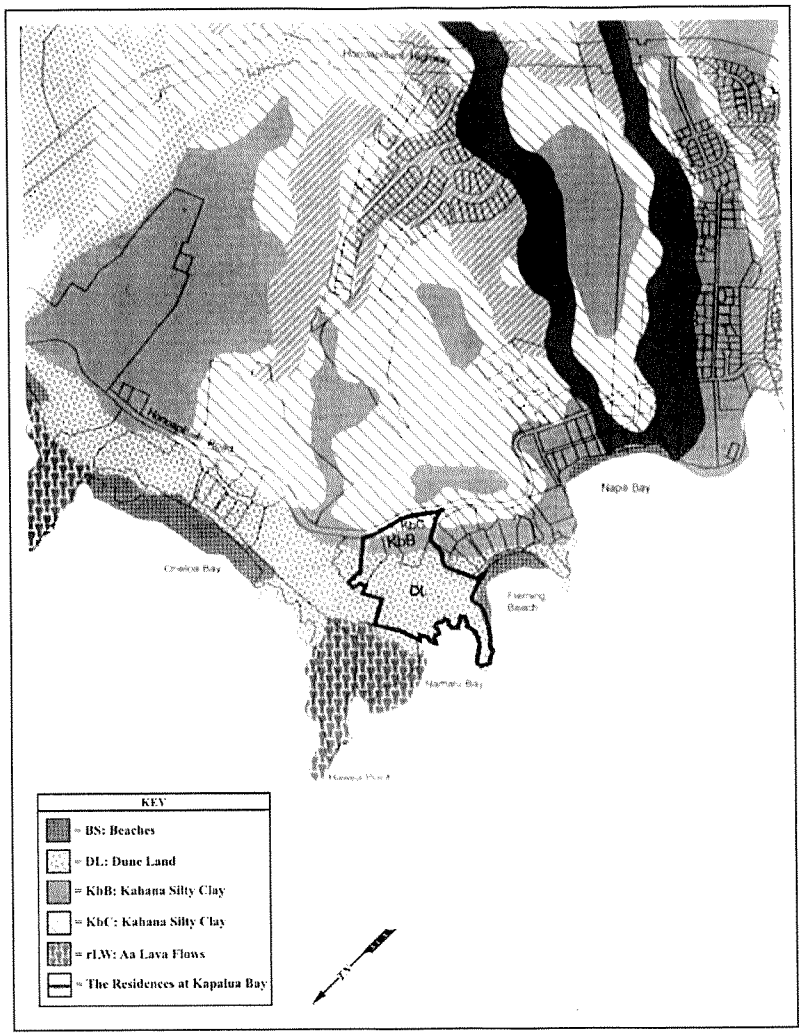

Figure 3: Soil Distribution Map (from PBR's EIS), Based on Foote *et al.* (1972).

the seashore to the upper (*mauka*) portion, where the Kahana Silty Clays predominate. The architectural footprint of the Kapalua Bay Hotel is more or less entirely within the Dune Land sands, according to these soil data. It is worth mentioning that the Honokahua Burial Site is located in soils classified as Dune Lands.

COASTAL AND MARINE RESOURCES

The project area was not blessed with rich soils for cultivation, although it is possible that sweet potatoes—which Native Hawaiians managed to produce under some relatively marginal conditions—may have once been planted. The coastal and marine environments adjacent to the project area would have provided a far richer resource, and a much better reason for coming to this site in ancient times, for traditional subsistence foragers and fishermen.

Kirch's (1973a) survey noted a large number of fish species in the near-coastal waters here, including: *weke* (*Mulloidichthys auriflamma*), *kumu* (*Upeneus prophyreus*), *mamo* (*Abudefduf abdominalis*), *manini* (*Acanthurus triostegus*), *palani* (*Acanthurus bariene*), *enenue* (*Kyphosus fuscus*), *kukala* (*Diodon hystrix*), *hinalea* (Family, Labridae), *uhu* (*Scarus perspicillatus*), *`ala`ihi* (*Holocentrus* sp.), *kala* (*Acanthurus* sp.), and *nehu* (*Anchoviella purpurea*). In addition to a relatively high density of gastropods and pelecypods (including *Nerita picea* and *Littorina pintado*), Kirch also noted at least five species of sea urchin: *Centrechinus paucispinus, Tripneustes gratilla, Podophora atrata, Heterocentrotus mammillatus,* and *Echinometra mathaei.*

TRADITIONAL AND HISTORIC SETTING

This section is predominantly based on information from several classic references on traditional Native Hawaiian lifeways and archaeological sites (*e.g.,* Thrum 1909, 1917; Walker 1931; Handy and Handy 1972; Sterling 1998). Additional information (cited as appropriate) has been gleaned from representative archaeological reports available at the SHPD library (Kapolei) and the SCS library (Honolulu). It is noteworthy that the Honokahua Burial Site (-1342) is not even mentioned in any of the standard oral history sources compiled by Sterling (1998). This illustrates that historic conditions and surface observations do not always correlate with traditional Native Hawaiian settlement patterns and site distribution, particularly as documented in subsurface excavation (see EXPECTED FINDINGS).

PRE-CONTACT ERA

The project area is located in the modern political district of Lahaina, which comprises the entire leeward half of West Maui. Lahaina Town, located some 16 km (10 miles) to the

south of the project area, has been the largest population center in leeward West Maui for quite some time. Handy and Handy (1972) quote Vancouver's naturalist and surgeon Menzies (in 1793) and traveler Arago (in 1819) as marveling at the state of cultivation and fertility of the greater Lahaina area, which was extensively planted in wet taro (*lo`i*) and other subsistence crops (*e.g.,* breadfruit, sweet potato, and coconut palms).

In traditional times, the current project area was probably more closely identified with the cultural district of Ka`anapali, starting north of Lahaina Town, and comprising roughly the northwest quadrant of West Maui. Ka`anapali District consisted of five major stream valleys draining the leeward slopes of West Maui, *i.e.,* Honokowai, Kahana, Honokahua, Honolua, and Honokohau. These valleys were all productive wet taro (*lo`i*) lands, with extensive systems of terracing reported from early historic and later times, into the early 20th century.

Compared with other populated regions of Maui, there are relatively few references in Sterling (1998) to the *ahupua`a* in and around the project area, especially to the south. Napili Ahupua`a is mentioned only once, in reference to a traditional battle. The neighboring *ahupua`a* to the south (Honokeana) is not mentioned, and the next land division (Alaeloa) is mentioned only once (a possible *heaiu*, see below). Further to the south, the *ahupua`a* of Honokowai and Kahana are mentioned numerous times. Honokahua Ahupua`a, the neighboring land division to the north of Napili, is mentioned twice, with increasing numbers of references as one moves northeast of Honokahua (especially Honolua and Honokohau).

Based on these observations, it is probable that the region in and around the project area was inhabited and farmed, at least by later pre-Contact times into the early historic era; however, it was unlikely to have supported a particularly large population.

Heiau from Mahinahina to Honokohau Ahupua`a

The early surveys of Thrum (1909, 1917) and Walker (1931) identified seven religious shrines (*heiau*) from Mahinahina to Honokohau Ahupua`a. No *heiau* were documented in the project area (Napili 2-3 Ahupua`a), nor in the adjacent (to the southwest) Honokeana Ahupua`a. The closet *heiau* reported by these early surveys was located in the adjacent (to the northeast) Honokahua Ahupua`a (Kahauiki Heiau, Walker Site No. 16), just over 1.0 km (0.6 miles) northeast of the project area. This "small irregular platform" (Sterling 1998:52) was located "a short distance up the west side of a gulch of the same name" [*i.e.,* Kahauili] (*ibid.*). This gulch drains into the eastern terminus of Honokahua Bay, on the other (northeast) side (from the project area) of the Honokahua Burial Site (-1342). Of the other six *heiau* between Mahinahina

to Honokohau Ahupua`a documented by Walker and/or Thrum, only three were visited/confirmed. From south (Mahinahina Ahupua`a) to north (Honokohau Ahupua`a), these six *heiau* are as described as follows:

- Kahana Heiau (Walker Site No. 12), located along the seashore, destroyed (Mahinahina Ahupua`a);
- Hihiho Heiau (Walker Site No. 14), located along "County Road near Kalaeokaea Point" (*ibid.*), destroyed to built road (Mailepai or Kahana Ahupua`a);
- Mailepai Heiau (Walker Site No. 13), located near Mailepai Point, "washed away" (*ibid.*), destroyed (Mailepai Ahupua`a);
- Unnamed Heiau (Walker Site No. 15), located on a "bluff at south side of rocky cove between Alaeloa and Papaua Points" described as a "small rectangular enclosure" (*ibid.*) with a small platform in the interior SW corner (Alaeloa Ahupua`a);
- Honua`ula Heiau (Walker Site No. 18), located at Honolua Gulch, described as the remains of old stone platforms and walls, with pavement in the entire interior (Honolua Ahupua`a);
- `Ili`ilikea Heiau (Walker Site No. 19, Rogers and Rosendahl 1992), located "on the top of ridge at west side of Punaha Gulch, just above the road", described as a site complex of enclosures, pavements, and burials occupying an area of at least 30,000 square feet (Honokahau Ahupua`a).

Other Large-Scale Sites and Features from Mahinahina to Honokohau Ahupua`a

Several other large-scale sites and features in the district of Ka`anapali attest to the area's settlement history in traditional times. Ka`anapali District is noted for an *alaloa* (a path or trail) that reportedly encircled the entire island. Walker (cited in Sterling 1998:46) wrote:

> The north end of Maui also is traversed by a paved trail. Sections of it can be seen from Honolua to Honokohau to Kahakuloa. It is paved with beach rocks and has a width of four to six feet...This trail is also spoken of as the Kihapiilani Trail.

A large *heiau* dedicated to human sacrifice (Walker Site No. 20) was reportedly located on a cliff on the east side of Honokohau Valley, some 60 m (200 ft.) above the seashore (Honokohau Ahupua`a, east of the Honokahua Burial Site). Kamakau (in Sterling 1998) reported oral history accounts of a 'death pit' at 'Waiuli' (also Honokohau Ahupua`a), near Honokohau and Honolua, into which dead commoners from Lahaina to Kahakuloa were thrown.

A *ko`a* (fishing shrine, Walker Site No. 17), located "[*makai*] to Honolua Park along the shore" (Honolua Ahupua`a), was described by Walker (Sterling 1998:53) as a "level space showing some paving with small stones." Walker (*ibid.*) also reported oral history accounts of a *hōlua* (slide or sledding ramp) at Honolua Ahupua`a, destroyed by the time of his survey (1920s-30s) by commercial pineapple agriculture.

Subsistence Economy in Ka`anapali District

As stated above, the traditional district of Ka`anapali consisted of five major stream valleys (Honokowai, Kahana, Honokahua, Honolua, and Honokohau), all of which were extensively terraced for wet taro (*lo`i*) in early historic and later times (in Honokohau, well into the 1930s). Honokahua Valley, just northeast of the project area, was described as having wet taro (*lo`i*) lands, although of no great abundance (according to Handy quoting D.L. Fleming, in Sterling 1998:52).

Sweet potatoes were reportedly grown between Honokohau and Kahakuloa Ahupua`a, presumably on lower *kula* lands (Sterling 1998).

Kahana Ahupua`a, well south of the project area, was known as a place of salt gathering for the people of Lahaina (Sterling 1998).

HISTORICAL ERA

An 1831 census estimated the entire population of Ka`anapali District as 2,980 people, which was reduced to less than half (1,341) only five years later (Schmidt 1973). Whaling (centered on Lahaina Town) was the first commercial enterprise in West Maui, but it had more or less collapsed by the 1860s. Commercial sugarcane production was the next large capitalist venture in West Maui, starting as early as 1863, and it was focused between Ka`anapali and Lahaina.

The area in and around the project area, which was located at the margins of sugarcane enterprises in West Maui (Dorrance and Morgan 2000), was most important as a center of commercial ranching (cattle raising) and, subsequently, pineapple production.

In the late 18th to early 19th century, the entire *ahupua`a* of Honokahua, immediately adjacent to (north of) the project area was given to Isaac Davis by Kamehameha I. Following the death of Davis in 1810, the land was eventually passed on to a succession of owners, from John Young to both Davis' and Young's heirs (1835) to Davis' daughter (Kele Sally Davis) during the Mahele (1848) (LCA 8522-B, RP 2236). In the later 19th century, these lands were owned by

James Campbell, who first established the Honolua Ranch. Cattle ranching started in the area around this time, and was continued by Henry Perrine Baldwin, who acquired the lands from Campbell in 1890 (Fredricksen and Fredrickson 2003). In addition to ranching, other early (but not particularly successful) commercial activities included coffee.

Fredricksen and Fredricksen (2002) compiled data on 19 Land Commission Awards (LCA) for Honolua Ahupua`a, just northeast of the project area. These documents indicate land use for taro and sweet potato cultivation, *kula* lands (roughly 'pasture'), and house lots. One of these awards (LCA 4243C) is located at the mouth of the Honolua Stream, along the coast; it was used for sweet potato cultivation, which Native Hawaiians managed to practice even in the relatively poor (sandy) soils found at the coast.

David T. Fleming became manager of Honolua Ranch in 1911 (or 1912). Fleming was well-versed in pineapple production from the Haiku area and gradually began shifting the ranch's initiative to pineapple production. The Honolua Ranch/Baldwin Packers complex shifted from Honolua to Honokahua in 1915, and a pineapple cannery was constructed. A major commercial pineapple industry emerged in West Maui during the 1920s. The plantation communities of Honokahua and Napili emerged and developed as Honolua Ranch/Baldwin Packers pineapple operations grew. The population of the Lahaina area increased with the successful economic operations of the pineapple plantation. Baldwin Packers merged with MLP in 1962. After this time, much of the Honolua Ranch lands were converted for resort development, a process that continues to this day. Both the Ritz-Carlton Kapalua and the Kapalua Bay Hotel are part of this ongoing process.

It is worth reiterating at this point that the project area was probably never planted in pineapple (nor coffee, nor sugarcane), given its predominantly sand dune deposits and shoreline location.

The Honokahua Historic District (SIHP No. 50-50-01-1591) is located just east of the project area. This historic district includes the plantation village of Honokahua, the Baldwin Packers cannery and associated facilities, Honolua Ranch Stables, Honolua Ditch (constructed in 1902), the Maui Pineapple Company offices, the Honolua Store, plantation camp housing, and two churches (Fredricksen 2001).

PREVIOUS ARCHAEOLOGY

OVERVIEW

The majority of previous archaeology in leeward West Maui has been conducted in and around the general Lahaina area, especially to the north (*e.g.*, Ka`anapali), due to the greater impact of modern development there. As discussed above (TRADITIONAL AND HISTORIC SETTING), Lahaina Town has been the most important population center in leeward West Maui for quite some time, at least from the later pre-Contact era. Relatively less is known about the archaeology of the Honokahua-Kapalua-Napili area, both because it has not been developed as intensively as areas to the south, and because it was probably not a major population center in leeward West Maui in traditional times. The Honokahua Burial Site (SIHP 50-50-01-1342) is the most significant traditional site in the vicinity of the project area, and the results from its investigation have important implications for the project area. Results from older, classic archaeological surveys (*e.g.*, Thrum 1919; Walker 1931) have been summarized above.

Traditional Settlement in Ka`anapali District

Kirch (1985) suggests a general settlement model for Ka`anapali District involving coastal marine foraging and fishing with more upland agricultural pursuits. In typical Native Hawaiian fashion, dating at least from the later pre-Contact period (if not earlier), traditional people in this area would have moved between the coast and the upland agricultural fields, exploiting the full range of resources available within their *ahupua`a*. Semi-permanent and permanent habitation probably occurred in both coastal and upland settings, although substantial dwellings would have been unlikely in Dune Lands, which comprise up to 80 percent of the project area.

Early occupation of the Ka`anapali District, in general, is documented from the Honokahua Burial Site, which has yielded radiocarbon dates from as early as A.D. 700–800 (as perhaps a century earlier) (Donham 2000). These dates are among the earliest in the Hawaiian Islands, and they suggest people have lived in this part of Maui for a very long time.

Closer to the project area, in the adjacent parcel to the north, Kirch (1973b) obtained a radiocarbon date in excavation at a small, temporary fishing camp (see below) calibrated to A.D. 1400–1700. In the Coconut Grove condominiums parcel, immediately south of the project area, Fredricksen (2001) dated a buried cultural layer, interpreted as a probable habitation site, to the later pre-Contact period (A.D. 1490–1665).

Fredricksen and Fredricksen (2002) obtained four radiocarbon dates from agricultural sites in the uplands of Napili 2–3 and Honokahua Ahupua`a, southeast of the project area, above the Honoapi`ilani Highway. The dates range from the middle 15th century to more recent times.

IMMEDIATE VICINITY OF THE SUBJECT PARCEL

Kirch (1973a) conducted the first systematic archaeological survey in and around the project area. MLP contracted the B.P. Bishop Museum to conduct the survey in advance of development in the Honolua Development Area (Figure 4). The current project area represents only a small portion of the entire Honolua Development Area, which extends from Kapalua to Honokahua, and includes mostly seashore and near-shore lands with some (limited) *mauka* uplands.

Kirch documented a total of nine, mostly traditional, archaeological sites in the Honolua Development Area. Most of these were located in and around Honokahua, including the Honokahua Burial Site (Bishop No. D13-9), but three of these sites were located just outside the current project area in adjacent parcels. No sites were documented in the current project area, but no subsurface testing (excavation) was conducted on the subject parcel either. The three nearby sites identified by Kirch included:

- a small, temporary fishing village at TMK: 4-2-04: por.10 & por. 30 (SIHP No. 50-50-01-1346, Bishop No. D13-1), approximately 200 m (700 ft.) north of the current project area; the site consisted of eight features, including several small shelters, one *ahu* (stone cairn), and midden (see Figure 4, site 1);

- a small shelter cave (SIHP No. 50-50-01-1347, Bishop No. D13-2) beneath the overhanging oceanfront *pali,* in the adjacent parcel to the north (parcel 30), approximately 180 m (600 ft.) from the northern boundary of the subject parcel (see Figure 4, site 4);

- a stone platform (SIHP No. 50-50-01-1348, Bishop No. D13-3), with an associated low wall, on a promontory, some 200 m (700 ft.) northeast (and upslope) of the eastern boundary of the subject parcel (see Figure 4, site 3).

A total of 4.0 m^2 was excavated at the small, temporary fishing village (SIHP No. 1346) located approximately 200 m (700 ft.) north of the current project area (Kirch 1973b). Several formal tools were recovered in excavation, including one unfinished bone fishhook, one bone

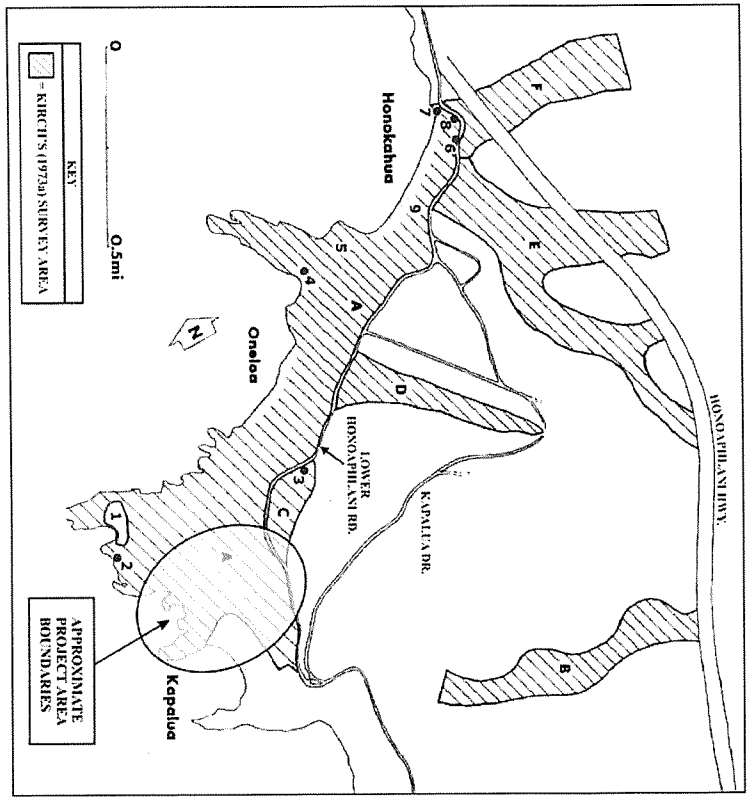

Figure 4: Honolua Development Area Surveyed by Kirch (1973a), with Identified Sites in Red.

fishhook blank, one shell adze fragment, ten coral abraders, one sea urchin abrader, and three dog tooth ornaments. Midden was recovered from the surface and from excavation, and consisted of marine shells, sea urchins, fish bone, and *kukui* nut shell (*Aleurites moluccana*). One radiocarbon determination of 327 ± 80 B.P. was obtained for a buried *imu* (cooking pit). Calibration yielded three possible calendric dates, indicating a maximum (*i.e.,* conservative) range for occupation of the site of between roughly A.D. 1400 and 1700.

Two additional, brief archaeological surveys/field inspections were conducted at the adjacent parcel (TMK: 4-2-04: 30) in which Kirch (1973a, b) documented the small, temporary fishing village and the cliff-face rockshelter. Rosendahl (1988a) did not locate any additional sites, but Kennedy (1990) recorded three additional sites, all stacked-rock features, presumably dating from traditional times (*i.e.,* a low, soil-filled platform, an L-shaped alignment, and a C-shaped structure). No excavation was conducted at these sites.

Archaeological Inventory Survey (Fredricksen *et al.* 1994, 1996) and Archaeological Monitoring (Fredricksen 2001) were conducted on the 12.2-acre parcel (TMK: 4-2-04: 26) immediately adjacent to (southwest of) the current project area. The survey area was extensively excavated with backhoe trenches and hand-dug units. No significant sites or features were identified in the Inventory Surveys, although one area of buried sand dune deposits was recommended for Monitoring. Three sites were identified:

- Site 50-50-03-4815 was a buried (subsurface) cultural layer, interpreted as a probable habitation site, approximately 15 cm thick, located approximately 1.5 m below the ground surface, containing three traditional artifacts (coral abrader, bone fishhook blank, and utilized basalt flake), shell midden, fire-cracked rock, and a hearth; one radiocarbon date indicated a later pre-Contact occupation (A.D. 1490–1665, 2 Sigma);

- Site –4814 was a historic burial feature containing two individuals, located approximately 1.7–1.9 m below the ground surface, and cutting into and through the cultural layer (-4815); the burial feature consists of a stone-lined crypt, probably topped with a wooden cover; stratigraphic evidence and artifact style (of the nails used to construct the overlying cover) suggest that the burial feature dates from the late 19th to early 20th century;

- Site –5059 consisted of a scatter of fragmentary human remains, representing one or more individuals, in previously disturbed sediments; the author also reports several oral accounts from local informants suggesting that graves were encountered and destroyed during the construction of the Kapalua Bay Hotel in the 1970s (footnotes 6 & 7, Fredricksen 2001).

M. Rosendahl (1988) conducted an archaeological reconnaissance survey at 'The Cottages' residential development, Oneloa Bay, immediately east-northeast of the current project area. This project area included sand dune sediments; however, the 10.8-acre coastal parcel did not contain any significant surface sites or features. P. Rosendahl (1988b) subsequently conducted subsurface testing (excavation) by bulldozer and backhoe, and by hand (auguring). No significant surface sites or features were located. No burials or human remains were observed.

HONOKAHUA BAY AND ENVIRONS

Kirch's (1973a) survey identified six sites in and around Honokahua Bay, of which the Honokahua Burial Site (SIHP 50-50-01-1342, B.P. Bishop Museum No. 50-Ma-D13-9) is the most significant. It is located approximately 1.0 km (0.6 miles) to the east-northeast of the project area at TMK: 4-2-01: 31 (see Figure 4). First reported by Kirch (1973a), the site represents one of the largest traditional Native Hawaiian cemeteries ever recorded, with over 1,000 sets of human remains recovered in excavation (Donham 1986, 1989, 2000; Pietrusewsky *et al.* 1991). Only the Mokapu site in Kane`ohe (O`ahu) has yielded as many burials in one place (*cf.* Bowen 1961; Snow 1974; Cleghorn 1987), and it is likely that additional remains—as yet undiscovered—are preserved *in situ* in the vicinity of the documented burial sites at Honokahua. The Honokahua Burial Site represents the single, most informative sample of human remains from traditional Native Hawaiian times.

The Honokahua Burial Site (-1342) is included with five other traditional sites in the Honokahua Archaeological District (-1340). The cemetery is included on the National Registry of Historic Places. The cemetery was used by Native Hawaiians from as early as A.D. 700–800, to as late as the early 19th century (Donham 2000). Burials were located in stabilized dune sand deposits located just inland of, and slightly above (elevation), the seashore at Honokahua Bay. This north-facing location is significant because it, along with the prevailing north-east trade winds, has contributed to the formation of at least two generations of sand dunes, a lower and an upper dune. The upper dune is located just above the 20-m (65 ft.) elevation. Traditional burials were located in both the upper and lower dunes. At least 1,029 sets of human remains were

excavated. A complete description of this important site is clearly beyond the scope of this report (but see Donham 1986, 1989, 2000; Ferguson *et al.* 1989; Pietrusewsky *et al.* 1991 for more details).

In addition to the Honokahua Burial Site, Donham's (1986) archaeological survey of the Kapalua Hotel Development Site 2-H identified seven additional sites, including two traditional features (-2015 and -2016, a trail remnant and a buried cultural layer, respectively), three historic ranching features (associated with the Honolua Ranch), and two features of indeterminate age.

Work by Guerriero *et al.* (1993) and by Fredricksen and Fredricksen (1996) in parcels just to the east of the Honokahua Burial Site documented additional burials, interpreted as more of the same (Honokahua) burial ground, as well as a habitation site (-2873) and part of an historic trail (-2876).

In addition to the Honokahua Burial Site, Kirch (1973a) also documented: a stone enclosure (Bishop No. D13-4, interpreted as a traditional house site) on a terraced area, with informal paving and midden (recovered in a single 50-cm-by-50-cm test pit), on Makaluapuna Point, just west of the Honokahua Burial Site; a series of relatively recent, historic walls (Bishop No. D13-5, interpreted as cattle pens), just west of the Honokahua Burial Site, and an historic midden (Bishop No. D13-8) just east of the Honokahua Burial Site; and, an eroding shell midden with a hammerstone (Bishop No. D13-6) interpreted as representing temporary, pre-Contact occupation), and a large basalt grinding stone (Bishop No. D13-7) on a large (1.6 m by 1.0 m) boulder, just east of the Honokahua Burial Site.

Spriggs (1989) visited the coastal area around Makaluapuna Point, between Oneloa Bay and Honokahua Bay, and described several previously unreported sites in the area surveyed by Kirch (1973a). These additional sites were all located on the northeast side of the point, and included: a *ko`a,* or fishing shrine, eroding midden, possible earth ovens (*imu*), a stone ramp, and a remnant section of trail.

Fredricksen and Fredricksen (2002) conducted Archaeological Inventory Survey on a *c.* 23-acre parcel (TMK: 4-2-04: 32) extending from eastern Honokahua Bay to Honolua Bay. Eight sites (two previously recorded) were documented, including: a paved platform/enclosure with auxiliary features (-5093), a remnant of a possible habitation area (-5094), two coastal rock shelters (-5097), a traditional Native Hawaiian burial (-5098), a remnant of the Old Government Road (-5095), and, a concrete slab associated with a former slaughter house (-5096). The

previously identified sites were a plantation-era refuse dump (-5006) and a coastal enclosure (-5007).

Jimenez and Rosendahl (1995) conducted Archaeological Inventory Survey on a 2.47-acre portion of TMK: 4-2-04: 31 along the coast in Honolua. Five sites were documented, including: a subsurface (buried) hearth (-4141), an historic burial site containing multiple individuals (-4142), a platform, interpreted as a permanent (traditional) habitation (-4143), a modified outcrop with an associated stone alignment and surface midden (-4144), and a boundary rock wall (-4145).

OTHER RELEVANT STUDIES

The following sample of previous archaeological studies in the uplands around the project area, and in more distant parts of Ka`anapali District, helps to illustrate a more complete regional picture of traditional lifeways, and serves as a compliment to the many coastal and near-coastal studies cited above. The uplands, in particular, have been severely altered (both at and below the present ground surface) in historic times by activities associated with commercial pineapple production. Traditional sites and features, if they survive at all, are typically remnant portions of once larger sites and site complexes. Many of these remnant portions are located on steep, relatively inaccessible lands (*e.g.,* the sides of gulches and drainages).

Fredricksen and Fredricksen (2000a, 2003) conducted Archaeological Inventory Surveys at upland (*mauka*) project areas located above Napili Bay, approximately 1.6 km (1.0 miles) from the project area. A *c.* 24-acre parcel (TMK: 4-2-04: por. 24) was found to be mostly disturbed by previous pineapple agriculture, and no sites were documented (Fredricksen and Fredricksen (2000a). One historic site—an animal pen/rock enclosure in association with several rock mounds (-4976)—was located just outside (to the northeast) of Fredricksen and Fredricksen's (2000a) project area. Five sites were documented at two small house lots (TMK: 4-2-07: 07 & 08) in the same area, including three historic animal husbandry features (-5464, -5465, and -5466), and two (possibly traditional or early historic) dryland agricultural terraces (-5467 and -5468).

Fredricksen and Fredricksen (1998) conducted Archaeological Inventory Survey at a *c.* 35-acre parcel (TMK: 4-2-04: por. 24) located just above Honokahua Bay, approximately 1.2 km (0.75 miles) from the project area. Most of the project area at TMK: 4-2-04: por. 24 was found to be disturbed by previous pineapple agriculture, but three sites were documented on steep terrain that had apparently escaped the ravages of ground disturbance. All of these sites,

including a remnant of stone wall (-4501), a modified outcrop with informal rock stacking (-4510), and a garden area (-4513), were interpreted as dating from the post-Contact (*i.e.,* historic) era.

Fredricksen and Fredricksen (2002) conducted Archaeological Inventory Survey at a *c.* 475-acre parcel located in the uplands of Napili 2-3 and Honokahua Ahupua`a, southeast of the project area, above the Honoapi`ilani Highway. Thirty-seven sites, representing a variety of traditional and historic activities, were documented. Traditional site types included habitation sites (both permanent and temporary), possible ceremonial and burial sites, and agricultural sites. Historic site types included both ranching and plantation (commercial pineapple production) features. Four radiocarbon dates from agricultural sites range from the middle 15th century to more recent times.

Other studies in upland (*mauka*) Napili 2-3 and Honokahua Ahupua`a (*e.g.,* Fredricksen 1997; Fredricksen and Fredricksen 2000; Morawski and Dega 2004) documented few significant sites, and widespread evidence of soil disturbance by commercial agricultural activities.

As reported by Moore (1974), the B.P. Bishop Museum's survey in Honolua Valley recorded 13 significant sites, including a wide variety of traditional features. Traditional sites included a possible coastal fishermen's camp, an area thought to be the destroyed ruins of a *heiau,* inland dry-agricultural terraces and fields, and a site complex thought to be Honua`ula Heiau. Archaeological survey and data salvage by Griffin and Lovelace (1977) along a coastal corridor between Honokowai and Alaeloa, in association with the (then) proposed realignment of the Honoapiilani Highway through Ka`anapali, recorded a small number of sites. Sites along the highway corridor consisted of two walls, a trail, and a small midden deposit; radiocarbon dates from the midden were consistent with site occupation from the later pre-Contact era. Site -1207 was documented in the Honokowai Gulch, consisting of numerous petroglyphs on boulders. Finally, survey and subsurface testing at Kahana by Kaschko (1974), Komori (1983), and Walker and Rosendahl (1985) identified an inland portion of a traditional Native Hawaiian agricultural field system, later modified by historic ranching and commercial (sugarcane and pineapple) agriculture.

EXPECTED FINDINGS

Based on all available physiographic, archaeological, and historical evidence, the following expectations guided this study:

- No historically-significant *surface* features or sites were expected. Kirch's (1973a) survey of this area failed to document any sites, and the project area is now completely landscaped and modified from its original surface conditions. Kirch's work suggests that no surface sites or features were destroyed during the construction of the hotel, since none existed.

- Unmarked burials and/or scattered human remains were a strong possibility, given the many factors cited above, including oral accounts reported in Fredricksen (2001).

- Subsurface evidence (*e.g.,* buried cultural layers) of temporary habitations, workshops, and other traditional sites related to fishing and foraging for coastal and marine resources was also a strong possibility.

- Subsurface evidence of permanent habitation and agricultural features was unlikely, given that the project area is dominated by Dune Lands, which are not favorable places for long-term settlement or for cultivation.

- Pre-Contact dates were expected, if any suitable materials could be found, given the results of radiocarbon dating from two adjacent parcels (*i.e.,* Kirch 1973b; Fredricksen 2001).

- Both fill sediments and undisturbed, natural sand dune deposits were expected. The main question, largely addressed with the resulting data (see below), was the spatial distribution of intact sands versus disturbed and/or filled areas. Clearly, undisturbed sand dune deposits are of utmost importance in this part of Maui, in particular, but the presence of unequivocal fill sediments is also important, since Fredricksen (2001) identified a subsurface scatter of fragmentary human remains, representing one or more individuals, in previously disturbed sediments at Coconut Grove condominiums.

METHODOLOGY

In addition to analysis, interpretation, and preparation of this document, the work described in this Archaeological Inventory Survey consisted of archival research, fieldwork, consultation (and informal talks with local residents and workers), and laboratory work. Specifics on all of these research activities are described in detail below.

ARCHIVAL METHODS

In addition to referencing available resources at SCS, archival research was conducted at the SHPD library facility (Kapolei, HI) and on the SHPD website before, during, and after the fieldwork described in this report. Archival work consisted of general research on the history and archaeology of the project area, as well as specific searches of previous archaeological studies in and around the subject parcel. Historic land use data, maps, and narrative information were obtained from the Kapalua Land Company's archives and from the Environmental Impact Statement associated with this project (PBR 2005).

FIELD METHODS

Fieldwork was conducted on January 17–21, 2005, by Christopher M. Monahan, Ph.D., and James Powell, B.A. All aspects of the work were photographed with a digital camera and archived on the SCS computer network. Fieldwork resulted in a thorough, 100% pedestrian survey of the grounds and outdoor facilities in the project area. It is worth reiterating that much of the project area (probably 25–35 percent) consists of a 'built' environment, such that no survey was possible in these places (*i.e.,* the buildings' footprint). Map coordinates for the single site identified in this survey were obtained from a professional surveyor (Mr. Reed Ariyoshi) contracted by the Kapalua Land Co. (KLC).

Subsurface Testing

Twenty stratigraphic trenches (ST-1 through ST-19, plus ST-17a) were excavated in the project area, exposing a total of 84.5 linear meters (278.0 ft.) of subsurface deposit. A standard 70-cm wide backhoe bucket was used. Depth of excavation ranged from 60–185 cmbs, and averaged 130 cmbs. Bedrock, and/or extremely consolidated clays with decomposing gray basalt that directly overlying bedrock, was reached in about half of the units (see RESULTS). The remaining trenches were typically excavated to depth in clean dune sands, but bedrock was not reached. The walls of many of these trenches quickly became unstable with increasing depth, and unit collapse was an ongoing problem, as well as a safety issue. Total excavated area was 59.2 square meters; total excavated volume was 76.9 cubic meters.

Trench excavation locations were recorded using tape and compass, and were documented on a base map, provided by the KLC, depicting existing conditions. As illustrated in Figure 5–7, trenches were placed in four main areas: (1) in the large open field (ST-1 through ST-3), north of the main hotel; (2) along the oceanfront (*makai*) side of the main hotel and its wings (ST-4 through ST-8, ST-15 through ST-18, plus ST-17a); (3) along the narrow southern margin of the hotel parcel (*i.e.,* bordering, and just north of, the Coconut Grove condominium

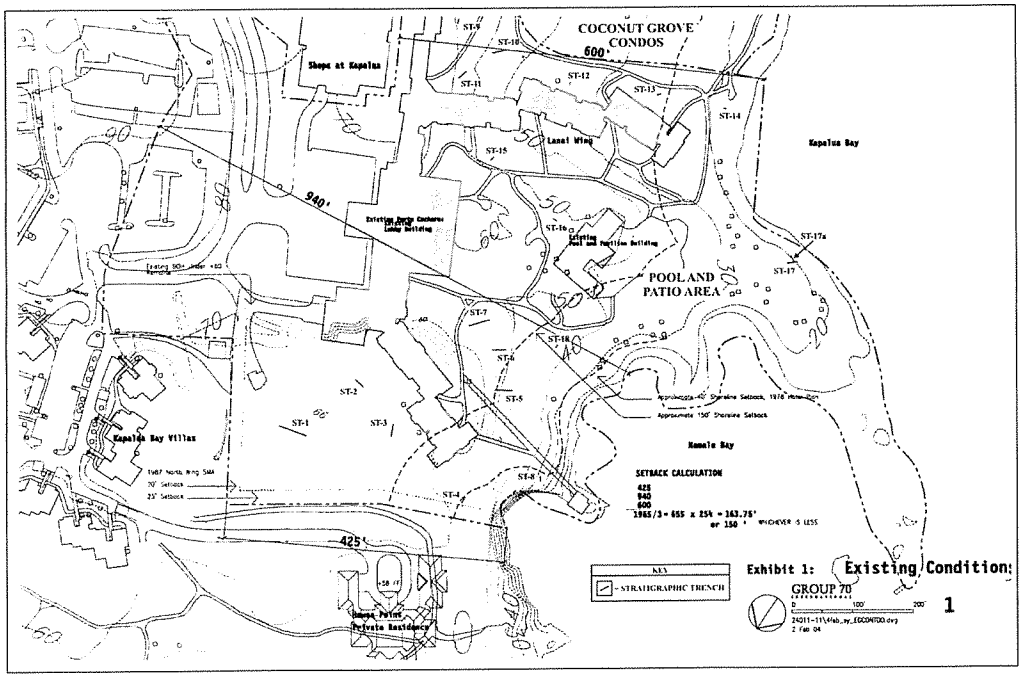

Figure 6: Plan View Map of Existing Conditions in the Project Area and Trench Locations.

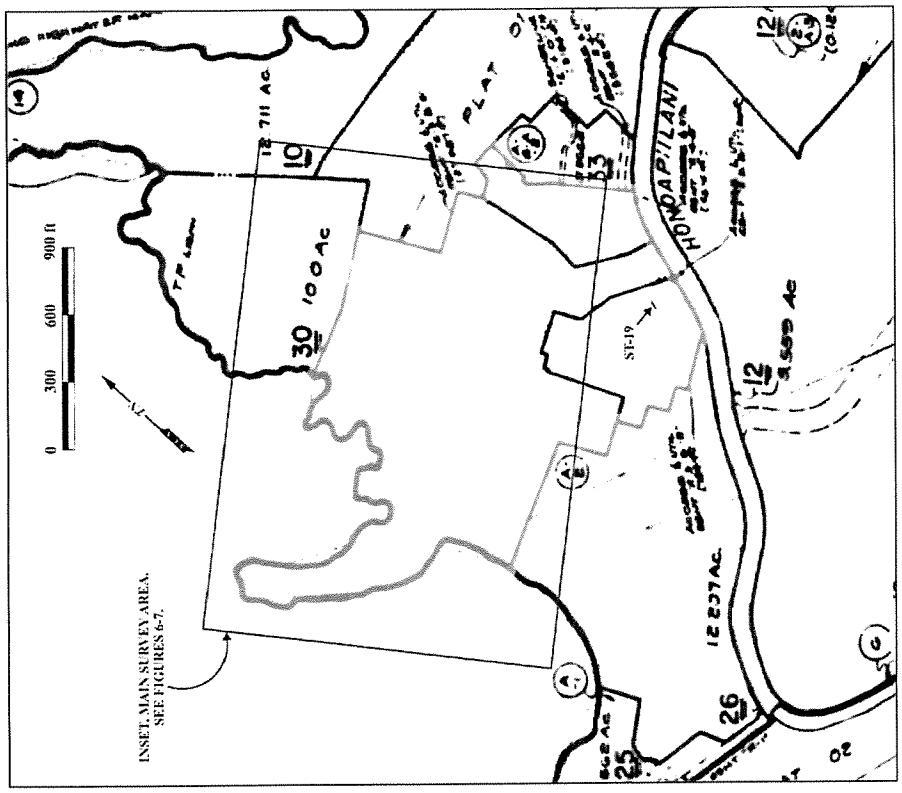

Figure 5: Plan View Map of Project Area, Showing Main Area of Trenching (Inset).

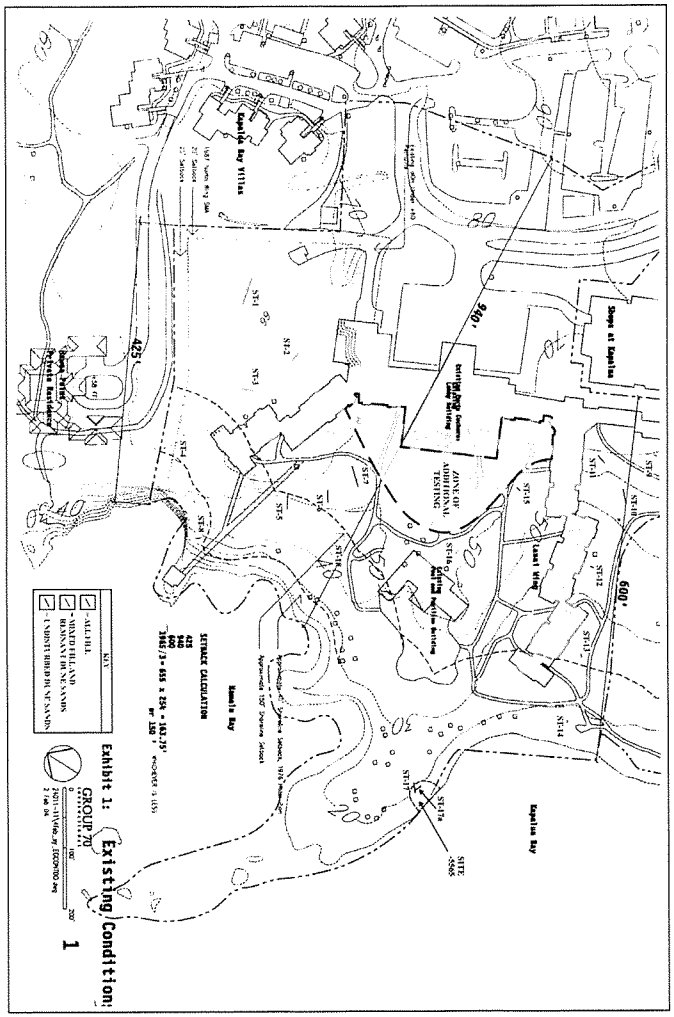

Figure 7: Trench Locations, Distribution of Main Sedimentary Units, and Site -5566 Location.

lot) (ST-9 through ST-14); and (4) in parcel 27, near the Kapalua Shops and the main entrance (driveway) to the hotel (ST-19).

One overriding concern during trench excavation throughout the parcel was the presence of numerous and diverse buried utilities. Some of these were clearly indicated on plans provided by the KLC, or by the hotel's Chief Engineer (Mr. Bill George). We also relied heavily upon the collective memory and hard work of several employees of KLC and the hotel, who worked with us, side by the side, for much of the week.

Trench positioning was primarily aimed at representative coverage of the project area, while avoiding major buried utilities. As stated in the Introduction, one area of the hotel grounds (directly in front of the main lobby and its adjacent wings) was unavailable for subsurface testing (backhoe excavation), and will need to be investigated with additional work.

Because of the possibility of encountering unmarked burials and/or scattered human remains, we used a flat-edge backhoe bucket whenever sand was encountered in excavation. Melissa Kirkendall (SHPD-Maui) specifically requested this procedure. Excavated sediments were not screened. Limited hand-digging (using a trowel) and cleaning was conducted at the single documented site (-5565) in ST-17 and ST-17a (see below). Field notes, stratigraphic profiles, and soil descriptions were recorded for each test unit, in keeping with standard archaeological procedure. All significant finds (*i.e.,* excepting recent garbage) were bagged, catalogued, and returned to SCS, Honolulu, for laboratory analysis. Materials were only collected from the single documented site (-5565) at ST-17 and ST-17a. Charcoal samples were collected from Site –5565, and a single sample was sent to Beta Analytic, Inc., for radiocarbon determination.

CONSULTATION

Dr. Melissa Kirkendall (SHPD-Maui) was consulted by phone by Monahan before, during, and after fieldwork. Kirkdendall made a site visit on Thursday, January 20, 2005 (early afternoon), walking the grounds with Monahan and observing two open trenches. Mr. Cliff Nae`ole (Hawaiian Cultural Specialist, Ritz-Carlton Kapalua) was contacted by phone by Monahan before and during the fieldwork. Mr. Bill George, Chief Engineer of the Kapalua Bay Hotel, was consulted prior to the commencement of trenching. Workers employed by both the KLC and the hotel were consulted on the location of each trench, in order to avoid buried utilities.

LABORATORY METHODS

All significant finds (*i.e.*, portable artifacts over 50 years in age) were transported to the SCS laboratory in Honolulu. These artifacts were catalogued, photographed, analyzed, and interpreted in the laboratory. Laboratory work also consisted of digital drafting of stratigraphic profiles, maps, and feature drawings. The traditional artifacts were analyzed by Dr. Robert L. Spear, President, SCS, Inc. All field notes, maps, photographs, and artifacts pertaining to this project are being curated at the SCS laboratory in Honolulu until further notice. One charcoal sample was submitted to Beta Analytic, Inc., for radiocarbon determination.

RESULTS

This section describes: (1) the single archaeological site (SIHP 50-50-01-5565) documented in the project area; and, (2) the subsurface testing, sediments and stratigraphy throughout the project area. With the exception of the one site described below (in ST-17 and ST-17a), no significant artifacts or features were exposed in any the trenches. Some fill sediments had inclusions of recent debris. Fill sediments consisted not only of poorly-sorted gravelly clay, but also of brown sands that may have originally been removed from the footprint of the hotel. Dune sands were exclusively comprised of clean sediments with no inclusions.

SITE DESCRIPTION: 50-50-01-5565

SIHP 50-50-01-5565 is located along the seashore at the southeast (inland) terminus of the rocky point between Kapalua Bay Beach and Namalu Bay. The site is a buried cultural layer (*i.e.*, an old land surface) exposed in ST-17. An additional trench (ST-17a) was excavated intersecting ST-17, in order to define the spatial dimensions (area) of Site –5565. Site –5565 has a maximum possible area of approximately 12 m by 12 m (40 ft. diameter) (see Figure 7). Site –5565 represents a temporary, probably short-term occupation of this rocky, near-shore location.

Site -5565 is significant under Criterion D, but no further work is recommended at this site. The site's geographic coordinates recorded by the professional surveyor (Mr. Reed Ariyoshi) are:

886.349 feet South
232.529 feet West
Elevation = 24.84 feet
As related to Government Survey Triangulation Station "Hawea"

Additional stratigraphic and sedimentary observations are also provided in the subsequent sub-section (SUBSURFACE TESTING: SEDIMENTS AND STRATIGRAPHY).

The buried cultural layer consisted of charcoal-stained sediment, diffuse and concentrated charcoal (including a small hearth feature), fire-cracked rock, and one (possibly two) informal (*i.e.*, expediently manufactured) stone tools, using local (relatively low quality) raw material (Figures 8–10). No marine shells or other food (midden) materials were observed. No evidence of historic artifacts was documented.

Undisturbed, natural dune sand is located above and below this cultural layer, which consists of these same sediments. The top of the buried cultural layer is exposed at approximately 80 cmbs in the east end of ST-17, and approximately 130 cmbs in the west end of ST-17 (Figures 11 and 12). Thus, the original ground surface upon which the layer was deposited sloped down to the west end of the rocky point, which was filled in, leveled, and stabilized at or around the time of the construction of the hotel. The extension trench (ST-17a) to the southeast showed that the buried cultural layer is exposed at approximately 80–90 cmbs. The buried layer is 20–50 cm (8–20 in.) thick, and contained several boulder-sized rocks as well as smaller (pebble- and cobble-sized) water worn rocks (Figure 13).

Figure 8: Cutting Tool, Recovered During Excavation, Site -5565.

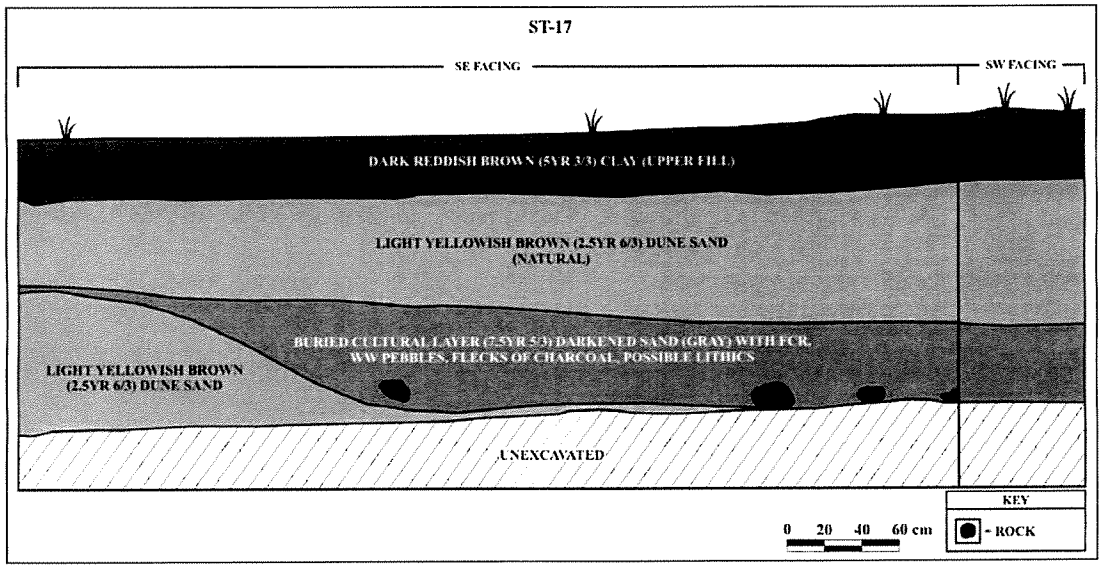

Figure 11: Soil-stratigraphic Profile, ST-17 (Site -5565).

Figure 9: Water-worn Cobble (Possible Hammerstone), Recovered in Excavation, Site -5565.

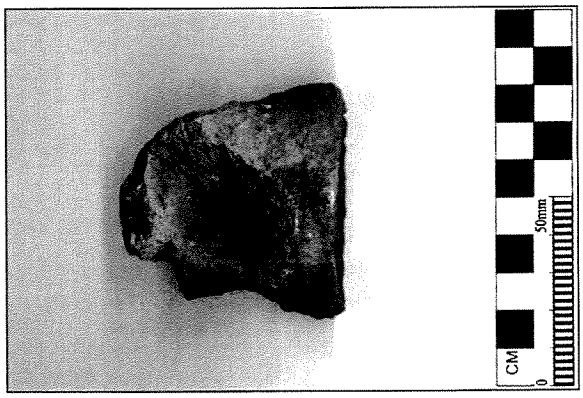

Figure 10: Fire-cracked Rock, Recovered in Excavation, Site -5565.

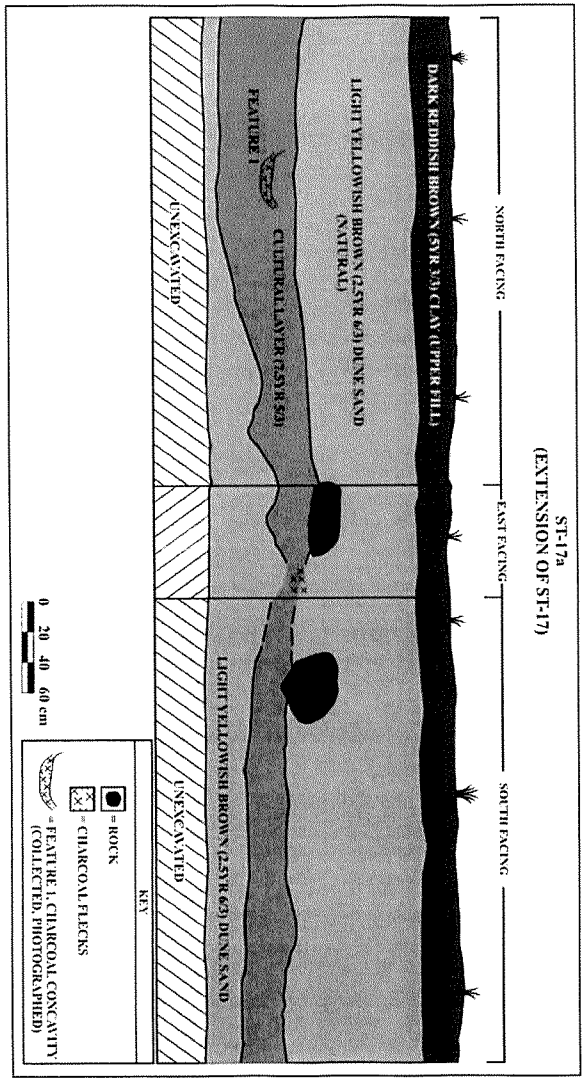

Figure 12: Soil-stratigraphic Profile, ST-17a (Site -5565).

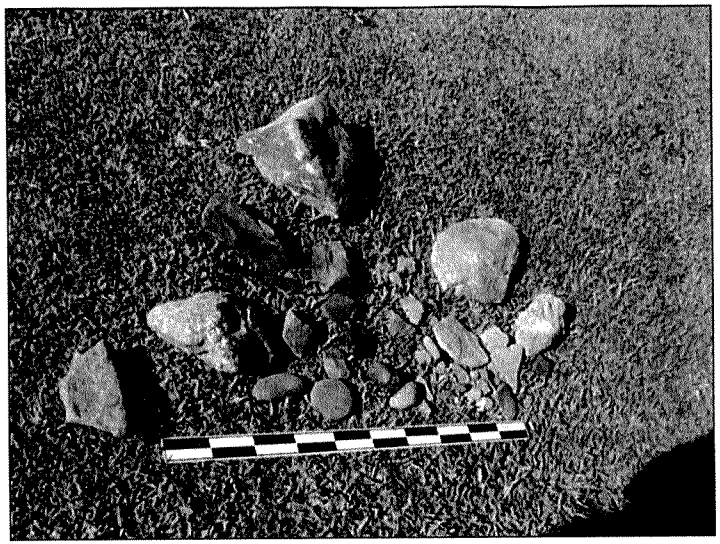

Figure 13: Water-worn Rocks and other Basalt Rocks Left Behind (Not Collected), Site -5565.

As exposed in the southeast-facing wall of ST-17 (see Figure 11), the cultural layer thins out and terminates at the northeast end of the trench. The base of the cultural layer generally ranges from 140–160 cmbs, but it is somewhat shallower in some places.

A small, concave feature consisting of concentrated charcoal was located in the north-facing wall of ST-17a, approximately 120 cmbs. The feature was approximately 6–8 cmbs and 35 cm in diameter. Charcoal was collected from the center of the feature, and one sample was submitted to Beta Analytic, Inc. for radiocarbon dating. A conventional radiocarbon date (standard delivery) of 210 ± 60 BP was obtained (Beta sample no. -201358). This radiocarbon determination calibrates (at 1 sigma, OxCal v. 3.5) to A.D. 1730–1810 (0.58), A.D. 1640–1690 (0.30), and A.D. 1930–1950 (0.12). These results are consistent with a late pre-Contact to early historic-era date of site occupation. Trench collapse precluded a proper photograph of this hearth feature.

Two medium-sized boulders were exposed in the east- and south-facing walls of ST-17a (see Figure 12). These were both dislodged, just prior to backfilling, in order to eliminate the possibility that these stones were part of a burial cairn (as documented by Fredricksen 2001 at the Coconut Grove condominiums). No human remains or other materials were observed when the boulders were exposed.

As stated above, the cultural layer contained a number of rocks (including several small boulders, water worn pebbles and cobbles, and fire-cracked rocks), most of which were left behind (see Figure 13). These rocks are all artifacts (*i.e.,* artificially-introduced), even though many, in and of themselves, would not be recognized as such in isolation. It is clear, however, that the dune sands on which the layer was deposited, and under which the site was buried, are consistently free of any inclusions (*e.g.,* rocks, shells, etc.). Therefore, these rocks are identifiable as portable artifacts mostly on stratigraphic and sedimentary criteria.

Other than one possible hammerstone, the most convincing stone tool is a simple, single-edged cutting/chopping tool, probably produced on a naturally-occurring basalt flake, rather than on an intentionally-produced flake (see Figures 8–10). The tool exhibits several notches, probably produced by hard-hammer percussion at the time of the immediate need for such a cutting/chopping tool. This is not a formal tool, and it was probably not moved very far from its source along the adjacent, rocky beach.

SUBSURFACE TESTING: SEDIMENTS AND STRATIGRAPHY

As stated above, 20 stratigraphic trenches (ST-1 through ST-19, plus ST-17a) were excavated in the project area, exposing a total of 84.5 linear meters (278.0 ft.) of subsurface deposit. Total excavated area was 59.2 square meters; total excavated volume was 76.9 cubic meters. Depth of excavation ranged from 60–185 cmbs, and averaged 130 cmbs. Bedrock, and/or extremely consolidated clays with decomposing gray basalt that directly overlying bedrock, was reached in about half of the units. The remaining trenches were typically excavated to depth in clean dune sands, but bedrock was not reached.

Table 1 presents a summary of all relevant quantitative and qualitative stratigraphic and sedimentary observations for each trench. With one or two exceptions, which are explained in detail, as appropriate, each stratigraphic trench is also documented below with at least one photograph and one profile drawing. The major soil-stratigraphic units are also described. Finally, for each trench, a brief narrative description of the most important stratigraphic and sedimentary observations is included.

Table 1: Summary of Stratigraphic Trenches at TMK: 4-2-04: 027 & 028.

Unit	Area[1]	Trench Length (m)	Maximum Depth (cm)	Trench Classification	Layers Present	Comments
ST-1	1	13.5	120–150	Fill—no dune sand	Sandy fill atop natural basal clay	Entirely composed of fill
ST-2	1	5.0	60–125	Fill—no dune sand	Gravelly fill atop natural basal clay	One small pocket of clean sand associated with a buried irrigation line
ST -3	1	5.5	80–90	Fill—with partially truncated dune sand	Silty clay loam atop a truncated sandy deposit atop natural basal clay	Natural dune sand deposit is completely truncated at the hotel end of trench; base of sand unit contains light-colored, microbedding
ST -4	1/2	2.5	70–75	Fill—no dune sand	Clayey loam atop silty clay atop gravelly sandy silty clay	Entirely composed of fill
ST -5	2	6.5	120–155	Fill—with basal dune sand remnant	Alternating fill layers atop natural thin dune sand atop thin clay atop basal clay	Stratigraphy demonstrates extensive earth-movements (bulldozing) in this area
ST -6	2	5.5	100–125	Fill—with basal dune sand remnant	Clayey loam atop gravelly sandy silty clay atop brown sand atop natural thin dune sand atop thin clay atop basal clay	--
ST -7	2	9.5	140–150	Natural dune sand	Silty clay atop a truncated (disturbed) layer atop natural dune sand atop basal clay	Stratigraphy demonstrates extensive earth-movements (bulldozing) in this area
ST -8	2	2.5	150	Natural dune sand	Mostly natural dune sands below alternating layers of clayey loam and silty sand	Located near the high *pali* just east of the 'Cliff House'
ST -9	3	1.5	130	Fill—no dune sand	Alternating layers of clay and sand under clayey loam cap	Entirely composed of fill
ST-10	3	6.5	130–150	Natural dune sand	Natural dune sands below several diverse fill layers	--
ST-11	3	5.0	180–185	Natural dune sand	Natural dune sands below several diverse fill layers	Stratigraphy demonstrates extensive earth-movements (bulldozing) above the dune sand
ST-12	3	1.2	115	Natural dune sand	Natural dune sands below two fill layers	North end of trench shows truncated dune sand, evidence of foundation excavation for hotel
ST-13	3	2.0	130	Natural dune sand	Natural dune sands below two fill layers	Live electrical conduit exposed in trench wall
ST-14	3	1.5	150	Natural dune sand	Natural dune sands below several diverse fill layers	Near the low *pali* above the sandy beach
ST-15	2	1.5	160	Natural dune sand	Natural dune sand below a deep layer of sandy fill	Live electrical conduit exposed in trench wall
ST-16	2	1.5	155	Fill—no dune sand	Lowermost layer composed of sandy fill	Entirely composed of fill
ST-17	2	5.0	160	Natural dune sand	Natural dune sands	Contains buried cultural

					containing the cultural layer below an upper clay fill	layer, artifacts
ST-17a	2	3.0	160	Natural dune sand	Natural dune sands containing the cultural layer below an upper clay fill	Contains buried cultural layer, artifacts
ST-18	2	1.3	125	Fill—no dune sand	Clayey loam atop silty clay atop gravelly sandy silty clay	Entirely composed of fill
ST-19	4	4.0	100–145	Fill—no dune sand	Silty fill atop natural silty clay	Included deeply buried (up to 100 cmbs) recent debris

[1] Locations: 1 = the large open field north of the main hotel, 2 = the oceanfront (*makai*) side of the main hotel and wings, 3 = the narrow southern margin of the hotel parcel bordering the Coconut Grove condominiums lot, 4 = near the Kapalua Shops and the main entrance (driveway) to the hotel.

As illustrated in Figure 7 (above), three main types of result were obtained in the course of systematic trenching. First, seven trenches consisted exclusively of introduced fill sediments, sometimes containing recent debris (*e.g.*, black plastic 'weed control' sheeting), and typically consisting of poorly-sorted, consolidated, gravelly clay and/or silty sand. These 'fill units' were located in all of the main areas of the project area, including: Area 1 (ST-1, ST-2, & ST-4), the large open field north of the main hotel, Area 2 (ST-16 & ST-18), the oceanfront (*makai*) side of the main hotel and wings, Area 3 (ST-9), the narrow southern margin of the hotel parcel bordering the Coconut Grove condominiums lot, and Area 4 (ST-19), near the Kapalua Shops and the main entrance (driveway) to the hotel. Second, three trenches (see Figure 7) consisted of mixed fill with minor and/or remnant components of undisturbed, natural dune sand (ST-3, ST-5, & ST-6). Third, most units (10 of 19) contained undisturbed, natural dune sand under a shallow, upper, topsoil-loam horizon. In particular, the areas directly west and south of the main hotel grounds are more or less completely composed of dune sands.

These results clearly show that much of the project area is underlain by undisturbed, natural dune sands. As discussed below (see individual trench descriptions), the two units (ST-3 & ST-12) placed closest to the existing footprint of the hotel both showed evidence of truncated natural dune sands, suggesting that the hotel was, indeed, built directly upon dune sands, and that much of these sands were excavated and moved about the site.

Several main soil-sedimentary layers were documented. In order to simplify a relatively dynamic and complex stratigraphic record in the project area, these common layers are classified in narrative-descriptive terms, rather than as numbered layers. The table (above), individual trench descriptions, photographs, and profiles clearly show, for each unit, which layers were present and precisely how they were ordered in each case.

Upper Topsoil: Dark brown (10YR 3/3) clayey loam, typically underlain by dark reddish brown (5YR 3/3) silty clay. These uppermost sediments support a thick grassy turf. Together, these layers are typically 25–30 cm thick.

Major Fill Layer: Dark brown (10YR 3/3) poorly-sorted, gravelly, mottled, sandy-silty-clay. This unit constitutes the bulk of the fill sediments, and was clearly introduced at the time of the hotel construction. Mottling is typically gray, and consists of clay clods. Inclusions are mostly angular and sub-angular gray basalt. This layer is extremely consolidated, and typically 50–100 cm thick, with some minor variation in some units. A small amount of recent (modern) debris is located in some units; mostly, however, this is clean fill.

Upper Sand Layer: A dark yellowish-brown (10YR 4/4) sand, typically medium-grained, occasionally showing weakly-developed bedding/micro-stratigraphy, was located above the 'undisturbed natural dune sand' in many units. This is a difficult layer to interpret: in one case (ST-3) it appears to represent an original uppermost dune sand (discolored by the overlying, introduced fill); in every other instance, it appears to be introduced from other areas. These 'upper sand layers' are probably excavated and redeposited from the footprint excavations (*i.e.*, for the foundation of the hotel).

Undisturbed Natural Dune Sand: Light yellowish-brown (2.5YR 6/3) dune sand, typically medium-grained, occasionally showing weakly-developed bedding/micro-stratigraphy, but mostly not. This clean, loose (unconsolidated) sand easily collapses in excavation. With the exception of some roots and rootlets, inclusions (*e.g.*, rocks) are rare to nonexistent. No mottling. Little observable variation with depth.

Lowermost Ashey Rocky Clay: In several units to the north and northwest of the main hotel (*e.g.*, ST-1 through ST-3, ST-5 & ST-6, and ST-18), the basal unit was a gray (5YR 6/1) to very dark grayish brown (10YR 3/2) clay with ash and decomposing gray basalt rocks, extremely consolidated. This represents the bedrock and/or near-bedrock layer, and is located close to the lava flow documented in the adjacent parcel to the north-northwest (*i.e.*, the 'Hawea Point Private Residence'). In ST-5 and ST-6, this unit is also overlain by a thin, well-sorted, dark brown clay.

TRENCH SUMMARIES

Stratigraphic Trench 1 (ST-1)

ST-1 (Figure 14) consisted of an upper sandy fill layer approximately 60 cm thick, atop a gray ashey clay, with decomposing lava rock. The lower clay unit is extremely consolidated and is probably laterally equivalent to the lava flow in the adjacent parcel to the north-northwest. Any dune sand that may have been here is completely gone.

Stratigraphic Trench 2 (ST-2)

ST-2 (Figures 15–16) consisted exclusively of an upper gravelly clay (fill) atop the sterile (near-bedrock) layer identified in several units in this area.

Stratigraphic Trench 3 (ST-3)

ST-3 (Figures 17–19) consisted of a natural sandy layer that was partially truncated at the south-southeast end of the trench. This sand layer is darker than most other exposures of dune sand in the project area, and, at first, it was unclear whether this was a fill layer or not. Close cleaning and inspection of the sand layer, however, showed a series of thin, lighter-color bands of typical dune sand at the base of the darker sand unit. This micro-stratigraphy clearly demonstrated the unit was deposited naturally, as no fill events would yield such structures. The sand is directly atop the gray ashey clay, with decomposing lava rock.

Stratigraphic Trench 4 (ST-4)

ST-4 was entirely composed of introduced fill (Figures 20–21).

Stratigraphic Trench 5 (ST-5)

ST-5 (Figures 22–23) consisted of nearly 1.5 m of mixed fill, alternating between the poorly-sorted gravelly sediments and dark yellowish brown sand. A thin remnant of dune sand directly atop clay was located at the base of this trench. It is possible that more massive dune sand deposits were originally located in this unit, but were bulldozed during the construction of the hotel.

Stratigraphic Trench 6 (ST-6)

ST-6 (Figures 24–25) also contained a thin basal layer of dune sand directly atop clay. It is possible that more massive dune sand deposits were originally located in this unit, but were bulldozed during the construction of the hotel.

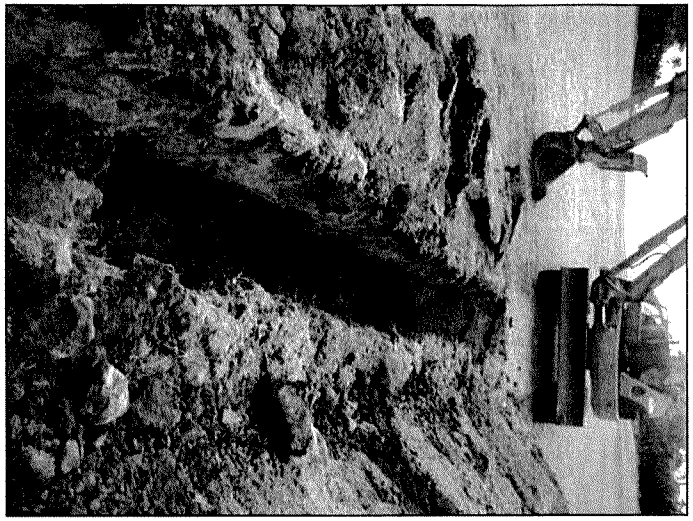

Figure 14: ST-1, Post-excavation, Facing West.

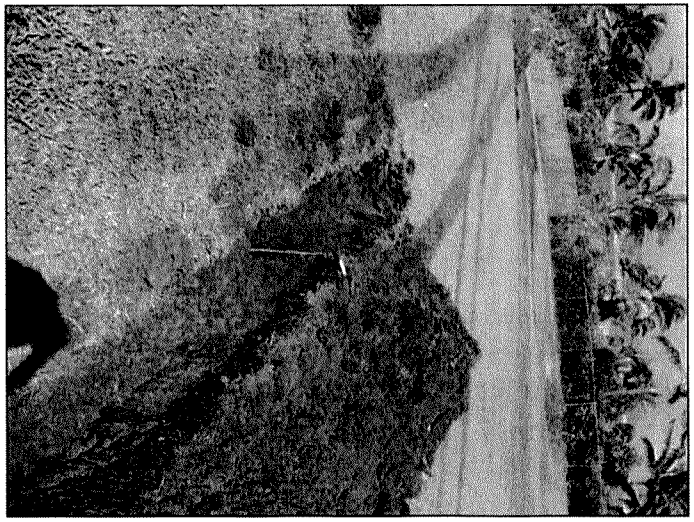

Figure 15: ST-2, Post-excavation, Facing West.

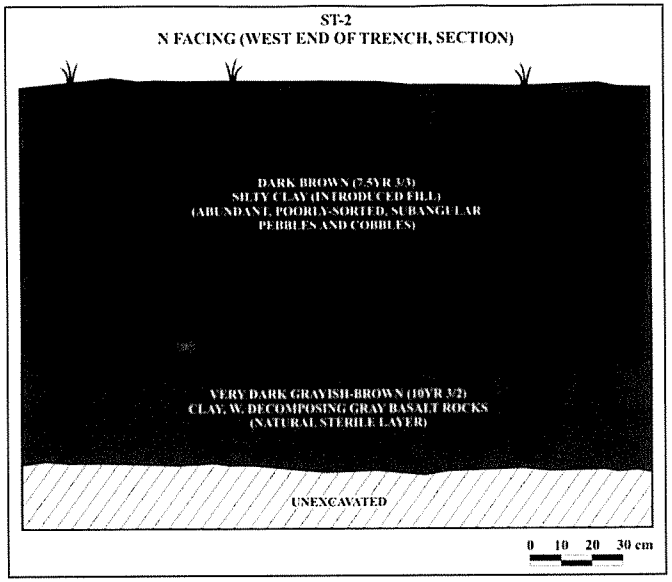

Figure 16: Soil-stratigraphic Profile, ST-2.

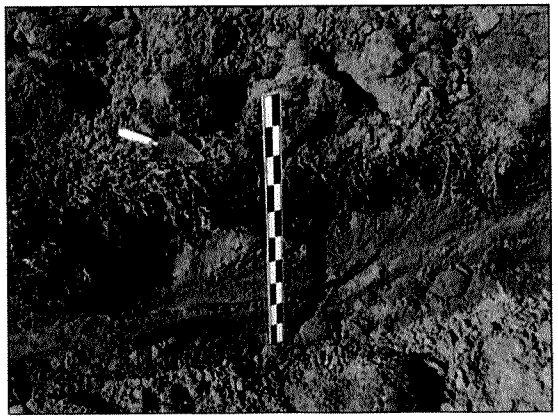

Figure 17: ST-3, Post-excavation, Facing West.

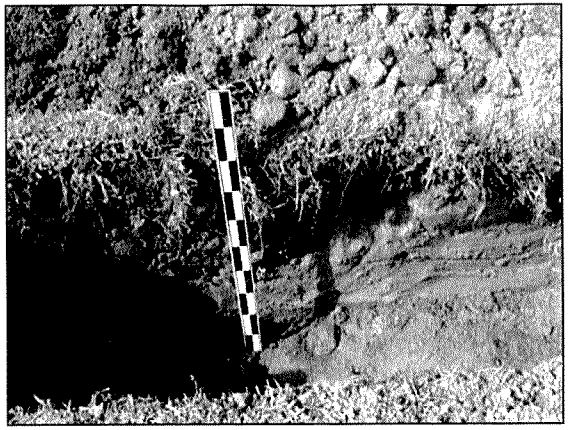

Figure 18: ST-3, Post-excavation, Facing West, Showing Truncated Sand Unit.

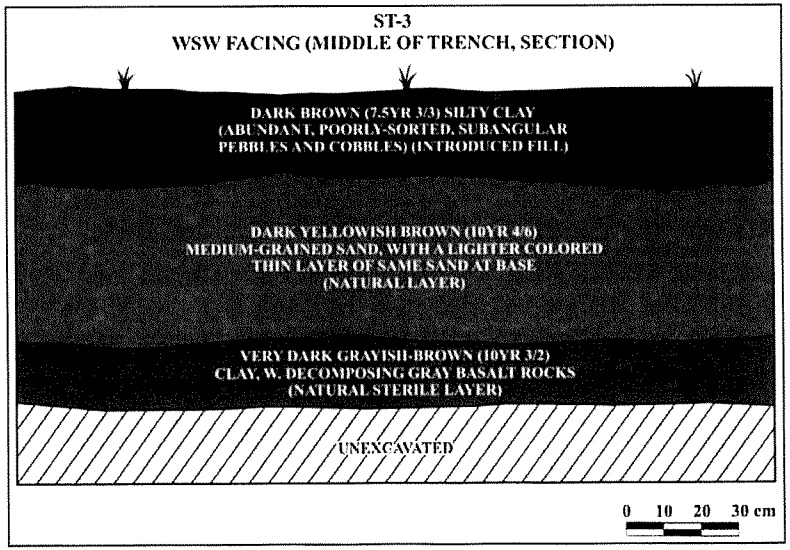

Figure 19: Soil-stratigraphic Profile, ST-3.

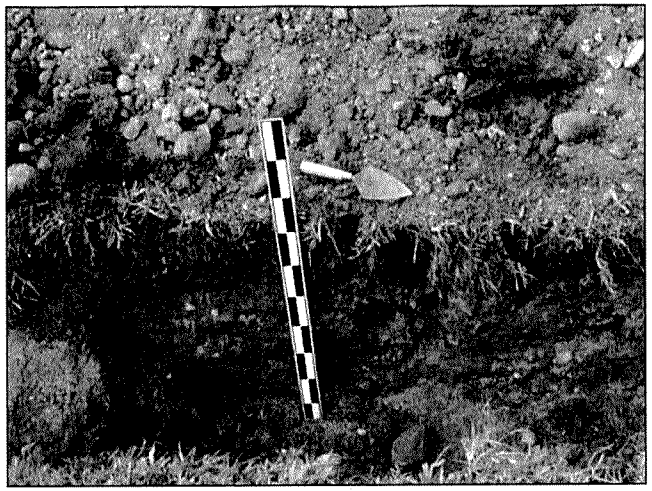

Figure 20: ST-4, Post-excavation, Facing West.

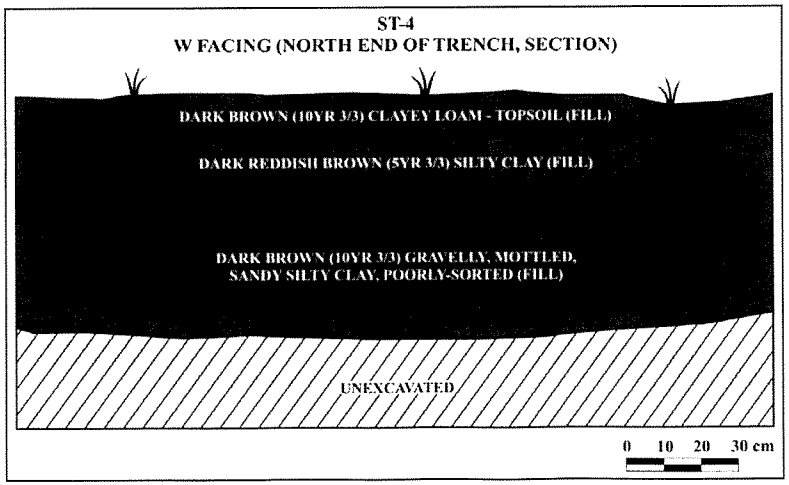

Figure 21: Soil-stratigraphic Profile, ST-4.

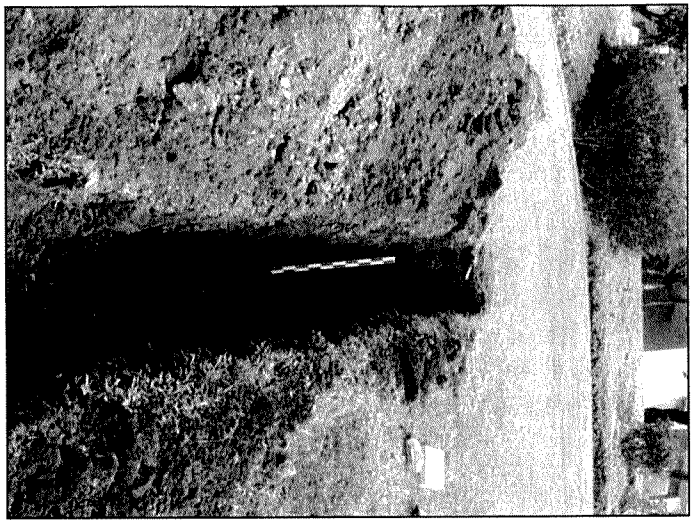

Figure 22: ST-5, Post-excavation, Facing East.

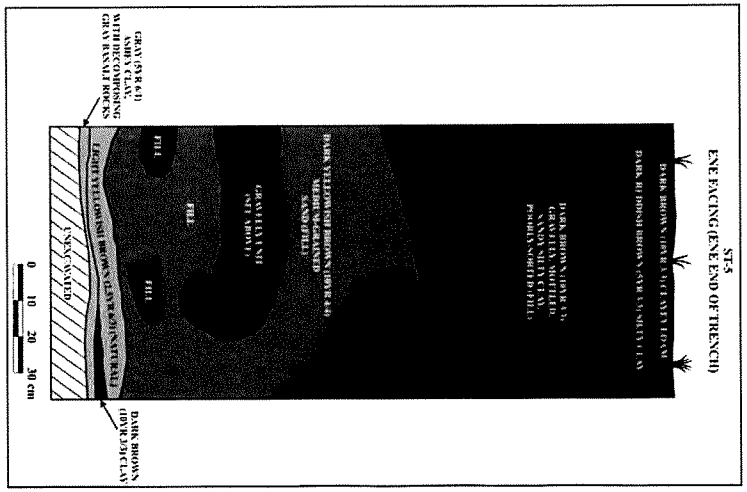

Figure 23: ST-5, Post-excavation, Facing East.

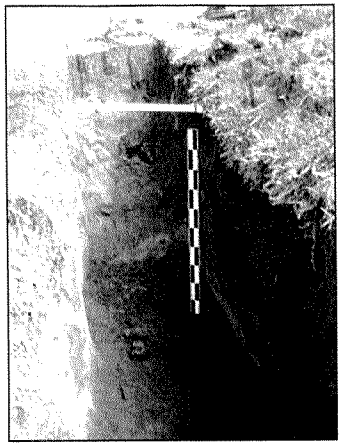

Figure 24: ST-6, Post-excavation, Facing East.

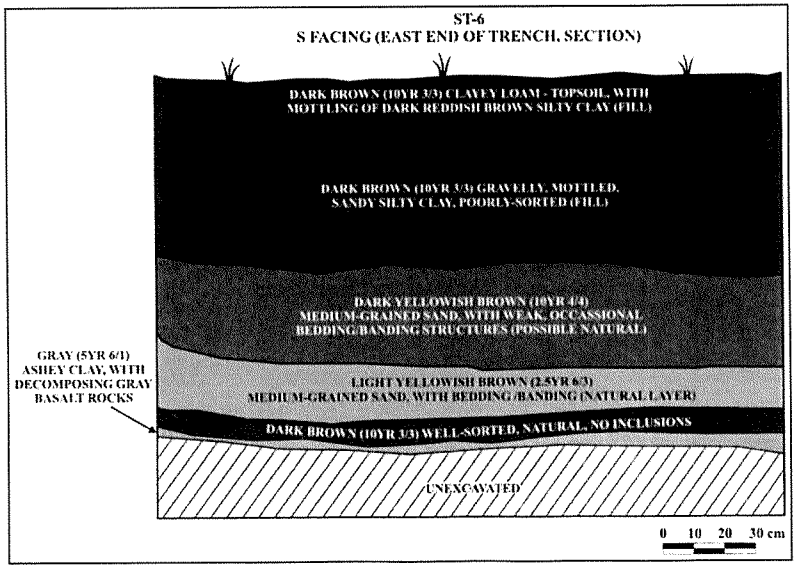

Figure 25: Soil-stratigraphic Profile, ST-6.

Stratigraphic Trench (ST-7)

ST-7 (Figures 26–27) was the first trench in the project area in which unequivocal, undisturbed sand dune deposits were located. Above these dune sands is a laterally-dynamic zone of mixed silty clay and sand adjacent to a possible layer of undisturbed, darker sand. This unit is stratigraphically similar to ST-10.

Stratigraphic Trench 8 (ST-8)

ST-8 (Figure 28) was composed almost entirely of undisturbed sand dune deposits, under alternating layers of fill sediment. It is worth noting that bits of black plastic ('weed control') sheeting were found in the silty sandy clayey loam layer just atop the natural dune sand.

Stratigraphic Trench 9 (ST-9)

ST-9 was entirely composed of introduced fill, alternating between poorly-sorted, gravelly sandy clay and dark yellowish brown sand (Figures 29–30).

Stratigraphic Trench 10 (ST-10)

ST-10 (Figures 31–32) contained undisturbed sand dune deposits below a laterally-dynamic zone of mixed silty clay and sand adjacent to a possible layer of undisturbed, darker sand. This unit is stratigraphically similar to ST-7.

Stratigraphic Trench 11 (ST-11)

ST-11 (Figures 33–34) contained undisturbed sand dune deposits below a deep layer of clearly mixed and disturbed fill sediments.

Stratigraphic Trench 12 (ST-12)

ST-12 (Figures 35–36) was located only 4.0 m from the existing hotel footprint, and the natural dune sand underlying much of this unit was clearly truncated (in the north end of the trench) by the excavation of the foundation of the hotel.

Stratigraphic Trench 13 (ST-13)

ST-13 (Figures 37–38) contained undisturbed sand dune deposits below several diverse layers of fill sediment. A gray sandy layer, directly atop the natural dune sand, contained live electrical conduit, just barely exposed by the backhoe.

Stratigraphic Trench 14 (ST-14)

ST-14 (Figures 39–40) contained undisturbed sand dune deposits below several layers of mixed and disturbed fill sediments.

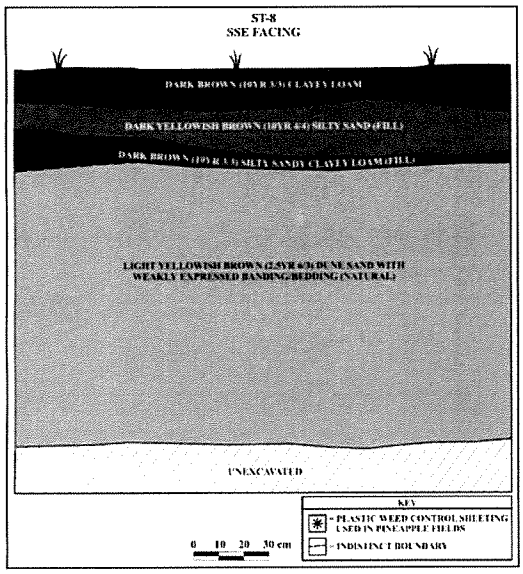

Figure 28: Soil-stratigraphic Profile, ST-8.

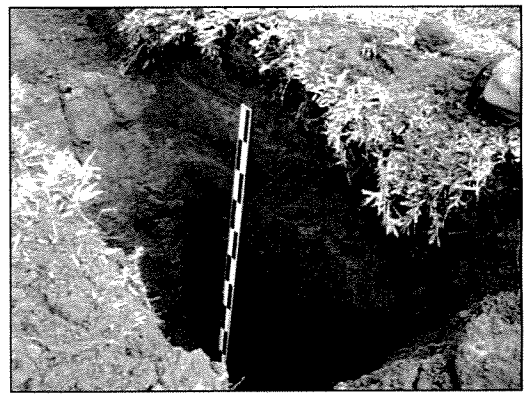

Figure 29: ST-9, Post-excavation, Facing North.

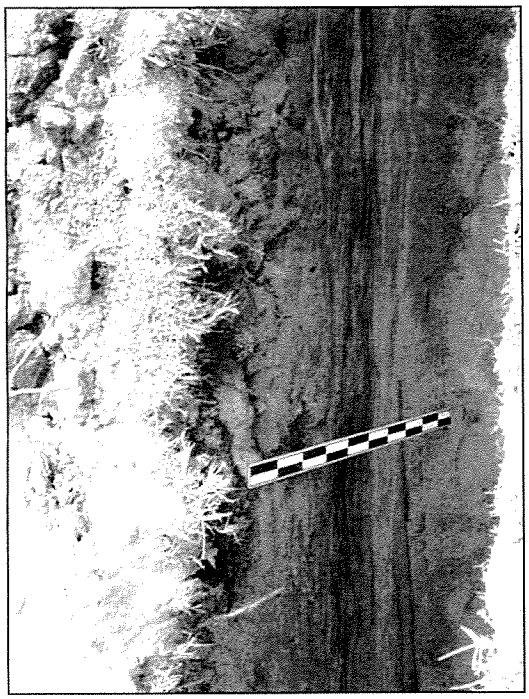

Figure 26: ST-7, Post-excavation, Facing Southeast.

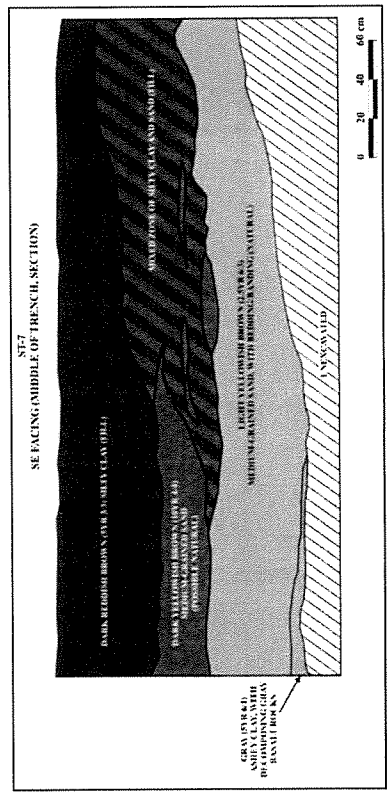

Figure 27: Soil-stratigraphic Profile, ST-7.

Figure 31: ST-10, Post-excavation, Facing East.

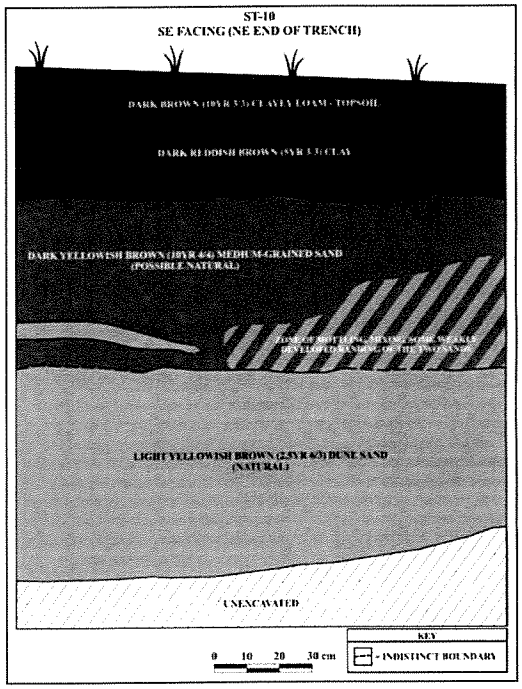

Figure 32: Soil-stratigraphic Profile, ST-10.

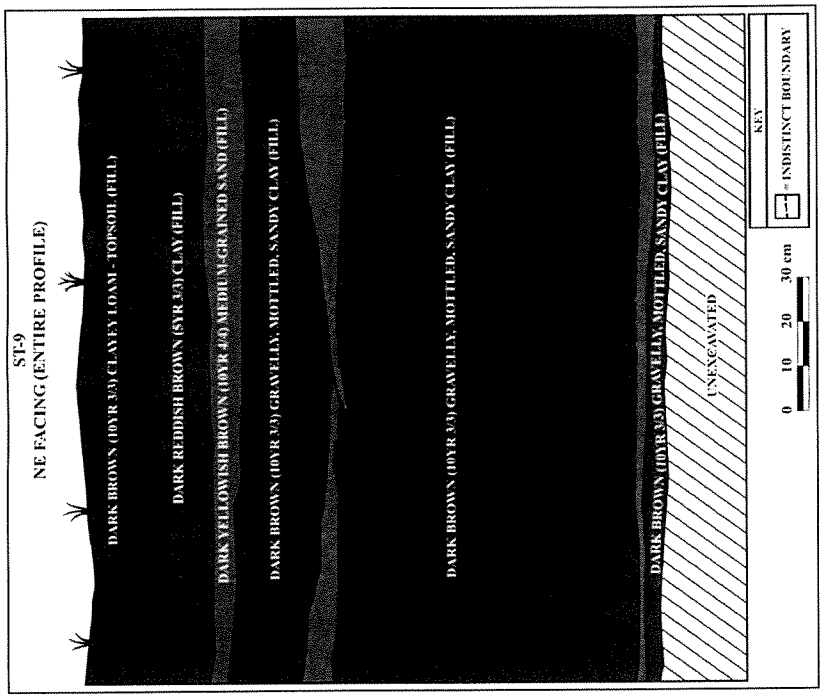

Figure 30: Soil-stratigraphic Profile, ST-9.

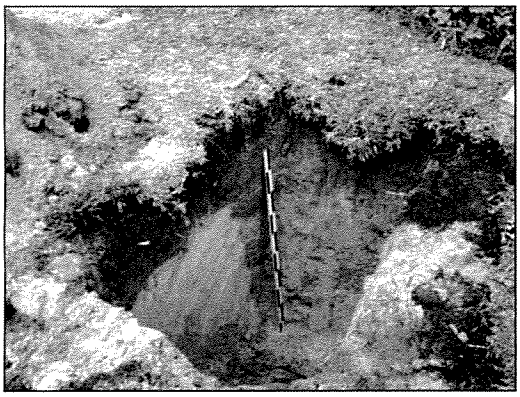

Figure 35: ST-12, Post-excavation, Facing North-Northwest.

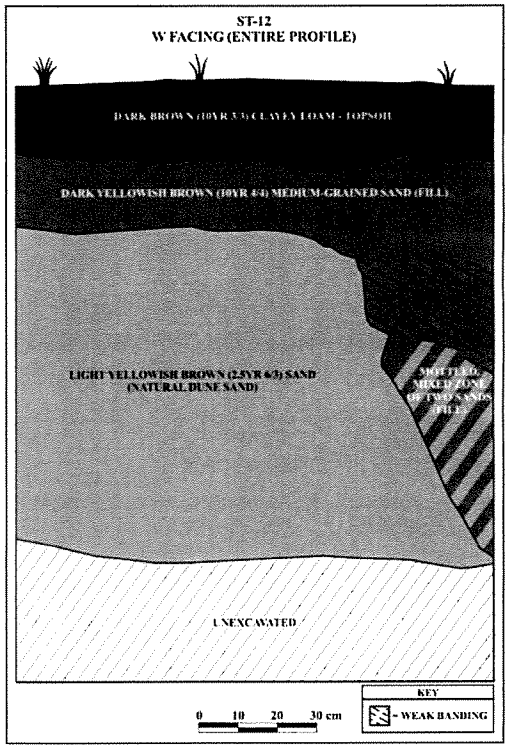

Figure 36: Soil-stratigraphic Profile, ST-12.

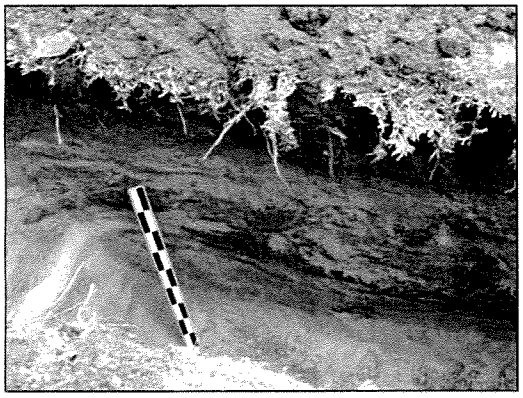

Figure 33: ST-11, Post-excavation, Facing East.

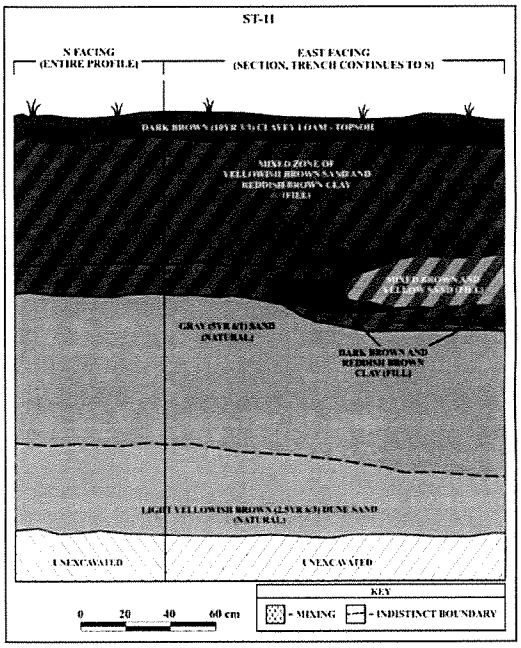

Figure 34: Soil-stratigraphic Profile, ST-11.

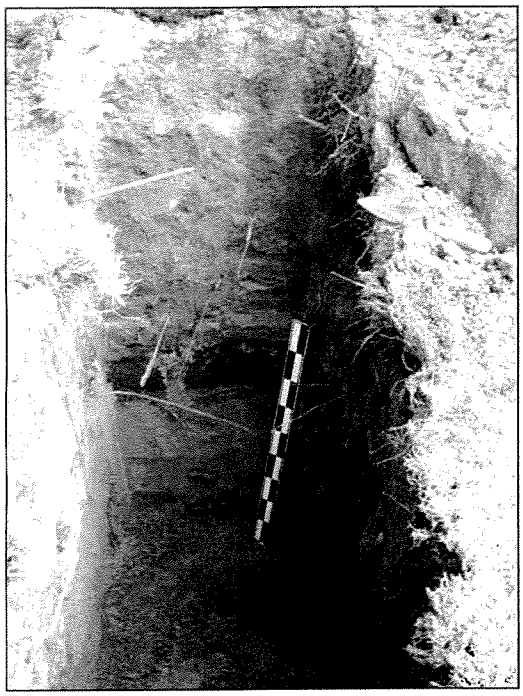

Figure 39: ST-14, Post-excavation, Facing East.

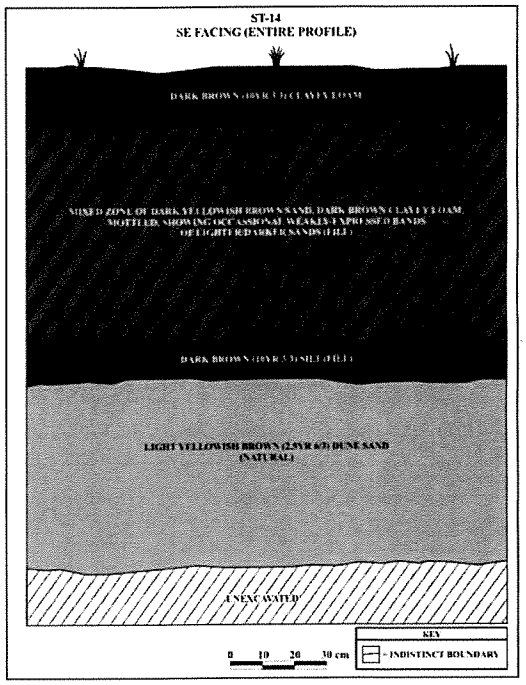

Figure 40: Soil-stratigraphic Profile, ST-14.

Figure 37: ST-13, Post-excavation, Facing North.

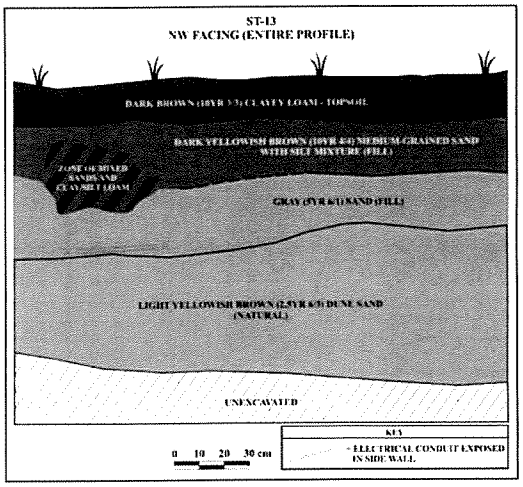

Figure 38: Soil-stratigraphic Profile, ST-13.

Stratigraphic Trench 15 (ST-15)

ST-15 (Figures 41–42) contained undisturbed sand dune deposits below two layers of fill sediments. A live electrical conduit was just barely exposed by the backhoe.

Stratigraphic Trench 16 (ST-16)

ST-16 was entirely composed of introduced fill (Figures 43–44).

Stratigraphic Trench 17 (ST-17 and ST-17a)

ST-17 and ST-17a exposed a natural dune sand deposit under a relatively thin, dark reddish brown upper fill (clayey loam) (Figures 45–46). Profile drawings for these trenches have been presented above. The top of the sand deposit showed little or no *in situ* soil development, suggesting that this area, before it was stabilized with the overlying clayey loam, was a zone of active, aeolian (wind-blown) deposition. The buried cultural layer designated Site –5565 (see description above) was deposited upon such a land surface, *i.e.,* one with little or no soil development. This implies that Site –5565 was most likely a temporary, probably short-duration, occupation, rather than a long-term habitation site.

Stratigraphic Trench 18 (ST-18)

ST-18 was entirely composed of introduced fill, directly atop a consolidated ashey clay with decomposing basalt (Figure 47).

Stratigraphic Trench 19 (ST-19)

ST-19 (Figures 48–49) consisted of approximately 100 cm of silty fill, including several recent-historic materials (clear bottle glass, lumbar, disconnected electrical conduit), over natural silty clay.

SUMMARY OF RESULTS

In summary, this Archaeological Inventory Survey resulted in the following findings:

- No human remains were observed or encountered. No subsurface, burial features were observed.
- There are no historically-significant *surface* features or sites.
- Subsurface excavations (20 backhoe trenches) led to the identification of one significant site (SIHP No. 50-50-01-5565), a buried cultural layer located in sandy

Figure 41: ST-15, Post-excavation, Facing West.

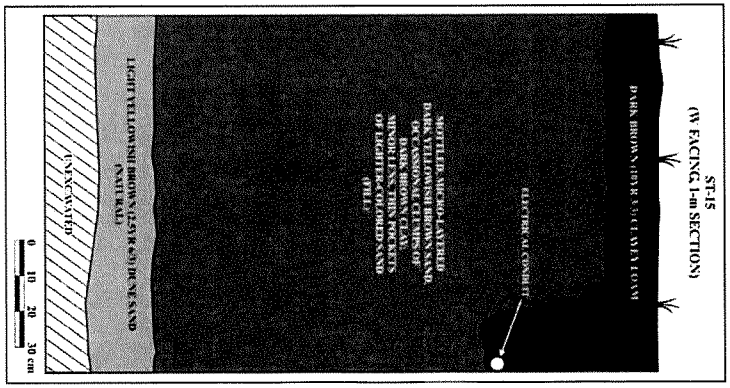

Figure 42: Soil-stratigraphic Profile, ST-15.

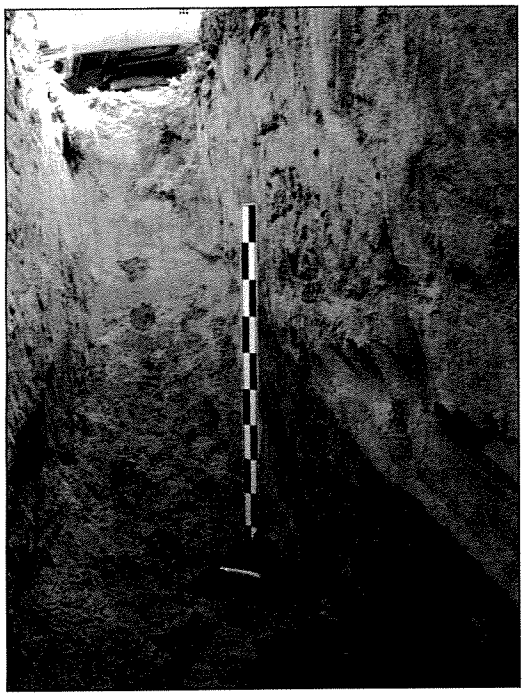

Figure 45: ST-17, Post-excavation, Facing Northeast.

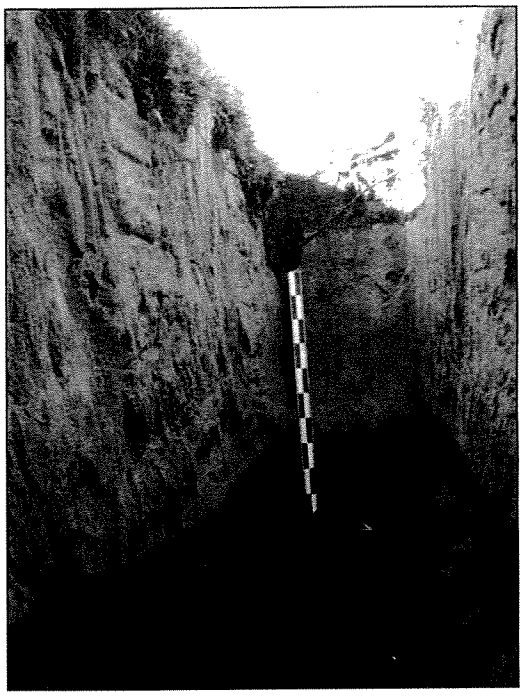

Figure 46: ST-17, Post-excavation, Facing Southwest.

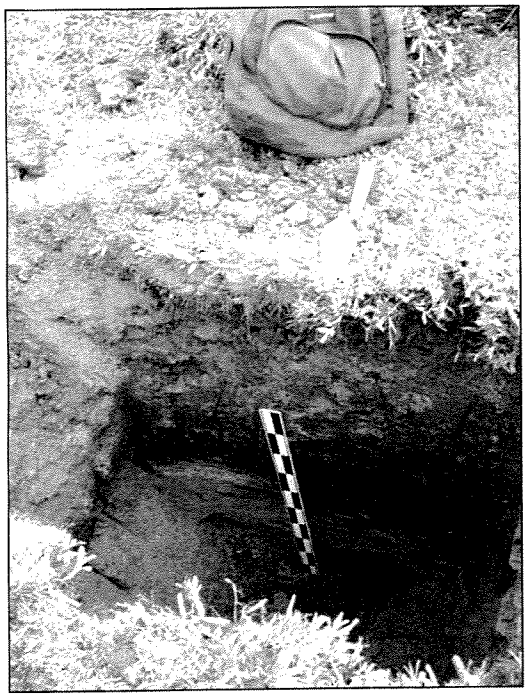

Figure 43: ST-16, Post-excavation, Facing South.

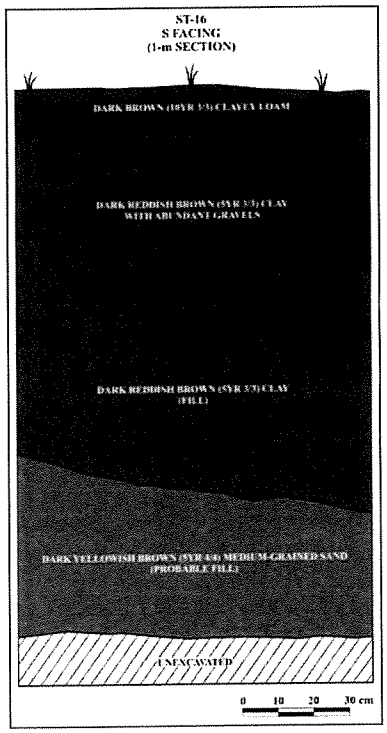

Figure 44: Soil-stratigraphic Profile, ST-16.

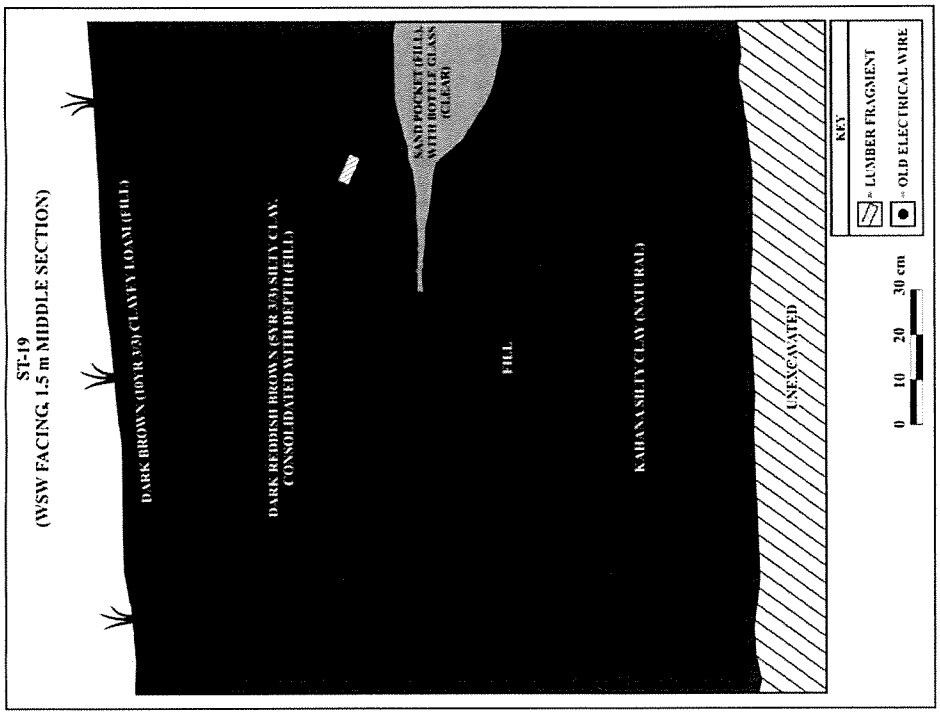

Figure 49: Soil-stratigraphic Profile, ST-19.

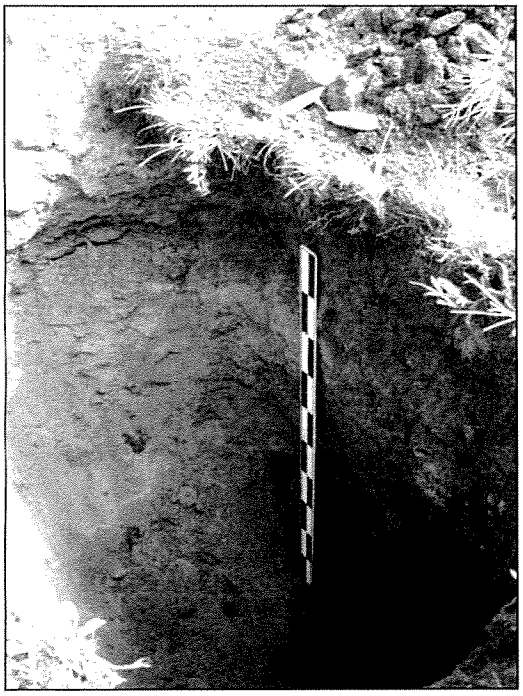

Figure 47: ST-18, Post-excavation, Facing Northeast.

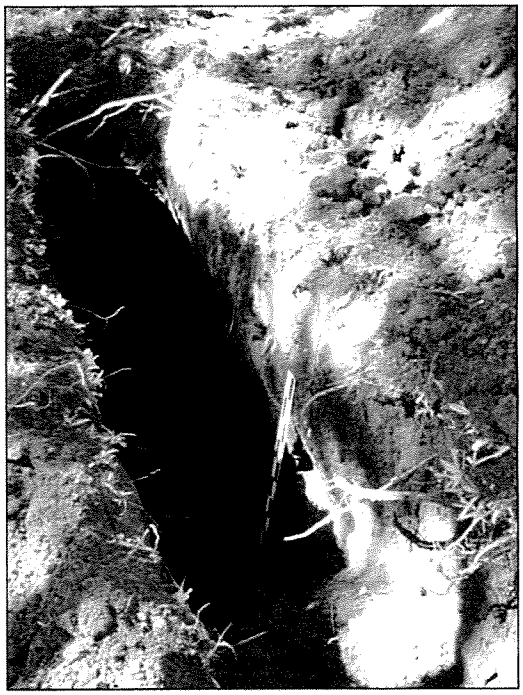

Figure 48: ST-19, Post-excavation, Facing Southwest.

deposits between 80–150 cm (31.5–59.1 in.) below the present ground surface, on the prominent rocky point just north of Kapalua Bay Beach. This site consists of charcoal-stained sediment, diffuse and concentrated charcoal, fire-cracked rock, and one or two simple stone tools. This site represents a temporary, short-duration camp inhabited by traditional Native Hawaiians. A radiocarbon date of 210 ± 60 BP was obtained from this buried layer, which is significant under Criterion D. Calibrated (calendar years) estimates for the age of this site are most consistent with a late pre-Contact to early historic-era occupation. No further work is recommended at this site.

- Although significant portions of the project area have been disturbed and filled, natural sand dune deposits underlie much of the project area, starting at approximately 50–100 cmbs.

- Finally, a small portion of the project area was unavailable for subsurface testing (excavation), because the resort is still fully functioning, and additional testing will have to be conducted before the parcel can be fully documented and assessed for historic significance.

SIGNIFICANCE ASSESSMENTS

One significant site was documented in the project area during Archaeological Inventory Survey at TMK: 4-2-04: 27, 28, and 29. The site has been evaluated for significance according to the criteria established for the State and National Register of Historic Places. Site 50-50-01-5565 is significant under Criterion D. The five criteria are listed below:

Criterion A: Site is associated with events that have made a significant contribution to the broad patterns of our history;

Criterion B: Site is associated with the lives of persons significant to our past;

Criterion C: Site is an excellent site type; embodies distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual construction;

Criterion D: Site has yielded or has the potential to yield information important in prehistory or history;

Criterion E: Site has cultural significance; probable religious structures or burials present (State of Hawai'i criteria only).

RECOMMENDATIONS

Based on these results, the following actions are recommended. First, additional backhoe testing will be needed in the area (mapped and described in more detail in the body of this report) immediately west (*makai*) of the main lobby. The scope of the additional testing will be determined in consultation with the SHPD-Maui archaeologist (Kirkendall). Results of this additional testing will guide the preparation of an Archaeological Monitoring Plan (AMP). Second, given a variety of factors—including the documented presence of undisturbed, natural dune sand throughout much of the project area, Archaeological Monitoring is recommended for future construction activities. Monitoring will be needed during both the demolition of the current hotel facilities and the construction of the planned residences. Specifics of the AMP will be contingent upon results of the additional testing, which will be submitted as an Addendum to this Archaeological Inventory Survey.

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E

Cultural Impact Study/Assessment

A CULTURAL IMPACT ASSESSMENT (CIA) ON APPROXIMATELY 25.3 ACRES IN KAPALUA (FORMERLLY HONOKAHUA), NĀPILI 2–3 AHUPUA`A, LAHAINA DISTRICT (TRADITIONALLY THE KA`ANAPALI DISTRICT), MAUI ISLAND, HAWAI`I TMK: 4-2-04: 27, 28, AND 29]

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April 2005

Prepared for:
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INTRODUCTION

Scientific Consultant Services (SCS), Inc. has been contracted by Kapalua Bay LLC to conduct a Cultural Impact Assessment (CIA) on approximately 25.3 acres in Kapalua, Nāpili 2–3 Ahupua`a, Lahaina District (traditionally the Ka`anapali District), Maui Island, Hawai`i (TMK: 4-2-04: 27, 28, and 29 [Figures 1 and 2]). Proposed plans for the parcel include the replacement of the Kapalua Bay Hotel with approximately 155 resort residential homes.

The Constitution of the State of Hawai`i clearly states the duty of the State and its agencies is to preserve, protect, and prevent interference with the traditional and customary rights of native Hawaiians. Article XII, Section 7 requires the State to "protect all rights, customarily and traditionally exercised for subsistence, cultural and religious purposes and possessed by ahupua`a tenants who are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778" (2000). Beginning in 1850 with the establishment of Hawai`i Revised Statutes (HRS) 7-1, native Hawaiians were given access rights to undeveloped private property and waterways in order to gather specific natural resources for customary uses. In 1992, the State of Hawai`i Supreme Court, reaffirmed HRS 7-1 and expanded it to include, "native Hawaiian rights…may extend beyond the ahupua`a in which a native Hawaiian resides where such rights have been customarily and traditionally exercised in this manner" (Pele Defense Fund v. Paty, 73 Haw.578, 1992).

Act 50, enacted by the Legislature of the State of Hawaii (2000) with House Bill 2895, relating to Environmental Impact Statements, proposes that:

> …there is a need to clarify that the preparation of environmental assessments or environmental impact statements should identify and address effects on Hawaii's culture, and traditional and customary rights…[H.B. NO. 2895].

Act 50 requires state agencies and other developers to assess the effects of proposed land use or shoreline developments on the "cultural practices of the community and State" as part of the HRS Chapter 343 environmental review process (2001). Its purpose has broadened, "to promote and protect cultural beliefs, practices and resources of native Hawaiians [and] other ethnic groups, and it also amends the definition of 'significant effect' to be re-defined as "the sum of effects on the quality of the environment including actions that are…contrary to the

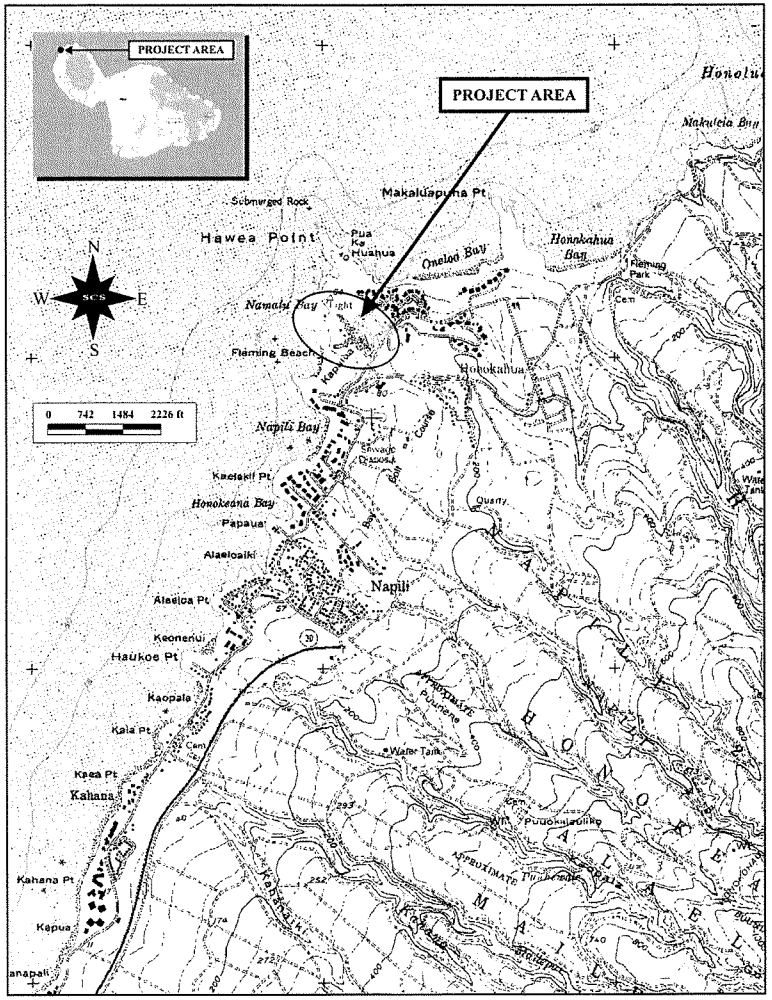

Figure 1: USGS Quadrangle Showing Project Area.

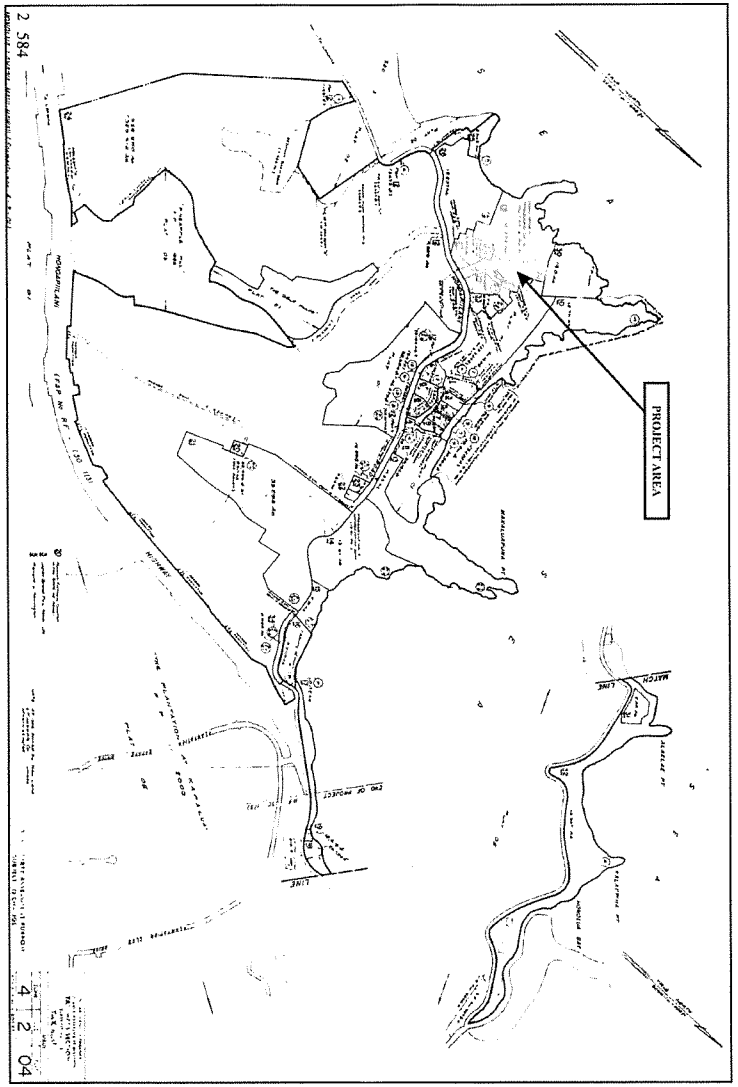

Figure 2: Tax map Key [TMK] 4-2-04 Showing Project Area.

State's environmental policies…or adversely affect the economic welfare, social welfare, or cultural practices of the community and State" (H.B. 2895, Act 50, 2000).

Thus, Act 50 requires an assessment of cultural practices to be included in the Environmental Assessments and the Environmental Impact Statements, and to be taken into consideration during the planning process. The concept of geographical expansion is recognized by using, as an example, "the broad geographical area, e.g. district or *ahupua'a*" (OEQC 1997). It was decided that the process should identify 'anthropological' cultural practices, rather than 'social' cultural practices. For example, *limu* (edible seaweed) gathering would be considered an anthropological cultural practice, while a modern-day marathon would be considered a social cultural practice.

According to the Guidelines for Assessing Cultural Impacts established by the Hawaii State Office of Environmental Quality Control (OEQC 1997):

> The types of cultural practices and beliefs subject to assessment may include subsistence, commercial, residential, agricultural, access-related, recreational, and religions and spiritual customs. The types of cultural resources subject to assessment may include traditional cultural properties or other types of historic sites, both manmade and natural which support such cultural beliefs.

This Cultural Impact Assessment involves evaluating the probability of impacts on cultural values and rights within the project area and its vicinity.

METHODOLOGY

This Cultural Impact Assessment was prepared in accordance with the methodology and content protocol provided in the Guidelines for Assessing Cultural Impacts (OEQC 1997). This report contains archival and documentary research, as well as consultation with individuals or organizations with knowledge of the project area, their cultural resources, and practices and beliefs. Based on this research, an assessment of the potential effects on cultural resources in the project area and recommendations for mitigation of these effects can be proposed.

ARCHIVAL RESEARCH

Archival research focused on a historical documentary study involving both published and unpublished sources. These included legendary accounts of native and early foreign writers; early historical journals and narratives; historic maps and land records such as Land Commission Awards, Royal Patent Grants, and Boundary Commission records; historic accounts, and previous archaeological project reports.

INTERVIEW METHODOLOGY

Interviews were conducted in accordance with federal and state laws and guidelines. Individuals and/or groups who have knowledge of traditional practices and beliefs associated with a project area or who know of historical properties within a project area are sought for consultation. Individuals who have particular knowledge of traditions passed down from preceding generations and a personal familiarity with the project area were invited to share their relevant information.

During each interview, maps of the study area were referenced and the project area was visited by Leann McGerty, the Project Director. Interviews were conducted in February 2005. Each interview was taped and then transcribed (Appendix A). These draft transcripts were returned to each of the participants for their review and comments. After corrections were made, each individual signed a release form, making the information available for this study (Appendix B). Key topics discussed with the interviewees included: personal association to *ahupua`a*, land use in the project's vicinity; traditional trails, gathering areas, water sources, and religious sites; place names and their meanings; stories that were handed down concerning special places or events in the vicinity of the project area; evidence of previous activities identified while in the project vicinity.

PROJECT AREA AND VICINITY

The project area consists of three contiguous parcels of land measuring approximately 25.3 acres in Kapalua, Nāpili 2–3 Ahupua'a, Lahaina District, Maui Island, Hawai`i [TMK: 4-2-04: 27, 28, and 29] (see Figures 1 and 2)]. The oceanfront project area consists of the grounds of the existing Kapalua Bay Hotel (Parcel 28, 18.5 acres), the Kapalua Shops (Parcel 27, 3.5 acres), and a parking lot (Parcel 29, 3.3 acres) used by hotel employees and guests. Parcel 28 (the hotel) is located at a rocky point between Kapalua Beach and Namalu Bay, just north of the village of Napili. The hotel was built in the mid 1970s, and first opened for business in 1978. According to aerial photographs and archival records, the project area was not formally used to grow commercial agricultural crops (PBR 2005), whose lower limits were probably located at the Lower Honoapiilani Road (*i.e.*, the *mauka* boundary of the project area).

CULTURAL HISTORICAL CONTEXT

The island of Maui ranks second in size of the eight main islands in the Hawaiian Archipelago. Pu`u Kukui, forming the west end of the island (1,215 m above mean sea level), is composed of large, heavily eroded amphitheater valleys that contain well-developed permanent stream systems that watered fertile agricultural lands extending to the coast. The deep valleys of West Maui and their associated coastal regions have been witness to many battles in ancient times and were coveted productive landscapes (Handy 1940:107).

PAST POLITICAL BOUNDARIES

Traditionally, the division of Maui's lands into districts (*moku*) and sub-districts was performed by a *kahuna* (priest, expert) named Kalaiha`ōhia, during the time of the *ali`i* Kaka`alaneo (Beckwith 1940:383; Fornander places Kaka`alaneo at the end of the 15th century or the beginning of the 16th century [Fornander 1919–20, Vol. 6:248]). Land was considered the property of the king or *ali`i `ai moku* (the *ali`i* who controls the island/district), which he held in trust for the gods. The title of *ali`i `ai moku* ensured rights and responsibilities to the land, but did not confer absolute ownership. The king kept the parcels he wanted, his higher chiefs received large parcels from him and, in turn, distributed smaller parcels to lesser chiefs. The *maka`āinana* (commoners) worked the individual plots of land.

In general, several terms, such as *moku*, *ahupua`a*, *`ili* or *`ili`āina* were used to delineate various land sections. A district (*moku*) contained smaller land divisions (*ahupua`a*) that customarily continued inland from the ocean and upland into the mountains. Extended household groups living within the *ahupua`a* were therefore able to harvest from both the land and the sea. Ideally, this situation allowed each *ahupua`a* to be self-sufficient by supplying needed resources from different environmental zones (Lyons 1875:111). The *`ili `āina* or *`ili* were smaller land divisions next in importance to the *ahupua`a* and were administered by the chief who controlled the *ahupua`a* in which it was located (Lyons 1875:33; Lucas 1995:40). The *mo`o`āina* were narrow strips of land within an *`ili*. The land holding of a tenant or *hoa `āina* residing in an *ahupua`a* was called a *kuleana* (Lucas 1995:61). The project area is located in the *ahupua`a* of Nāpili 2-3, which translated, literally means "the joinings or *pili* grass" (Pukui *et al.*:223, Rock 1974).

TRADITIONAL SETTLEMENT PATTERNS

The Hawaiian economy was based on agricultural production and marine exploitation, as well as raising livestock and collecting wild plants and birds. Extended household groups settled in various *ahupua`a*. During pre-Contact times, there were primarily two types of agriculture,

wetland and dry land, both of which were dependent upon geography and physiography. River valleys, such as those extending up into the West Maui Mountains, provided ideal conditions for wetland *kalo* (*Colocasia esculenta*) agriculture that incorporated pond fields and irrigation canals. Other cultigens, such as *kō* (sugar cane, *Saccharum officinaruma*) and *mai`a* (banana, *Musa* sp.), were also grown and, where appropriate, such crops as *`uala* (sweet potato, *Ipomoea batatas*) were produced. This was the typical agricultural pattern seen during traditional times on all the Hawaiian Islands (Kirch and Sahlins 1992, Vol. 1:5, 119; Kirch 1985). Agricultural development on the leeward side of Maui was likely to have begun early in what is known as the Expansion Period (A.D. 1200–1400 [Kirch 1985]).

A general settlement model based on archaeological evidence has been suggested for the Ka`anapali District (Chapman and Kirch 1979; Kirch 1985). This model includes coastal marine foraging and fishing with more upland agricultural pursuits. In typical Native Hawaiian fashion, dating at least from the later pre-Contact period (if not earlier), traditional people in this area would have moved between the coast and the upland agricultural fields, exploiting the full range of resources available within their *ahupua`a.* Semi-permanent and permanent habitation probably occurred in both coastal and upland settings.

The traditional district of Ka`anapali, where the project area is located, consisted of five major stream valleys (Honokowai, Kahana, Honokahua, Honolua, and Honokohau), all of which were extensively terraced for wet taro (*lo`i*) in early historic and later times (in Honokohau, well into the 1930s). Honokahua Valley, just northeast of the project area, was described as having wet taro (*lo`i*) lands, although of no great abundance (according to Handy quoting D.L. Fleming, in Sterling 1998:52). Sweet potatoes were reportedly grown between Honokohau and Kahakuloa Ahupua`a, presumably on lower *kula* lands and, south of the project area, Kahana Ahupua`a was known as a place of salt gathering for the people of Lāhainā (Sterling 1998).

There are six bays located on Maui's west shore whose names begin with the word *hono*. These bays and coves are collectively known as *Hono a Pi`ilani* (the bays beginning with Hono, ruled by Kihapi`ilani), which referred to a vision predicting the prominence of Kihapi`ilani over his brother, Lonoapi`ilani in ruling Maui in the early 1600s (Clark 1980; Cordy 2000; Manu 1884). Kapalua is situated along this coast between Honokahua and Honokeana. The coastal and marine environments adjacent to the project area would have provided rich resources for traditional subsistence foragers and fishermen in ancient times.

A large number of fish species are found in the near-coastal waters: *weke* (*Mulloidichthys auriflamma*), *kumu* (*Upeneus prophyreus*), *mamo* (*Abudefduf abdominalis*), *manini* (*Acanthurus triostegus*), *palani* (*Acanthurus bariene*), *enenue* (*Kyphosus fuscus*), *kukala* (*Diodon hystrix*), *hinalea* (Family, Labridae), *uhu* (*Scarus perspicillatus*), *`ala`ihi* (*Holocentrus* sp.), *kala* (*Acanthurus* sp.), and *nehu* (*Anchoviella purpurea*). In addition to a relatively high density of gastropods and pelecypods (including *Nerita picea* and *Littorina pintado*), at least five species of sea urchin have been noted: *Centrechinus paucispinus, Tripneustes gratilla, Podophora atrata, Heterocentrotus mammillatus,* and *Echinometra mathaei* (Kirch 1973).

Early archaeological surveys identified seven religious shrines (*heiau*) from Mahinahina to Honokohau Ahupua`a (Thrum 1909, 1917; Walker 1931). No *heiau* were documented in the project area (Nāpili 2–3 Ahupua`a), nor in the adjacent (to the southwest) Honokeana Ahupua`a. The closest *heiau* reported by these early surveys was located in the adjacent (to the northeast) Honokahua Ahupua`a (Kahauiki Heiau, Walker Site No. 16), just over 1.0 km northeast of the project area. *Heiau* indicate the presence of political power and the appropriate population to support it.

Traditionally, trails extended from the coast to the mountains, linking the two for both economic and social reasons. Ka`anapali District is noted for an *alaloa* (a path or trail) that reportedly encircled the entire island. Walker (cited in Sterling 1998:46) wrote:

> The north end of Maui also is traversed by a paved trail. Sections of it can be seen from Honolua to Honokohau to Kahakuloa. It is paved with beach rocks and has a width of four to six feet...This trail is also spoken of as the Kihapiilani Trail.

A large *luakini heiau* (*heiau* for human sacrifice) that was only built by paramount chiefs, was reportedly located on a cliff on the east side of Honokohau Valley, some 60 m above the seashore (Honokohau Ahupua`a, east of the Honokahua Burial Site). Most significantly, Kamakau (in Sterling 1998) reported oral history accounts of a 'death pit' at 'Waiuli' (also Honokohau Ahupua`a), near Honokohau and Honolua, into which dead commoners from Lahaina to Kahakuloa, as well as Moloka`i, were thrown. He says:

> Waiuli was a death pit wherein the dead bodies of commoners were thrown. It is right above Honokohau and Honolua, and from Lahaina to Kahakuloa those are the burial places. If the dead are of Molokai, or of Lanai, they too are sent there. Waiuli's death pit

> is large, of perhaps a mile in depth, the bottom of which reaches water....

A *ko`a* (fishing shrine, Walker Site No. 17), located "[*makai*] to Honolua Park along the shore" (Honolua Ahupua`a), was described by Walker (Sterling 1998:53). He also reported oral history accounts of a *hōlua* (slide or sledding ramp) at Honolua Ahupua`a that was destroyed by the time of his survey (1920s–30s) by commercial agriculture.

Kamakau recounts the results of a war between Kauhi-pumai-kahoaka (or Kauhi-`aimoku-a-Kama) and Kamehameha-nui in 1735, both children of Kekaulike. Alapa`i of Hawai`i Island had joined forces with Kamehameha-nui and a year was spent preparing for the war "which swept the country" (Kamakau 1961:74). Alapa`i tactics included drying up some of the main streams, which in turn dried up the brooks and taro patches. This reduced food not only for Kahui's forces, but also the *maka`āinana*. Honokahua and Honolua Bays near the project area became the gathering place for the forces of Peleioholani who had come from O`ahu to assist Kauhi. While attempting to unite its warriors with those of Kauhi, Peleioholani became surrounded by the army of Alapa`i where Kamakau says:

> The hardest fighting, even compared with that of Napili and at Honokahua in Ka`anapali, took place on the day of the attack at Pu`unēnē. Pele-io-holani was surrounded on all sides, *mauka* and *makai*, by the forces of Alapa`i, let by Ka-lani-`opu`ū and Keoua. The two ruling chiefs met there again, face to face, to end the war and became friends again, so great had been the slaughter on both sides [Kamakau 1961].

EARLY HISTORIC

Most of the *ahupua`a* on the coast have been overshadowed by the famous roadstead and village that served as the capitol of the Hawaiian Kingdom after the conquest of Kamehameha until 1855. The ethnographic and historic literature, often our only link to the past, reveal that the lands around Lāhainā were rich agricultural areas irrigated by aqueducts originating in well-watered valleys with permanent occupation predominately on the coast. Crops cultivated included coconut, breadfruit, paper mulberry, banana, taro, sweet potato, sugar cane, and gourds.

Handy and Handy (1972) quote Vancouver's naturalist and surgeon Menzies (in 1793) and traveler Arago (in 1819) as marveling at the state of cultivation and fertility of the greater Lahaina area, which was extensively planted with wet taro (*lo`i*) and other subsistence crops (*e.g.*, breadfruit, sweet potato, and coconut palms).

Menzies, the naturalist and surgeon on board HMS Discovery during Captain George Vancouver's 1793 tour, made these observations of the region:

> [We]...soon entered the verge of the woods where we observed the rugged bands of a large rivulet that came out of the chasm cultivated and watered with great neatness and industry. Even the shelving cliffs of rock were planted with esculent roots, banked in and watered by aqueducts from the rivulet with as much art as if their level had been taken by the most ingenious engineer...[Menzies 1928:105].

Little had changed twenty-six years later when J. Arago visited Hawai`i with Captain Louis de Freycinet in 1819. He recorded:

> The environs of Lahaina are like a garden. It would be difficult to find a soil more fertile, or a people who can turn it to greater advantage...various sorts of vegetables and plants...amongst which we distinguish the Caribee-cabbage, named here taro; double rows of banana, bread-fruit, cocoa-nut, palma-christi, and the paper-mulberry trees...[Arago cited in Handy and Handy 1972:493].

THE GREAT MĀHELE

In the 1840s, traditional land tenure shifted drastically with the introduction of private land ownership based on Western law. While it is a complex issue, many scholars believe that in order to protect Hawaiian sovereignty from foreign powers, Kauikeaouli (Kamehameha III) was forced to establish laws changing the traditional Hawaiian economy to that of a market economy (Kame`eleihiwa 1992:169–70, 176; Kelly 1983:45, 1998:4; Daws 1962:111; Kuykendall 1938 Vol. I:145). The Great Māhele of 1848 divided Hawaiian lands between the king, the chiefs, the government, and began the process of private ownership of lands. The subsequently awarded parcels were called Land Commission Awards (LCAs). Once lands were thus made available and private ownership was instituted, the *maka`āinana* (commoners)—if they had been made aware of the procedures—were able to claim the plots on which they had been cultivating and living. These claims did not include any previously cultivated but presently fallow land, *`okipū* (on O`ahu), stream fisheries, or many other resources necessary for traditional survival (Kelly 1983; Kame`eleihiwa 1992:295; Kirch and Sahlins 1992). If occupation could be established through the testimony of two witnesses, the petitioners were awarded the claimed LCA and were issued a Royal Patent after which they could take possession of the property (Chinen 1961:16).

Nineteen Land Commission Awards (LCA) are on record for Honolua Ahupua`a, just northeast of the project area. These documents indicate land use for taro and sweet potato cultivation, *kula* lands (roughly 'pasture'), and house lots. One of these awards (LCA 4243C) is located at the mouth of the Honolua Stream, along the coast. It was used for sweet potato cultivation (Fredricksen and Fredricksen 2003). No LCAs were located in the project area.

HISTORIC LAND USE

An 1831 census estimated the entire population of Ka`anapali District to be 2,980 people, which was reduced to less than half (1,341) only five years later probably due to introduced diseases (Schmidt 1973). Whaling (centered on Lahaina Town) was the first commercial enterprise in West Maui, but it had more or less collapsed by the 1860s. Commercial sugar cane production was the next large capitalist venture in West Maui, starting as early as 1863, and it was focused between Ka`anapali and Lahaina.

The area in and around the project area, which was located at the margins of sugar cane enterprises in West Maui (Dorrance and Morgan 2000), was most important as a center of commercial ranching (cattle raising) and, subsequently, pineapple production.

In the late 18th to early 19th century, the entire *ahupua`a* of Honokahua, immediately adjacent to (north of) the project area was given to Isaac Davis by Kamehameha I. Following the death of Davis in 1810, the land was eventually passed onto a succession of owners, from John Young to both Davis' and Young's heirs (1835) to Davis' daughter (Kele Sally Davis) during the Mahele (1848) (LCA 8522-B, RP 2236). In the later 19th century, these lands became part of the Campbell Estate. This was also the time that the Honolua Ranch was first established. Cattle ranching began then and was continued by Henry Perrine Baldwin, who acquired the lands from the Campbell Estate in 1890 (Fredricksen and Fredrickson 2003). In addition to ranching, other early commercial activities included coffee farming.

David T. Fleming became manager of Honolua Ranch in 1911 (or 1912). Fleming was well-versed in pineapple production from the Haiku area and gradually began shifting the ranch's initiative to pineapple production. The Honolua Ranch/Baldwin Packers complex shifted from Honolua to Honokahua in 1915, and a pineapple cannery was constructed. A major commercial pineapple industry emerged in West Maui during the 1920s. The plantation communities of Honokahua and Nāpili emerged and developed as Honolua Ranch/Baldwin Packers pineapple operations grew. The population of the Lahaina area increased with the successful economic operations of the pineapple plantation. Baldwin Packers merged with Maui

Pineapple Company in 1962 to form Maui Land and Pineapple Company, Inc. After this time, much of the Honolua Ranch lands were converted for resort development, a process that continues to this day. Both the Ritz-Carlton Kapalua and the Residences at Kapalua Bay are part of this ongoing process.

The Honokahua Historic District (SIHP No. 50-50-01-1591) is located just east of the project area. This historic district includes the plantation village of Honokahua, the Baldwin Packers cannery and associated facilities, Honolua Ranch Stables, Honolua Ditch (constructed in 1902), the Maui Pineapple Company offices, the Honolua Store, plantation camp housing, and two churches (Fredricksen 2001).

The Honokahua Burial Site (-1342) is included with five other traditional sites in the Honokahua Archaeological District (-1340). The cemetery is included on the National Registry of Historic Places. The cemetery was used by Native Hawaiians from as early as A.D. 700 to 800, to as late as the early 19th century (Donham 2000). At least 1,029 sets of human remains were excavated.

INTERVIEWS

Individuals that were interviewed by SCS in order to obtain information concerning their knowledge of Kapalua or its vicinity included Clifford Nae`ole, Cultural Advisor for the Ritz-Carlton Hotel and a member of the Maui Burial Council; Wesly Nohara, Manager of Maui Land and Pineapple Honolua Office; Sila Kaina, Cultural Advisor for the Kapalua Bay Hotel; Betty Taira, Makanani Catugal, and Yolanda Dukes, all former residents of Honokahua and employees of the Kapalua Bay Hotel. Transcripts of the interviews are found in Appendix A. Appendix B contains the signed information release forms. A brief summary of the information is provided below.

SUMMARY OF INTERVIEWS

Clifford Nae`ole is the Cultural Advisor for the Ritz-Carlton Hotel in Kapalua and a member of the Maui-Lāna`i Burial Council. Although he was not born in Kapalua, he is well aware of both the ancient and modern history of the region. Clifford knows where the culturally sensitive areas are around Kapalua, and as landscape changes and general development occur he prevents negative impact to those sites. He feels that access to the beach is important for fishermen, people gathering coastal resources and just for "plain meditation." There is a place where *limu kala* along with another *limu* considered to be very spiritually powerful, is cultivated.

He has been told of new, upcoming development plans to construct a hiking trail along the coastline. Clifford believes this trail would be good, but he is also concerned about keeping the spirituality of the place. Clifford mentioned there is a point in front of the hotel that is considered a *leina a ka `uhane*, or leaping off place for the soul, similar to Keka`a in Lahaina that needs to be protected. Fishing *ko`a* that at one time were on the beach disappeared with the building of the hotel. Other cultural artifacts have been found and moved to safer places rather than have them defaced.

"Access with dignity" is a term used by Clifford and refers to local people being able to park their cars and go down to the coast without being made to feel "shame." Clifford believes that the rights of the visitors and the local residents should not be infringed upon. Clifford feels that whoever is developing needs to make sure there is "access with dignity" for the local fishermen, practitioners of hula, chant, etc. He is also concerned that the developers be sensitive to the proper protocol, ceremonies, and notification of the Burial Council in the case *`iwi* are uncovered. Clifford said, "it's just vital the 'host' and 'hosted' feel equally as comfortable within the confines or shores of this island."

Wesly Nohara, Manager of the Maui Pineapple Company, Honolua Plantation, was born and raised in one of Kapalua's plantation camps right by Honolua Store. Both his father and grandfather worked for the Pineapple Company. Wes' memories of the area where the Kapalua Bay Hotel is located included the Boy Scout Camp grounds, the old beach club built by the Plantation and used for various functions, an open grassy area with coconut trees, a restroom facility, and the peacefulness of the Bay, which he considers ideal for children. Kapalua Bay was called Fleming's Beach in those days. Wes would go spear fishing there because it was so calm, but it was mostly popular as a family snorkeling area. Some fishing occurred on the two points on either side of the bay. Hāwea Point was a popular fishing spot. His father would go to a particular area to pick *ogo*, a Japanese seaweed. Wes mentioned that there were about five places where people can access the beach.

An interview was held at the Kapalua Bay Hotel with Sila Kaina, Cultural Advisor for the hotel; and Betty Taira, Makanani Catugal, and Yolanda Dukes—all long- time residents in the Kapalua area. As there were four people present and offering information, a compilation of the discussion follows.

While listening to these women, it became evident that all informants share a "sense of place" at Kapalua. That is, it is culturally patterned and includes happy childhood memories,

traditional family gathering practices, and an association with Hawaiian history. These factors all produce feelings of love and respect for their home. Much of the past is entwined with activities and institutions present in plantation life, such as large families congregating on holidays and the use of various fixtures provided by the plantation for everyone's enjoyment. Some of these, of course, ended with the closing of the various camps and the plantation itself. Other activities such as fishing, camping on the beach, gathering *`opihi* and *maile* continued after the plantation's closing, as they were cultural activities. Regular use only diminished as commercial development made access difficult.

All of the informants agreed that development impacts the continuation of a 'local' lifestyle. The women feel that private owners keep local people from the areas they have traditionally used. The informants reported that when they use old trails to cross private land, "...they really gonna hassle us, or they going kick us out." Because of this, local people stop going to these places. More public parking and access is needed to ensure that local residents can in fact have "access with dignity." To Kaina, Taira, Catugal, and Dukes, "access with dignity" means that local people should not be made to feel that they are second-class citizens when trying to visit these areas. They should not have to justify or defend their purpose to private landowners or to security guards when trying to go to the beach for any activity. With the changes that appear to be coming, especially if membership is required, there is a fear that access will be even harder to find. It was suggested the developers consult with cultural advisors in the area. In this way, the rights of the private landowner and the rights of native Hawaiians can both be honored and protected.

All agree it is a shame to tear down a hotel known for its graciousness and peaceful environment. They feel there are few Hawaiian hotels in this genre left. The women explain how the guests are welcomed back again and again by employees who also feel it is special place and love being there. For these women, it is not just a job, but also a daily enjoyment to come to work.

RECOMMENDATIONS

The redevelopment at Kapalua Bay will not affect current access points, public parking lots, and restroom facilities. The current public access to the shoreline through the site, as well as 10 on-site public parking stalls, will be maintained. At the Kapalua (Fleming's) Beach site, public access to the beach will still be found south of the Coconut Grove Condominiums. The 39 public parking stalls as well as restrooms and showers for the public will be maintained. At Oneloa Bay, public access to the beach is provided adjacent to the Kapalua Place residential

property. In addition to the public access path, 20 public parking stalls and showers will be maintained. At the D. T. Fleming Beach Park (in front of Honokahua Beach), 70 public parking stalls as well as restrooms and showers will remain in place. This beach park is under a "Charitable Lease" (from Maui Land and Pineapple Inc.) to the County of Maui for the cost of one dollar per year. Maui Land and Pineapple maintains the parking lot. Finally, at Makaluapuna Point, public access and 10 public parking stalls will remain. In addition to the existing facilities, Kapalua Bay LLC is proposing a lateral shoreline trail in front of the Residences that will eventually run the entire length of the Kapalua coast and beyond. Figure 3 provides a map of where these areas are located.

Some of the informants were concerned that their access to or traditional use of this area of Maui may be encumbered due to the proposed Kapalua Bay LLC redevelopment. Because Kapalua Bay LLC plans to maintain these existing public facilities, it is thus recommended that Kapalua Bay LLC initiate correspondence or dialogue with the public regarding its maintenance of these facilities. In order to preserve native Hawaiian rights and the ability of the local community to access, gather, and perform other customary activities that have continued along the coast *ad infintum* (Hawai`i State Law, Article XII, Section 7; Act 50), communication and consultation between the developers (Kapalua Bay LLC) and cultural practitioners, especially regarding access to the shore and its resources, should take place during the planning process. In this way, appropriate mitigation measures, if needed, can be put in place before redevelopment occurs.

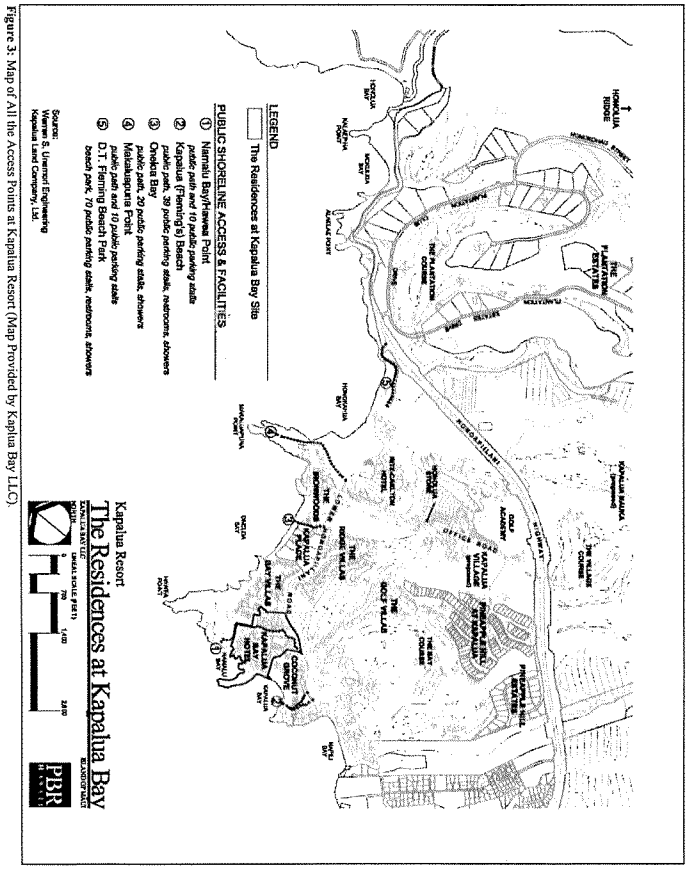

Figure 3: Map of All the Access Points at Kapalua Resort (Map Provided by Kapalua Bay LLC).

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APPENDIX A: TRANSCRIPTS OF INTERVIEWS

Interview with Clifford Nae`ole, Cultural Advisor for the Ritz-Carlton in Kapalua, concerning the Kapalua Bay Hotel area held at the Ritz-Carlton Hotel in Kapalua, Maui on January 21, 2005. Present are Clifford Nae`ole (CN) and Leann McGerty (LM) from Scientific Consultant Services, Inc.

LM: ...This is the 21 on Friday of January 2005, and we're here at the Ritz-Carlton Kapalua with Cliff Nae`ole and he is the Cultural Advisor for the Hotel, is that correct?

CN: Cultural Advisor for the Ritz-Carlton Kapalua and the Kapalua Resort. So I have two purposes here.

LM: O.k. and, uhmm, what we're looking at is a, we're doing a Cultural Impact Assessment for the area down at the Kapalua Bay Hotel.

CN: Correct.

LM: And, uhmm, I guess it's not well known at the moment that there's going to be some building done, but it was suggested that I get a jump-start and come over...

CN: Announcement has been made, but the real extent of the construction-slash-rebuilding of the area is not really known yet, to what extent.

LM: In other words, they don't know themselves?

CN: The public.

LM: The public doesn't know.

CN: Correct, correct.

LM: How extensive is it going to be?

CN: Well, I don't know. All I hear is what I read in the newspaper as far as the breaking down of the Kapalua Bay Hotel and in its place will be, I believe, the [indistinguishable] Time-shares, vacation rentals, and Ritz-Carlton residences, with the efforts to relocate these buildings further back, away from the shoreline for public use.

LM: I see, o.k. That's such a beautiful hotel, I'm surprised they're going to...

CN: Yeah, but I guess, it's a old hotel, as they say it's rotting from the outside...from inside out, so things have to change, yeah?

LM: Oh, yeah. Cliff, you're from Kapalua area?

CN: No, I'm from Wailuku. I'm a member of the Maui-Lana`i Island burial Commission. So I am pretty familiar as to what went on here and, uh, am always in touch with any finds or any surveys that are being done throughout the area.

LM: Yeah, that's great. May I ask your age?

CN: Fifty-two.

LM: So, you're from Wailuku originally? But because of your position on the Burial Council, you would, you certainly were around when they were doing the original Kapalua...

CN: Actually, I wasn't around when it was originating, I came in to this after the fact, however, because working at the Ritz-Carlton, having to know the history of the Ritz-Carlton, you automatically had to know the history of what went here, went on here at the dunes of Honokahua, and then now, with the development of Kapalua, I have to be aware of whatever landscaping changes are there, just to know that there are some highly sensitive areas within the dunes here.

LM: Right. Where were the Honokahau dunes?

CN: Honokahua dunes were, you can see the hedge there? Any thing fronting the hedge through the ocean is sand dune and burial site.

LM: So, it's been...the hotel did move at the time, didn't it

CN: Correct.

LM: And they have that area, ah...

CN: Sealed off with a native *hau* hedge and public entry prohibited, unless you're a native Hawaiian conducting ceremony of protocol, or escorted by a member of the Burial Council.

LM: Yeah, I was just curious, because it was...of course, when it was happening, it was ...well, it changed the Burial Laws in Hawai`i.

CN: This was Ground Zero.

LM: Yeah, yeah, exactly! However, what I'm interested in is the impact that it might have on people, for instance, fisherman, that want to get down to the beach. I don't whether....there seem to be some prime areas along here...

CN: Sure, absolutely!

LM: ...and I'm wondering if access is provided by the hotels, or that sort of thing.
CN: You know, I am not aware of access provided by the hotel. There are many points and bays outside of the hotel that public access is provided and they can go down through there, from

there I'm assuming they can just hike the coast line and come back towards the hotel, or go further away from the hotel. It is a very rugged and natural area and fish are plentiful. So it is important that the fishermen do have access there. Not only for fishermen but for the gathering of seaweed, or just for plain meditation.

LM: Exactly! As a matter of fact, when I was down there at the hotel (Kapalua Bay Hotel), I was looking over at Moloka`i and I was thinking, "Gee, I wonder if you're over on Moloka`i looking over at night....", I mean it must change the whole...you must be able to (see the lights), well, I know you can, cause I remember being on Moloka`i and seeing all the lights on this coast. It's interesting how everything we do kind of impacts all the surrounding, yeah?

CN: Sure, right, right.

LM: So, you, of course of all people, would be aware of any areas that are held in particular regard for gathering, like you say, *limu*, or even plants. I don't know, ocean plants , or anything down on the coast. Do you know of any in the vicinity?

CN: Well, again, I'm more familiar with the coast line here in front of the hotel [Ritz Carlton]. There's a great place...the point out here...now it escapes my mind, but that is a leaping point spiritually for souls. Like Keka`a in Lahaina....

LM: And Ka`ena Point and...

CN: In Ka`ena, same here, It's a *lele`uhane*, *leina*...but it's a leaping point. [*Leina a ka `uhane*]

LM: *Leina pō*?

CN: Yeah, so that is very significant, there. Also, there's a great place where the cultivation of *limu kala*, a very spiritual and powerful *limu*, is as well. So, that has to be kept. I am under the understanding that the new development will pose and construct a hiking trail along the coast line.

LM: They will oppose it?

CN: No, they will construct a hiking trail. I think it's like 20 miles of hiking trail around the coast line. That's good! That's good!

LM: Yeah!

CN: But again, we just need to take a look and make sure that it doesn't become....well, we need to make sure that the spirituality side is taken care of as well. Whether it be markers, "Keep Out" signs, etc., that type of think. And then of course, still allowing free access for the fishermen. That is crucial.

LM: You know, a lot of times...a lot of the fishermen that go down, at least on O`ahu, maybe not so much Maui, they're older people. And I know that, I remember seeing on the Big Island, that, "Oh, yeah, we'll make access" [say the developers] , and they do, but you have to hike like ten miles to get down to the ....

CN: Right, yeah. They give you two parking spaces and you gotta hike 10 miles.

LM: Exactly! Exactly! So, that's what I'm thinking, I'm wondering if...the trail sounds great, but if there is only a entrance here and an entrance there [at each end of the 20 mile trail]...you know what I'm saying.

CN: Well, yeah, that's where the developers will have to take that into concern. I'm hoping that, you know, the input from people as myself and yourself and whoever else is on this interview, knowing that there will have to be access. Access with dignity. Meaning being able to feel comfortable parking your car and going down there.

LM: That is perfect! What you just said, cause I was really interested, cause I'm dressed in jeans and a T-shirt, right? And I was really interested, I went down and walked through the hotel. I was really interested in the response [from hotel people] cause I thought., "Well, hey", you know, I`m pretty casual, this is how local people dress. And everyone was extremely polite and very nice, and you, you didn't know that I was coming to interview you, when I came into the hotel. Immediately you said...you know, you greeted me without any, you know without any looking up and down [critically] or anything.

CN: I was admiring your *kupe`e!* [laughs]

LM: Oh, my *kupe`e*, I know from Kealakekua. I love these. So, that's really important, you're right. That's the perfect phrase, "access with dignity," not being made to feel shame.

CN: Correct. It's a ....yeah...

LM: Very important, very important, yeah.

CN: That people can feel a sense of well being coming to the shores of this island and not feel that they're infringing upon the visitors rights and...

LM: Or, that it's not their own anymore.

CN: Correct, that they've lot it. So, whoever's developing needs to make sure that that is obliged for the local fishermen, practioners of hula, chant, etc.

LM: That's really important, I hope you don't mind, I'm going to use that phrase a lot in my CIAs, because that really encapsulates what's important on these access places, yeah. So you know of the jumping off place like Ka`ena Point, you know about the *limu* and you know about...are there other areas that you know that have significance? That people might want to ....are there *ko`a*, fishing *ko`a*?

CN: there were fishing *ko`a*, they have since been disappeared. With the construction of this hotel, there was a large shaping rock that had been removed.

LM: Shaping rock? For adzes?

CN: Correct. Right. I just got the call yesterday, they're bringing it back. Very cool. So, something from the past is now come back and it's going to be put on to the burial site within sight of people so they can learn. And it's a sad testament where as they would have put it back where it was, it would probably be graffitid and destroyed.

LM: To bad, yeah.

CN: Yeah, but as far as fishing *ko`a* is concerned, there probably were, I just don't know exactly where they were.

LM: The rock, the shaping rock, was that near a quarry? Was there a quarry near by?

CN: There was a quarry near by and it was on D.T. Fleming's, the new D.T. Fleming's Beach, right down here. What I would assume, is that, for instance when you go places where the old Hawaiian fishermen, you would find the *kōnane* boards. A way to pass the time. I would assume that that may have been a way to pass the time as well. They may have been fishing at the same time they're shaping [indistinguishable].

LM: Yeah. Exactly. You know, on Moloka`i, there's a couple of places that we found on Moloka`i just like that down at Mo`omomi. There's no quarry but there's an area, you know, where you can over look the little Mo`omomi Bay, or whatever it's called, and flakes all over the place! So you know that's what they were doing. They were sitting there and just passing the time and making tools and things.

CN: that was their "Game Boy".

LM: Yeah! That's right [laughs]. That was their "Game Boy".

CN: But I don't know of any specific names or sites. You know, at this point cause everything has been so developed, I'm not even sure where the sand dunes are anymore! So, with the construction, with the test cores being drilled, They would have to come from a point backwards, knowing, "Oh, here starts the cultural layer", and then this is what we need to watch out for.

LM: Right, right. When they first built that hotel there wasn't any archaeology done, was there? It was before the fact?

CN: No, this is rock filling that they moved...Kapalua Bay Hotel you're referring to?

LM: Yeah.

CN: I'm not sure when it was found.

LM: When was it built?

CN: Jees, it gotta be at least 30, almost 40 years ago, probably.

LM: So, way before this.

CN: Yeah, way before it was a rock resort. Now when they did the excavation for the new, I think it's called Coconut Grove, there. You have the hotel and right next, right adjacent to the hotel is Coconut Grove vacation Townhouses, etc. They did find some *iwi* there. So, it's safe to assume that that is part of a dune system and it will be highly sensitive to [indistinguishable].

LM: Yeah. I wonder why in this area, why, it's not typical to find a burial ground of that size.

CN: Well, we need to remember that because water was plentiful. Because the ground was fertile. Because there were nice streams that came down to the ocean and because the harvest of fish was great, this was a perfect place to live! So, it was habi...this was a place of living. And then with this type of bays, there was only a few sand dunes. So, this a choice place to be buried, in the dunes, you see.

LM: So, this vacation rentals, are they...which side of the Kapalua....

CN: If you're looking at the ocean, you here looking at the ocean, The hotel is here and then there's beach and then the vacation rentals are along this beach here and then you have the old Bay restaurant. You have the restaurant, you get... and then you have a big hotel here. So it's on the left hand side of the hotel.

LM: So, it's on the Lahaina side?

CN: Correct. In that sandy bay, there.

LM: And they don't plan on doing any ...

CN: Construction there? No, I don't believe so. I don't believe so. At first glance, you would think that they're just going to take the hotel down, everything underneath, it has already been impacted. Therefore, there's a very, very scarce chance of finding artifacts or bones, but being on the Burial Council, that theory has flown out the door. We were finding them six inches to a foot underneath the top layer.

LM: Oh, yeah. There're places in downtown Honolulu where, you know, big parking garages, Marin Tower and places we thought, "Oh, there's nothing there!" And you took'um down and it just, you know, it was just...everything was there still except for where the pillars went down. So, you're right, there could be all sorts of interesting results from that.

CN: My, my question to developers is, I hope they are sensitive enough to already know what they need to do if these things are found. And that, because of this Cultural Assessment thing,

because of SCS, they've already experience in dealing with these matters so I feel comfortable in the fact that things will be done correctly, the Burial Council will be notified, and the correct ceremony and protocol [indistinguishable].

LM: I would assume that State Historic Preservation would insist that there be monitoring from the word go.

CN: Oh, yeah, especially at Honokahua and Honolua, here.

LM: Yeah, exactly, so I would assume that the minute anything is spotted it would just be, you guys would be notified right away. Well, I can't thing of anything else. It sounds like that you are well aware of the sensitive areas right in this vicinity and people who want to visit these places, will be able to, and it's just a question of making sure that the new development allows that as well.

CN: Correct. It's just vital the "host" and the "hosted" feel equally as comfortable within the confines or shores of this island, that's all. If I think of anymore significant, historical, or spiritual importance here, I'll definitely call you and let you know.

LM: Yeah, good. As a matter of fact, I should give you my card.

CN: Yes, please. Are you an archaeologist as well?

LM: I am, yeah, actually. You know, this Cultural Impact Assessment....

Tape turned off and end of interview.

Interview with Wes Nohara, Manager of Maui Pineapple Company's Honolua Plantation, who was born and raised in Kapalua, concerning the Kapalua Bay Hotel area. The interview took place at Starbuck's coffee shop near the airport on January 26, 2005. Present are Wes Nohara (WN) and Leann McGerty (LM) from Scientific Consultant Services, Inc.

LM:...twenty-sixth, two thousand and five and we're at Starbuck. Wes Nohara is here and we're going to talk about Kapalua. And, so you work for the pineapple company now, but you were born and raised in Kapalua, or..?

WN: Yeah, right where Honolua Store is? There was a old pineapple village, that's where I was born and raised.

LM: Yes, yes. Oh, alright. Because I went down there last week to see Cliff Nae'ole, and talk to him and I went to the store. So, that was the whole village, yeah? Well, what I'm trying to identify are areas, sensitive areas that might be impacted by the rebuilding of this hotel. Uhmmm, if there are, for instance if there are paths that go down to ocean that fishermen have been using for many, many years, those need to be protected. And that's the kind of thing I'm interested in. Any places that you knew of when you were growing up that would have cultural significance. Not just to Hawaiians, but to anyone.

WN: And when you say the "hotel," you talking about the Kapalua Bay Hotel.

LM: Right, yeah. Cause I guess that's what they're going to be doing renovations on or, actually taking it all down, I guess, and putting something new up.

WN: [yes] O.K.

LM: So, do you know of any places like that that had that kind of significance in that area?

WN: Well, as far as I remember, right where the hotel is located there was an old beach club house that the company...Maui Pineapple Company, had built and was used for functions. Supervisors could a...not lease, but actually reserve and utilize the place for company functions. It was kind of a open, grassy area with a lot of tall coconut trees. With restroom, I believe...yeah, there was a restroom facility there. and between where the hotel is and the Bay Club Restaurant, there was a Boy Scout camp grounds that was very popular. Boy Scouts from all over the islands used to go there every now and then to have camp-outs and the Company would allow the scouting units to go ahead and camp there. Over where the Bay Club Restaurant is now, there was a shower facility and toilets for the public use and, ah, this whole beach area was a favorite amongst locals for taking their children for swimming, cause it's always so calm and peaceful in there. So, as children we used to go there a lot.

LM: What was it called? Did it have a name?

WN: We used to call it "Fleming's Beach."

LM: Oh, o.k.! So, now what they're Fleming's Beach is more...

WN: Right. Yeah, I believe the rightful name for that beach is "Kapalua", Kapalua Beach, but, you know, most people just called it "Fleming's Beach."

LM: Who was Fleming?

WN: David Fleming, David T. Fleming was, I believe, one of the first managers for our company.

LM: So, then, the pineapple,...Maui Pine sold the land to these guys?

WN: No, you talking about..?

LM: The Kapalua Bay Hotel.

WN: I believe, originally, we built the hotel and it was our hotel. And then, I believe it changed, we sold it, I believe to Rolfing, Mark Rolfing, who then sold it to someone else and then, full circle, came back to us.

LM: When was it build, do you know?

WN: I would be guessing...but it was the first hotel ...twenty, twenty years?

LM: I would think so. It was way before the Ritz-Carlton, wasn't it?

WN: Oh, yeah.

LM: And the Ritz-Carlton was twenty years ago. That was in the early eighties. Cause that's when they started uncovering all the burials. So it must have been 70s? Yeah, maybe 1970s. You were born ...your dad worked to the a, for Maui Pine as well?

WN: Yeah, actually my granddad started working for the company. Back then we weren't Maui Pineapple Company, we were called the Baldwin Packers...and that was 1920s and my dad was born and raised there and worked for the pineapple company since a young youth, retired there. I started there in 1969.

LM: You did?

WN: Yeah, as a seasonal high school worker in the summer months and graduated...worked my way through college working for the pineapple company, graduated from college in 1979, worked full time since then.

LM: Wow! So, when were you born? I'm sorry, you were born...

WN: Nineteen fifty-four.

LM: And you were living there at the time, in Kapalua?

WN: Yeah. Right *mauka* of the Honolua Store was a village, actually, we called it "Japanese Camp", that's where I was...[born].

LM: The fishing looks pretty good over in that area.

WN: It can be. Yeah, it really wasn't that, wasn't that popular of a fishing site.

LM: It wasn't? So, there weren't special spots that, like your grandfather or others would go to? Maybe some?

WN: I know that I used to go there for spear fishing only because it was so calm, when other places was to rough, I'd go there. But, whenever I'd go there I didn't expect to get a whole lot, because there really wasn't....it was more for a family snorkeling kinda recreational use type area. Picnics, popular for picnics...when you get out to the points then, there's two points jutting out on either side, some fishing used to occur there, but that was more the fishing, the rest is the inside of the bay was mostly used for swimming and recreation.

LM: Do you recall any stories about the area, old Hawaiian stories, did people ever uncover anything?

WN: No, I don't...other than, it was popular place for families to go and the company employees for functions. I don't remember any significant finding there.

LM: People didn't come down to get any particular kind of *limu*? Did you see Hawaiian families as a kid down there?

NW: My father used to go down in the far corner and get some, what we call *ogo*.

LM: *Ogo*. What is that? I know that name.

WN: It's a seaweed that a...a very popular seaweed that they make a, like a little vinegar salad.

LM: Do you know what it's called in Hawaiian?

WN: No. It's a *limu*.

LM: Is it brown?

WN: Brown to red, brownish red. Sometimes real goldish color, too.

LM: So that was there, uhmmm, *`opihi*?

WN: There's some, but it wasn't, that's not a....If I was gonna get `opihi, that's not where I'd go. Right where the Cliff House, the Cliff House was always there as a youth, so, yeah, it was a very reserved, secluded area for upper management. Not just anybody could get the Cliff House.

LM: I don't where that...I must have seen the Cliff House...

WN: It's right to the, if you facing the beach, right to the right of the hotel. It's still there.

LM: O.k. and it's part of the hotel now?

WN: Yeah, I think the hotel has some rights to it and so does Maui Land and Pine.

LM: I see. When the hotel...you might not know this, when the hotel was built do you know whether any archaeology was done? I don't think It probably was because it was before Kapalua, I mean it was before the Ritz-Carlton. I think that was like the landmark when it comes to doing that sort of thing.

WN: I don't know. No, I'm not sure if any archaeological work was done.

LM: And you never heard any stories about when they were building the hotel, Oh we found this, or that"?

WN: No.

LM: Yeah. So basically you remember it being as a family place and now those activities have switched to what they're calling Fleming Beach now, right?

WN: Fleming's Beach now is a totally different type of beach. So, I don't think you would take your kids there for snorkeling, it's more open to the wind and the waves. I think you can still get to that Kapalua Beach. There is a public access, or stuff like that. So, I that's...if I was going take my kids, I'd still take'um there.

LM: So, is the public access pretty easy to get, you know find and everything? It's not like 10 miles from the beach and you have to hike along a path and...

WN: No. You just...it's a small parking lot, but just park and walk under a little tunnel, you're right at the beach.

LM: So, the families that...of course the plantation families have all scattered, but, you know, if they are and they wanted to go back to the beach, there shouldn't be a problem doing that. They'd be able to do that?

WN: No. Yeah.

LM: Yeah. that seems to be the main thing that I'm hearing, is that, there needs to be access for the local people to go ahead and enjoy the, you know, enjoy the bay, yeah? You can't think of anything else that might be of significance, then?

WN: At that location?

LM: Yeah.

WN: Other than the beach front and the coconut trees and the facilities I described, the back side was mostly *kiawe*. There was a dirt road that went into the Cliff house, and if you took that road further in, it would take you all the way to what we call Hāwea Point and that was a popular fishing site. But...the point's still there. Actually, you can drive, if you had the proper access and keys, but...you can still walk in today. You can park and walk in.

LM: the Cliff house was then part of Maui Pine...?

WN: Yes.

LM: And may still be?

WN: It still is.

LM: How far a walk is it out to Hāwea Point.

WN: From where?

LM: From where, lets say the gates are locked.

WN: In the old days?

LM: No...now you say you can still get out there if we wanted to?

WN: I think there's a public parking at the Kapalua Bay Hotel, and then you can walk in, so it's actually...to me it's closer now than it used to be before.

LM: Yeah, yeah. So it's still accessible, though.

WN: Yeah. I would say, to get to the very tip of point, it's a good ...between a quarter and a half a mile.

LM: Very often it seems that some of the prime fishing areas are still used by older people and it can be a problem if they want to get to these fishing places if they can't find access, you know, except for five miles away or something...it becomes more of a difficulty than...I wanted to ask you, you know when I walked through the hotel, walked down, walking out towards the point that's right in front of the hotel and that whole grassy area where the pool is. Was that sand before or did they bring sand in for fill? I'm just curious.

WN: Actually there was sand and dirt. There was…I remember there was quite a bit of sand already covered part of the…if you dug underneath, it was dirt, but there was quite a bit of sand on the dirt.

LM: …brought up by the waves and everything. But there was dirt there, it wasn't like lava rocks and…

WN: No, it was dirt.

LM: I was just curious about that. And the closer I got to the point, you know how the rocks are on a point, and then I thought, "Well, I wonder if they brought fill in," to …

WN: Plant the grass.

LM: But you remember dirt being there.

WN: there was dirt and sand.

LM: You don't recall any fishing *ko`a* in the area, that were used either to …for people that were out in the ocean and they would, you know, triangulate and…

WN: Oh, o.k. Well, my dad-folks were boat fishermen too, and they use to use triangulation to get their bearings?

LM: On land marks? On any particular land marks?

WN: Yeah, they used to have certain landmarks and they would try and line up and line up….

LM: And that would be where the *ko`a* was…

WN: Yeah.

LM: But, we're talking like maybe a mountain or we're talking about a valley or something, right, rather than something on the beach.

WN: Yeah, right.

LM: Well, it sounds like, as far as you know, things will not be impacted any more than they have been already and the main thing would be access and seems to be still there and would be in the future. So, that's all I need.

WN: there's quite a few access points. They're not real large parking areas, but, you know, there's, all along the areas, like there's certain public access. On the other side by the Bay Club, there's one and at the Kapalua Bay Hotel there's one, and what we call the "Ironwoods", there's another one and by the Methodist, well, they call it Kumulani Chapel there's another one. And on the other side, by D.T. Fleming Park there's another one.

LM: So, that's quite a number and people, local people do use these?

WN: Oh, yeah.

LM: Sometimes, I saw this on the Big Island years ago, sometimes the hotels say, "Yes, we'll give access." and they do, but it's so difficult, or as you say, small parking, but small parking and then you have to walk, and walk, and walk, and walk. You know, local people, after while, they just stop going and stop enjoying the things, you know. So, but it sounds like there's quite a number right along that area, so it shouldn't be too much of a problem for people. And they are still using those areas.

WN: Actually, in terms of access, in terms of distance-wise, it's better now than when I was a kid!

LM: You can get closer?

WN: Yeah.

LM: Yeah, before you have to start walking. Well, I appreciate the time that you've given me, in coming all the way down from Hāli`imaile…

WN: Sorry about that.

LM: No, not at all. The only other thing I'd like to do [take picture]

End of interview

Interview at the Kapalua Bay Hotel with Sila Kaina, Cultural Advisor for the hotel, Betty Taira, Makanani Catugal, and Yolanda Dukes, long- time residents in the Kapalua area. The interview was held on February 1, 2005. *As there were four people present and offering information, this transcription is a compilation of the discussion. Because of the informal venue, it was difficult to identify who said what, therefore, a summary of the discussion is presented below. Each person was able to read the compilation and make corrections or additions, as needed. When I met with them, they had just been told about the changes that are proposed to take place to the Kapalua Bay Hotel.*

While listening to these women, it became evident that the "sense of place" present at Kapalua, is culturally patterned and includes happy childhood memories, traditional family gathering practices, its association with Hawaiian history, all of which produce love and respect for their home. Much of the past is entwined with activities and institutions present in plantation life, such as large families congregating on holidays and the use of various fixtures provided by the plantation for everyone's enjoyment. Some of these, of course, ended with the closing of the various camps and the plantation, itself. Other activities, fishing, camping on the beach, gathering *`opihi* and *maile* were continued, as they were cultural, and only diminished as commercial development made access difficult.

Childhood Memories

There was a Boy Scout camp, a "Show Hall", and a private restroom where the present hotel is located. Families were able to rent the facilities from the Maui Land and Pineapple Honolua Office for special events and permits for camping in the area could also be requested. The Show Hall was used on holidays, such as Thanksgiving and Christmas when all the plantation families would bring their children for a celebration. The Supervisor's house could be rented for parties and *lū`au* and the plantation had dug a place for an *imu*. The bay was calm and safe for children and there are fond memories of camping in the Boy Scout camp, fishing in the cove, and swimming in the bay. The Boy Scouts would have their annual Jamboree here. The plantation had provided a cement pit for bonfires. There was a big, grassy lawn that was a good place to sit and eat. All these facilities were for the plantation workers and their families and disappeared along with the plantation life. As development evolved, camping permits were no longer issued.

Resource Gathering

These bays are known as the "Bays of Pi`ilani" and were highly valued by Hawaiian *ali`i* because of the rich resources found there, not only in the ocean, but continuing up into the valleys, rich with taro and overflowing with fresh water.

The coves linking the larger bays together were like stalls in a fish market. Each cove had its own specialty. In one area, there would be limited *limu* picking. One cove supported lots of free diving for *he`e*. Another place would provide Hā`uke`uke. Yolanda and mother used to get up at 6 am and go down the foot path to Oneloa Bay for *`opihi* picking. A Japanese plantation family would fish for *akule* in one cove. At Oneloa, there was a stepping stone where the "Kiloman" (fish spotter) would stand and give signals to the fishermen in the boats as to the location of the big *akule* in deeper waters It was suggested that this may have been a traditional lookout site for fishermen. Sila's dad would go to different coves for different ocean resources. *Enenue*, and *lohe*, would be found in one cove, Kapalua and Napili Bay would provide *manini*,

and *kala*. Between Bay Villas and a point beyond Hāwea Point, there was a special place where he would obtain Hā`uke`uke. As kids they would sit up on cliffs watching sea turtles while he got sea urchin and crab (*`a`ama*). Sila says, "that's how we knew these places." Yolanda's brother-in-law still does some of this gathering.

Inland resources were also known to the local residents of the area. Sila's father knew where to find *maile li`ili`i* and medicinal plants, like *koali*. There is no access to these areas today; however, this is an example of the traditional familiarity Hawaiians and local people had with the *ahupua`a* in which they lived just within the last 20 years.

An interesting anecdote was told of a local Napili family whose *`aumakua* was the *manō* who traveled between Honokeana and Napili Bay, and often appeared in Kapalua Bay. The family that stills lives in the area would go down to the bay and feed their *manō `aumakua*. This was done quietly, as a private offering by the older members of the family. This practice ended with the building of the hotel.

`Iwi

All remember the unfortunate circumstances surrounding the building of the Ritz-Carlton Hotel and the uncovering of thousands of burials in Honokahua Beach. As this hotel [Kapalua Bay Hotel] was built over thirty years ago before there were laws requiring archaeological investigation, they are concerned that remains might be buried under the hotel and would undoubtedly be disturbed during any reconstruction. Human bones were uncovered in The Coconut Grove area during construction. It was also revealed that on the hotel's opening day in the 1970s, there was inexplicitly no water. A relative of one our interviewees was working for Hawaiian Dredging and as he dug down into the ground he uncovered bones. He was very distressed when his boss told him, "Cover 'em!".

Through the years, there have been many disturbing occurrences that have been attributed to possible undiscovered burials. Before the hotel was built, there were reported sightings by campers of Night Marchers on the beach (along with beating drums and torches), and it was said that the Land Company office had been built on the old warriors' path. Several guests have reported seeing "spirits," and one said she witnessed warriors marching through the hotel grounds to the beach. Although there have been many blessings, in various rooms, housekeepers have seen furniture moving about. Most of the "ghost" stories originate from the Lahaina side of the hotel. In the past, one of the managers of the hotel would inspect the rooms. A certain Manager came back to the office very upset and said he had a terrifying experience. Immediately, the Deacon of Mormon Church was called and asked to pray. From then on, the Manager would never go on a room inspection alone. He never told what happened, but said he had been "absolutely terrified". Several other of the rooms have had to be blessed because of the presence of spirits. In spite of these experiences, most of the occurrences are benign and, although disconcerting, not considered to be foreboding.

Access

Before development, Hāwea point was sand dunes from the Highway to the point. The cove there is well known for net throwing because it is shallow, and in the evening crabbing. It

is very deep off the point, attracting turtles into the area. Even today, people pole fish from the point.

When the Bay Villas were first built, there was a fence preventing the access of fishermen and local people to the beach, as well as Hāwea Point. It was very difficult to get to the point and fish. Hotel security would stop the local fishermen from crossing Hotel land. Sila's father, who passed away in 1995, argued with the security at the Bay Villas who would not let him pass to go fishing. She said, "And the saddest thing is, you know, he was like, he was fighting, he says, 'You know, I'm a *kanaka*! I've been roaming this bay area and you telling me you not gonna let me pass?' and you know, the security literally, literally escorted him out with a police officer! There had been a lot of thefts, but he was obviously going to his fishing grounds."

About ten years ago, a Manager of the Kapalua Bay Hotel, Brett Huske, had the present pathway built to provide access to Hāwea Point. However, it is still difficult to get to where the pole-stands are located. Fishermen have to follow the boundaries private property, the Bay Villas, and then the Kapalua Bay Hotel. But people still go there for to fish. Presently the access for fishermen is out by Site One parking lot which also has a designated parking area for a few cars. This is not the traditional path to the beach and the point.

Many years ago, Mr. Cameron from the plantation, made another access on the other side which included a public shower, parking, and a tunnel providing entry to the original Fleming beach (Kapalua Beach). It was greatly appreciated and locals would come early in the morning, lay their net in the bay, and enjoy the bay.

Summary:

The consensus is that development impacts the continuation of local lifestyle. Private owners keep the local people from the areas they have traditionally used. If you go on the old trails across their land, "...they really gonna hassle us, or they going kick us out." Because of this, local people stop going to these places. What is needed is more public parking and access. Not just access, but access with dignity. This means local people should not be made to feel that they are second-class citizens when trying to visit these areas. They shouldn't have to justify or defend their purpose to private landowners' or to security guards when trying to go to the beach for any activity. With the changes that appear to be coming, there is a fear that access will be even harder to find. It was suggested the developers consult with Cultural advisors in the area. In this way, the rights of the private landowner and the rights of native Hawaiian's can both be honored and protected.

All agree they will miss the graciousness and peaceful environment. There are so few Hawaiian hotels in this genre left. Guests are welcomed back again and again by employees who also feel it is special place and love being there. For these women, it is not just a job, but also a daily enjoyment to come to work.

APPENDIX B: CONSENT FORMS

INFORMATION RELEASE FORM

I, the undersigned participated in an interview with Scientific Consultant Services, Inc. on 1-21-05 of the year 2004. Scientific Consultant Services, Inc., Senior Archaeologist, Leann McGerty conducted the interview on the Island of Maui, State of Hawai`i.

I understand that the information I have provided to Scientific Consultant Services, Inc., shall be submitted as a part of a Cultural Impact Assessment report on a development project in Ukumehame Valley (TMK: 4-08-002:09), on the island of Maui.

I have read the transcript of the interview and the information is true and accurate to the best of my knowledge. By signing this release form, I am providing my approval for the release of the information to Scientific Consultant Services, Inc. For the purpose outlined above.

Date of recorded interview JAN-21, 2005

Print Name: CLIFFORD J. NAE'OLE

Signature: Clifford Naeole

Release Dated: 4-01-05

INFORMATION RELEASE FORM

I, the undersigned participated in an interview with Scientific Consultant Services, Inc. on Feb 1 of the year 2005. Scientific Consultant Services, Inc., Senior Archaeologist, Leann McGerty conducted the interview on the Island of Maui, State of Hawai`i.

I understand that the information I have provided to Scientific Consultant Services, Inc., shall be submitted as a part of a Traditional Cultural Assessment report for the vicinity of the Kapalua Bay Hotel on the island of Maui.

I have read the transcript of the interview and the information is true and accurate to the best of my knowledge. By signing this release form, I am providing my approval for the release of the information to Scientific Consultant Services, Inc. For the purpose outlined above.

Date of recorded interview Feb 1 2005

Print Name: Betty Taira

Signature: Betty Taira

Release Dated: 4/4/05

INFORMATION RELEASE FORM

I, the undersigned participated in an interview with Scientific Consultant Services, Inc. on _____ of the year 2004. Scientific Consultant Services, Inc., Senior Anthropologist, Leann McGrady conducted the interview on the Island of Maui, State of Hawai'i.

I understand that the information I have provided to Scientific Consultant Services, Inc., shall be submitted as a part of a Cultural Impact Assessment report on a development project in Ukumehame Valley (TMK: 4-08-002:09), on the island of Maui.

I have read the transcript of the interview and the information is true and accurate to the best of my knowledge. By signing this release form, I am providing my approval for the release of the information to Scientific Consultant Services, Inc. For the purpose outlined above.

Date of recorded interview: 4/4/05

Print Name: Drusilla L Kaina

Signature: Drusilla L Kaina

Release Dated: 4/4/05

INFORMATION RELEASE FORM

I, the undersigned participated in an interview with Scientific Consultant Services, Inc. on _____ of the year 2004. Scientific Consultant Services, Inc., Senior Anthropologist, Leann McGrady conducted the interview on the Island of Maui, State of Hawai'i.

I understand that the information I have provided to Scientific Consultant Services, Inc., shall be submitted as a part of a Cultural Impact Assessment report on a development project in Ukumehame Valley (TMK: 4-08-002:09), on the island of Maui.

I have read the transcript of the interview and the information is true and accurate to the best of my knowledge. By signing this release form, I am providing my approval for the release of the information to Scientific Consultant Services, Inc. For the purpose outlined above.

Date of recorded interview: _____

Print Name: YOLANDA K. DUKES

Signature: Yolanda K Dukes

Release Dated: 4/4/05

INFORMATION RELEASE FORM

I, the undersigned participated in an interview with Scientific Consultant Services, Inc. on Feb 1 of the year 2005. Scientific Consultant Services, Inc., Senior Archaeologist, Leann McGerty conducted the interview on the Island of Maui, State of Hawai`i.

I understand that the information I have provided to Scientific Consultant Services, Inc., shall be submitted as a part of a Traditional Cultural Assessment report for the vicinity of the Kapalua Bay Hotel on the island of Maui.

I have read the transcript of the interview and the information is true and accurate to the best of my knowledge. By signing this release form, I am providing my approval for the release of the information to Scientific Consultant Services, Inc. For the purpose outlined above.

Date of recorded interview Feb 1 2005

Print Name: Makanani Catugal

Signature: Makanani Catugal

Release Dated: April 4, 05

INFORMATION RELEASE FORM

I, the undersigned participated in an interview with Scientific Consultant Services, Inc. on January 26 of the year 2005. Scientific Consultant Services, Inc., Senior Archaeologist, Leann McGerty conducted the interview on the Island of Maui, State of Hawai`i.

I understand that the information I have provided to Scientific Consultant Services, Inc., shall be submitted as a part of a Cultural Impact Assessment report on a development project at the Kapalua Bay Hotel (TMK: 4-02-004:27, 28, 2, 33), on the island of Maui.

I have read the transcript of the interview and the information is true and accurate to the best of my knowledge. By signing this release form, I am providing my approval for the release of the information to Scientific Consultant Services, Inc. For the purpose outlined above.

Date of recorded interview 1/26/05

Print Name: Wesley Nohara

Signature: Wesley Nohara

Release Dated: 2/14/05

F

Transportation Impact Analysis Report

Traffic Assessment Report

The Residences At Kapalua Bay

Submitted to:
Kapalua Bay LLC

Submitted by:
Wilson Okamoto Corporation

April 2005
(Revised)

TRAFFIC ASSESSMENT REPORT

FOR

THE RESIDENCES AT KAPALUA BAY

Prepared for:

Kapalua Bay LLC
1000 Kapalua Drive
Lahaina, Maui, Hawaii 96761

Prepared by:

Wilson Okamoto Corporation
1907 South Beretania Street
Honolulu, Hawaii 96826
WOC Ref: 7322-01

April 2005
(Revised)

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I. INTRODUCTION

A. Purpose of Study

The purpose of this study is to identify and assess the traffic impacts resulting from the proposed Residences at Kapalua Bay. The proposed project site is adjacent to the existing Kapalua Bay Villas and the Coconut Grove at Kapalua Bay in West Maui. The project entails the redevelopment of the existing hotel site to include approximately 155, 2- and 3-bedroom units of which approximately 90 units shall be solely owned with the balance of approximately 65 units intended for fractional use. The traffic assessment evaluates traffic impacts associated with the proposed development.

B. Scope of Study

This report presents the findings and conclusions of the traffic study, the scope of which includes:

1. Description of the proposed project and proposed development plan.
2. Evaluation of existing roadway and traffic operations in the vicinity.
3. Analysis and development of trip generation characteristics for the proposed project.
4. Development of traffic projections and future traffic conditions.
5. Superimposition of site-generated traffic over future traffic conditions.
6. The identification and analysis of traffic impacts, if any, resulting from the proposed project.
7. Development of recommended roadway or intersection improvements, as appropriate, to mitigate the identified traffic impacts resulting from the proposed project.

II. PROJECT DESCRIPTION

A. Location

The project site is located in Kapalua on the makai side of Honoapiilani Highway (State Route 30) along the ocean coastline. The project site is further identified as Tax Map Keys: 4-2-04: 27, 28, and 29. Access to the project site is

through Lower Honoapiilani Road via Office Road and/or Honoapiilani Highway. Figure 1 shows the Location Map.

B. Project Characteristics

The proposed redevelopment of the existing Kapalua Bay Hotel site to The Residences at Kapalua Bay includes a total of 155, 2- or 3-bedroom units and associated amenities for residents and guests. Of the 155 units, approximately 90 units shall be solely owned with the balance of approximately 65 units planned for fractional use. The existing hotel currently includes 196 hotel units. The reduction in unit count and general land use change are expected to reduce traffic demands in the vicinity. Build-out of the proposed project is anticipated to occur in Year 2008. Figure 2 shows the project site plan.

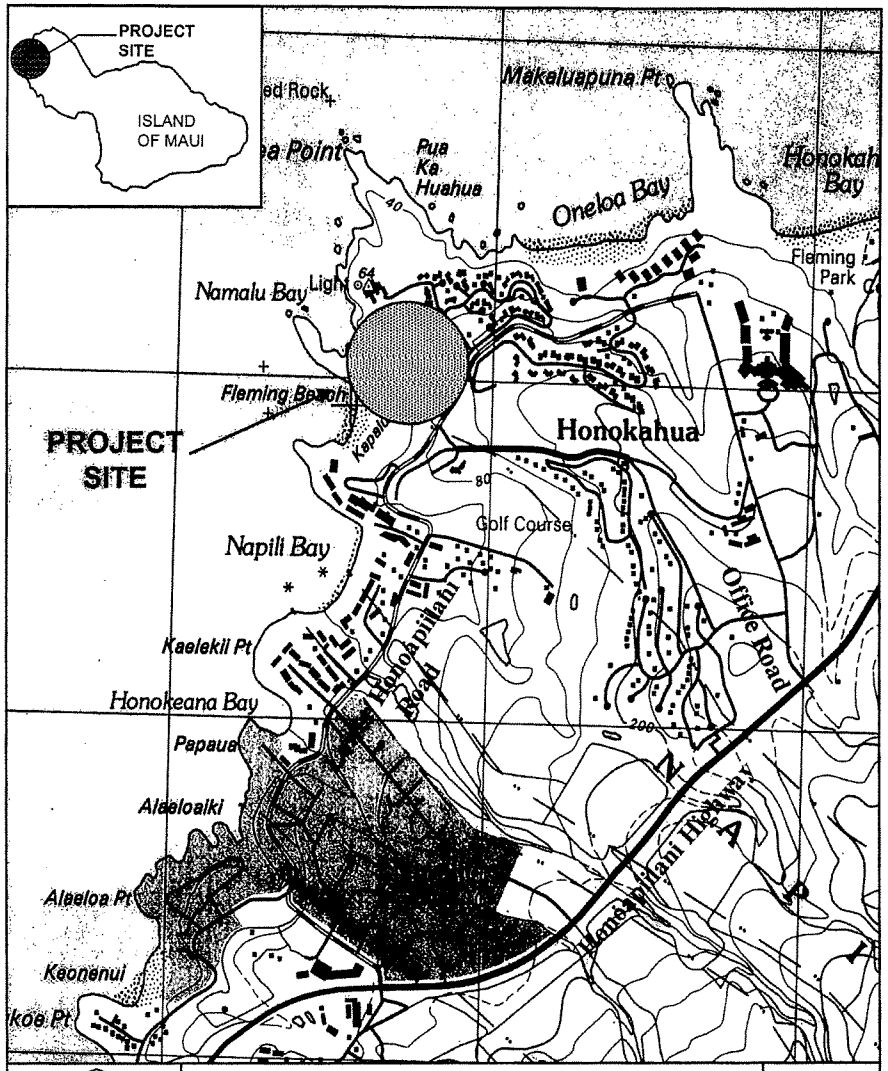
III. EXISTING CONDITIONS

A. General

Access routes to and from the proposed project site is via Lower Honoapiilani Road through the intersections of Honoapiilani Highway with Office Road and Lower Honoapiilani Road. Honoapiilani Highway serves as the primary arterial roadway in the region oriented along the west Maui coast and connects to other regional highway systems serving other parts of the island. In the project vicinity, Honoapiilani Highway is generally linked to mauka-makai collector roads that serve the surrounding residences, resort areas, agricultural lands, and adjacent commercial areas. Figure 3 shows the lane assignments of the study intersections along Honoapiilani Highway.

B. Area Roadway System

In the vicinity of the proposed project, Honoapiilani Highway is primarily a two-way, two-lane, undivided State highway (Route 30) with a general posted speed limit of 45 miles per hour (mph) in the project vicinity. Honoapiilani Highway is the primary arterial in West Maui that is oriented in the north-south directions providing regional access along the coast with other areas of the island. Between Lower Honoapiilani Highway and Dickenson Street in Lahaina, Honoapiilani continues as a



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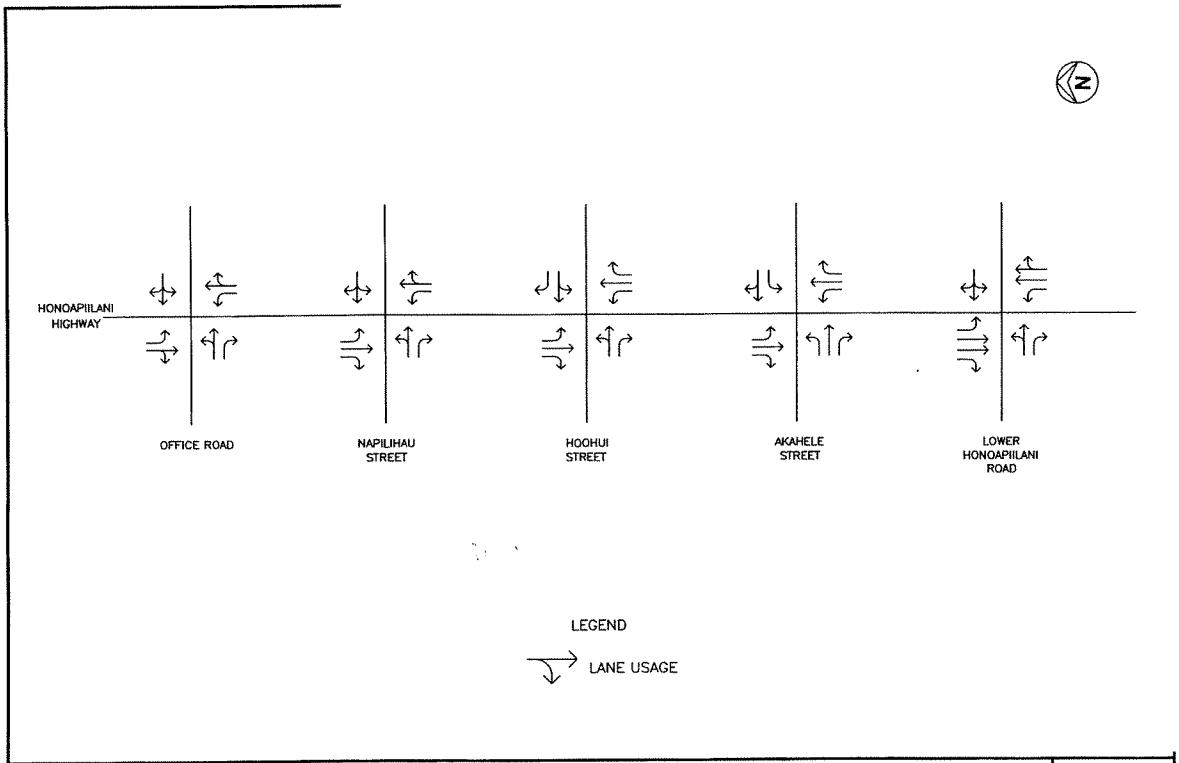
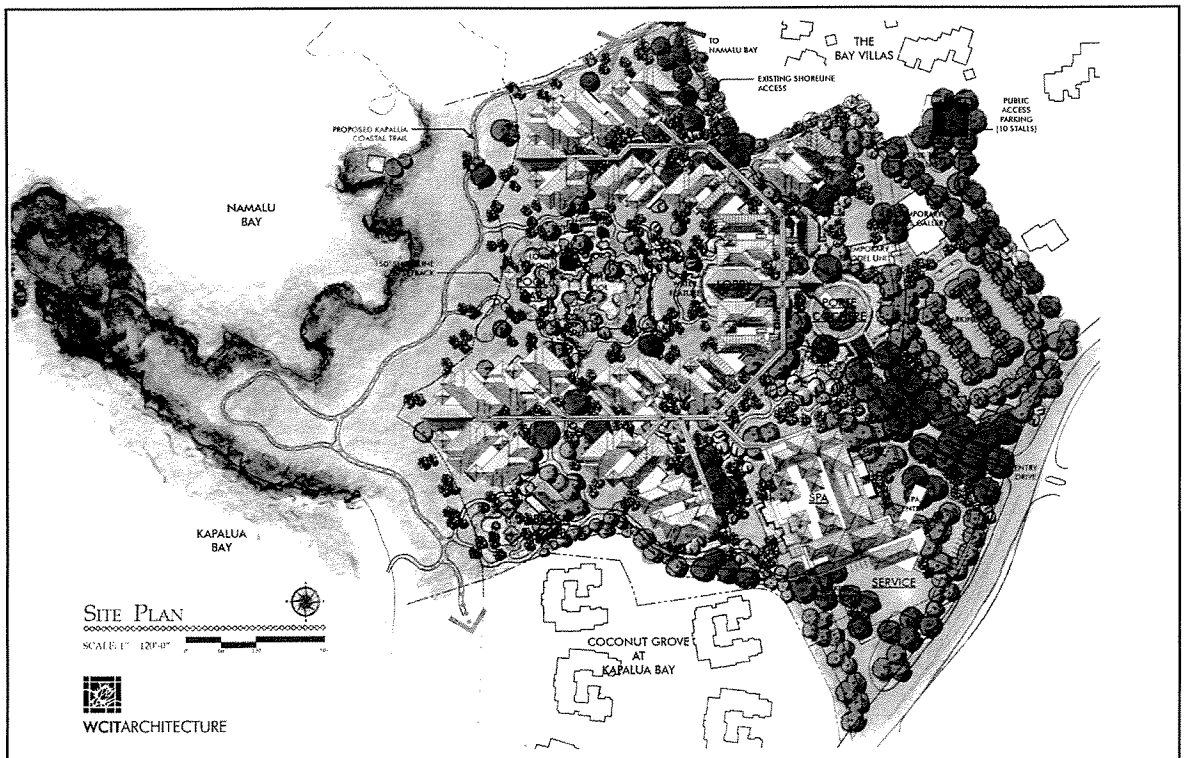
LOCATION MAP AND VICINITY MAP

FIGURE 1



WILSON OKAMOTO CORPORATION ENGINEERS · PLANNERS	THE RESIDENCES AT KAPALUA BAY EXISTING LANE CONFIGURATIONS	FIGURE 3



WILSON OKAMOTO CORPORATION ENGINEERS - PLANNERS	THE RESIDENCES AT KAPALUA BAY PROJECT SITE PLAN	FIGURE 2

two-way, four-lane, undivided roadway. South of Dickenson Street, Honoapiilani Highway continues as a two-way, two-lane, undivided roadway.

In the vicinity of the project site, Honoapiilani Highway intersects with Office Road. Office Road is a two-lane collector road serving the Kapalua resort area oriented in the mauka-makai directions with a posted speed limit of 25 mph. Office Road intersects with Honoapiilani Highway to the east with plans of extending further mauka to support development of lands on the slopes of the West Maui Mountains in the future. The intersection of Honoapiilani Highway and Office Road operates as an unsignalized intersection with stop-controls provided for Office Road. The northbound and southbound approaches of the intersection include exclusive left-turn lanes and shared through and right-turn lanes. The Office Road approach of the intersection services left-turn, through, and right-turn traffic movements. On the west side near the project site, Office road terminates at Lower Honoapiilani Road providing access to uses on the makai side of Kapalua along the coast. This intersection includes one lane on each intersection approach servicing all permitted traffic movements.

South of the intersection of Honoapiilani Highway and Office Road, the highway intersects with Napilihau Street. Napilihau Street operates as a two-way, two-lane, County of Maui roadway with a posted speed limit of 20 mph. The Ironwood Ranch and operations associated with Maui Pineapple Company, Ltd. are located on the mauka side of the intersection with future plans of developing the Maui Preparatory School located further mauka on the slopes of the West Maui Mountains. The uses on the makai corners of the intersection include the Honolua United Methodist Church and Pre-School, and the Napili Plaza commercial area. The intersection of Honoapiilani Highway and Napilihau Street services traffic utilizing a three-phase traffic signal system. The lane designations on the northbound approach of the intersection serve exclusive left-turn, and shared through and right-turn traffic movements. The lane designations on the eastbound approach of Napilihau Street serve exclusive right-turn, and shared through and left-turn movements, while the

one-lane westbound approach is designated as shared between left-turn, through, and right-turn traffic movements.

Approximately 1.5 miles south of the intersection with Napilihau Street, Honoapiilani Highway intersects with Hoohui Road that is generally a two-way, two-lane, County of Maui roadway with a posted speed limit of 20 mph. The Kahana Ridge residential subdivision is located on the mauka side of the intersection with the Kahana Shopping Center located on the makai side. The intersection is controlled by a traffic signal system with lane designations on both the southbound and northbound approaches serving exclusive left-turn, through, and right-turn traffic movements. The lane designations on the eastbound and westbound approaches of Hoohui Road serve shared left-turn and through traffic movements, and exclusive right-turn traffic movements.

Approximately 4,000 feet further south of the intersection with Hoohui Road, Honoapiilani Highway intersects with Akahele Street. Akahele Street is generally a two-way, two-lane, County of Maui roadway with a posted speed limit of 30 mph. The Kapalua West Maui Airport is located on the mauka side of the intersection with residential homes on the makai side. The intersection is controlled by a traffic signal system with lane designations on both the northbound and southbound approaches of Honoapiilani Highway serving exclusive left-turn, through, and right-turn traffic movements. The eastbound and westbound approaches of Akahele Street both serve exclusive left-turn, and shared through and right-turn movements.

At the southern end of the project study area, Honoapiilani Highway intersects with Lower Honoapiilani Road. Access to the project site may be achieved through the intersection of Honoapiilani Highway and Lower Honoapiilani Road. Lower Honoapiilani Road traverses northward from the Honoapiilani Highway intersection through resort and commercial areas, hotels, residences, and other areas of accommodations, and continues as a private road through the Kapalua resort area near the project site. The prevailing posted speed limit on the roadway is 20 mph. The intersection of Honoapiilani Highway and Lower Honoapiilani Road is controlled by a traffic signal system utilizing a 3-phase signal operation with northbound and

southbound left-turn lanes, and a southbound deceleration lane on the highway. The traffic on eastbound approach of Lower Honoapiilani Road at the intersection is serviced by a shared left-turn and through lane, and an exclusive right-turn lane. The westbound approach of the intersection has one lane servicing left-turn, through, and right-turn traffic movements.

C. Traffic Volumes and Conditions

1. General

a. Field Investigation

The field investigations were conducted on March 16 and 17, 2004, and October 20 and 21, 2004. The field investigation consisted of manual intersection turning movement count surveys and field observations of traffic conditions in the vicinity. The traffic count surveys were conducted between the morning peak hours of 6:00 AM and 8:00 AM, and between the afternoon peak hours of 3:00 PM and 6:00 PM at the intersections of Honoapiilani Highway with Office Road, Napilihau Street, Hoohui Road, Akahele Street, and Lower Honoapiilani Road. Traffic data from other reports for proposed developments in the region were also evaluated to ensure an appropriate existing or baseline condition was used in the traffic analysis. These reference reports include: Kapalua Project District 2 Traffic Impact Analysis, dated December 2001, Kaanapali Vacation Club Traffic Impact Analysis Report, dated January 1997, Maui Preparatory Academy Traffic Impact Report, dated April 2004, Pioneer Farms Phases I and II Subdivisions Traffic Impact Report, dated December 2004, and Pulelehua Transportation Report, dated March 2, 2005. Although traffic demands at the study intersections were generally the same based on data collected for this study and recently collected data for other traffic studies in the region, the data set with the highest traffic demands at each of the study intersections were used in this study to represent a conservative approach to the traffic

analysis. In addition, 24-hour traffic counts were collected along the roadway segment of Honoapiilani Highway within the study area to verify peak traffic periods on the highway.

b. Capacity Analysis Methodology

The highway capacity analysis performed in this study is based upon procedures presented in the "Highway Capacity Manual", Transportation Research Board, 2000, and the "Highway Capacity Software", developed by the Federal Highway Administration. The analysis is based on the concept of Level of Service (LOS).

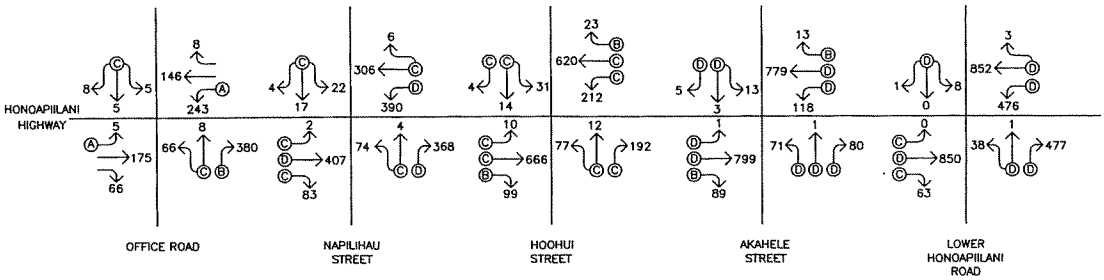
LOS is a quantitative and qualitative assessment of traffic operations. Levels of Service are defined by LOS "A" through "F". LOS "A" represents ideal or free-flow traffic operating conditions and LOS "F" represents unacceptable or potentially congested traffic operating conditions. LOS "B", "C", "D", and "E" represent the intermediate traffic operational characteristics between the two extremes of LOS "A" and LOS "F". The LOS definitions are included in Appendix B.

"Volume-to-Capacity" (v/c) ratio is another measure indicating the relative traffic demand to the roadway carrying capacity. A v/c ratio of one (1.00) indicates that the roadway is operating at or near capacity. A v/c ratio of greater than 1.00 generally indicates that the traffic demand exceeds the road's carrying capacity.

2. Existing Peak Hour Traffic

a. General

Figures 4 and 5 show the existing AM and PM peak hour traffic volumes and traffic operating conditions at the intersections of Honoapiilani Highway with Office Road, Napilihau Street, Hoohui Street, Akahele Street, and Lower Honoapiilani Road. The morning peak hour of traffic generally occurs between 7:15 AM and 8:15 AM at the study intersections and represent both school-related and commuter



LEGEND

90 TRAFFIC MOVEMENT VOLUME (VPH)

Ⓐ LANE GROUP LEVEL OF SERVICE

DATE OF COUNT: March 16 & 17, 2004 & October 21, 2004

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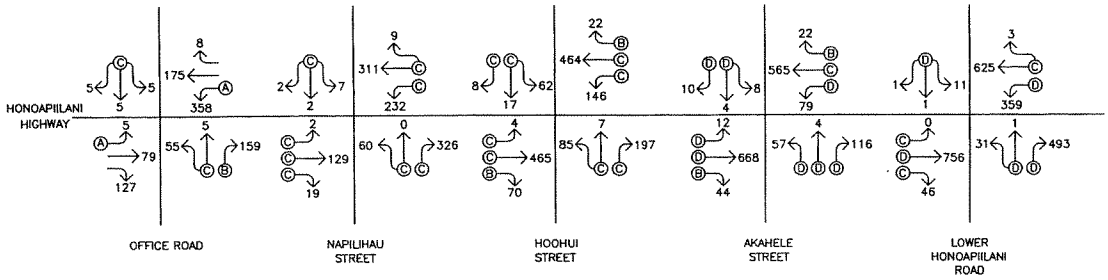
EXISTING PM PEAK HOUR OF TRAFFIC

FIGURE 5



LEGEND

90 TRAFFIC MOVEMENT VOLUME (VPH)

Ⓐ LANE GROUP LEVEL OF SERVICE

DATE OF COUNT: March 16 & 17, 2004 & October 21, 2004

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THE RESIDENCES AT KAPALUA BAY

EXISTING AM PEAK HOUR OF TRAFFIC

FIGURE 4

traffic since all of the available schools are located south of the study area. In the afternoon, the peak hour of traffic generally occurs between the hours of 4:00 PM and 5:00 PM in the project vicinity. To identify the traffic impacts associated with the proposed project, the traffic analyses are based on these peak hour time periods. LOS calculations are included in Appendix C.

b. Honoapiilani Highway and Office Road

At the intersection of Honoapiilani Highway and Office Road, the northbound and southbound left-turn movements operate at LOS "A" while the eastbound left-turn and through movement operates at LOS "C" during the AM peak hour of traffic. During the PM peak hour of traffic, the northbound and southbound left-turn movements also operate at LOS "A" while the eastbound left-turn and through movement continues to operate at LOS "C". The eastbound approach provides an exclusive right-turn lane that allows the right-turn movements to flow without impeding other traffic movements at the intersection. Maximum vehicular queue lengths on the eastbound approach of Office Road were observed to be very minimal with only a couple of vehicles queuing in the morning and an approximate maximum of three vehicles queuing in the afternoon. However, the vehicular queues would quickly dissipate since gaps in the through traffic stream on the highway are frequently available. During the PM peak hour, the eastbound maximum vehicle queues were longer at approximately four to five vehicles. However, like the morning peak hour of traffic, these queues would quickly dissipate since gaps in the through traffic stream on the highway are frequently available.

During the AM peak period, Honoapiilani Highway just south of Office Road carries 784 vehicles, 541 vehicles traveling northbound and 243 vehicles traveling southbound. Traffic volumes during the PM peak hour at the same roadway section are higher with a total of

957 vehicles on the roadway, 397 vehicles traveling northbound and 560 vehicles traveling southbound.

c. Honoapiilani Highway and Napilihau Street

At the intersection of Honoapiilani Highway and Napilihau Street, the traffic movements on both the northbound and southbound intersection approaches of Honoapiilani Highway operate at LOS "C" during the AM peak hour of traffic. During the PM peak hour, the northbound left-turn and southbound through traffic movements on the highway operate at LOS "D" while the remainder of the traffic movements at those approaches operate at LOS "C." All of the other movements at the intersection on the Napilihau Street approaches operate at LOS "C" or better during both the AM and PM peak hours of traffic, with the exception of the eastbound right-turn movement which operates at LOS "D" during the existing PM peak hours of traffic. Maximum vehicular queue lengths on the southbound approach of Honoapiilani Highway were observed to be between seven and nine vehicles in the afternoon. The maximum queue vehicle lengths for the northbound approach left-turn movement were between 11 and 13 vehicles during the afternoon. The vehicular queues of the other traffic movements would clear after each traffic signal cycle change during both the AM and PM peak hours of traffic.

During the AM peak period, Honoapiilani Highway just south of Napilihau Street carries 1,014 vehicles, 552 vehicles traveling northbound and 462 vehicles traveling southbound. Traffic volumes during the PM peak hour at the same roadway section are heavier with a total of 1,499 vehicles on the roadway, 702 vehicles traveling northbound and 797 vehicles traveling southbound. Although traffic volumes are relatively heavy, the traffic signal system at the intersection generally services the traffic demands during both the

morning and afternoon peak hours with occasionally queuing of specific movements.

d. Honoapiilani Highway and Hoohui Road

At the intersection of Honoapiilani Highway and Hoohui Road, the traffic movements on both the northbound and southbound intersection approaches of Honoapiilani Highway operate at LOS "C" or better during both the AM and PM peak hours of traffic. The other traffic movements on both the eastbound and westbound approaches of Hoohui Road operate at LOS "C" during the AM and PM peak hours of traffic. The intersection is channelized and allows right-turn movements on all approaches to flow without impeding other traffic movements at the intersection. Maximum vehicular queue lengths on the southbound and northbound approaches of Honoapiilani were observed to be between eight and ten vehicles in the afternoon. The maximum vehicle queue lengths for the eastbound and westbound approaches were observed at five to seven vehicles. However, all of the vehicle queues would clear after each traffic signal cycle change at the intersection during both the AM and PM peak hours of traffic.

During the AM peak period, Honoapiilani Highway just south of Hoohui Road carries 1,356 vehicles, 632 vehicles traveling northbound and 724 vehicles traveling southbound. Traffic volumes during the PM peak hour at the same roadway section are heavier with a total of 1,744 vehicles on the roadway, 855 vehicles traveling northbound and 889 vehicles traveling southbound. Although traffic volumes are relatively heavy, the traffic signal system at the intersection generally services the traffic demands during both the morning and afternoon peak hours with occasionally queuing of specific movements.

e. Honoapiilani Highway and Akahele Street

At the intersection of Honoapiilani Highway with Akahele Street, the northbound through and right-turn movements and the southbound right-turn movement of the highway operate at LOS "C" or better during the AM peak hour of traffic while both the northbound left-turn movement and the southbound left-turn and through movements operate at LOS "D". During the PM peak hour, however, both the northbound and southbound left-turn and through movements operate at LOS "D" while the right-turn movements for both the northbound and southbound intersection approaches of Honoapiilani Highway operate at LOS "B". During the AM and PM peak hours, the eastbound approach of Akahele Street also operates at LOS' D" as a result of the relatively heavy through traffic movements on the highway.

During the AM peak period, Honoapiilani Highway just south of Akahele Street carries 1,458 vehicles, 666 vehicles traveling northbound and 792 vehicles traveling southbound. Traffic volumes during the PM peak hour at the same roadway section are slightly heavier with a total of 1,802 vehicles on the roadway, 910 vehicles traveling northbound and 892 vehicles traveling southbound. The eastbound right-turn movement from Akahele Street to southbound Honoapiilani Highway is generally heavy during the morning peak hour that appears to comprise of commuter trips from the adjacent residential areas. Likewise, in the afternoon, the northbound left-turn movement from Honoapiilani Highway to westbound Akahele Street is also heavy which is inferred to be the returning commuter trips.

f. Honoapiilani Highway and Lower Honoapiilani Road

At the intersection of Honoapiilani Highway and Lower Honoapiilani Road, the northbound through and right-turn movement, and the southbound left-turn and right-turn movements of the highway

operate at LOS "C" while the northbound left-turn and southbound through movements operate at LOS "D" during the AM peak hour of traffic. During the PM peak hour of traffic, the southbound left-turn and right-turn movements continue to operate at LOS "C" conditions while the remainder of the movements at those approaches operate at LOS "D". The movements at the eastbound and westbound approaches also operate at LOS "D" during both peak hours of traffic. The southbound right-turn movement is channelized at the intersection approach that allows right-turn movements to flow without impeding other traffic movements at the intersection. Maximum vehicular queue lengths on the southbound approach of Honoapiilani Highway were observed to be between seven and nine vehicles per lane in the morning with maximum vehicular queue lengths on the northbound approach observed to be between 12 and 15 vehicles per lane during the afternoon peak period. However, the vehicular queues on the highway were observed to clear the intersection after each traffic signal cycle change during both the AM and PM peak hours of traffic.

During the AM peak period, Honoapiilani Highway just south of Lower Honoapiilani Road carries 2,247 vehicles, 987 vehicles traveling northbound and 1,260 vehicles traveling southbound. Traffic volumes during the PM peak hour at the same roadway section are heavier with a total of 2,666 vehicles on the roadway, 1,331 vehicles traveling northbound and 1,335 vehicles traveling southbound. Although traffic volumes are relatively heavy, the traffic signal system at the intersection generally services the traffic demands during both the morning and afternoon peak hours with occasionally queuing of specific and isolated traffic movements.

IV. PROJECTED TRAFFIC CONDITIONS

A. Site-Generated Traffic

1. Trip Generation Methodology

The trip generation methodology used in this study is based upon generally accepted techniques developed by the Institute of Transportation Engineers (ITE) and published in "Trip Generation, 7th Edition," 2003. The projected vehicular trips generated by the proposed project were based on the proposed number of dwelling units within the project. In addition, traffic generated by the existing Kapalua Bay Hotel were determined and subtracted from the future traffic conditions to account for the project site's new unit counts. Tables 1 and 2 summarizes the project site trip generation characteristics applied to the AM and PM peak hours of traffic for the development Year 2008. Table 3 shows the traffic generated by the existing Kapalua Bay Hotel that was discounted from the future traffic projections.

Table 1: Peak Hour Trip Generation – Recreational Homes

INDEPENDENT VARIABLE:		Dwelling Units Year 2008 90 units		
Period/Direction		**Rate**	**% Split**	**TRIP ENDS**
AM PEAK	ENTER	0.1000	67	9
	EXIT	0.0556	33	5
	TOTAL	0.1556	-	14
PM PEAK	ENTER	0.1000	41	9
	EXIT	0.1556	59	14
	TOTAL	0.2556	-	23

Table 2: Peak Hour Trip Generation – Resort

INDEPENDENT VARIABLE:		Dwelling Units Year 2008 65 units		
Period/Direction		**Rate**	**% Split**	**TRIP ENDS**
AM PEAK	ENTER	0.2615	72	17
	EXIT	0.1077	28	7
	TOTAL	0.3692	-	24
PM PEAK	ENTER	0.2154	43	14
	EXIT	0.2769	57	18
	TOTAL	0.4923	-	32

Table 3: Peak Hour Trip Generation – Existing KBH

INDEPENDENT VARIABLE:		Hotel Units Year 2008 196 units		
Period/Direction		**Rate**	**% Split**	**TRIP ENDS**
AM PEAK	ENTER	0.2704	72	53
	EXIT	0.1020	28	20
	TOTAL	0.3724	-	73
PM PEAK	ENTER	0.2092	43	41
	EXIT	0.2806	57	55
	TOTAL	0.4898	-	96

2. Trip Distribution

Access to the proposed Residences at Kapalua Bay would be via Lower Honoapiilani Road through the intersections of Honoapiilani Highway with either Office Road or Lower Honoapiilani Road, with some use of Napilihau Street. The directional distribution of all site-generated vehicular trips was assumed to remain constant for each analysis year. At the study intersections, the directional distribution of site-generated traffic was based upon the current commercial and employment distributions throughout the

area incorporating the direct path of travel to and from the proposed project. Figures 6 and 7 show the AM and PM peak hour traffic distribution of project site-generated traffic for each of the study intersection.

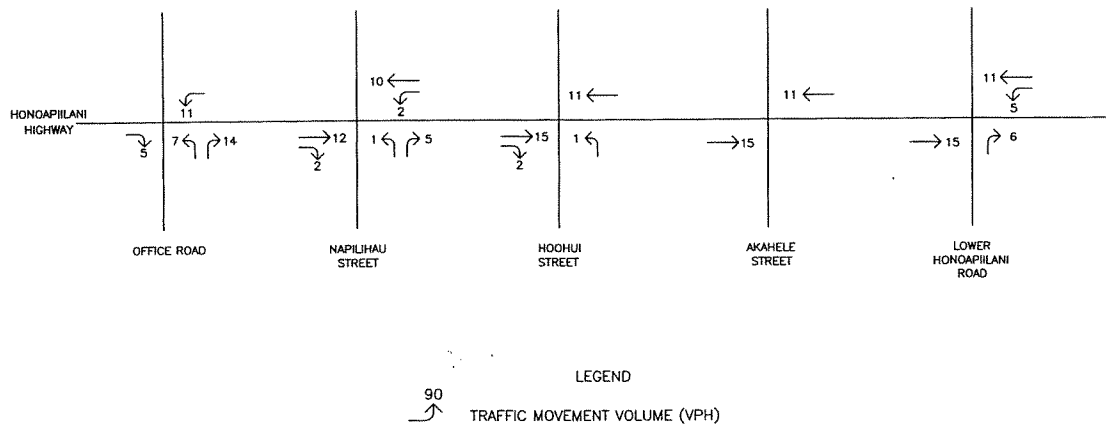
B. Through Traffic Forecasting Methodology

An analysis of both historical traffic data and traffic projections contained within Maui Long-Range Land Transportation Plan (MLRLTP) was made to determine the appropriate ambient growth of traffic demands in the project vicinity. The historical data, using linear regression analyses, indicate an average annual traffic growth rate in the vicinity of approximately 2.5%, while the MLRLTP indicates an average annual traffic growth rate of approximately 1.7%. Therefore, for conservative analysis purposes, the travel forecast used in this study is based upon the historical traffic count data obtained from the State Department of Transportation (DOT) resulting in the average annual traffic growth rate of 2.5%, using Year 2004 as the base year. The growth rate was therefore applied to the project expected build-out Year 2008. The respective growth factor of 1.10 was applied to the existing traffic demands on the highway to achieve the projected ambient traffic demands for Year 2008.

C. Other Considerations

The following are other developments expected to be completed by the build-out year of 2008 of the Kapalua Bay Hotel redevelopment:

- Miraval Kapalua project, which includes 125 proposed resort-style units and resort spa amenities.
- Maui Breakers project in Mahinahina, which includes 90 multi-family affordable residential units, is expected to be completed in late 2005 or early 2006.
- Villas at Kahana Ridge development includes 117 multi-family residential units and is expected to be completed in Year 2005.
- Lokahi Pacific project in Lahaina with an expected completion in Year 2005. The Lokahi Pacific project includes 12 single-family residential units.



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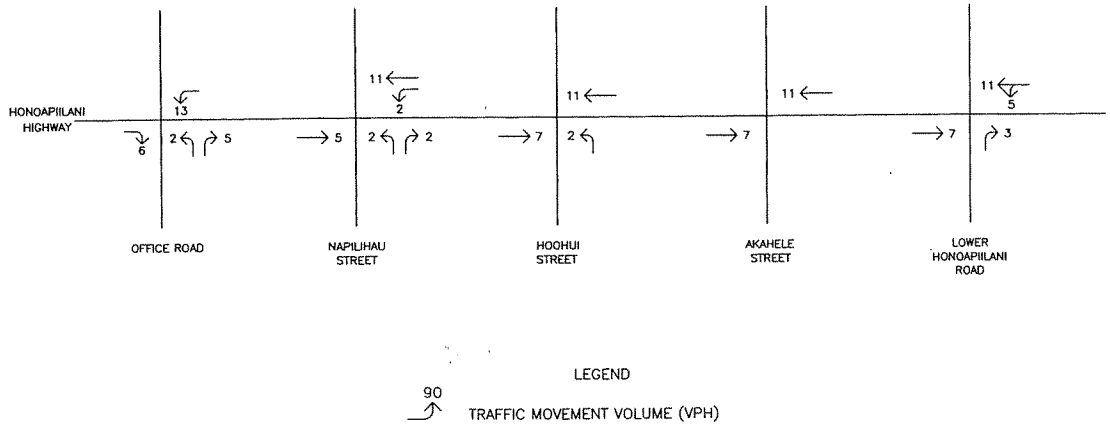
DISTRIBUTION OF PM PEAK HOUR
SITE GENERATED TRAFFIC

FIGURE 7



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THE RESIDENCES AT KAPALUA BAY

DISTRIBUTION OF AM PEAK HOUR
SITE GENERATED TRAFFIC

FIGURE 6

- North Beach Lot 1 project of the Kaanapali Ocean Resort subdivision, which includes a total of 280 timeshare units. At the time of the study, North Beach Lot 1 included 103 units, with the balance of 177 units currently under construction and soon to be completed.
- North Beach Lot 2 of Kaanapali Ocean Resort subdivision, located adjacent to North Beach Lot 1, is currently in the planning stages at this writing, and includes approximately 258 multi-family units with potential lockouts for each unit.
- Kaanapali Golf Estates Parcels 22 and 23 residential subdivision located mauka of Honoapiilani highway within the South Beach Mauka are will include 132 single-family recreational homes. Construction is expected to start mid-2005 with completion anticipated by Year 2007.
- Pioneer Farms Phases I and II residential subdivision located in Kaanapali, mauka of Honoapiilani Highway. The proposed project will include 108 residential lots with expected completion by Year 2008.
- Maui Preparatory Academy located mauka of Honoapiilani Highway with access to and from the highway via the Napilihau Street intersection. The project is expected to include an enrollment of 540 students from pre-kindergarten to grade 12 with build-out in Year 2013.
- Pulelehua, a planned community located mauka of Honoapiilani Highway in the Mahinahina area. The project is expected to include 895 primary units with a potential of 318 additional Ohana-type units. Build-out for the Pulelehua project is expected to occur in Year 2011, beyond the expected occupancy of The Residences at Kapalua. This analysis therefore excludes trips generated by the Pulelehua project. It is assumed that the Pulelehua development would include the implementation of necessary traffic mitigating measures associated with that project.

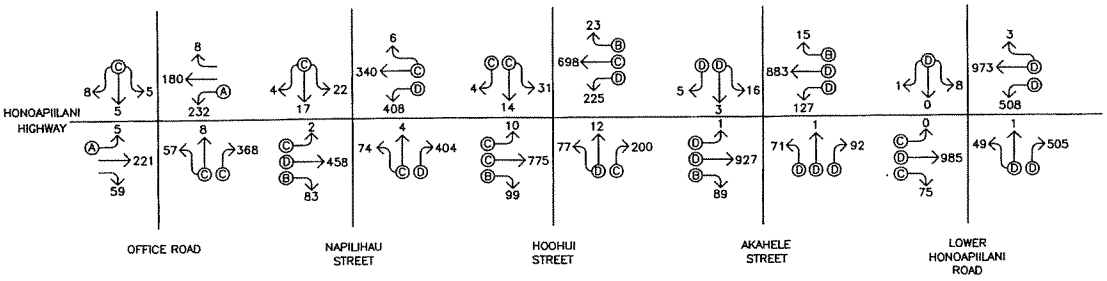
The traffic generated by the above projects, as applicable, were estimated based on the generation rates and procedures identified in the Institute of

Transportation Engineers publication on trip generation for specific land use types, and other traffic studies associated with each proposed development. The determined traffic generation was applied to the ambient traffic growth, thus incorporating these additional applicable projects in the baseline traffic conditions. The purpose of including traffic demands from these other developments is to obtain a more realistic traffic forecast model and to ensure that any adverse traffic operational impacts can be properly addressed. Thus, the traffic analysis would include the cumulative traffic demands on the roadways in the vicinity of the project at its build-out. Should there be additional developments not accounted for in the analysis, the average annual ambient traffic growth rate utilized in the traffic forecast is expected to encompass the increased traffic demands resulting from these unknown developments. Should there be no additional developments other than those stated above, the inclusive of the average annual ambient growth rate represents a conservative traffic analysis in terms of future traffic projections.

D. Traffic Operations Without Proposed Project

1. General

Figures 8 and 9 show AM and PM peak hour traffic volumes and operating conditions of the study intersections for Year 2008 without the proposed Residences at Kapalua Bay. To measure and isolate the traffic impacts as a result of the proposed project, the existing trips generated by the Kapalua Bay Hotel were removed from the traffic volumes at the study intersections. A comparison can therefore be made with traffic conditions as a result of the proposed project described in following sections of this report. The through volumes along Honoapiilani Highway were projected to Year 2008 based on the aforementioned historical traffic volume data. Table 4 shows the comparison between existing and projected levels of service of traffic operations at each of the study intersections for projected Year 2008 without the project's traffic generation. The analysis results of projected traffic demands in Table 4 include traffic generation associated with other developments in the vicinity identified in previous sections of this document.



LEGEND

90 TRAFFIC MOVEMENT VOLUME (VPH)

Ⓐ LANE GROUP LEVEL OF SERVICE

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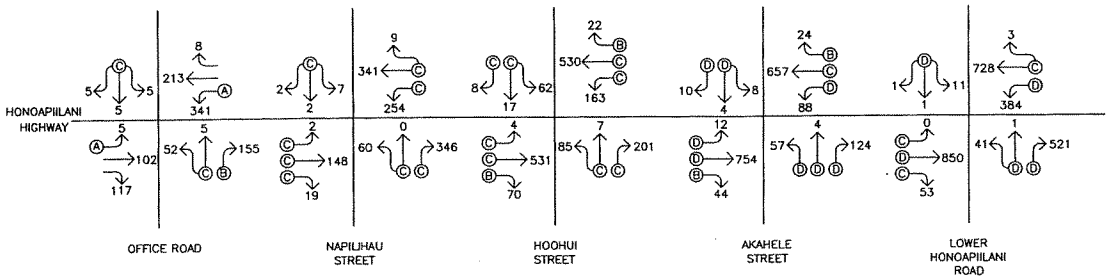
YEAR 2008 PM PEAK HOUR OF TRAFFIC WITHOUT PROJECT

FIGURE 9



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YEAR 2008 AM PEAK HOUR OF TRAFFIC WITHOUT PROJECT

FIGURE 8

Table 4: Comparison of Existing and Projected (Without Project) Levels of Service

Intersection	Approach	Movement	AM		PM	
			Exist	Year 2008 w/out Proj	Exist	Year 2008 w/out Proj
Honoapiilani Hwy/Office Rd (unsignalized)	EB	LT-TH	C	C	C	C
		RT	B	B	B	C
	WB	LT-TH-RT	C	C	C	C
	NB	LT	A	A	A	A
	SB	LT	A	A	A	A
Honoapiilani Hwy/Napilihau St (signalized)	EB	LT-TH	C	C	C	C
		RT	C	C	D	D
	WB	LT-TH-RT	C	C	C	C
	NB	LT	C	C	D	D
		TH-RT	C	C	C	C
	SB	LT	C	C	C	C
		TH	C	C	D	D
		RT	C	C	C	B
Honoapiilani Hwy/Hoohui Rd (signalized)	EB	LT-TH	C	C	C	D
		RT	C	C	C	C
	WB	LT-TH	C	C	C	C
		RT	C	C	C	C
	NB	LT	C	C	C	D
		TH	C	C	C	C
		RT	B	B	B	B
	SB	LT	C	C	C	C
		TH	C	C	C	C
		RT	B	B	B	B

Table 4: Comparison of Existing and Projected (Without Project) Levels of Service (Cont'd)

Intersection	Approach	Movement	AM		PM	
			Exist	Year 2008 w/out Proj	Exist	Year 2008 w/out Proj
Honoapiilani Hwy/Akahele St (signalized)	EB	LT	D	D	D	D
		TH	D	D	D	D
		RT	D	D	D	D
	WB	LT-TH	D	D	D	D
		RT	D	D	D	D
	NB	LT	D	D	D	D
		TH	C	C	D	D
		RT	B	B	B	B
	SB	LT	D	D	D	D
		TH	D	D	D	D
		RT	B	B	B	B
Honoapiilani Hwy/Lower Honoapiilani Rd (signalized)	EB	LT-TH	D	D	D	D
		RT	D	D	D	D
	WB	LT-TH-RT	D	D	D	D
	NB	LT	D	D	D	D
		TH-RT	D	C	D	D
	SB	LT	C	C	C	C
		TH	D	D	D	D
		RT	C	C	C	C

2. Honoapiilani Highway and Office Road

At the intersection of Honoapiilani Highway and Office Road, all of the movements at the intersection should operate under the same LOS designations for Year 2008 without project conditions as with existing Year 2004 conditions with the exception of the eastbound right-turn movement which would operate at LOS "C" during the PM peak hour of traffic. The

northbound and southbound left-turn movements on the highway would continue to operate at LOS "A" and eastbound left-turn and through traffic movement would continue operating at LOS "C" during both peak hours of traffic.

During the projected Year 2008 without project AM peak hour traffic conditions, Honoapiilani Highway just south of Office Road is expected to carry 824 vehicles, 562 vehicles traveling northbound and 262 vehicles traveling southbound. Traffic volumes during the PM peak hour at the same roadway section would be slightly lower with a total of 1,014 vehicles on the roadway, 420 vehicles traveling northbound and 594 vehicles traveling southbound.

3. Honoapiilani Highway and Napilihau Street

At the intersection of Honoapiilani Highway and Napilihau Street, the southbound right-turn traffic movement would operate at LOS "B" during the PM peak period due to the shift in traffic distribution at the intersection. The remainder of the movements at that intersection should operate under the same LOS designations as with existing Year 2004 conditions. All of the traffic operations at the intersection during the projected Year 2008 AM peak period without project conditions would continue to operate at LOS "C." During the PM peak period, the northbound left-turn, southbound through, and eastbound right-turn movements would continue to operate at LOS "D" while the remainder of the movements at the intersection would continue to operate at LOS "C".

During the projected Year 2008 AM peak hour without project conditions, Honoapiilani Highway just south of Napilihau Street is expected to carry 1,105 vehicles, 604 vehicles traveling northbound and 501 vehicles traveling southbound. Traffic volumes during the PM peak hour at the same roadway section would be heavier with a total of 1,638 vehicles on the roadway, 754 vehicles traveling northbound and 884 vehicles traveling southbound.

4. Honoapiilani Highway and Hoohui Road

At the intersection of Honoapiilani Highway and Hoohui Road, the traffic movements on both the northbound and southbound intersection approaches of Honoapiilani Highway would continue to operate at LOS "C" or better during the projected Year 2008 AM peak hours without the project. During the projected PM peak hours without the project, the northbound left-turn movement would operate at LOS "D" while the remainder of the movements along the highway would continue to operate at LOS "C" or better. . The traffic operations of all movements on both the eastbound and westbound approaches of Hoohui Road would continue to operate at LOS "C" during both the projected Year 2008 AM and PM peak hour conditions without the project.

During the projected Year 2008 AM peak hour conditions without the project, Honoapiilani Highway just south of Hoohui Road is expected to carry 1,509 vehicles, 715 vehicles traveling northbound and 794 vehicles traveling southbound. Traffic volumes during the PM peak hour at the same roadway section are expected to be heavier with a total of 1,952 vehicles on the roadway, 946 vehicles traveling northbound and 1,006 vehicles traveling southbound.

5. Honoapiilani Highway and Akahele Street

At the intersection of Honoapiilani Highway with Akahele Street, all of the movements at the intersection should operate under the same LOS designations for Year 2008 without project conditions as with existing Year 2004 conditions. The northbound left-turn movement and the southbound left-turn and through movements of the highway would continue to operate at LOS "D" during AM peak hour while the remainder of the movements along the highway would continue to operate at LOS "C" or better. During the PM peak hour, the northbound and southbound left-turn and through movements are expected to operate at the same service quality as existing conditions at LOS "D" while the right-turn movements on both approaches are expected to

remain at LOS "B". The movements on the westbound and eastbound approaches of Akahele Street would continue to operate at LOS' D" during both projected Year 2008 peak hours without the project as a result of the relatively heavy projected through traffic movements on the highway.

During the projected Year 2008 AM peak hour traffic conditions without the project, Honoapiilani Highway just south of Akahele Street is expected to carry 1,655 vehicles, 769 vehicles traveling northbound and 886 vehicles traveling southbound. Traffic volumes during the PM peak hour at the same roadway section are expected to be slightly heavier with a total of 2,060 vehicles on the roadway, 1,025 vehicles traveling northbound and 1,035 vehicles traveling southbound.

6. Honoapiilani Highway and Lower Honoapiilani Road

At the intersection of Honoapiilani Highway with Lower Honoapiilani Road, all of the movements at the intersection should operate under the same LOS designations for Year 2008 without project conditions as with existing Year 2004 conditions. The northbound left-turn and southbound through movements of the highway would operate at LOS "D" during the projected Year 2008 AM peak hour conditions without the project while the remainder of the movements on both approaches of the highway are expected to operate at LOS "C". During the PM peak hour, all the movements on the northbound approach of the highway and the southbound through movement are expected to operate at LOS "D" while the southbound left-turn and right-turn movements are expected to operate at LOS "C". The movements on the eastbound and westbound approaches would continue to operate at LOS "D" during both peak hours for projected conditions without the proposed project.

During the projected Year 2008 AM peak hour traffic conditions without the project, Honoapiilani Highway just south of Lower Honoapiilani Road is expected to carry 2,497 vehicles, 1,115 vehicles traveling northbound and 1,382 vehicles traveling southbound. Traffic volumes during the PM peak hour at the same roadway section are expected to be slightly heavier with a

total of 2,982 vehicles on the roadway, 1,484 vehicles traveling northbound and 1,498 vehicles traveling southbound.

E. Total Traffic Volumes With Project

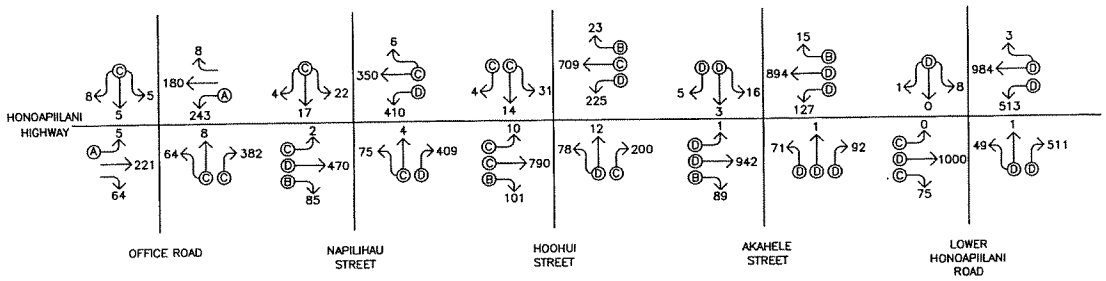
1. General

Figures 10 and 11 show the cumulative AM and PM peak hour traffic conditions resulting from the projected external traffic and the development of the proposed Residences at Kapalua Bay for Year 2008 traffic conditions. The cumulative volumes consist of site-generated traffic superimposed over baseline Year 2008 projected traffic demands.

2. Honoapiilani Highway and Office Road

At the intersection of Honoapiilani Highway and Office Road, the traffic movements on the eastbound approach of Office Road would continue to operate at LOS "C" or better during both peak hours of traffic for Year 2008 conditions with the proposed project. Similar to existing conditions, the northbound and southbound left-turn movements on the highway would operate at LOS "A" during both the projected Year 2008 AM and PM peak hours of traffic with the project while the eastbound left-turn and through movement would operate at LOS "C" during both peak hours. The eastbound right-turn movement would continue to operate at LOS "B" and LOS "C" during the AM and PM peak periods, respectively, similar to projected Year 2008 without project conditions.

During the projected Year 2008 AM peak hour traffic conditions with the project, Honoapiilani Highway just south of Office Road is expected to carry 842 vehicles, 575 vehicles traveling northbound and 267 vehicles traveling southbound. Traffic volumes during the PM peak hour at the same roadway section would be lower with a total of 1,039 vehicles on the roadway, 431 vehicles traveling northbound and 608 vehicles traveling southbound.



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90 TRAFFIC MOVEMENT VOLUME (VPH)

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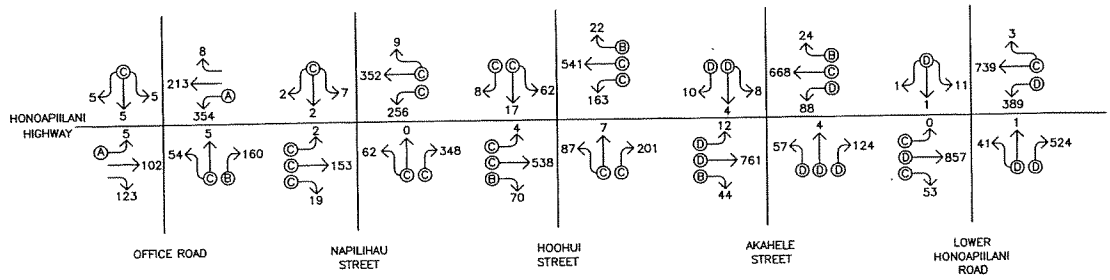
YEAR 2008 PM PEAK HOUR OF TRAFFIC WITH PROJECT

FIGURE 11



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YEAR 2008 AM PEAK HOUR OF TRAFFIC WITH PROJECT

FIGURE 10

3. Honoapiilani Highway and Napilihau Street

At the intersection of Honoapiilani Highway and Napilihau Street, the traffic movements on both the northbound and southbound intersection approaches of Honoapiilani Highway would continue to operate at LOS "C" or better during the AM peak hour of traffic conditions with the project for Year 2008. During the PM peak hour of traffic with project conditions for Year 2008, the traffic movements on both the northbound and southbound approaches would also operate at LOS "C" or better on the highway, with the exception of the northbound left-turn movement and the southbound through movement. Similar to without project conditions, these movements would operate at LOS "D" traffic conditions. Similarly, the traffic movements on the eastbound and westbound approaches of the intersection should continue to operate at LOS "C" with the exception of the eastbound right-turn movement which would operate at LOS "D" similar to without project conditions.

During the projected Year 2008 AM peak hour with project conditions, Honoapiilani Highway just south of Napilihau Street is expected to carry 1,125 vehicles, 617 vehicles traveling northbound and 508 vehicles traveling southbound. Traffic volumes during the PM peak hour at the same roadway section would be heavier with a total of 1,667 vehicles on the roadway, 766 vehicles traveling northbound and 901 vehicles traveling southbound.

4. Honoapiilani Highway and Hoohui Street

At the intersection of Honoapiilani Highway and Hoohui Road, all the traffic movements during the projected Year 2008 peak hours with the proposed project are expected to operate at LOS "C" or better during both peak periods with the exception of the eastbound left-turn and through movement and the northbound left-turn movement. Similar to without project conditions, these movements would operate at LOS "D" traffic conditions under projected Year 2008 PM peak hours with the proposed project.

During the projected Year 2008 AM peak hour conditions with the project, Honoapiilani Highway just south of Hoohui Road is expected to carry 1,527 vehicles, 726 vehicles traveling northbound and 801 vehicles traveling southbound. Traffic volumes during the PM peak hour at the same roadway section are expected to be heavier with a total of 1,978 vehicles on the roadway, 957 vehicles traveling northbound and 1,021 vehicles traveling southbound.

5. Honoapiilani Highway and Akahele Street

At the intersection of Honoapiilani Highway with Akahele Street, the northbound left-turn and southbound left-turn and through movements of the highway would continue to operate at LOS "D" during the projected Year 2008 AM peak hour conditions with the project while the remainder of the movements on those approaches are expected to operate at the same service quality as existing conditions at LOS "C" or better. During the PM peak hours, both the northbound and southbound left-turn and through movements of the highway are expected to continue to operate at LOS "D" during the projected Year 2008 conditions with the project while the right-turn movement on both approaches is expected to continue to operate at LOS "B". During the AM and PM peak hours, the westbound and eastbound approaches of Akahele Street would continue to operate at LOS' D", similar to existing conditions.

During the projected Year 2008 AM peak hour traffic conditions with the project, Honoapiilani Highway just south of Akahele Street is expected to carry 1,673 vehicles, 780 vehicles traveling northbound and 893 vehicles traveling southbound. Traffic volumes.during the projected PM peak hour at the same roadway section with the project are expected to be slightly heavier with a total of 2,086 vehicles on the roadway, 1,036 vehicles traveling northbound and 1,050 vehicles traveling southbound.

6. Honoapiilani Highway and Lower Honoapiilani Road

At the intersection of Honoapiilani Highway with Lower Honoapiilani Road, the northbound through and right-turn movement of the highway would operate at LOS "C" during the projected Year 2008 AM peak hour conditions with the project while the southbound through movement is expected to operate at the same service quality as existing conditions at LOS "D". The northbound left-turn movement is also expected to continue to operate at LOS "D" conditions while the southbound left-turn movement operates at LOS "C". During the PM peak hours, the northbound left-turn movement of the highway is expected to operate at LOS "D" while the southbound left-turn movement operates at LOS "C" during projected Year 2008 conditions with the project. The northbound and southbound through movements are also expected to operate at LOS "D" for projected Year 2008 PM peak hours of traffic with the proposed project. During the AM and PM peak hours, the eastbound and westbound approaches would continue to operate at LOS "D" conditions.

During the projected Year 2008 AM peak hour traffic conditions with the proposed project, Honoapiilani Highway just south of Lower Honoapiilani Road is expected to carry 2,523 vehicles, 1,131 vehicles traveling northbound and 1,392 vehicles traveling southbound. Traffic volumes during the PM peak hour at the same roadway section are expected to be slightly heavier with a total of 3,019 vehicles on the roadway, 1,500 vehicles traveling northbound and 1,519 vehicles traveling southbound.

V. TRAFFIC IMPACT ANALYSIS

The traffic operations for the projected Year 2008 with the project for both the AM and PM peak hours of traffic are summarized in Table 5. The analysis incorporates the developments of other projects with expected build-outs at Year 2008 or earlier and is reflected in the results of the LOS designations as shown in the table. The LOS designations for existing conditions are presented for convenience and comparison purposes. LOS calculations are included in the Appendix.

Table 5: Comparison of Existing and Projected Levels of Service

Intersection	Approach	Movement	AM			PM		
			Exist	Year 2008 w/out Proj	Year 2008 w/ Proj	Exist	Year 2008 w/out Proj	Year 2008 w/ Proj
Honoapiilani Hwy/Office Rd	EB	LT-TH	C	C	C	C	C	C
		RT	B	B	B	B	C	C
	WB	LT-TH-RT	C	C	C	C	C	C
	NB	LT	A	A	A	A	A	A
	SB	LT	A	A	A	A	A	A
Honoapiilani Hwy/Napilihau St	EB	LT-TH	C	C	C	C	C	C
		RT	C	C	C	D	D	D
	WB	LT-TH-RT	C	C	C	C	C	C
	NB	LT	C	C	C	D	D	D
		TH-RT	C	C	C	C	C	C
	SB	LT	C	C	C	C	C	C
		TH	C	C	C	D	D	D
		RT	C	C	C	C	B	B
Honoapiilani Hwy/Hoohui Rd	EB	LT-TH	C	C	C	C	D	D
		RT	C	C	C	C	C	C
	WB	LT-TH	C	C	C	C	C	C
		RT	C	C	C	C	C	C
	NB	LT	C	C	C	C	D	D
		TH	C	C	C	C	C	C
		RT	B	B	B	B	B	B
	SB	LT	C	C	C	C	C	C
		TH	C	C	C	C	C	C
		RT	B	B	B	B	B	B

Table 5: Comparison of Existing and Projected Levels of Service (Cont'd.)

Intersection	Approach	Movement	AM			PM		
			Exist	Year 2008 w/out Proj	Year 2008 w/ Proj	Exist	Year 2008 w/out Proj	Year 2008 w/ Proj
Honoapiilani Hwy/Akahele St	EB	LT	D	D	D	D	D	D
		TH	D	D	D	D	D	D
		RT	D	D	D	D	D	D
	WB	LT-TH	D	D	D	D	D	D
		RT	D	D	D	D	D	D
	NB	LT	D	D	D	D	D	D
		TH	C	C	C	D	D	D
		RT	B	B	B	B	B	B
	SB	LT	D	D	D	D	D	D
		TH	D	D	D	D	D	D
		RT	B	B	B	B	B	B
Honoapiilani Hwy/Lower Honoapiilani Rd	EB	LT-TH	D	D	D	D	D	D
		RT	D	D	D	D	D	D
	WB	LT-TH-RT	D	D	D	D	D	D
	NB	LT	D	D	D	D	D	D
		TH-RT	C	C	C	D	D	D
	SB	LT	C	C	C	C	C	C
		TH	D	D	D	D	D	D
		RT	C	C	C	C	C	C

The proposed Residences at Kapalua Bay should not have a significant adverse impact on traffic operations in the vicinity. The primary contributor to projected traffic demands of the study intersections is attributed to traffic generated by other developments expected to be completed and operational by Year 2008. The projected through traffic movements at the study intersections would be primarily influenced by ambient traffic growth as well as project-generated trips from other known developments. The generated traffic by the project site, with the proposed Residences at Kapalua Bay, would be lower than

the existing site traffic generation of the Kapalua Bay Hotel. The decrease in traffic generation is a result of the reduction in total unit count, as well as the trip generating characteristics of the proposed type of use. The total unit count on the property will be reduced from the existing 196 hotel units to 155 larger units, resulting in less traffic generation by the site. In addition, trip or traffic generation is generally less for developments comprised of multi-room units. These developments can also be described as having guests with longer stays than the typical resort hotel, which typically correlates to less traffic generation with guests utilizing available on-site amenities. The occupants of the fractional use component of the development are also expected to generate less vehicular trips than typical resort hotel guests. The traffic generated by the proposed Residences at Kapalua Bay would represent less than 1% to 4% of the total traffic entering the study intersection along Honoapiilani Highway in the project vicinity. The traffic impact to the study intersection on the highway, as a result of the proposed project, would therefore be minimal.

VI. CONCLUSION

The proposed Residences at Kapalua Bay is not expected to impact traffic operations in the vicinity. The redevelopment plans include a reduction in total unit count, of which approximately 90 units will be designated for sole ownership and the balance of 65 converted to fractional use, thus reducing the traffic generation of the site. Any impact or reduction in levels of service to the study intersections as identified in previous sections for projected Year 2008 are primarily due to the overall ambient growth of traffic in the area as well as the cumulative traffic generation by other developments. The identified projected traffic operational deficiencies are a result of the overall growth of the region. Although the trip generating volumes of the proposed Residences at Kapalua Bay are relatively low compared to the overall carrying capacity of the highway, it represents a net decrease from existing conditions. Traffic generated by the proposed Residences at Kapalua Bay represent a 48% and 43% decrease during the morning and afternoon peak periods, respectively, when compared to the existing hotel use on the site, thus assisting in improving the overall operations of the study intersections in Year 2008.

Wilson Okamoto Corporation
1907 S. Beretania St. Suite 400
Honolulu, HI 96826

Counter: D1-0528
Counted By: KT
Weather: Clear

File Name : honoffa
Site Code : 00000001
Start Date : 10/21/2004
Page No : 1

Groups Printed- Unshifted

	Honoapiilani Highway Southbound				Office Road Westbound				Honoapiilani Highway Northbound				Office Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
06:30 AM	0	10	5	15	0	0	0	0	47	19	0	66	9	0	51	60	141
06:45 AM	0	8	3	11	0	0	0	0	51	15	0	66	7	0	62	69	146
Total	0	18	8	26	0	0	0	0	98	34	0	132	16	0	113	129	287
07:00 AM	0	12	9	21	0	0	0	0	59	19	0	78	5	1	98	104	203
07:15 AM	0	11	10	21	0	0	0	0	60	35	0	95	11	0	63	74	190
07:30 AM	0	10	4	14	0	1	0	1	39	27	0	66	7	0	42	49	130
07:45 AM	0	19	4	23	0	0	1	1	41	25	0	66	5	1	48	54	144
Total	0	52	27	79	0	1	1	2	199	106	0	305	28	2	251	281	667
08:00 AM	0	17	9	26	0	0	0	0	35	19	0	54	12	0	50	62	142
08:15 AM	0	9	3	12	0	0	0	0	27	31	0	58	7	0	49	56	126
Grand Total	0	96	47	143	0	1	1	2	359	190	0	549	63	2	463	528	1222
Apprch %	0.0	67.1	32.9		0.0	50.0	50.0		65.4	34.6	0.0		11.9	0.4	87.7		
Total %	0.0	7.9	3.8	11.7	0.0	0.1	0.1	0.2	29.4	15.5	0.0	44.9	5.2	0.2	37.9	43.2	

	Honoapiilani Highway Southbound				Office Road Westbound				Honoapiilani Highway Northbound				Office Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 06:30 AM to 08:15 AM - Peak 1 of 1																	
Intersection	06:30 AM																
Volume	0	41	27	68	0	0	0	0	217	88	0	305	32	1	274	307	680
Percent	0.0	60.3	39.7		0.0	0.0	0.0		71.1	28.9	0.0		10.4	0.3	89.3		
07:00 Volume	0	12	9	21	0	0	0	0	59	19	0	78	5	1	98	104	203
Peak Factor																	0.837
High Int.	07:00 AM				6:15:00 AM				07:15 AM				07:00 AM				
Volume	0	12	9	21	0	0	0	0	60	35	0	95	5	1	98	104	
Peak Factor				0.810								0.803				0.738	

APPENDIX A

EXISTING TRAFFIC COUNT DATA

Wilson Okamoto Corporation
1907 S. Beretania St. Suite 400
Honolulu, HI 96826

Counter: T-1839 / T-1841
Counted By: CL / PP
Weather: Clear

File Name : honnapa
Site Code : 00000002
Start Date : 3/17/2004
Page No : 1

Groups Printed- Unshifted

	Honoapiilani Highway Southbound				Napilihau Street Westbound				Honoapiilani Highway Northbound				Napilihau Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
06:30 AM	0	18	7	25	0	1	0	1	26	41	2	69	10	3	49	62	157
06:45 AM	0	21	4	25	8	0	1	9	30	64	3	97	11	0	61	72	203
Total	0	39	11	50	8	1	1	10	56	105	5	166	21	3	110	134	360
07:00 AM	3	24	1	28	1	1	0	2	44	53	0	97	15	2	93	110	237
07:15 AM	1	30	5	36	1	1	0	2	51	98	4	153	19	0	104	123	314
07:30 AM	0	34	4	38	4	0	0	4	51	74	0	125	10	0	87	97	264
07:45 AM	0	39	8	47	0	0	1	1	67	68	2	137	12	0	70	82	267
Total	4	127	18	149	6	2	1	9	213	293	6	512	56	2	354	412	1082
08:00 AM	1	26	2	29	2	1	1	4	63	71	3	137	19	0	65	84	254
08:15 AM	1	34	3	38	3	4	0	7	63	98	3	164	21	2	53	76	285
Grand Total	6	226	34	266	19	8	3	30	395	567	17	979	117	7	582	706	1981
Apprch %	2.3	85.0	12.8		63.3	26.7	10.0		40.3	57.9	1.7		16.6	1.0	82.4		
Total %	0.3	11.4	1.7	13.4	1.0	0.4	0.2	1.5	19.9	28.6	0.9	49.4	5.9	0.4	29.4	35.6	

	Honoapiilani Highway Southbound				Napilihau Street Westbound				Honoapiilani Highway Northbound				Napilihau Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 06:30 AM to 08:15 AM - Peak 1 of 1																	
Intersection	07:15 AM																
Volume	2	129	19	150	7	2	2	11	232	311	9	552	60	0	326	386	1099
Percent	1.3	86.0	12.7		63.6	18.2	18.2		42.0	56.3	1.6		15.5	0.0	84.5		
07:15 Volume	1	30	5	36	1	1	0	2	51	98	4	153	19	0	104	123	314
Peak Factor																	0.875
High Int.	07:45 AM				07:30 AM				07:15 AM				07:15 AM				
Volume	0	39	8	47	4	0	0	4	51	98	4	153	19	0	104	123	
Peak Factor				0.798				0.688				0.902				0.785	

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Counter: D1-0528
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Weather: Clear

File Name : honoffp
Site Code : 00000001
Start Date : 10/21/2004
Page No : 1

Groups Printed- Unshifted

	Honoapiilani Highway Southbound				Office Road Westbound				Honoapiilani Highway Northbound				Office Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
03:30 PM	0	22	11	33	0	0	0	0	45	17	1	63	13	0	21	34	130
03:45 PM	0	25	13	38	0	0	0	0	41	21	0	62	11	2	25	38	138
Total	0	47	24	71	0	0	0	0	86	38	1	125	24	2	46	72	268
04:00 PM	0	22	15	37	0	0	0	0	44	19	0	63	10	0	18	28	128
04:15 PM	0	28	9	37	0	0	0	0	49	30	3	82	10	0	18	28	147
04:30 PM	0	26	9	35	0	1	0	1	41	25	0	66	16	0	27	43	145
04:45 PM	0	31	17	48	0	0	1	1	36	26	0	62	11	0	31	42	153
Total	0	107	50	157	0	1	1	2	170	100	3	273	47	0	94	141	573
05:00 PM	0	33	15	48	0	0	0	0	39	21	0	60	7	0	33	40	148
05:15 PM	0	15	11	26	0	0	0	0	39	19	0	58	9	0	39	48	132
05:30 PM	0	12	15	27	0	0	0	0	41	20	0	61	5	1	41	47	135
05:45 PM	0	17	7	24	0	0	0	0	35	17	0	52	10	0	33	43	119
Total	0	77	48	125	0	0	0	0	154	77	0	231	31	1	146	178	534
Grand Total	0	231	122	353	0	1	1	2	410	215	4	629	102	3	286	391	1375
Apprch %	0.0	65.4	34.6		0.0	50.0	50.0		65.2	34.2	0.6		26.1	0.8	73.1		
Total %	0.0	16.8	8.9	25.7	0.0	0.1	0.1	0.1	29.8	15.6	0.3	45.7	7.4	0.2	20.8	28.4	

	Honoapiilani Highway Southbound				Office Road Westbound				Honoapiilani Highway Northbound				Office Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 03:30 PM to 05:45 PM - Peak 1 of 1																	
Intersection	04:15 PM																
Volume	0	118	50	168	0	1	1	2	165	102	3	270	44	0	109	153	593
Percent	0.0	70.2	29.8		0.0	50.0	50.0		61.1	37.8	1.1		28.8	0.0	71.2		
04:45 Volume	0	31	17	48	0	0	1	1	36	26	0	62	11	0	31	42	153
Peak Factor																	0.969
High Int.	04:45 PM				04:30 PM				04:15 PM				04:30 PM				
Volume	0	31	17	48	0	1	0	1	49	30	3	82	16	0	27	43	
Peak Factor				0.875				0.500				0.823				0.890	

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Counter: D1-0526 / D1-0527
Counted By: IQ / MAF
Weather: Clear

File Name : honhooa
Site Code : 00000003
Start Date : 3/17/2004
Page No : 1

Groups Printed- Unshifted

	Honoapiilani Highway Southbound				Hoohui Street Westbound				Honoapiilani Highway Northbound				Hoohui Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
06:30 AM	2	63	11	76	5	2	2	9	13	78	5	96	5	2	26	33	214
06:45 AM	1	83	9	93	9	2	1	12	19	83	3	105	9	0	39	48	258
Total	3	146	20	169	14	4	3	21	32	161	8	201	14	2	65	81	472
07:00 AM	3	108	12	123	13	2	0	15	16	79	4	99	13	2	37	52	289
07:15 AM	2	158	14	174	27	2	3	32	33	124	4	161	26	3	62	91	458
07:30 AM	1	117	21	139	13	2	1	16	34	105	5	144	21	1	57	79	378
07:45 AM	0	102	21	123	11	8	1	20	43	112	3	158	18	1	43	62	363
Total	6	485	68	559	64	14	5	83	126	420	16	562	78	7	199	284	1488
08:00 AM	1	88	14	103	11	5	3	19	36	123	10	169	20	2	35	57	348
08:15 AM	1	84	12	97	8	2	2	12	49	120	8	177	29	1	40	70	356
Grand Total	11	803	114	928	97	25	13	135	243	824	42	1109	141	12	339	492	2664
Apprch %	1.2	86.5	12.3		71.9	18.5	9.6		21.9	74.3	3.8		28.7	2.4	68.9		
Total %	0.4	30.1	4.3	34.8	3.6	0.9	0.5	5.1	9.1	30.9	1.6	41.6	5.3	0.5	12.7	16.5	

	Honoapiilani Highway Southbound				Hoohui Street Westbound				Honoapiilani Highway Northbound				Hoohui Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 06:30 AM to 08:15 AM - Peak 1 of 1																	
Intersection	07:15 AM																
Volume	4	465	70	539	62	17	8	87	146	464	22	632	85	7	197	289	1547
Percent	0.7	86.3	13.0		71.3	19.5	9.2		23.1	73.4	3.5		29.4	2.4	68.2		
07:15 Volume	2	158	14	174	27	2	3	32	33	124	4	161	26	3	62	91	458
Peak Factor																	0.844
High Int.	07:15 AM				07:15 AM				08:00 AM				07:15 AM				
Volume	2	158	14	174	27	2	3	32	36	123	10	169	26	3	62	91	
Peak Factor				0.774				0.680				0.935				0.794	

Wilson Okamoto Corporation
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Honolulu, HI 96826

Counter: T-1839 / T-1841
Counted By: CL / PP
Weather: Clear

File Name : honnapp
Site Code : 00000002
Start Date : 3/16/2004
Page No : 1

Groups Printed- Unshifted

	Honoapiilani Highway Southbound				Napilihau Street Westbound				Honoapiilani Highway Northbound				Napilihau Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
02:00 PM	2	86	19	107	0	2	0	2	63	70	3	136	12	0	70	82	327
02:15 PM	0	72	13	85	4	1	3	8	84	58	0	142	12	1	81	94	329
02:30 PM	0	70	13	83	5	0	0	5	68	74	3	145	14	0	67	81	314
02:45 PM	2	60	14	76	2	0	0	2	70	87	3	160	18	1	70	89	327
Total	4	288	59	351	11	3	3	17	285	289	9	583	56	2	288	346	1297
03:00 PM	1	91	10	102	2	2	1	5	79	72	5	156	6	0	77	83	346
03:15 PM	2	90	11	103	0	3	0	3	92	67	4	163	16	4	67	87	356
03:30 PM	1	88	18	107	18	11	3	32	105	72	3	180	15	1	93	109	428
03:45 PM	0	81	9	90	2	0	0	2	92	79	1	172	19	0	88	107	371
Total	4	350	48	402	22	16	4	42	368	290	13	671	56	5	325	386	1501
04:00 PM	0	137	37	174	1	5	0	6	84	75	2	161	22	1	100	123	464
04:15 PM	1	101	19	121	1	1	1	3	109	80	0	189	18	2	87	107	420
04:30 PM	0	66	20	86	0	1	0	1	99	71	3	173	11	2	96	109	369
04:45 PM	0	84	10	94	4	0	0	4	97	64	2	163	11	2	87	100	361
Total	1	388	86	475	6	7	1	14	389	290	7	686	62	7	370	439	1614
Grand Total	9	1026	193	1228	39	26	8	73	1042	869	29	1940	174	14	983	1171	4412
Apprch %	0.7	83.6	15.7		53.4	35.6	11.0		53.7	44.8	1.5		14.9	1.2	83.9		
Total %	0.2	23.3	4.4	27.8	0.9	0.6	0.2	1.7	23.6	19.7	0.7	44.0	3.9	0.3	22.3	26.5	

	Honoapiilani Highway Southbound				Napilihau Street Westbound				Honoapiilani Highway Northbound				Napilihau Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 02:00 PM to 04:45 PM - Peak 1 of 1																	
Intersection	03:30 PM																
Volume	2	407	83	492	22	17	4	43	390	306	6	702	74	4	368	446	1683
Percent	0.4	82.7	16.9		51.2	39.5	9.3		55.6	43.6	0.9		16.6	0.9	82.5		
04:00 Volume	0	137	37	174	1	5	0	6	84	75	2	161	22	1	100	123	464
Peak Factor																	0.907
High Int.	04:00 PM				03:30 PM				04:15 PM				04:00 PM				
Volume	0	137	37	174	18	11	3	32	109	80	0	189	22	1	100	123	
Peak Factor				0.707				0.336				0.929				0.907	

Wilson Okamoto Corporation
1907 S. Beretania St. Suite 400
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Counter: D1-0525
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Weather: Clear

File Name : akahona
Site Code : 00000004
Start Date : 3/17/2004
Page No : 1

Groups Printed- Unshifted

	Honoapiilani Highway Southbound				Akahele Street Westbound				Honoapiilani Highway Northbound				Akahele Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
06:30 AM	3	86	5	94	1	0	1	2	5	78	2	85	17	1	23	41	222
06:45 AM	3	122	6	131	1	0	1	2	6	94	7	107	10	0	24	34	274
Total	6	208	11	225	2	0	2	4	11	172	9	192	27	1	47	75	496
07:00 AM	2	145	11	158	2	0	0	2	8	90	2	100	9	2	32	43	303
07:15 AM	3	229	15	247	1	1	2	4	12	141	4	157	18	0	41	59	467
07:30 AM	6	176	5	187	2	0	3	5	26	126	5	157	15	1	20	36	385
07:45 AM	3	143	10	156	2	0	3	5	19	140	7	166	15	2	29	46	373
Total	14	693	41	748	7	1	8	16	65	497	18	580	57	5	122	184	1528
08:00 AM	0	120	14	134	3	3	2	8	22	158	6	186	9	1	26	36	364
08:15 AM	3	124	5	132	5	2	3	10	16	164	5	185	10	2	25	37	364
Grand Total	23	1145	71	1239	17	6	15	38	114	991	38	1143	103	9	220	332	2752
Apprch %	1.9	92.4	5.7		44.7	15.8	39.5		10.0	86.7	3.3		31.0	2.7	66.3		
Total %	0.8	41.6	2.6	45.0	0.6	0.2	0.5	1.4	4.1	36.0	1.4	41.5	3.7	0.3	8.0	12.1	

	Honoapiilani Highway Southbound				Akahele Street Westbound				Honoapiilani Highway Northbound				Akahele Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 06:30 AM to 08:15 AM - Peak 1 of 1																	
Intersection	07:15 AM																
Volume	12	668	44	724	8	4	10	22	79	565	22	666	57	4	116	177	1589
Percent	1.7	92.3	6.1		36.4	18.2	45.5		11.9	84.8	3.3		32.2	2.3	65.5		
07:15 Volume	3	229	15	247	1	1	2	4	12	141	4	157	18	0	41	59	467
Peak Factor																	0.851
High Int.	07:15 AM				08:00 AM				08:00 AM				07:15 AM				
Volume	3	229	15	247	3	3	2	8	22	158	6	186	18	0	41	59	
Peak Factor				0.733				0.688				0.895				0.750	

Wilson Okamoto Corporation
1907 S. Beretania St. Suite 400
Honolulu, HI 96826

Counter: D1-0526 / D1-0527
Counted By: IQ / MAF
Weather: Clear

File Name : honhoop
Site Code : 00000003
Start Date : 3/16/2004
Page No : 1

Groups Printed- Unshifted

	Honoapiilani Highway Southbound				Hoohui Street Westbound				Honoapiilani Highway Northbound				Hoohui Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
02:00 PM	3	114	16	133	9	9	0	18	43	120	3	166	25	2	34	61	378
02:15 PM	2	129	19	150	4	7	0	11	34	112	8	154	16	6	34	56	371
02:30 PM	2	118	20	140	10	2	3	15	45	122	8	175	23	1	44	68	398
02:45 PM	3	111	20	134	7	2	1	10	54	148	6	208	15	2	31	48	400
Total	10	472	75	557	30	20	4	54	176	502	25	703	79	11	143	233	1547
03:00 PM	4	134	18	156	8	1	1	10	39	137	2	178	18	3	40	61	405
03:15 PM	1	142	21	164	11	4	0	15	42	147	11	200	15	0	48	63	442
03:30 PM	1	158	20	179	11	2	2	15	43	146	6	195	16	1	59	76	465
03:45 PM	3	153	24	180	11	5	1	17	53	155	7	215	20	3	37	60	472
Total	9	587	83	679	41	12	4	57	177	585	26	788	69	7	184	260	1784
04:00 PM	3	176	28	207	1	2	1	4	47	147	2	196	19	4	55	78	485
04:15 PM	3	179	27	209	8	5	0	13	69	172	8	249	22	4	41	67	538
04:30 PM	4	143	23	170	9	4	2	15	56	137	8	201	22	1	52	75	461
04:45 PM	5	124	24	153	5	1	1	7	46	152	7	205	18	3	44	65	430
Total	15	622	102	739	23	12	4	39	218	608	25	851	81	12	192	285	1914
Grand Total	34	1681	260	1975	94	44	12	150	571	1695	76	2342	229	30	519	778	5245
Apprch %	1.7	85.1	13.2		62.7	29.3	8.0		24.4	72.4	3.2		29.4	3.9	66.7		
Total %	0.6	32.0	5.0	37.7	1.8	0.8	0.2	2.9	10.9	32.3	1.4	44.7	4.4	0.6	9.9	14.8	

	Honoapiilani Highway Southbound				Hoohui Street Westbound				Honoapiilani Highway Northbound				Hoohui Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 02:00 PM to 04:45 PM - Peak 1 of 1																	
Intersection	03:30 PM																
Volume	10	666	99	775	31	14	4	49	212	620	23	855	77	12	192	281	1960
Percent	1.3	85.9	12.8		63.3	28.6	8.2		24.8	72.5	2.7		27.4	4.3	68.3		
04:15 Volume	3	179	27	209	8	5	0	13	69	172	8	249	22	4	41	67	538
Peak Factor																	0.911
High Int.	04:15 PM				03:45 PM				04:15 PM				04:00 PM				
Volume	3	179	27	209	11	5	1	17	69	172	8	249	19	4	55	78	
Peak Factor				0.927				0.721				0.858				0.901	

Wilson Okamoto Corporation
1907 S. Beretania St. Suite 400
Honolulu, HI 96826

Counter: D1-0768 / D1-0769
Counted By: TF / MF
Weather: Clear

File Name : honlowa
Site Code : 00000005
Start Date : 3/17/2004
Page No : 1

Groups Printed- Unshifted

	Honoapiilani Highway Southbound				Lower Honoapiilani Road Westbound				Honoapiilani Highway Northbound				Lower Honoapiilani Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
06:30 AM	0	84	7	91	0	0	0	0	51	94	4	149	6	0	81	87	327
06:45 AM	0	146	8	154	1	0	1	2	45	101	11	157	9	1	94	104	417
Total	0	230	15	245	1	0	1	2	96	195	15	306	15	1	175	191	744
07:00 AM	0	161	5	166	1	2	0	3	44	85	1	130	6	0	133	139	438
07:15 AM	0	277	8	285	1	0	0	1	72	151	0	223	7	1	148	156	665
07:30 AM	0	176	7	183	3	0	0	3	88	146	0	234	7	0	111	118	538
07:45 AM	0	168	18	186	4	0	0	4	98	180	2	280	11	0	116	127	597
Total	0	782	38	820	9	2	0	11	302	562	3	867	31	1	508	540	2238
08:00 AM	0	135	13	148	3	1	1	5	101	148	1	250	6	0	118	124	527
08:15 AM	1	126	7	134	2	0	0	2	72	147	1	220	6	0	86	92	448
Grand Total	1	1273	73	1347	15	3	2	20	571	1052	20	1643	58	2	887	947	3957
Apprch %	0.1	94.5	5.4		75.0	15.0	10.0		34.8	64.0	1.2		6.1	0.2	93.7		
Total %	0.0	32.2	1.8	34.0	0.4	0.1	0.1	0.5	14.4	26.6	0.5	41.5	1.5	0.1	22.4	23.9	

	Honoapiilani Highway Southbound				Lower Honoapiilani Road Westbound				Honoapiilani Highway Northbound				Lower Honoapiilani Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 06:30 AM to 08:15 AM - Peak 1 of 1																	
Intersection	07:15 AM																
Volume	0	756	46	802	11	1	1	13	359	625	3	987	31	1	493	525	2327
Percent	0.0	94.3	5.7		84.6	7.7	7.7		36.4	63.3	0.3		5.9	0.2	93.9		
07:15 Volume	0	277	8	285	1	0	0	1	72	151	0	223	7	1	148	156	665
Peak Factor																	0.875
High Int.	07:15 AM				08:00 AM				07:45 AM				07:15 AM				
Volume	0	277	8	285	3	1	1	5	98	180	2	280	7	1	148	156	
Peak Factor				0.704				0.650				0.881				0.841	

Wilson Okamoto Corporation
1907 S. Beretania St. Suite 400
Honolulu, HI 96826

Counter: D1-0525
Counted By: GMT
Weather: Clear

File Name : akahonp
Site Code : 00000004
Start Date : 3/16/2004
Page No : 1

Groups Printed- Unshifted

	Honoapiilani Highway Southbound				Akahele Street Westbound				Honoapiilani Highway Northbound				Akahele Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
02:00 PM	2	142	13	157	2	2	1	5	22	152	2	176	13	1	18	32	370
02:15 PM	5	156	6	167	6	0	2	8	26	144	3	173	8	1	17	26	374
02:30 PM	2	155	19	176	6	3	7	16	23	158	9	190	10	2	17	29	411
02:45 PM	1	135	13	149	3	1	1	5	27	193	1	221	14	0	18	32	407
Total	10	588	51	649	17	6	11	34	98	647	15	760	45	4	70	119	1562
03:00 PM	0	169	13	182	2	0	2	4	30	166	1	197	10	0	14	24	407
03:15 PM	1	185	14	200	4	0	0	4	23	187	0	210	13	1	29	43	457
03:30 PM	0	209	19	228	3	1	2	6	25	177	6	208	16	1	15	32	474
03:45 PM	0	185	16	201	7	1	1	9	38	195	3	236	19	0	22	41	487
Total	1	748	62	811	16	2	5	23	116	725	10	851	58	2	80	140	1825
04:00 PM	1	211	20	232	1	1	2	4	31	176	3	210	18	0	25	43	489
04:15 PM	0	194	34	228	2	0	0	2	24	231	1	256	18	0	18	36	522
04:30 PM	0	184	20	204	3	0	3	6	30	181	8	219	17	0	22	39	468
04:45 PM	4	147	22	173	5	2	2	9	27	193	4	224	10	2	32	44	450
Total	5	736	96	837	11	3	7	21	112	781	16	909	63	2	97	162	1929
Grand Total	16	2072	209	2297	44	11	23	78	326	2153	41	2520	166	8	247	421	5316
Apprch %	0.7	90.2	9.1		56.4	14.1	29.5		12.9	85.4	1.6		39.4	1.9	58.7		
Total %	0.3	39.0	3.9	43.2	0.8	0.2	0.4	1.5	6.1	40.5	0.8	47.4	3.1	0.2	4.6	7.9	

	Honoapiilani Highway Southbound				Akahele Street Westbound				Honoapiilani Highway Northbound				Akahele Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 02:00 PM to 04:45 PM - Peak 1 of 1																	
Intersection	03:30 PM																
Volume	1	799	89	889	13	3	5	21	118	779	13	910	71	1	80	152	1972
Percent	0.1	89.9	10.0		61.9	14.3	23.8		13.0	85.6	1.4		46.7	0.7	52.6		
04:15 Volume	0	194	34	228	2	0	0	2	24	231	1	256	18	0	18	36	522
Peak Factor																	0.944
High Int.	04:00 PM				03:45 PM				04:15 PM				04:00 PM				
Volume	1	211	20	232	7	1	1	9	24	231	1	256	18	0	25	43	
Peak Factor				0.958				0.583				0.889				0.884	

Wilson Okamoto Corporation
1907 S. Beretania St. #400
Honolulu, HI 96826

: Maui Prep
: SUNNY
: 0349

Site: 1
Date: 03/16/04
Day: Tuesday

Interval	SB AM	SB PM	NB AM	NB PM	Combined AM	Combined PM
2:00	0	86	0	75	0	161
2:15	0	138	0	125	0	263
2:30	0	206	0	125	0	331
2:45	0	176	0	132	0	308
3:00	0	146	0	127	0	273
3:15	0	160	0	132	0	292
3:30	0	156	0	140	0	296
3:45	0	148	0	155	0	303
4:00	0	168	0	149	0	317
4:15	0	168	0	160	0	328
4:30	0	193	0	160	0	353
4:45	0	194	0	158	0	352
5:00	0	218	0	162	0	380
5:15	0	228	0	164	0	392
5:30	0	173	0	181	0	354
5:45	0	170	0	168	0	338
6:00	0	182	0	146	0	328
6:15	0	148	0	179	0	327
6:30	0	142	0	158	0	300
6:45	0	146	0	136	0	282
7:00	0	146	0	129	0	275
7:15	0	124	0	146	0	270
7:30	0	110	0	124	0	234
7:45	0	130	0	118	0	248
8:00	0	123	0	92	0	215
8:15	0	111	0	97	0	208
8:30	0	80	0	90	0	170
8:45	0	69	0	80	0	149
9:00	0	120	0	82	0	202
9:15	0	76	0	92	0	168
9:30	0	57	0	82	0	139
9:45	0	56	0	94	0	150
10:00	0	54	0	78	0	132
10:15	0	57	0	82	0	139
10:30	0	57	0	82	0	139
10:45	0	49	0	92	0	141
11:00	0	65	0	70	0	135
11:15	0	59	0	84	0	143
11:30	0	60	0	42	0	102
11:45	0	36	0	54	0	90
12:00	0	52	0	39	0	91
12:15	0	24	0	18	0	42
12:30	0	13	0	26	0	39
12:45	0	21	0	15	0	36
Totals	0	5,095	0	4,840	0	9,935
Splits		51.3		48.7		

	Combined
2:00	1,063
2:15	
2:30	1,164
2:45	
3:00	1,350
3:15	
3:30	1,464
3:45	
4:00	1,237
4:15	
4:30	1,027
4:45	
5:00	742
5:15	
5:30	659
5:45	
6:00	551
6:15	
6:30	470
6:45	
7:00	208
7:15	
7:30	
7:45	
8:00	
8:15	
8:30	
8:45	
9:00	
9:15	
9:30	
9:45	
10:00	
10:15	
10:30	
10:45	
11:00	
11:15	
11:30	
11:45	
12:00	
12:15	
12:30	
12:45	
Totals	9,935
Splits	
Peak Hour	03:45
Volume	1,478
Factor	0.94

File : mauiprep
Printed : 3/19/2004
Page : 1

Wilson Okamoto Corporation
1907 S. Beretania St. Suite 400
Honolulu, HI 96826

Counter: D1-0768 / D1-0769
Counted By: TF / MF
Weather: Clear

File Name : honlowp
Site Code : 00000005
Start Date : 3/16/2004
Page No : 1

Groups Printed- Unshifted

	Honoapiilani Highway Southbound				Lower Honoapiilani Road Westbound				Honoapiilani Highway Northbound				Lower Honoapiilani Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
02:00 PM	0	140	21	161	1	0	0	1	127	185	0	312	10	0	127	137	611
02:15 PM	0	176	11	187	2	0	0	2	98	158	2	258	14	0	100	114	561
02:30 PM	0	129	12	141	0	0	0	0	92	142	0	234	13	0	103	116	491
02:45 PM	0	164	19	183	0	0	0	0	106	157	0	263	15	0	152	167	613
Total	0	609	63	672	3	0	0	3	423	642	2	1067	52	0	482	534	2276
03:00 PM	0	164	12	176	0	0	0	0	107	150	0	257	10	0	118	128	561
03:15 PM	0	176	14	190	7	0	2	9	114	181	0	295	6	0	110	116	610
03:30 PM	0	212	16	228	5	0	0	5	82	197	2	281	8	1	100	109	623
03:45 PM	0	191	15	206	2	0	1	3	161	229	1	391	11	0	103	114	714
Total	0	743	57	800	14	0	3	17	464	757	3	1224	35	1	431	467	2508
04:00 PM	0	248	16	264	0	0	0	0	101	212	0	313	13	0	141	154	731
04:15 PM	0	199	16	215	1	0	0	1	132	214	0	346	3	0	133	136	698
04:30 PM	0	184	16	200	0	0	0	0	133	163	0	296	7	0	182	189	685
04:45 PM	0	154	20	174	0	0	0	0	130	191	0	321	13	0	122	135	630
Total	0	785	68	853	1	0	0	1	496	780	0	1276	36	0	578	614	2744
Grand Total	0	2137	188	2325	18	0	3	21	1383	2179	5	3567	123	1	1491	1615	7528
Apprch %	0.0	91.9	8.1		85.7	0.0	14.3		38.8	61.1	0.1		7.6	0.1	92.3		
Total %	0.0	28.4	2.5	30.9	0.2	0.0	0.0	0.3	18.4	28.9	0.1	47.4	1.6	0.0	19.8	21.5	

	Honoapiilani Highway Southbound				Lower Honoapiilani Road Westbound				Honoapiilani Highway Northbound				Lower Honoapiilani Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 02:00 PM to 04:45 PM - Peak 1 of 1																	
Intersection	03:45 PM																
Volume	0	822	63	885	3	0	1	4	527	818	1	1346	34	0	559	593	2828
Percent	0.0	92.9	7.1		75.0	0.0	25.0		39.2	60.8	0.1		5.7	0.0	94.3		
04:00 Volume	0	248	16	264	0	0	0	0	101	212	0	313	13	0	141	154	731
Peak Factor																	0.967
High Int.	04:00 PM				03:45 PM				03:45 PM				04:30 PM				
Volume	0	248	16	264	2	0	1	3	161	229	1	391	7	0	182	189	
Peak Factor				0.838				0.333				0.861				0.784	

Wilson Okamoto Corporation
1907 S. Beretania St., #400
Honolulu, HI 96826

'itle1 : Maui Prep
2 : SUNNY
3 : 0349

Site: 1
Date: 03/17/04
Day: Wednesday

Interval	SB			NB			Combined		
Begin	AM		PM	AM		PM	AM		PM
12:00	17	56	*	17	53	*	34	109	*
12:15	23		*	24		*	47		*
12:30	8		*	7		*	15		*
12:45	8		*	5		*	13		*
01:00	11	32	*	9	33	*	20	65	*
01:15	5		*	5		*	10		*
01:30	6		*	6		*	12		*
01:45	10		*	13		*	23		*
02:00	8	22	*	12	33	*	20	55	*
02:15	7		*	9		*	16		*
02:30	4		*	5		*	9		*
02:45	3		*	7		*	10		*
03:00	5	21	*	10	21	*	15	42	*
03:15	5		*	0		*	5		*
03:30	4		*	5		*	9		*
03:45	7		*	6		*	13		*
04:00	10	33	*	14	124	*	24	157	*
04:15	4		*	22		*	26		*
04:30	9		*	38		*	47		*
04:45	10		*	50		*	60		*
05:00	28	118	*	22	120	*	50	238	*
05:15	26		*	30		*	56		*
05:30	26		*	26		*	52		*
05:45	38		*	42		*	80		*
06:00	64	277	*	30	257	*	94	534	*
06:15	47		*	52		*	99		*
06:30	68		*	91		*	159		*
06:45	98		*	84		*	182		*
07:00	122	578	*	100	498	*	222	1,076	*
07:15	181		*	128		*	309		*
07:30	147		*	140		*	287		*
07:45	128		*	130		*	258		*
08:00	104		*	134		*	238		*
08:15	102		*	170		*	272		*
08:30	0		*	0		*	0		*
08:45	*		*	*		*	*		*
09:00	*		*	*		*	*		*
09:15	*		*	*		*	*		*
09:30	*		*	*		*	*		*
09:45	*		*	*		*	*		*
10:00	*		*	*		*	*		*
10:15	*		*	*		*	*		*
10:30	*		*	*		*	*		*
10:45	*		*	*		*	*		*
11:00	*		*	*		*	*		*
11:15	*		*	*		*	*		*
11:30	*		*	*		*	*		*
11:45	*		*	*		*	*		*
Totals	1,343		0	1,443		0	2,786		0
%	48.2		*	51.8		*			
Day Totals		1,343			1,443			2,786	
Day Splits		48.2			51.8				
Peak Hour	07:00		*	07:30		*	07:15		*
Volume	578		*	574		*	1,092		*
Factor	0.80		*	0.84		*	0.88		*

APPENDIX B

LEVEL OF SERVICE DEFINITIONS

LEVEL OF SERVICE DEFINITIONS

LEVEL-OF-SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

Level of Service (LOS) for signalized intersections is defined in terms of delay, which is a measure of driver discomfort, frustration, fuel consumption, and increased travel time. Specifically, level-of-service (LOS) criteria are stated in terms of the average control delay per vehicle, typically a 15-min analysis period. The criteria are given in the following table.

Table 1: Level-of-Service Criteria for Signalized Intersections

Level of Service	Control Delay per Vehicle (sec/veh)
A	≤10.0
B	>10.0 and ≤20.0
C	>20.0 and ≤35.0
D	>35.0 and ≤55.0
E	>55.0 and ≤80.0
F	>80.0

Delay is a complex measure and depends on a number of variables, including the quality of progression, the cycle length, the green ratio, and the v/c ratio for the lane group.

Level of Service A describes operations with low control delay, up to 10 sec per vehicle. This level of service occurs when progression is extremely favorable and most vehicles arrive during the green phase. Many vehicles do not stop at all. Short cycle lengths may tend to contribute to low delay values.

Level of Service B describes operations with control delay greater than 10 and up to 20 sec per vehicle. This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of delay.

Level of Service C describes operations with control delay greater than 20 and up to 35 sec per vehicle. These higher delays may result from only fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level. Cycle failure occurs when a given green phase does not serve queued vehicles and overflows occur. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.

Level of Service D describes operations with control delay greater than 35 and up to 55 sec per vehicle. At level of service D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.

Level of Service E describes operation with control delay greater than 55 and up to 80 sec per vehicle. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent.

Level of Service F describes operations with control delay in excess of 80 sec per vehicle. This level, considered to be unacceptable to most drivers, often occurs with oversaturation, that is, when arrival flow rates exceed the capacity lane groups. It may also occur at high v/c ratios with many individual cycle failures. Poor progression and long cycle lengths may also contribute significantly to high delay levels.

LEVEL OF SERVICE DEFINITIONS

LEVEL-OF-SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

Level of Service (LOS) criteria are given in Table 1. As used here, control delay is defined as the total elapsed time from the time a vehicle stops at the end of the queue to the time required for the vehicle to travel from the last-in-queue position to the first-in-queue position, including deceleration of vehicles from free-flow speed to the speed of vehicles in the queue.

The average total delay for any particular minor movement is a function of the service rate or capacity of the approach and the degree of saturation. If the degree of saturation is greater than about 0.9, average control delay is significantly affected by the length of the analysis period.

Table 1: Level-of-Service Criteria for Unsignalized Intersections

Level of Service	Average Control Delay (Sec/Veh)
A	≤10.0
B	>10.0 and ≤15.0
C	>15.0 and ≤25.0
D	>25.0 and ≤35.0
E	>35.0 and ≤50.0
F	>50.0

"Highway Capacity Manual," Transportation Research Board, 2000

APPENDIX C

CAPACITY ANALYSIS CALCULATIONS
EXISTING PEAK HOUR TRAFFIC ANALYSIS

HCS2000: Unsignalized Intersections Release 4.1d

TWO-WAY STOP CONTROL SUMMARY

Analyst:
Agency/Co.:
Date Performed: 3/8/2005
Analysis Time Period: AM Peak
Intersection:
Jurisdiction:
Units: U. S. Customary
Analysis Year: Existing
Project ID:
East/West Street: Office Road
North/South Street: Honoapiilani Hwy
Intersection Orientation: NS Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street: Approach	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	358	175	8	5	79	127
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	397	194	8	5	87	141
Percent Heavy Vehicles	2	--	--	2	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes	1	1	0	1	1	0
Configuration	L		TR	L		TR
Upstream Signal?		No			No	

Minor Street: Approach	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	5	5	5	55	5	159
Peak Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	5	5	5	61	5	176
Percent Heavy Vehicles	2	2	2	2	2	2
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No /			/
Lanes	0	1	0	0	1	1
Configuration		LTR		LT		R

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Config	L	L		LTR		LT		R
v (vph)	397	5		15		66		176
C(m) (vph)	1340	1370		216		269		887
v/c	0.30	0.00		0.07		0.25		0.20
95% queue length	1.26	0.01		0.22		0.97		0.74
Control Delay	8.8	7.6		22.9		22.7		10.1
LOS	A	A		C		C		B
Approach Delay				22.9			13.5	
Approach LOS				C			B	

HCS2000: Unsignalized Intersections Release 4.1d

TWO-WAY STOP CONTROL SUMMARY

Analyst:
Agency/Co.:
Date Performed: 3/8/2005
Analysis Time Period: PM Peak
Intersection:
Jurisdiction:
Units: U. S. Customary
Analysis Year: Existing
Project ID:
East/West Street: Office Road
North/South Street: Honoapiilani Hwy
Intersection Orientation: NS Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street: Approach	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	243	146	8	5	175	66
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	270	162	8	5	194	73
Percent Heavy Vehicles	2	--	--	2	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes	1	1	0	1	1	0
Configuration	L		TR	L		TR
Upstream Signal?		No			No	

Minor Street: Approach	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	5	5	8	66	8	380
Peak Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	5	5	8	73	8	422
Percent Heavy Vehicles	2	2	2	2	2	2
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No /			/
Lanes	0	1	0	0	1	1
Configuration		LTR		LT		R

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Config	L	L		LTR		LT		R
v (vph)	270	5		18		81		422
C(m) (vph)	1297	1407		268		384		809
v/c	0.21	0.00		0.07		0.21		0.52
95% queue length	0.79	0.01		0.22		0.80		3.22
Control Delay	8.5	7.6		19.4		16.9		14.3
LOS	A	A		C		C		B
Approach Delay				19.4			14.7	
Approach LOS				C			B	

HCS2000: Signalized Intersections Release 4.1d

Analyst:
Agency:
Date: 3/8/05
Period: AM PEAK
Project ID:
E/W St: Napilihau Street

Inter.:
Area Type: All other areas
Jurisd:
Year : Existing
N/S St: Honoapiilani Highway

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	1	0	1	0	1	1	0	1	1	1
LGConfig		LT	R		LTR		L	TR		L	T	R
Volume	60	0	326	7	2	2	232	311	9	2	129	19
Lane Width		12.0	12.0		12.0		12.0	12.0		12.0	12.0	12.0
RTOR Vol			163			1			1			2

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4			5	6	7	8
EB Left	A				NB	Left	A			
Thru	A					Thru		A		
Right	A					Right		A		
Peds						Peds				
WB Left	A				SB	Left	A			
Thru	A					Thru		A		
Right	A					Right		A		
Peds						Peds				
NB Right					EB	Right				
SB Right					WB	Right				
Green	24.0						24.5	26.5		
Yellow	4.0						4.0	4.0		
All Red	1.0						1.0	1.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LT	365	1370	0.21	0.27	25.9	C	28.0	C
R	422	1583	0.49	0.27	28.7	C		
Westbound								
LTR	427	1600	0.03	0.27	24.4	C	24.4	C
Northbound								
L	532	1956	0.48	0.27	28.1	C		
TR	604	2051	0.58	0.29	28.5	C	28.3	C
Southbound								
L	532	1956	0.00	0.27	23.9	C		
T	606	2059	0.27	0.29	24.5	C	24.3	C
R	515	1750	0.04	0.29	22.7	C		

Intersection Delay = 27.5 (sec/veh) Intersection LOS = C

HCS2000: Signalized Intersections Release 4.1d

Analyst:
Agency:
Date: 03/09/05
Period: PM PEAK
Project ID:
E/W St: Napilihau Street

Inter.:
Area Type: All other areas
Jurisd:
Year : Existing
N/S St: Honoapiilani Highway

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	1	0	1	0	1	1	0	1	1	1
LGConfig		LT	R		LTR		L	TR		L	T	R
Volume	74	4	368	22	17	4	390	306	6	2	407	83
Lane Width		12.0	12.0		12.0		12.0	12.0		12.0	12.0	12.0
RTOR Vol			184			2			1			8

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4			5	6	7	8
EB Left	A				NB	Left	A			
Thru	A					Thru		A		
Right	A					Right		A		
Peds						Peds				
WB Left	A				SB	Left	A			
Thru	A					Thru		A		
Right	A					Right		A		
Peds						Peds				
NB Right					EB	Right				
SB Right					WB	Right				
Green	19.0						25.5	30.5		
Yellow	4.0						4.0	4.0		
All Red	1.0						1.0	1.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LT	260	1230	0.33	0.21	30.8	C	33.9	C
R	334	1583	0.60	0.21	35.3	D		
Westbound								
LTR	296	1404	0.41	0.21	31.6	C	31.6	C
Northbound								
L	554	1956	0.76	0.28	35.6	D		
TR	696	2054	0.48	0.34	24.0	C	30.4	C
Southbound								
L	554	1956	0.01	0.28	23.2	C		
T	698	2059	0.82	0.34	35.6	D	33.2	C
R	593	1750	0.18	0.34	21.1	C		

Intersection Delay = 32.1 (sec/veh) Intersection LOS = C

HCS2000: Signalized Intersections Release 4.1d

Analyst:
Agency:
Date: 03/08/05
Period: AM PEAK
Project ID:
E/W St: Hoohui Road

Inter.:
Area Type: All other areas
Jurisd:
Year : Existing
N/S St: Honoapiilani Highway

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	1	0	1	1	1	1	1	1	1	1
LGConfig		LT	R		LT	R	L	T	R	L	T	R
Volume	85	7	197	62	17	8	146	464	22	4	465	70
Lane Width		12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
RTOR Vol			99			4			2			7

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	A				NB Left	A			
Thru	A				Thru		A		
Right	A				Right		A		
Peds					Peds				
WB Left	A				SB Left	A			
Thru	A				Thru		A		
Right	A				Right		A		
Peds					Peds				
NB Right					EB Right				
SB Right					WB Right				
Green	22.5					21.0	31.5		
Yellow	4.0					4.0	4.0		
All Red	1.0					1.0	1.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LT	248	991	0.42	0.25	29.4	C	28.5	C
R	396	1583	0.28	0.25	27.6	C		
Westbound								
LT	291	1163	0.46	0.25	29.8	C	29.6	C
R	396	1583	0.02	0.25	25.4	C		
Northbound								
L	456	1956	0.36	0.23	29.4	C		
T	721	2059	0.72	0.35	29.1	C	28.9	C
R	612	1750	0.04	0.35	19.3	B		
Southbound								
L	456	1956	0.01	0.23	26.5	C		
T	721	2059	0.67	0.35	27.3	C	26.4	C
R	612	1750	0.11	0.35	19.8	B		

Intersection Delay = 28.0 (sec/veh) Intersection LOS = C

HCS2000: Signalized Intersections Release 4.1d

Analyst:
Agency:
Date: 03/08/05
Period: PM PEAK
Project ID:
E/W St: Hoohui Road

Inter.:
Area Type: All other areas
Jurisd:
Year : Existing
N/S St: Honoapiilani Highway

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	1	0	1	1	1	1	1	1	1	1
LGConfig		LT	R		LT	R	L	T	R	L	T	R
Volume	77	12	192	31	14	4	212	620	23	10	666	99
Lane Width		12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
RTOR Vol			96			2			2			10

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	A				NB Left	A			
Thru	A				Thru		A		
Right	A				Right		A		
Peds					Peds				
WB Left	A				SB Left	A			
Thru	A				Thru		A		
Right	A				Right		A		
Peds					Peds				
NB Right					EB Right				
SB Right					WB Right				
Green	16.5					21.5	37.0		
Yellow	4.0					4.0	4.0		
All Red	1.0					1.0	1.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LT	236	1285	0.42	0.18	33.7	C	33.3	C
R	290	1583	0.36	0.18	32.9	C		
Westbound								
LT	244	1330	0.25	0.18	32.0	C	31.9	C
R	290	1583	0.01	0.18	30.1	C		
Northbound								
L	423	1770	0.58	0.24	32.4	C		
T	846	2059	0.85	0.41	33.2	C	32.5	C
R	651	1583	0.04	0.41	15.9	B		
Southbound								
L	423	1770	0.03	0.24	26.3	C		
T	846	2059	0.85	0.41	32.6	C	30.6	C
R	651	1583	0.15	0.41	16.7	B		

Intersection Delay = 31.8 (sec/veh) Intersection LOS = C

HCS2000: Signalized Intersections Release 4.1d

Analyst:
Agency:
Date: 03/09/05
Period: AM PEAK
Project ID:
E/W St: Akahele Street

Inter.:
Area Type: All other areas
Jurisd:
Year : Existing
N/S St: Honoapiilani Highway

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	1	1	1	0	1	1	1	1	1	1
LGConfig	L	T	R	L	TR		L	T	R	L	T	R
Volume	57	4	116	8	4	10	79	565	22	12	668	44
Lane Width	12.0	12.0	12.0	12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0
RTOR Vol			58			5			2			4

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	A				NB Left	A			
Thru		A			Thru		A		
Right		A			Right		A		
Peds					Peds				
WB Left	A				SB Left	A			
Thru		A			Thru		A		
Right		A			Right		A		
Peds					Peds				
NB Right					EB Right				
SB Right					WB Right				
Green	14.5	14.5				14.5	56.5		
Yellow	4.0	4.0				4.0	4.0		
All Red	1.0	1.0				1.0	1.0		

Cycle Length: 120.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	214	1770	0.36	0.12	49.5	D		
T	225	1863	0.02	0.12	46.5	D	49.7	D
R	191	1583	0.40	0.12	50.1	D		
Westbound								
L	214	1770	0.06	0.12	46.8	D		
TR	207	1712	0.06	0.12	46.9	D	46.8	D
Northbound								
L	236	1956	0.37	0.12	49.6	D		
T	969	2059	0.65	0.47	25.7	C	28.3	C
R	824	1750	0.03	0.47	17.0	B		
Southbound								
L	236	1956	0.07	0.12	46.9	D		
T	969	2059	0.93	0.47	49.5	D	47.7	D
R	824	1750	0.07	0.47	17.4	B		

Intersection Delay = 40.3 (sec/veh) Intersection LOS = D

HCS2000: Signalized Intersections Release 4.1d

Analyst:
Agency:
Date: 03/08/05
Period: PM PEAK
Project ID:
E/W St: Akahele Street

Inter.:
Area Type: All other areas
Jurisd:
Year : Existing
N/S St: Honoapiilani Highway

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	1	1	1	0	1	1	1	1	1	1
LGConfig	L	T	R	L	TR		L	T	R	L	T	R
Volume	71	1	80	13	3	5	118	779	13	1	799	89
Lane Width	12.0	12.0	12.0	12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0
RTOR Vol			40			3			1			9

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	A				NB Left	A			
Thru		A			Thru		A		
Right		A			Right		A		
Peds					Peds				
WB Left	A				SB Left	A			
Thru		A			Thru		A		
Right		A			Right		A		
Peds					Peds				
NB Right					EB Right				
SB Right					WB Right				
Green	14.5	13.0				17.5	55.0		
Yellow	4.0	4.0				4.0	4.0		
All Red	1.0	1.0				1.0	1.0		

Cycle Length: 120.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	214	1770	0.37	0.12	49.7	D		
T	202	1863	0.00	0.11	47.7	D	49.8	D
R	171	1583	0.26	0.11	49.9	D		
Westbound								
L	214	1770	0.10	0.12	47.2	D		
TR	190	1758	0.04	0.11	48.0	D	47.4	D
Northbound								
L	285	1956	0.47	0.15	48.2	D		
T	944	2059	0.93	0.46	49.4	D	48.8	D
R	802	1750	0.02	0.46	17.7	B		
Southbound								
L	285	1956	0.00	0.15	43.8	D		
T	944	2059	0.88	0.46	40.5	D	38.5	D
R	802	1750	0.10	0.46	18.5	B		

Intersection Delay = 44.3 (sec/veh) Intersection LOS = D

HCS2000: Signalized Intersections Release 4.1d

Analyst:
Agency: Wilson Okamoto Corp
Date: 3/8/05
Period: AM Peak
Project ID:
E/W St: Lower Honoapiilani Rd

Inter.:
Area Type: All other areas
Jurisd:
Year : Existing
N/S St: Honopiilani Hwy

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	1	0	1	0	1	2	0	1	2	1
LGConfig		LT	R		LTR		L	TR		L	T	R
Volume	31	1	493	11	1	1	359	625	3	0	756	46
Lane Width		12.0	12.0		12.0		12.0	12.0		12.0	12.0	12.0
RTOR Vol			493			0			1			23

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A							
Thru	A							
Right	A							
Peds								
WB Left		A						
Thru		A						
Right		A						
Peds								
NB Right								
SB Right								
Green	15.0	14.5			32.5	38.0		
Yellow	4.0	4.0			4.0	4.0		
All Red	1.0	1.0			1.0	1.0		

	5	6	7	8
NB Left	A			
Thru		A		
Right		A		
Peds				
SB Left	A			
Thru		A		
Right		A		
Peds				
EB Right				
WB Right				

Cycle Length: 120.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LT	222	1776	0.17	0.13	47.3	D	47.3	D
R	198	1583	0.00	0.13	45.9	D		
Westbound								
LTR	214	1767	0.10	0.12	47.1	D	47.1	D
Northbound								
L	530	1956	0.77	0.27	47.1	D		
TR	1238	3910	0.58	0.32	34.9	C	39.4	D
Southbound								
L	530	1956	0.00	0.27	31.9	C		
T	1239	3912	0.87	0.32	45.7	D	45.2	D
R	554	1750	0.06	0.32	28.6	C		

Intersection Delay = 42.4 (sec/veh) Intersection LOS = D

HCS2000: Signalized Intersections Release 4.1d

Analyst:
Agency: Wilson Okamoto Corp
Date: 3/8/05
Period: PM Peak
Project ID:
E/W St: Lower Honoapiilani Rd

Inter.:
Area Type: All other areas
Jurisd:
Year : Existing
N/S St: Honopiilani Hwy

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	1	0	1	0	1	2	0	1	2	1
LGConfig		LT	R		LTR		L	TR		L	T	R
Volume	38	1	477	8	0	1	476	852	3	0	850	63
Lane Width		12.0	12.0		12.0		12.0	12.0		12.0	12.0	12.0
RTOR Vol			477			0			0			32

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A							
Thru	A							
Right	A							
Peds								
WB Left		A						
Thru		A						
Right		A						
Peds								
NB Right								
SB Right								
Green	12.0	11.0			42.0	35.0		
Yellow	4.0	4.0			4.0	4.0		
All Red	1.0	1.0			1.0	1.0		

	5	6	7	8
NB Left	A			
Thru		A		
Right		A		
Peds				
SB Left	A			
Thru		A		
Right		A		
Peds				
EB Right				
WB Right				

Cycle Length: 120.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LT	178	1776	0.28	0.10	50.9	D	50.9	D
R	158	1583	0.00	0.10	48.6	D		
Westbound								
LTR	161	1755	0.15	0.09	50.6	D	50.6	D
Northbound								
L	619	1770	0.88	0.35	50.9	D		
TR	1140	3910	0.86	0.29	47.1	D	48.5	D
Southbound								
L	619	1770	0.00	0.35	25.4	C		
T	1141	3912	0.89	0.29	49.3	D	48.7	D
R	462	1583	0.08	0.29	30.9	C		

Intersection Delay = 48.6 (sec/veh) Intersection LOS = D

APPENDIX D

CAPACITY ANALYSIS CALCULATIONS
PROJECTED YEAR 2008 PEAK HOUR TRAFFIC
ANALYSIS WITHOUT PROJECT

HCS2000: Unsignalized Intersections Release 4.1d

TWO-WAY STOP CONTROL SUMMARY

Analyst:
Agency/Co.:
Date Performed: 3/8/2005
Analysis Time Period: AM Peak
Intersection:
Jurisdiction:
Units: U. S. Customary
Analysis Year: Year 2008 w/out project
Project ID:
East/West Street: Office Road
North/South Street: Honoapiilani Hwy
Intersection Orientation: NS Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street: Approach	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	341	213	8	5	102	117
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	378	236	8	5	113	130
Percent Heavy Vehicles	2	--	--	2	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes	1	1	0	1	1	0
Configuration	L	TR		L	TR	
Upstream Signal?		No			No	

Minor Street: Approach	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	5	5	5	52	5	155
Peak Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	5	5	5	57	5	172
Percent Heavy Vehicles	2	2	2	2	2	2
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No	/		/
Lanes	0	1	0	0	1	1
Configuration		LTR		LT		R

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Config	L	L		LTR		LT		R
v (vph)	378	5		15		62		172
C(m) (vph)	1323	1322		211		262		865
v/c	0.29	0.00		0.07		0.24		0.20
95% queue length	1.20	0.01		0.23		0.92		0.74
Control Delay	8.8	7.7		23.4		23.0		10.2
LOS	A	A		C		C		B
Approach Delay				23.4			13.6	
Approach LOS				C			B	

HCS2000: Unsignalized Intersections Release 4.1d

TWO-WAY STOP CONTROL SUMMARY

Analyst:
Agency/Co.:
Date Performed: 3/8/2005
Analysis Time Period: PM Peak
Intersection:
Jurisdiction:
Units: U. S. Customary
Analysis Year: Year 2008 w/out project
Project ID:
East/West Street: Office Road
North/South Street: Honoapiilani Hwy
Intersection Orientation: NS Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street: Approach	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	232	180	8	5	221	59
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	257	200	8	5	245	65
Percent Heavy Vehicles	2	--	--	2	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes	1	1	0	1	1	0
Configuration	L		TR	L		TR
Upstream Signal?		No			No	

Minor Street: Approach	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	5	5	8	57	8	368
Peak Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	5	5	8	63	8	408
Percent Heavy Vehicles	2	2	2	2	2	2
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No	/		/
Lanes	0	1	0	0	1	1
Configuration		LTR			LT	R

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Config	L	L		LTR		LT		R
v (vph)	257	5		18		71		408
C(m) (vph)	1250	1363		248		351		761
v/c	0.21	0.00		0.07		0.20		0.54
95% queue length	0.78	0.01		0.23		0.76		3.40
Control Delay	8.6	7.7		20.7		17.9		15.2
LOS	A	A		C		C		C
Approach Delay				20.7			15.6	
Approach LOS				C			C	

HCS2000: Signalized Intersections Release 4.1d

Analyst:
Agency:
Date: 3/8/05
Period: AM PEAK
Project ID:
E/W St: Napilihau Street

Inter.:
Area Type: All other areas
Jurisd:
Year : Year 2008 w/out project

N/S St: Honoapiilani Highway

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	1	0	1	0	1	1	0	1	1	1
LGConfig		LT	R		LTR		L	TR		L	T	R
Volume	60	0	346	7	2	2	254	341	9	2	148	19
Lane Width		12.0	12.0		12.0		12.0	12.0		12.0	12.0	12.0
RTOR Vol			173			1			1			2

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	A				NB Left	A			
Thru	A				Thru		A		
Right	A				Right		A		
Peds					Peds				
WB Left	A				SB Left	A			
Thru	A				Thru		A		
Right	A				Right		A		
Peds					Peds				
NB Right					EB Right				
SB Right					WB Right				
Green	24.0					24.5	26.5		
Yellow	4.0					4.0	4.0		
All Red	1.0					1.0	1.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LT	365	1370	0.21	0.27	25.9	C	28.4	C
R	422	1583	0.52	0.27	29.2	C		
Westbound								
LTR	427	1600	0.03	0.27	24.4	C	24.4	C
Northbound								
L	532	1956	0.52	0.27	28.8	C		
TR	604	2052	0.64	0.29	29.8	C	29.4	C
Southbound								
L	532	1956	0.00	0.27	23.9	C		
T	606	2059	0.31	0.29	24.9	C	24.7	C
R	515	1750	0.04	0.29	22.7	C		

Intersection Delay = 28.2 (sec/veh) Intersection LOS = C

HCS2000: Signalized Intersections Release 4.1d

Analyst:
Agency:
Date: 03/09/05
Period: PM PEAK
Project ID:
E/W St: Napilihau Street

Inter.:
Area Type: All other areas
Jurisd:
Year : Year 2008 w/out project
N/S St: Honoapiilani Highway

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	1	0	1	0	1	1	0	1	1	1
LGConfig		LT	R		LTR		L	TR		L	T	R
Volume	74	4	404	22	17	4	408	340	6	2	458	83
Lane Width		12.0	12.0		12.0		12.0	12.0		12.0	12.0	12.0
RTOR Vol			202			2			1			8

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	A				NB Left	A			
Thru	A				Thru		A		
Right	A				Right		A		
Peds					Peds				
WB Left	A				SB Left	A			
Thru	A				Thru		A		
Right	A				Right		A		
Peds					Peds				
NB Right					EB Right				
SB Right					WB Right				
Green	17.5					25.0	32.5		
Yellow	4.0					4.0	4.0		
All Red	1.0					1.0	1.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LT	239	1227	0.36	0.19	32.3	C	39.6	D
R	308	1583	0.72	0.19	42.3	D		
Westbound								
LTR	260	1338	0.47	0.19	33.4	C	33.4	C
Northbound								
L	543	1956	0.81	0.28	39.8	D		
TR	742	2055	0.50	0.36	22.9	C	32.1	C
Southbound								
L	543	1956	0.01	0.28	23.5	C		
T	744	2059	0.87	0.36	38.6	D	35.9	D
R	632	1750	0.17	0.36	19.7	B		

Intersection Delay = 34.8 (sec/veh) Intersection LOS = C

HCS2000: Signalized Intersections Release 4.1d

Analyst:
Agency:
Date: 03/08/05
Period: AM PEAK
Project ID:
E/W St: Hoohui Road

Inter.:
Area Type: All other areas
Jurisd:
Year : Year 2008 w/out project
N/S St: Honoapiilani Highway

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	1	0	1	1	1	1	1	1	1	1
LGConfig		LT	R		LT	R	L	T	R	L	T	R
Volume	85	7	201	62	17	8	163	530	22	4	531	70
Lane Width		12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
RTOR Vol			101			4			2			7

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	A				NB Left	A			
Thru	A				Thru		A		
Right	A				Right		A		
Peds					Peds				
WB Left	A				SB Left	A			
Thru	A				Thru		A		
Right	A				Right		A		
Peds					Peds				
NB Right					EB Right				
SB Right					WB Right				
Green	21.5					20.0	33.5		
Yellow	4.0					4.0	4.0		
All Red	1.0					1.0	1.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LT	231	968	0.45	0.24	30.6	C	29.5	C
R	378	1583	0.30	0.24	28.5	C		
Westbound								
LT	274	1149	0.49	0.24	30.9	C	30.7	C
R	378	1583	0.02	0.24	26.2	C		
Northbound								
L	435	1956	0.42	0.22	30.7	C		
T	766	2059	0.78	0.37	30.3	C	30.0	C
R	651	1750	0.03	0.37	18.0	B		
Southbound								
L	435	1956	0.01	0.22	27.3	C		
T	766	2059	0.72	0.37	27.7	C	26.7	C
R	651	1750	0.10	0.37	18.5	B		

Intersection Delay = 28.9 (sec/veh) Intersection LOS = C

HCS2000: Signalized Intersections Release 4.1d

Analyst:
Agency:
Date: 03/08/05
Period: PM PEAK
Project ID:
E/W St: Hoohui Road

Inter.:
Area Type: All other areas
Jurisd:
Year : Year 2008 w/out project

N/S St: Honoapiilani Highway

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	1	0	1	1	1	1	1	1	1	1
LGConfig		LT	R		LT	R	L	T	R	L	T	R
Volume	77	12	200	31	14	4	225	698	23	10	775	99
Lane Width		12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
RTOR Vol			100			2			2			10

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4			5	6	7	8
EB Left	A				NB	Left	A			
Thru	A					Thru		A		
Right	A					Right		A		
Peds						Peds				
WB Left	A				SB	Left	A			
Thru	A					Thru		A		
Right	A					Right		A		
Peds						Peds				
NB Right					EB	Right				
SB Right					WB	Right				
Green	15.0						19.0	41.0		
Yellow	4.0						4.0	4.0		
All Red	1.0						1.0	1.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LT	212	1270	0.46	0.17	35.5	D	35.0+	D
R	264	1583	0.42	0.17	34.7	C		
Westbound								
LT	206	1234	0.30	0.17	33.7	C	33.6	C
R	264	1583	0.01	0.17	31.3	C		
Northbound								
L	413	1956	0.63	0.21	35.6	D		
T	938	2059	0.87	0.46	31.4	C	32.0	C
R	797	1750	0.03	0.46	13.5	B		
Southbound								
L	413	1956	0.03	0.21	28.2	C		
T	938	2059	0.89	0.46	34.3	C	32.1	C
R	797	1750	0.12	0.46	14.2	B		

Intersection Delay = 32.4 (sec/veh) Intersection LOS = C

HCS2000: Signalized Intersections Release 4.1d

Analyst:
Agency:
Date: 03/09/05
Period: AM PEAK
Project ID:
E/W St: Akahele Street

Inter.:
Area Type: All other areas
Jurisd:
Year : Year 2008 w/out project

N/S St: Honoapiilani Highway

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	1	1	1	0	1	1	1	1	1	1
LGConfig	L	T	R	L	TR		L	T	R	L	T	R
Volume	57	4	124	8	4	10	88	657	24	12	754	44
Lane Width	12.0	12.0	12.0	12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0
RTOR Vol			62			5			2			4

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4			5	6	7	8
EB Left	A				NB	Left	A			
Thru		A				Thru		A		
Right		A				Right		A		
Peds						Peds				
WB Left	A				SB	Left	A			
Thru		A				Thru		A		
Right		A				Right		A		
Peds						Peds				
NB Right					EB	Right				
SB Right					WB	Right				
Green	12.0	13.0					12.5	62.5		
Yellow	4.0	4.0					4.0	4.0		
All Red	1.0	1.0					1.0	1.0		

Cycle Length: 120.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	177	1770	0.43	0.10	52.5	D		
T	202	1863	0.02	0.11	47.9	D	52.4	D
R	171	1583	0.49	0.11	52.5	D		
Westbound								
L	177	1770	0.07	0.10	49.1	D		
TR	185	1712	0.07	0.11	48.2	D	48.6	D
Northbound								
L	204	1956	0.48	0.10	52.5	D		
T	1072	2059	0.68	0.52	23.1	C	26.3	C
R	911	1750	0.03	0.52	14.0	B		
Southbound								
L	204	1956	0.08	0.10	48.7	D		
T	1072	2059	0.95	0.52	50.8	D	49.0	D
R	911	1750	0.06	0.52	14.2	B		

Intersection Delay = 40.2 (sec/veh) Intersection LOS = D

HCS2000: Signalized Intersections Release 4.1d

Analyst:
Agency:
Date: 03/08/05
Period: PM PEAK
Project ID:
E/W St: Akahele Street

Inter.:
Area Type: All other areas
Jurisd:
Year : Year 2008 w/out project
N/S St: Honoapiilani Highway

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	1	1	1	0	1	1	1	1	1	1
LGConfig	L	T	R	L	TR		L	T	R	L	T	R
Volume	71	1	92	16	3	5	127	883	15	1	927	89
Lane Width	12.0	12.0	12.0	12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0
RTOR Vol			46			3			2			9

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	A				NB Left	A			
Thru		A			Thru		A		
Right		A			Right		A		
Peds					Peds				
WB Left	A				SB Left	A			
Thru		A			Thru		A		
Right		A			Right		A		
Peds					Peds				
NB Right					EB Right				
SB Right					WB Right				
Green	12.0	11.5				15.5	61.0		
Yellow	4.0	4.0				4.0	4.0		
All Red	1.0	1.0				1.0	1.0		

Cycle Length: 120.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	177	1770	0.45	0.10	52.7	D		
T	179	1863	0.01	0.10	49.1	D	52.5	D
R	152	1583	0.34	0.10	52.1	D		
Westbound								
L	177	1770	0.15	0.10	49.8	D		
TR	168	1758	0.05	0.10	49.4	D	49.7	D
Northbound								
L	253	1956	0.57	0.13	52.0	D		
T	1047	2059	0.95	0.51	50.9	D	50.6	D
R	890	1750	0.02	0.51	14.6	B		
Southbound								
L	253	1956	0.00	0.13	45.5	D		
T	1047	2059	0.92	0.51	43.5	D	41.2	D
R	890	1750	0.09	0.51	15.3	B		

Intersection Delay = 46.5 (sec/veh) Intersection LOS = D

HCS2000: Signalized Intersections Release 4.1d

Analyst:
Agency:
Date: 3/8/05
Period: AM Peak
Project ID:
E/W St: Lower Honoapiilani Rd

Inter.:
Area Type: All other areas
Jurisd:
Year : Year 2008 w/out project
N/S St: Honopiilani Hwy

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	1	0	1	0	1	2	0	1	2	1
LGConfig		LT	R		LTR		L	TR		L	T	R
Volume	41	1	521	11	1	1	384	728	3	0	850	53
Lane Width		12.0	12.0		12.0		12.0	12.0		12.0	12.0	12.0
RTOR Vol			521			0			1			27

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	A				NB Left	A			
Thru	A				Thru		A		
Right	A				Right		A		
Peds					Peds				
WB Left		A			SB Left	A			
Thru		A			Thru		A		
Right		A			Right		A		
Peds					Peds				
NB Right					EB Right				
SB Right					WB Right				
Green	13.5	12.5				33.5	40.5		
Yellow	4.0	4.0				4.0	4.0		
All Red	1.0	1.0				1.0	1.0		

Cycle Length: 120.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LT	200	1776	0.25	0.11	49.3	D	49.3	D
R	178	1583	0.00	0.11	47.3	D		
Westbound								
LTR	184	1767	0.11	0.10	49.0	D	49.0	D
Northbound								
L	546	1956	0.80	0.28	48.3	D		
TR	1320	3910	0.63	0.34	34.4	C	39.2	D
Southbound								
L	546	1956	0.00	0.28	31.2	C		
T	1320	3912	0.92	0.34	48.8	D	48.1	D
R	591	1750	0.06	0.34	26.9	C		

Intersection Delay = 43.8 (sec/veh) Intersection LOS = D

HCS2000: Signalized Intersections Release 4.1d

Analyst:
Agency:
Date: 3/8/05
Period: PM Peak
Project ID:
E/W St: Lower Honoapiilani Rd

Inter.:
Area Type: All other areas
Jurisd:
Year : Year 2008 w/out project

N/S St: Honopiilani Hwy

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	1	0	1	0	1	2	0	1	2	1
LGConfig		LT	R		LTR		L	TR		L	T	R
Volume	49	1	505	8	0	1	508	973	3	0	985	75
Lane Width		12.0	12.0		12.0		12.0	12.0		12.0	12.0	12.0
RTOR Vol			505			0			0			38

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	A				NB Left	A			
Thru	A				Thru		A		
Right	A				Right		A		
Peds					Peds				
WB Left		A			SB Left	A			
Thru		A			Thru		A		
Right		A			Right		A		
Peds					Peds				
NB Right					EB Right				
SB Right					WB Right				
Green	11.0	9.5				40.5	39.0		
Yellow	4.0	4.0				4.0	4.0		
All Red	1.0	1.0				1.0	1.0		

Cycle Length: 120.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LT	163	1775	0.39	0.09	52.9	D	52.9	D
R	145	1583	0.00	0.09	49.5	D		
Westbound								
LTR	139	1755	0.17	0.08	52.2	D	52.2	D
Northbound								
L	660	1956	0.88	0.34	51.2	D		
TR	1271	3910	0.88	0.32	45.9	D	47.7	D
Southbound								
L	660	1956	0.00	0.34	26.3	C		
T	1271	3912	0.92	0.32	50.3	D	49.5	D
R	569	1750	0.08	0.32	28.1	C		

Intersection Delay = 48.6 (sec/veh) Intersection LOS = D

APPENDIX E

CAPACITY ANALYSIS CALCULATIONS
PROJECTED YEAR 2008 PEAK HOUR TRAFFIC
ANALYSIS WITH PROJECT

HCS2000: Unsignalized Intersections Release 4.1d

TWO-WAY STOP CONTROL SUMMARY

Analyst:
Agency/Co.:
Date Performed: 3/8/2005
Analysis Time Period: AM Peak
Intersection:
Jurisdiction:
Units: U. S. Customary
Analysis Year: Year 2008 w/ project
Project ID:
East/West Street: Office Road
North/South Street: Honoapiilani Hwy
Intersection Orientation: NS Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street: Approach	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	354	213	8	5	102	123
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	393	236	8	5	113	136
Percent Heavy Vehicles	2	--	--	2	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes	1	1	0	1	1	0
Configuration	L	TR		L	TR	
Upstream Signal?		No			No	

Minor Street: Approach	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	5	5	5	54	5	160
Peak Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	5	5	5	60	5	177
Percent Heavy Vehicles	2	2	2	2	2	2
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No /			/
Lanes	0	1	0	0	1	1
Configuration		LTR		LT	R	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Config	L	L		LTR		LT		R
v (vph)	393	5		15		65		177
C(m) (vph)	1317	1322		199		248		862
v/c	0.30	0.00		0.08		0.26		0.21
95% queue length	1.27	0.01		0.24		1.05		0.77
Control Delay	8.9	7.7		24.6		24.7		10.3
LOS	A	A		C		C		B
Approach Delay				24.6			14.1	
Approach LOS				C			B	

HCS2000: Unsignalized Intersections Release 4.1d

TWO-WAY STOP CONTROL SUMMARY

Analyst:
Agency/Co.:
Date Performed: 3/8/2005
Analysis Time Period: PM Peak
Intersection:
Jurisdiction:
Units: U. S. Customary
Analysis Year: Year 2008 w/ project
Project ID:
East/West Street: Office Road
North/South Street: Honoapiilani Hwy
Intersection Orientation: NS Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street: Approach	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	243	180	8	5	221	64
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	270	200	8	5	245	71
Percent Heavy Vehicles	2	--	--	2	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes	1	1	0	1	1	0
Configuration	L	TR		L	TR	
Upstream Signal?		No			No	

Minor Street: Approach	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	5	5	8	64	8	382
Peak Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	5	5	8	71	8	424
Percent Heavy Vehicles	2	2	2	2	2	2
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No /			/
Lanes	0	1	0	0	1	1
Configuration		LTR		LT	R	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Config	L	L		LTR		LT		R
v (vph)	270	5		18		79		424
C(m) (vph)	1244	1363		229		337		759
v/c	0.22	0.00		0.08		0.23		0.56
95% queue length	0.83	0.01		0.26		0.91		3.71
Control Delay	8.7	7.7		22.1		18.9		15.7
LOS	A	A		C		C		C
Approach Delay				22.1			16.2	
Approach LOS				C			C	

HCS2000: Signalized Intersections Release 4.1d

Analyst:
Agency:
Date: 3/8/05
Period: AM PEAK
Project ID:
E/W St: Napilihau Street

Inter.:
Area Type: All other areas
Jurisd:
Year : Year 2008 w/ project

N/S St: Honoapiilani Highway

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	1	0	1	0	1	1	0	1	1	1
LGConfig		LT	R		LTR		L	TR		L	T	R
Volume	62	0	348	7	2	2	256	352	9	2	153	19
Lane Width		12.0	12.0		12.0		12.0	12.0		12.0	12.0	12.0
RTOR Vol			174			1			1			2

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	A				NB Left	A			
Thru	A				Thru		A		
Right	A				Right		A		
Peds					Peds				
WB Left	A				SB Left	A			
Thru	A				Thru		A		
Right	A				Right		A		
Peds					Peds				
NB Right					EB Right				
SB Right					WB Right				
Green	24.0					24.0	27.0		
Yellow	4.0					4.0	4.0		
All Red	1.0					1.0	1.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LT	365	1367	0.21	0.27	26.0	C	28.4	C
R	422	1583	0.52	0.27	29.3	C		
Westbound								
LTR	426	1599	0.03	0.27	24.4	C	24.4	C
Northbound								
L	522	1956	0.54	0.27	29.4	C		
TR	616	2052	0.64	0.30	29.6	C	29.5	C
Southbound								
L	522	1956	0.00	0.27	24.2	C		
T	618	2059	0.31	0.30	24.6	C	24.4	C
R	525	1750	0.04	0.30	22.3	C		

Intersection Delay = 28.3 (sec/veh) Intersection LOS = C

HCS2000: Signalized Intersections Release 4.1d

Analyst:
Agency:
Date: 03/09/05
Period: PM PEAK
Project ID:
E/W St: Napilihau Street

Inter.:
Area Type: All other areas
Jurisd:
Year : Year 2008 w/ project

N/S St: Honoapiilani Highway

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	1	0	1	0	1	1	0	1	1	1
LGConfig		LT	R		LTR		L	TR		L	T	R
Volume	75	4	409	22	17	4	410	350	6	2	470	85
Lane Width		12.0	12.0		12.0		12.0	12.0		12.0	12.0	12.0
RTOR Vol			205			2			1			9

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	A				NB Left	A			
Thru	A				Thru		A		
Right	A				Right		A		
Peds					Peds				
WB Left	A				SB Left	A			
Thru	A				Thru		A		
Right	A				Right		A		
Peds					Peds				
NB Right					EB Right				
SB Right					WB Right				
Green	17.5					24.5	33.0		
Yellow	4.0					4.0	4.0		
All Red	1.0					1.0	1.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LT	238	1226	0.36	0.19	32.3	C	39.9	D
R	308	1583	0.73	0.19	42.8	D		
Westbound								
LTR	259	1332	0.47	0.19	33.5	C	33.5	C
Northbound								
L	532	1956	0.83	0.27	42.4	D		
TR	754	2055	0.51	0.37	22.7	C	33.3	C
Southbound								
L	532	1956	0.01	0.27	23.9	C		
T	755	2059	0.88	0.37	39.6	D	36.7	D
R	642	1750	0.17	0.37	19.3	B		

Intersection Delay = 35.6 (sec/veh) Intersection LOS = D

HCS2000: Signalized Intersections Release 4.1d

Analyst:
Agency:
Date: 03/08/05
Period: AM PEAK
Project ID:
E/W St: Hoohui Road

Inter.:
Area Type: All other areas
Jurisd:
Year : Year 2008 w/ project
N/S St: Honoapiilani Highway

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	1	0	1	1	1	1	1	1	1	1
LGConfig		LT	R		LT	R	L	T	R	L	T	R
Volume	87	7	201	62	17	8	163	541	22	4	538	70
Lane Width		12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
RTOR Vol			101			4			2			7

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	A				NB Left	A			
Thru	A				Thru		A		
Right	A				Right		A		
Peds					Peds				
WB Left	A				SB Left	A			
Thru	A				Thru		A		
Right	A				Right		A		
Peds					Peds				
NB Right					EB Right				
SB Right					WB Right				
Green	21.5					20.0	33.5		
Yellow	4.0					4.0	4.0		
All Red	1.0					1.0	1.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LT	231	967	0.46	0.24	30.7	C	29.6	C
R	378	1583	0.30	0.24	28.5	C		
Westbound								
LT	272	1140	0.49	0.24	31.0	C	30.7	C
R	378	1583	0.02	0.24	26.2	C		
Northbound								
L	435	1956	0.42	0.22	30.7	C		
T	766	2059	0.79	0.37	31.2	C	30.7	C
R	651	1750	0.03	0.37	18.0	B		
Southbound								
L	435	1956	0.01	0.22	27.3	C		
T	766	2059	0.73	0.37	28.0	C	27.0	C
R	651	1750	0.10	0.37	18.5	B		

Intersection Delay = 29.3 (sec/veh) Intersection LOS = C

HCS2000: Signalized Intersections Release 4.1d

Analyst:
Agency:
Date: 03/08/05
Period: PM PEAK
Project ID:
E/W St: Hoohui Road

Inter.:
Area Type: All other areas
Jurisd:
Year : Year 2008 w/ project
N/S St: Honoapiilani Highway

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	1	0	1	1	1	1	1	1	1	1
LGConfig		LT	R		LT	R	L	T	R	L	T	R
Volume	78	12	200	31	14	4	225	709	23	10	790	101
Lane Width		12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
RTOR Vol			100			2			2			10

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	A				NB Left	A			
Thru	A				Thru		A		
Right	A				Right		A		
Peds					Peds				
WB Left	A				SB Left	A			
Thru	A				Thru		A		
Right	A				Right		A		
Peds					Peds				
NB Right					EB Right				
SB Right					WB Right				
Green	15.0					18.5	41.5		
Yellow	4.0					4.0	4.0		
All Red	1.0					1.0	1.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LT	212	1270	0.47	0.17	35.5	D	35.1	D
R	264	1583	0.42	0.17	34.7	C		
Westbound								
LT	205	1228	0.30	0.17	33.7	C	33.6	C
R	264	1583	0.01	0.17	31.3	C		
Northbound								
L	402	1956	0.65	0.21	36.6	D		
T	949	2059	0.87	0.46	31.3	C	32.2	C
R	807	1750	0.03	0.46	13.3	B		
Southbound								
L	402	1956	0.03	0.21	28.6	C		
T	949	2059	0.89	0.46	34.9	C	32.6	C
R	807	1750	0.12	0.46	13.9	B		

Intersection Delay = 32.7 (sec/veh) Intersection LOS = C

HCS2000: Signalized Intersections Release 4.1d

Analyst:
Agency:
Date: 03/09/05
Period: AM PEAK
Project ID:
E/W St: Akahele Street

Inter.:
Area Type: All other areas
Jurisd:
Year : Year 2008 w/ project

N/S St: Honoapiilani Highway

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	1	1	1	0	1	1	1	1	1	1
LGConfig	L	T	R	L	TR		L	T	R	L	T	R
Volume	57	4	124	8	4	10	88	668	24	12	761	44
Lane Width	12.0	12.0	12.0	12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0
RTOR Vol			62			5			2			4

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4			5	6	7	8
EB Left	A				NB	Left	A			
Thru		A				Thru		A		
Right		A				Right		A		
Peds						Peds				
WB Left	A				SB	Left	A			
Thru		A				Thru		A		
Right		A				Right		A		
Peds						Peds				
NB Right					EB	Right				
SB Right					WB	Right				
Green	11.5	13.0					12.5	63.0		
Yellow	4.0	4.0					4.0	4.0		
All Red	1.0	1.0					1.0	1.0		

Cycle Length: 120.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	170	1770	0.45	0.10	53.1	D		
T	202	1863	0.02	0.11	47.9	D	52.7	D
R	171	1583	0.49	0.11	52.5	D		
Westbound								
L	170	1770	0.07	0.10	49.6	D		
TR	185	1712	0.07	0.11	48.2	D	48.9	D
Northbound								
L	204	1956	0.48	0.10	52.5	D		
T	1081	2059	0.69	0.52	23.0	C	26.1	C
R	919	1750	0.03	0.52	13.7	B		
Southbound								
L	204	1956	0.08	0.10	48.7	D		
T	1081	2059	0.95	0.52	50.6	D	48.8	D
R	919	1750	0.06	0.52	14.0	B		

Intersection Delay = 40.0 (sec/veh) Intersection LOS = D

HCS2000: Signalized Intersections Release 4.1d

Analyst:
Agency:
Date: 03/08/05
Period: PM PEAK
Project ID:
E/W St: Akahele Street

Inter.:
Area Type: All other areas
Jurisd:
Year : Year 2008 w/ project

N/S St: Honoapiilani Highway

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	1	1	1	0	1	1	1	1	1	1
LGConfig	L	T	R	L	TR		L	T	R	L	T	R
Volume	71	1	92	16	3	5	127	894	15	1	942	89
Lane Width	12.0	12.0	12.0	12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0
RTOR Vol			46			3			2			9

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4			5	6	7	8
EB Left	A				NB	Left	A			
Thru		A				Thru		A		
Right		A				Right		A		
Peds						Peds				
WB Left	A				SB	Left	A			
Thru		A				Thru		A		
Right		A				Right		A		
Peds						Peds				
NB Right					EB	Right				
SB Right					WB	Right				
Green	12.0	11.5					15.0	61.5		
Yellow	4.0	4.0					4.0	4.0		
All Red	1.0	1.0					1.0	1.0		

Cycle Length: 120.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	177	1770	0.45	0.10	52.7	D		
T	179	1863	0.01	0.10	49.1	D	52.5	D
R	152	1583	0.34	0.10	52.1	D		
Westbound								
L	177	1770	0.15	0.10	49.8	D		
TR	168	1758	0.05	0.10	49.4	D	49.7	D
Northbound								
L	245	1956	0.58	0.13	53.1	D		
T	1055	2059	0.95	0.51	52.1	D	51.8	D
R	897	1750	0.02	0.51	14.4	B		
Southbound								
L	245	1956	0.00	0.13	46.0	D		
T	1055	2059	0.93	0.51	44.9	D	42.6	D
R	897	1750	0.09	0.51	15.0	B		

Intersection Delay = 47.7 (sec/veh) Intersection LOS = D

HCS2000: Signalized Intersections Release 4.1d

Analyst:
Agency:
Date: 3/8/05
Period: AM Peak
Project ID:
E/W St: Lower Honoapiilani Rd

Inter.:
Area Type: All other areas
Jurisd:
Year : Year 2008 w/ project
N/S St: Honopiilani Hwy

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	1	0	1	0	1	2	0	1	2	1
LGConfig		LT	R		LTR		L	TR		L	T	R
Volume	41	1	524	11	1	1	389	739	3	0	857	53
Lane Width		12.0	12.0		12.0		12.0	12.0		12.0	12.0	12.0
RTOR Vol			524			0			1			27

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	A				NB Left	A			
Thru	A				Thru		A		
Right	A				Right		A		
Peds					Peds				
WB Left		A			SB Left	A			
Thru		A			Thru		A		
Right		A			Right		A		
Peds					Peds				
NB Right					EB Right				
SB Right					WB Right				
Green	13.5	12.5				33.5	40.5		
Yellow	4.0	4.0				4.0	4.0		
All Red	1.0	1.0				1.0	1.0		

Cycle Length: 120.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LT	200	1776	0.25	0.11	49.3	D	49.3	D
R	178	1583	0.00	0.11	47.3	D		
Westbound								
LTR	184	1767	0.11	0.10	49.0	D	49.0	D
Northbound								
L	546	1956	0.81	0.28	49.2	D		
TR	1320	3910	0.64	0.34	34.6	C	39.6	D
Southbound								
L	546	1956	0.00	0.28	31.2	C		
T	1320	3912	0.93	0.34	49.8	D	49.1	D
R	591	1750	0.06	0.34	26.9	C		

Intersection Delay = 44.4 (sec/veh) Intersection LOS = D

HCS2000: Signalized Intersections Release 4.1d

Analyst:
Agency:
Date: 3/8/05
Period: PM Peak
Project ID:
E/W St: Lower Honoapiilani Rd

Inter.:
Area Type: All other areas
Jurisd:
Year : Year 2008 w/ project
N/S St: Honopiilani Hwy

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	1	0	1	0	1	2	0	1	2	1
LGConfig		LT	R		LTR		L	TR		L	T	R
Volume	49	1	511	8	0	1	513	984	3	0	1000	75
Lane Width		12.0	12.0		12.0		12.0	12.0		12.0	12.0	12.0
RTOR Vol			511			0			0			38

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	A				NB Left	A			
Thru	A				Thru		A		
Right	A				Right		A		
Peds					Peds				
WB Left		A			SB Left	A			
Thru		A			Thru		A		
Right		A			Right		A		
Peds					Peds				
NB Right					EB Right				
SB Right					WB Right				
Green	11.0	9.5				40.5	39.0		
Yellow	4.0	4.0				4.0	4.0		
All Red	1.0	1.0				1.0	1.0		

Cycle Length: 120.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LT	163	1775	0.39	0.09	52.9	D	52.9	D
R	145	1583	0.00	0.09	49.5	D		
Westbound								
LTR	139	1755	0.17	0.08	52.2	D	52.2	D
Northbound								
L	660	1956	0.89	0.34	52.4	D		
TR	1271	3910	0.89	0.32	46.8	D	48.7	D
Southbound								
L	660	1956	0.00	0.34	26.3	C		
T	1271	3912	0.94	0.32	52.2	D	51.4	D
R	569	1750	0.08	0.32	28.1	C		

Intersection Delay = 49.9 (sec/veh) Intersection LOS = D

G

Environmental Noise Assessment Report

D. L. ADAMS ASSOCIATES, LTD.

Consultants in Acoustics and Performing Arts Technologies

Environmental Noise Assessment Report
The Residences at Kapalua Bay
Kapalua, Maui, Hawaii

April 2005

DLAA Project No. 04-84

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Figure 4. Graph of Long Term Noise Measurements.

Figure 5. Typical Sound Levels from Construction Equipment.

APPENDICIES

Appendix A. Acoustic Terminology

Appendix B. Summary of Future Projects Included in the Traffic Analyses

1.0 EXECUTIVE SUMMARY

1.1 The Residences at Kapalua Bay project is located in Kapalua, Maui, Hawaii. The existing hotel will be demolished to make room for the new single ownership and fractional ownership residential units.

1.2 The dominant noise sources during the project construction phase will probably be demolition construction equipment and earth moving equipment, such as bulldozers and diesel powered trucks. Noise from construction activities will occur on the project site. Noise from construction activities should be short term and must comply with State Department of Health noise regulations. A temporary sound barrier wall, installed at the north and south project property lines, is recommended to reduce the impact of construction noise. The temporary sound barrier wall could be constructed using ¾-inch plywood or a similar weight construction material.

1.3 The results of the vehicular traffic noise analyses show very small increases in noise level. However, the traffic noise analyses do not include a direct comparison of the future traffic of the existing hotel to the future traffic of the Residences at Kapalua Bay project. The Residences at Kapalua Bay will generate less traffic than the existing hotel, when comparing Year 2008 traffic projections. Therefore the predicted traffic noise levels will also be less for the Residences at Kapalua Bay project. No noise impact was found for project generated vehicular traffic noise.

1.4 Although noise along the Honoapiilani Highway exceeds the FHWA/HDOT noise limits, no noise impact was found because the existing noise levels already exceed the criteria and the increase in noise level due to the project is very small. Noise levels along secondary roads, such as Office Road, comply with the FHWA/HDOT maximum noise limits.

1.5 The project area is relatively quiet. Noise measurements taken at the existing project property line show noise levels ranging from 40 dBA during the night to around 55 dBA during the day. These noise levels are within the HUD and EPA recommended noise guidelines.

2.0 PROJECT DESCRIPTION

The Residences at Kapalua Bay project proposes to redevelop the existing Kapalua Bay Hotel into new residential units. Of the planned 155 residential units, 90 units will be single ownership (wholly owned) and 65 will be designated as fractional ownership units. The new development will also include typical fractional ownership support spaces, such as a bar and grill, pool, spa, and other spaces.

The existing Kapalua Bay Hotel will be demolished to make room for the new residential units. During demolition of the existing hotel and construction of the new residences, the project site will be closed to the public.

3.0 NOISE STANDARDS

Various local and federal agencies have established guidelines and standards for assessing environmental noise impacts and set noise limits as a function of land use. A brief description of common acoustic terminology used in these guidelines and standards is presented in Appendix A.

3.1 State of Hawaii, Community Noise Control

The State of Hawaii Community Noise Control Rule [Reference 1] defines three classes of zoning districts and specifies corresponding maximum permissible sound levels due to *stationary* noise sources such as air-conditioning units, exhaust systems, generators, compressors, pumps, etc. The Community Noise Control Rule does not specifically address most *moving* sources, such as vehicular traffic noise, air traffic noise, or rail traffic noise. However, the Community Noise Control Rule does include equipment related to agricultural, construction, and industrial activities, which may not be stationary.

These maximum permissible noise levels are enforced by the State Department of Health (DOH) for any location at or beyond the property line and shall not be exceeded for more than 10% of the time during any 20-minute period. The specified noise limits which apply are a function of the zoning and time of day as shown in Figure 1. With respect to mixed zoning districts, the rule specifies that the primary land use designation shall be used to determine the applicable zoning district class and the maximum permissible sound level. In determining the maximum permissible sound level, the background noise level is taken into account by the DOH.

3.2 U.S. Federal Highway Administration (FHWA)

The FHWA defines four land use categories and assigns corresponding maximum hourly equivalent sound levels, $L_{eq(h)}$, for traffic noise exposure [Reference 2], which are listed in Figure 2. For example, Category B, defined as picnic and recreation areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals, has a corresponding maximum exterior L_{eq} of 67dBA and a maximum

interior L_{eq} of 52 dBA. These limits are viewed as design goals, and all projects meeting these limits are deemed in conformance with FHWA noise standards. Calculation of traffic noise levels should be conducted using the Federal Highway Administration's Traffic Noise Model, 1978 [Reference 3].

3.3 Hawaii Department of Transportation (HDOT)

The HDOT has adopted FHWA's design goals for traffic noise exposure in its noise analysis and abatement policy [Reference 4]. According to the policy, a traffic noise impact occurs when the predicted traffic noise levels "approach" or exceed FHWA's design goals or when the predicted traffic noise levels "substantially exceed the existing noise levels." The policy also states that "approach" means at least 1 dB less than FHWA's design goals and "substantially exceed the existing noise levels" means an increase of at least 15dB.

3.4 U.S. Environmental Protection Agency (EPA)

The U.S. EPA has identified a range of yearly day-night equivalent sound levels, L_{dn}, sufficient to protect public health and welfare from the effects of environmental noise [Reference 5]. The EPA has established a goal to reduce exterior environmental noise to an L_{dn} not exceeding 65 dBA and a future goal to further reduce exterior environmental noise to an L_{dn} not exceeding 55 dBA. Additionally, the EPA states that these goals are not intended as regulations as it has no authority to regulate noise levels, but rather they are intended to be viewed as levels below which the general population will not be at risk from any of the identified effects of noise.

3.5 U.S. Department of Housing and Urban Development (HUD)

HUD's environmental noise criteria and standards in 24 CFR 51 [Reference 6] were established for determining housing project site acceptability. These standards are based on day-night equivalent sound levels, L_{dn}, and are not limited to traffic noise exposure. However, for project sites in the vicinity of highways, the L_{dn} may be estimated to be equal to the design hour $L_{eq(h)}$, provided "heavy trucks (vehicles with three or more axles) do not exceed 10 percent of the total traffic flow in vehicles per 24 hours and the traffic flow between 10:00 p.m. and 7:00 a.m. does not exceed 15 percent of the average daily traffic flow in vehicles per 24 hours." For these same conditions, L_{dn}, may also be estimated as 3 dB less than the design hour L_{10}.

HUD site acceptability criteria rank sites as Acceptable, Normally Unacceptable, or Unacceptable. "Acceptable" sites are those where exterior noise levels do not exceed an L_{dn} of 65 dBA. Proposed housing projects on "Acceptable" sites do not require additional noise attenuation other than that provided by customary building techniques. "Normally Unacceptable" sites are those where the L_{dn} is above 65 dBA, but does not exceed 75 dBA. Housing on "Normally Unacceptable" sites requires some form of noise abatement, either at the property line or in the building construction, to ensure the interior noise levels are

acceptable. "Unacceptable" sites are those where the L_{dn} is 75 dBA or higher. The term "Unacceptable" does not necessarily mean that housing cannot be built on those sites, however, more elaborate sound attenuation will likely be needed.

4.0 EXISTING ACOUSTICAL ENVIRONMENT

Continuous long-term ambient noise level measurements were conducted at one (1) location, as shown on Figure 3. The noise measurements were conducted between February 10, 2005 and February 11, 2005. In addition, short term noise measurements and traffic counts were conducted on February 10, 2005. The purpose of the short-term measurements and traffic counts was to calibrate the traffic noise model prediction software.

4.1 Noise Measurement Procedure

Long-Term Noise Measurements
The microphone was mounted on a tripod, approximately 5 feet above grade. A windscreen covered the microphone during the entire measurement period. The sound level meter was secured in a weather resistant case.

Continuous, hourly, equivalent sound levels, L_{eq}, were recorded during the measurement period. The measurements were taken using a Larson-Davis Laboratories, Model 820, Type-1 Sound Level Meter together with a Larson-Davis, Model 2560 Type-1 Microphone. Calibration was checked before and after the measurements with a Larson-Davis Model CAL200 calibrator. Both the sound level meter and the calibrator have been certified by the manufacturer within the recommended calibration period.

Short-Term Noise Measurements
The microphone and sound level meter was mounted on a tripod, approximately 5 feet above grade. A windscreen covered the microphone during the entire measurement period.

An approximate 30-minute equivalent sound level, L_{eq}, was measured. The measurement was taken using a Larson-Davis Laboratories, Model 824, Type-1 Sound Level Meter together with a Larson-Davis, Model 2541 Type-1 Microphone. Calibration was checked before and after the measurements with a Larson-Davis Model CAL200 calibrator. Both the sound level meter and the calibrator have been certified by the manufacturer within the recommended calibration period.

4.2 Noise Measurement Location

The long-term noise measurement location was positioned along the northwest Kapalua Bay Hotel property line. The measurement location was selected as a relatively quiet location and should represent the lowest noise levels around the project site. The noise measurement location is shown in Figure 3.

4.3 Noise Measurement Results

The results from the long-term noise measurements are graphically presented in Figure 4, which shows the measured equivalent sound level, L_{eq}, and the 90 percent exceedance level, L_{90}, in A-weighted decibels (dBA) as a function of the measurement date and time. The graph shows a few "overload" conditions. These overload conditions were most likely caused by brief wind gusts, and did not seem to adversely affect the L_{eq} and L_{90} noise measurements.

The sound levels are relatively dynamic and depend significantly on the activities in the area. The hourly L_{eq} noise levels generally range from 55 dBA during the mid-day high traffic times to approximately 40 dBA during low traffic times during the early morning hours. The hourly L_{90} ranges from 48 dBA to 38 dBA. These noise levels are typical for quiet rural resort environments. The dominant and secondary noise sources are described below:

Noise Sources

Dominant: Vehicular traffic on nearby roads, waves crashing on the shoreline.

Secondary: Occasional aircraft flyovers, wind, birds, crickets, and other hotel operations.

5.0 POTENTIAL NOISE IMPACTS DUE TO THE PROJECT

5.1 Project Construction Noise

Development of project areas will involve excavation, grading, and other typical construction activities during construction. The various construction phases of the project may generate significant amounts of noise. The surrounding residences may be impacted by the construction noise due to their proximity to the project. The actual noise levels produced during construction will be a function of the methods employed during each stage of the construction process. Typical ranges of construction equipment noise are shown in Figure 5. Demolition construction equipment and earthmoving equipment, e.g., bulldozers and diesel-powered trucks, will probably be the loudest equipment used during construction, assuming that pile driving will not be required.

5.2 Projection of Noise Levels Due to the Project

The new residences will incorporate stationary mechanical equipment that is typical for residential housing, resort buildings, etc. Expected mechanical equipment may include air handling equipment, condensing units, etc. Noise from this mechanical equipment and other equipment must meet the State noise rules, which stipulate maximum permissible noise limits at the property line. These noise limits are 55 dBA during the daytime hours (7:00 am to 10:00 pm) and 45 dBA during the night time hours (10:00 pm to 7:00 am) for residential areas. For commercial areas, the noise limits are 60 dBA during the day and 50 dBA during the night.

Other noises generated by the Residences at Kapalua Bay include typical human activities (i.e., outdoor maintenance, conversations, etc.), vehicles entering and exiting the property, and other miscellaneous resort activity noises. These noises should be very similar to the existing hotel noises.

5.3 Projection of Project Generated Vehicular Traffic Noise

A vehicular traffic noise analysis was completed for the existing conditions, future year 2008 projections without the project, and future year 2008 projections with the project. All traffic noise predictions and calculations were completed using the FHWA Traffic Noise Model (1978) [Reference 3].

The results of the traffic noise analyses are shown in Table 1. The table shows a slight increase in noise level due to the project. However, the traffic projections and associated noise levels do not include a direct comparison of hotel traffic to the Residences at Kapalua Bay traffic, since the "2008 Without Project" assumes no traffic from the project site. The Residences at Kapalua Bay will generate less traffic than the existing hotel, when considering Year 2008 traffic projections. Therefore, traffic noise levels will be less for the Residences at Kapalua Bay project than the existing hotel, when comparing Year 2008 traffic projections.

The traffic projections include anticipated increases from other projects planned in the area. A description of theses projects is included in Appendix B. No impact is found relating to project generated vehicular traffic noise.

5.4 Compliance with FHWA/HDOT Land Use Noise Limits

Many residences along Honoapiilani Highway corridor are located too close to the roadway, such that they currently exceed the FHWA/DOT maximum noise limit of 67 dBA during peak hour traffic times. However, residences along the secondary roads, such as Office Road, comply with the FHWA/DOT maximum noise limits with or without the Residences at Kapalua Bay project. The Residences at Kapalua Bay project site is located far away from all major roads. Therefore traffic noise at the project site is very low. The Residences at Kapalua Bay complies with the FHWA/HDOT maximum noise limits.

5.5 Compliance with HUD and EPA Noise Guidelines

Noise levels at the project are relatively quiet. From noise measurements taken at the Residences at Kapalua Bay project property lines, the project is within the HUD and EPA maximum noise guidelines of 65 dBA and 55 dBA respectively.

6.0 NOISE IMPACT MITIGATION

6.1 Mitigation of Construction Noise

In cases where construction noise exceeds, or is expected to exceed the State's "maximum permissible" property line noise levels [Reference 1], a permit must be obtained from the State DOH to allow the operation of vehicles, cranes, construction equipment, power tools, etc., which emit noise levels in excess of the "maximum permissible" levels.

In order for the State DOH to issue a construction noise permit, the Contractor must submit a noise permit application to the DOH, which describes the construction activities for the project. Prior to issuing the noise permit, the State DOH may require action by the Contractor to incorporate noise mitigation into the construction plan. The DOH may also require the Contractor to conduct noise monitoring or community meetings inviting the neighboring residents and business owners to discuss construction noise. The Contractor should use reasonable and standard practices to mitigate noise, such as using mufflers on diesel and gasoline engine machines, using properly tuned and balanced machines, etc. However, the State DOH may require additional noise mitigation, such as temporary noise barriers, or time of day usage limits for certain kinds of construction activities.

Specific permit restrictions for construction activities [Reference 1] are:

> "No permit shall allow any construction activities which emit noise in excess of the maximum permissible sound levels ... before 7:00 a.m. and after 6:00 p.m. of the same day, Monday through Friday."
>
> "No permit shall allow any construction activities which emit noise in excess of the maximum permissible sound levels... before 9:00 a.m. and after 6:00 p.m. on Saturday."
>
> "No permit shall allow any construction activities which emit noise in excess of the maximum permissible sound levels on Sundays and on holidays."

The use of hoe rams and jack hammers 25 lbs. or larger, high pressure sprayers, chain saws, and pile drivers must be restricted to 9:00 a.m. to 5:30 p.m., Monday through Friday.

The DOH noise permit does not limit the noise *level* generated at the construction site, but rather the *times* at which noisy construction can take place. Therefore, noise mitigation for construction activities should be addressed using project management, such that the time restrictions within the DOH permit are followed.

Since the existing noise levels in the project area are relatively quiet, a temporary sound barrier wall should be constructed at the north and south project property

lines to help mitigate construction noise. The temporary sound barrier wall will not eliminate construction noise, but will help reduce the impact of noisy construction activities, such as demolition of the existing hotel for the neighbors closest to the construction site. The temporary sound barrier wall could be constructed using ¾-inch plywood, or other similar weight building materials. The height of the wall should be at least 16 feet tall.

6.2 Mitigation of Project Generated Mechanical Noise

The design of the new Residences at Kapalua Bay should give consideration to controlling the noise emanating from stationary mechanical equipment, such as chiller, compressors, air conditioning units, etc. so as to comply with the State Department of Health *Community Noise Control* rules [Reference 1]. Noisy equipment should be located away from neighbors and residential units, as much as is practical. Enclosed mechanical rooms may be required for some equipment.

6.3 Mitigation of Vehicular Traffic Noise

Traffic noise along the secondary roads near the project area complies with the FHWA/HDOT noise criteria, and the noise levels along the Honoapiilani Highway currently exceed the FHWA/HDOT noise criteria. Vehicular traffic noise generated by the project will increase slightly, only if considering no traffic from the project site for the "2008 Without Project" condition. However, vehicular traffic and associated traffic noise will decrease slightly, if considering Year 2008 hotel traffic versus Residences at Kapalua Bay Traffic. No noise mitigation should be required for vehicular traffic noise.

REFERENCES

1. Chapter 46, *Community Noise Control*, Department of Health, State of Hawaii, Administrative Rules, Title 11, September 23, 1996.

2. *Department of Transportation, Federal Highway Administration Procedures for Abatement of Highway Traffic Noise*, Title 23, CFR, Chapter 1, Subchapter J, Part 772, 38 FR 15953, June 19, 1973; Revised at 47 FR 29654, July 8, 1982.

3. *Federal Highway Administration's Traffic Noise Model*, FHWA-RD-77-108; U.S. Department of Transportation, December 1978.

4. *Noise Analysis and Abatement Policy*, Department of Transportation, Highways Division, State of Hawaii, June 1977.

5. *Toward a National Strategy for Noise Control*, U.S. Environmental Protection Agency, April 1977.

6. Department of Housing and Urban Development Environmental Criteria and Standards, Title 24 CFR, Part 51, 44 FR 40860, July 12, 1979, Amended by 49 FR 880, January 6, 1984.

TABLE 1
Predicted Traffic Noise Levels With and Without the Project and Resulting Increases Due to the Project+

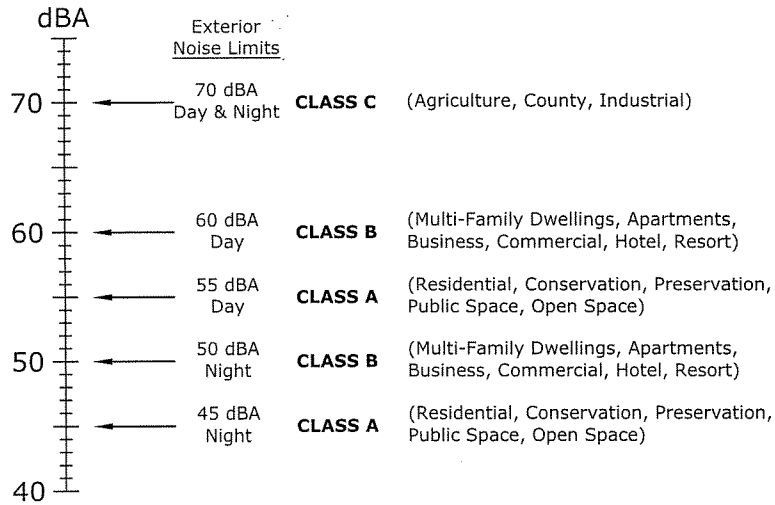
Noise levels shown in the table are based on peak-hour traffic volumes, and are expressed in A-weighted decibels (dBA).

	Location 1* (Honoapiilani Hwy.)		Location 2* (Office Rd.)	
	AM	PM	AM	PM
Existing (Calculated)	66.6	68.5	63.8	65.9
Future Without Project (2008)	66.9	68.9	63.5	65.6
Future With Project (2008)	67.0	69.0	63.7	65.8
Future Increase Without Project+ (2008)	0.3	0.4	-0.3	-0.3
Future Increase With Project+ (2008)	0.4	0.5	-0.1	-0.1
Future Increase Due to the Project+ (2008)	**0.1**	**0.1**	**0.2**	**0.2**

+ The noise level calculations were based on the traffic study provided by Wilson Okamoto Corporation. The traffic study assumes that there will be no traffic from the project for the "2008 Without Project" condition. However, the traffic projections do not consider the comparison of Year 2008 conditions with the existing hotel (no changes to the existing property) to Year 2008 with the Residences at Kapalua Bay project. The Residences at Kapalua Bay will generate less traffic than the existing hotel, when considering the Year 2008 peak hour traffic. Therefore, the noise level will also decrease when considering Year 2008 traffic for the existing hotel compared to the Residences at Kapalua Bay.

* Location 1 – 50 feet west of Honoapiilani Highway
Location 2 - 30 feet north of Office Road

Zoning District	Day Hours (7 AM to 10 PM)	Night Hours (10 PM to 7 AM)
CLASS A Residential, Conservation, Preservation, Public Space, Open Space	55 dBA (Exterior)	45 dBA (Exterior)
CLASS B Multi-Family Dwellings, Apartments, Business, Commercial, Hotel, Resort	60 dBA (Exterior)	50 dBA (Exterior)
CLASS C Agriculture, County, Industrial	70 dBA (Exterior)	70 dBA (Exterior)



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Hawaii Maximum Permissible Sound Levels for Various Zoning Districts

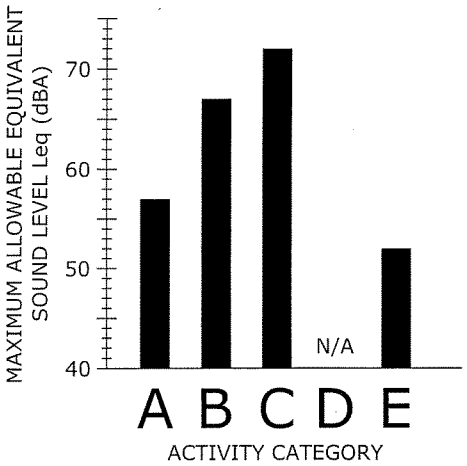
Residences at Kapalua Bay

not to scale

Date	Project No.	Drawn By
April 2005	04-84	TRB

Figure No 1

ACTIVITY CATEGORY	ACTIVITY CATEGORY DESCRIPTION	MAXIMUM EQUIVALENT SOUND LEVEL $L_{eq(h)}$
A	LANDS ON WHICH SERENITY AND QUIET ARE OF EXTRAORDINARY SIGNIFICANCE AND SERVE AN IMPORTANT PUBLIC NEED AND WHERE THE PRESERVATION OF THOSE QUALITIES IS ESSENTIAL IF THE AREA IS TO CONTINUE TO SERVE ITS INTENDED PURPOSE.	57 dBA (EXTERIOR)
B	PICNIC AREAS, RECREATION AREAS, PLAYGROUNDS, ACTIVE SPORT AREAS, PARKS, RESIDENCES, MOTELS, HOTELS, ACHOOLS, CHURCHES, LIBRARIES, AND HOSPITALS.	67 dBA (EXTERIOR)
C	DEVELOPED LANDS, PROPERTIES, OR ACTIVITIES NOT INCLUDED IN ACTIVITY CATEGORIES A OR B ABOVE.	72 dBA (EXTERIOR)
D	UNDEVELOPED LAND	N/A
E	RESIDENCES, MOTELS, HOTELS, PUBLIC MEETING ROOMS, SCHOOLS, CHURCHES, LIBRARIES, HOSPITALS, AND AUDITORIUMS.	52 dBA (INTERIOR)



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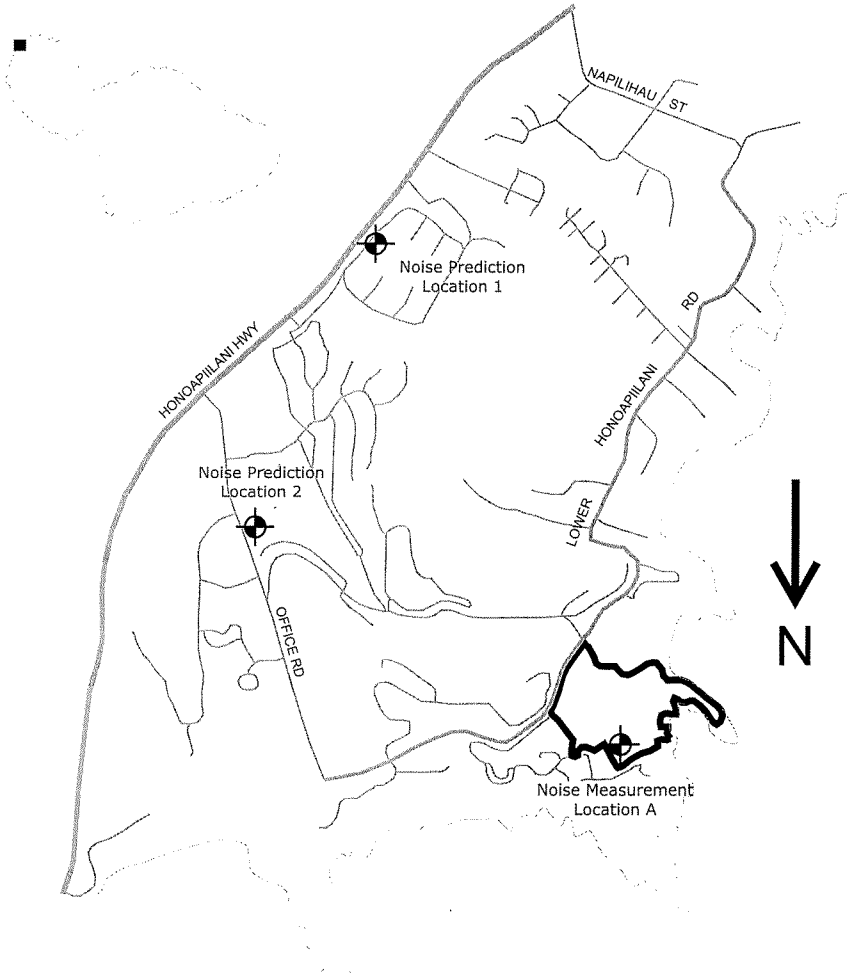
Federal Highways Administration Recommended Equivalent Hourly Sound Levels Based on Land Use

Residences at Kapalua Bay

not to scale

Date	Project No.	Drawn By
April 2005	04-84	TRB

Figure No 2



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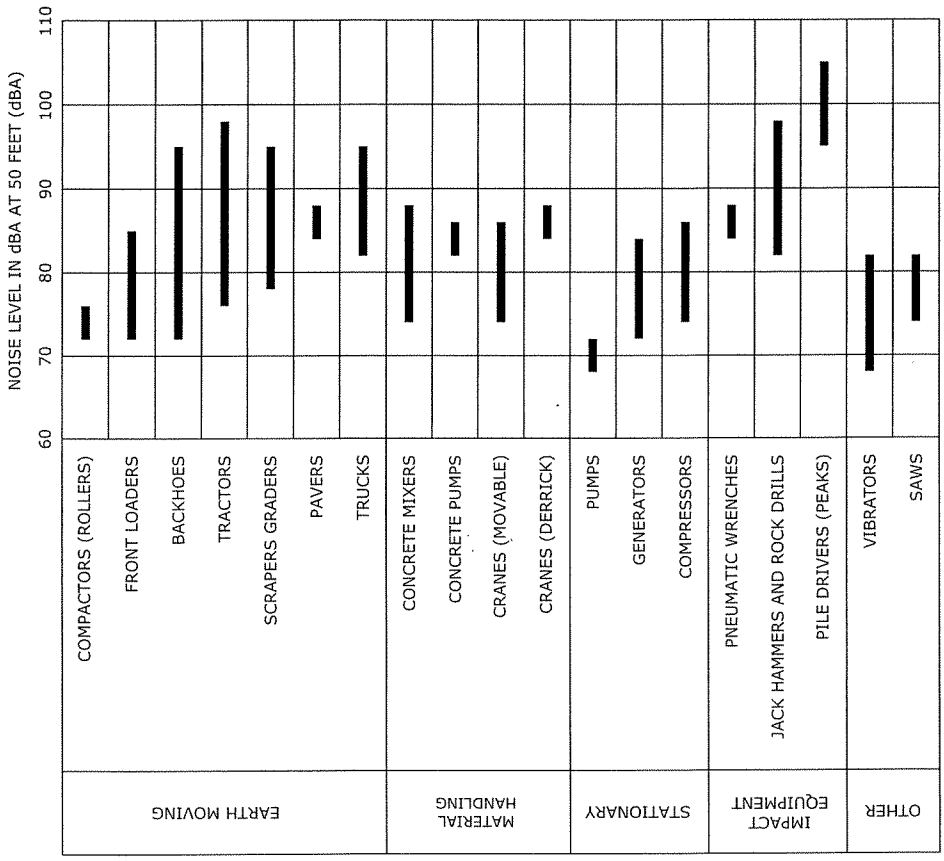
Noise Measurement/Prediction Locations

Residences at Kapalua Bay

not to scale

Date	Project No.	Drawn By
April 2005	04-84	TRB

Figure No 3



NOTE: BASED ON LIMITED AVAILABLE DATA SAMPLES

Typical Sound Levels from Construction Equipment

Figure No 5

Residences at Kapalua Bay

not to scale

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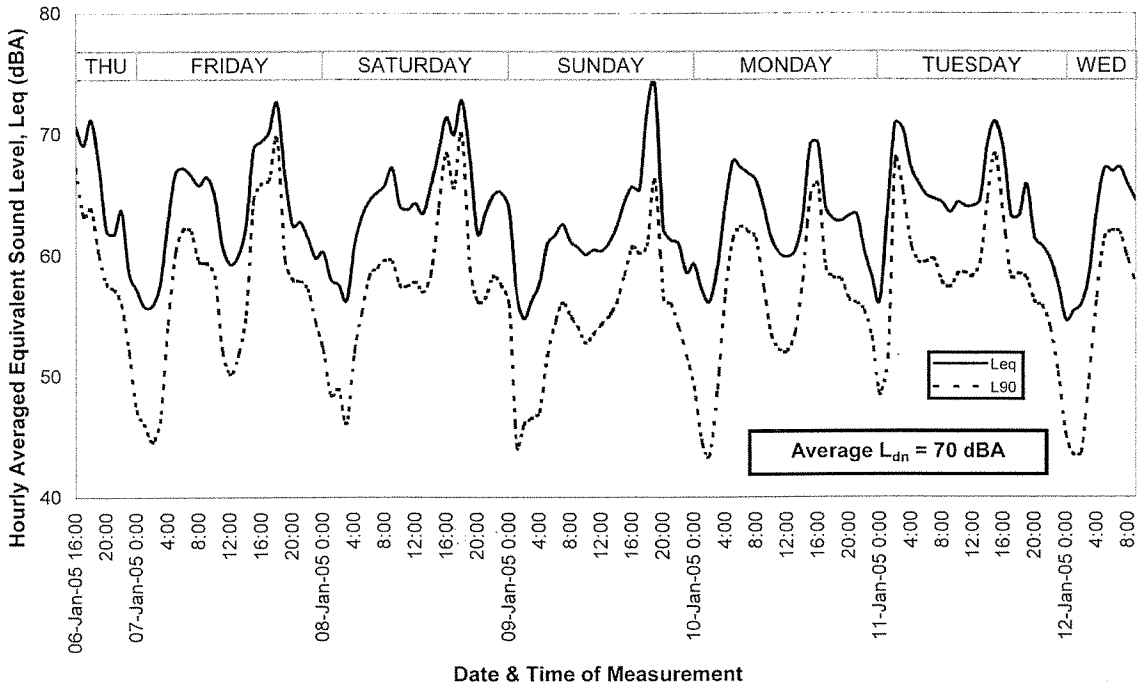

Graph of Long Term Noise Measurements

Figure No 4

Residences at Kapalua Bay

not to scale

Date April 2005 | Project No. 04-84 | Drawn By TRB

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APPENDIX A

Acoustic Terminology

Acoustic Terminology

Sound Pressure Level

Sound, or noise, is the term given to variations in air pressure that are capable of being detected by the human ear. Small fluctuations in atmospheric pressure (sound pressure) constitute the physical property measured with a sound pressure level meter. Because the human ear can detect variations in atmospheric pressure over such a large range of magnitudes, sound pressure is expressed on a logarithmic scale in units called decibels (dB). Noise is defined as "unwanted" sound.

Technically, sound pressure level (SPL) is defined as:

$$SPL = 20 \log (P/P_{ref}) \text{ dB}$$

where P is the sound pressure fluctuation (above or below atmospheric pressure) and P_{ref} is the reference pressure, 20 μPa, which is approximately the lowest sound pressure that can be detected by the human ear. For example:

If P = 20 μPa, then SPL = 0 dB
If P = 200 μPa, then SPL = 20 dB
If P = 2000 μPa, then SPL = 40 dB

The sound pressure level that results from a combination of noise sources is not the arithmetic sum of the individual sound sources, but rather the logarithmic sum. For example, two sound levels of 50 dB produce a combined sound level of 53 dB, not 100 dB. Two sound levels of 40 and 50 dB produce a combined level of 50.4 dB.

Human sensitivity to changes in sound pressure level is highly individualized. Sensitivity to sound depends on frequency content, time of occurrence, duration, and psychological factors such as emotions and expectations. However, in general, a change of 1 or 2 dB in the level of sound is difficult for most people to detect. A 3 dB change is commonly taken as the smallest perceptible change and a 6 dB change corresponds to a noticeable change in loudness. A 10 dB increase or decrease in sound level corresponds to an approximate doubling or halving of loudness, respectively.

A-Weighted Sound Level

Studies have shown conclusively that at equal sound pressure levels, people are generally more sensitive to certain higher frequency sounds (such as made by speech, horns, and whistles) than most lower frequency sounds (such as made by motors and engines)[1] at the same level. To address this preferential response to frequency, the A-weighted scale was developed. The A-weighted scale adjusts the sound level in each frequency band in much the same manner that the

[1] D.W. Robinson and R.S. Dadson, "A Re-Determination of the Equal-Loudness Relations for Pure Tones," *British Journal of Applied Physics*, vol. 7, pp. 166 - 181, 1956. (Adopted by the International Standards Organization as Recommendation R-226.

human auditory system does. Thus the A-weighted sound level (read as "dBA") becomes a single number that defines the level of a sound and has some correlation with the sensitivity of the human ear to that sound. Different sounds with the same A-weighted sound level are perceived as being equally loud. The A-weighted noise level is commonly used today in environmental noise analysis and in noise regulations. Typical values of the A-weighted sound level of various noise sources are shown in Figure A-1.

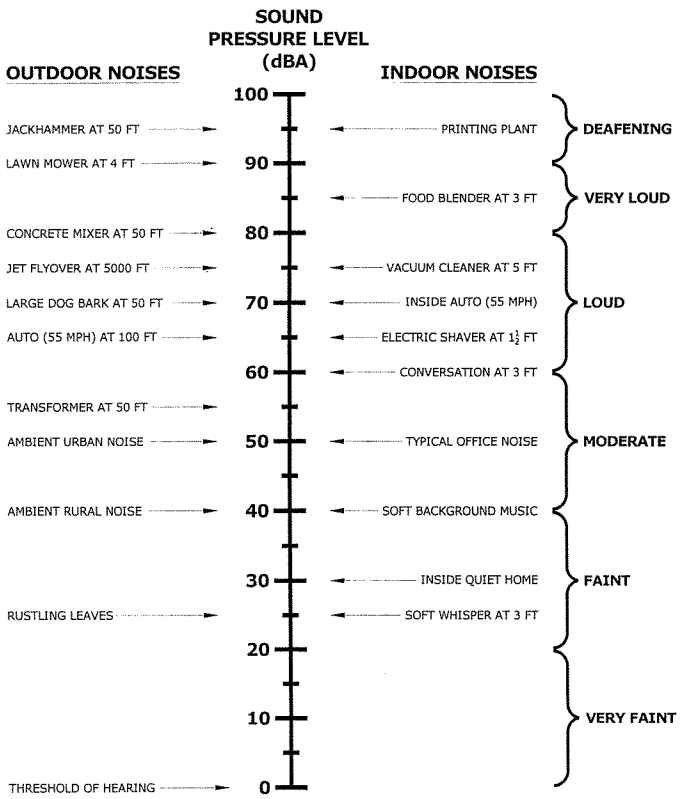

Figure A-1. Common Outdoor/Indoor Sound Levels

Equivalent Sound Level

The Equivalent Sound Level (L_{eq}) is a type of average which represents the steady level that, integrated over a time period, would produce the same energy as the actual signal. The actual *instantaneous* noise levels typically fluctuate above and below the measured L_{eq} during the measurement period. The A-weighted L_{eq} is a common index for measuring environmental noise. A graphical description of the equivalent sound level is shown in Figure A-2.

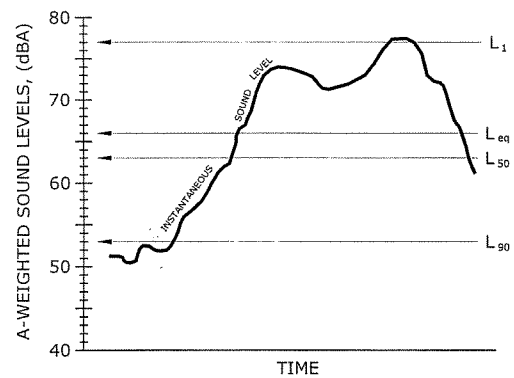

Figure A-2. Example Graph of Equivalent and Statistical Sound Levels

Statistical Sound Level

The sound levels of long-term noise producing activities such as traffic movement, aircraft operations, etc., can vary considerably with time. In order to obtain a single number rating of such a noise source, a statistically-based method of expressing sound or noise levels has been developed. It is known as the Exceedence Level, L_n. The L_n represents the sound level that is exceeded for n% of the measurement time period. For example, L_{10} = 60 dBA indicates that for the duration of the measurement period, the sound level exceeded 60 dBA 10% of the time. Typically, in noise regulations and standards, the specified time period is one hour. Commonly used Exceedence Levels include L_{01}, L_{10}, L_{50}, and L_{90}, which are widely used to assess community and environmental noise. A graphical description of the equivalent sound level is shown in Figure A-2.

Day-Night Equivalent Sound Level

The Day-Night Equivalent Sound Level, L_{dn}, is the Equivalent Sound Level, L_{eq}, measured over a 24-hour period. However, a 10 dB penalty is added to the noise levels recorded between 10 p.m. and 7 a.m. to account for people's higher sensitivity to noise at night when the background noise level is typically lower. The L_{dn} is a commonly used noise descriptor in assessing land use compatibility, and is widely used by federal and local agencies and standards organizations.

Appendix B

Summary of Future Projects Included in Traffic Analyses

1. *Miraval Kapalua*

The project includes 125 proposed resort-style units and resort spa amenities.

2. *Maui Preparatory Academy*

This project is located on the mauka side of Honoapiilani Highway with access to and from the highway via the Napilihau Street intersection. The project is expected to include an enrollment of 540 students from pre-kindergarten to grade 12 with build-out in ear 2013.

3. *Villas at Kahana Ridge*

This development is located at Kahana Ridge and will consist of 117 multiple-family dwelling. These units are under construction now and are expected to be completed by 2005.

4. *Pulelehua*

This project is a planned community located mauka of Honoapiilani Highway in the Mahinahina area. The project is expected to include 895 primary units with a potential of 318 additional Ohana-type units. Build-out for the Pulelehua project is expected to occur in Year 2001, beyond the expected occupancy of The Residneces at Kapalua. The traffic analysis excludes trips generated by the Pulelehua project.

5. *Maui Breakers*

The project is located makai the highway in Mahinahina. It currently has 24 condominium units and plans to add 90 units in Phase to be completed in 2005 or 2006.

6. *Pioneer Farms Phases I and II*

The project is a residential subdivision located in Kaanapali, mauka of Honoapiilani Highway. The proposed project will include 108 residential lots with expected completion by Year 2008.

7. *Kaanapali Golf Estates Parcels 22 and 23*

This project is a residential subdivision located mauka of Honoapiilani Highway within the South Beach Mauka and will include 132 single-family recreational homes. Construction is expected to start mid-2005 with completion anticipated by Year 2007.

8. *North Beach Lot 1*

The project is part of the Kaanapali Ocean Resort subdivision, which includes a total of 280 timeshare units. At the time of the study, North Beach Lot 1 included 103 units, with the balance of 177 units currently under construction and soon to be completed.

9. *North Beach Lot 2*

The project is also part of the Kaanapali Ocean Resort subdivision, which is located adjacent to North Beach Lot 1, and includes approximately 258 multi-family units with potential lockouts for each unit.

H

Air Quality Study

B.D. NEAL & ASSOCIATES
*Applied Meteorology * Air Quality * Computer Science*
P.O. BOX 1808 * KAILUA-KONA, HAWAII 96745 * TELEPHONE (808) 329-1627 * FAX (808) 331-8428
EMAIL: bdneal@kona.net

April 6, 2005

Mr. Ryan Churchill
President
Kapalua Bay LLC
1000 Kapalua Drive
Kapalua, Hawaii 96761

Subject: The Residences at Kapalua Bay Project
Air Quality Impact Assessment

Dear Mr. Churchill:

In response to your request, we have examined the potential air quality impacts related to the proposed Residences at Kapalua Bay Project. The results of this examination along with background information related to this issue and recommended mitigation measures are summarized below.

Project Description

Kapalua Bay LLC is proposing to develop The Residences at Kapalua Bay project on the site of the existing Kapalua Bay Hotel at Kapalua on the island of Maui. The project will involve the demolition of the existing structures on the site and the construction of approximately 155 homes to be clustered in approximately 9 buildings on the property. Project construction is expected to be completed about 24 months from the time all approvals are received.

Ambient Air Quality Standards

Both federal and state standards have been established to maintain ambient air quality. At the present time, seven parameters are regulated including: particulate matter, sulfur dioxide, hydrogen sulfide, nitrogen dioxide, carbon monoxide, ozone and lead. Hawaii air quality standards are comparable to the national

standards except those for nitrogen dioxide and carbon monoxide which are more stringent than the national standards.

Regional and Local Climatology

Regional and local climate together with the amount and type of human activity generally dictate the air quality of a given location. The climate of the Kapalua area is very much affected by its near coastal situation and by nearby mountains. Winds are variable but are often trade winds from the north or northeast. Wind speeds typically vary between about 5 and 15 miles per hour. Temperatures in the Kapalua area are generally very consistent and moderate with an average daily temperature range of about 66°F to 85°F. The extreme minimum temperature recorded at nearby Kaanapali is 47°F, while the extreme maximum temperature is 98°F. Average annual rainfall in the area amounts to about 20 to 30 inches.

Existing Air Quality Conditions

No ambient air quality data for the Kapalua area has been reported by the state Department of Health. However, except for periodic impacts from distant volcanic emissions (vog) and possibly occasional localized impacts from traffic congestion, the present air quality of the Kapalua area is good.

Air Quality Impacts of Project

Short-term direct and indirect impacts on air quality could potentially occur during project construction. For a project of this nature, there are two potential types of air pollution emissions that could directly result in short-term air quality impacts during project construction: (1) fugitive dust from building demolition, soil excavation and vehicle movement; and (2) exhaust emissions from on-site construction equipment. Indirectly, there also could be short-term air quality impacts from the disruption of traffic on nearby roadways, from slow-moving construction equipment traveling to and from the project site and from a temporary increase in local traffic caused by commuting construction workers.

An Amended Phase I Environmental Site Assessment has already been prepared for the demolition of the existing structures on the site. This assessment found evidence of existing or pre-existing potentially hazardous materials, such as perchloroethylene (PCE), polychlorinated biphenyls (PCBs), diesel fuel, fungi, asbestos and lead paint. Removal of all such materials should be performed in accordance with a hazardous materials abatement plan.

Fugitive dust emissions from demolition and construction activities are difficult to estimate accurately because of their elusive nature of emission and because the potential for dust generation varies greatly depending upon the type of soil at the construction site, the amount and type of dirt-disturbing activity taking place, the moisture content of exposed soil in work areas, and the wind speed. The U.S. EPA has provided a rough estimate for uncontrolled fugitive dust emissions from construction activity of 1.2 tons per acre per month under conditions of "medium" activity, moderate soil silt content (30%), and precipitation/evaporation (P/E) index of 50. Uncontrolled fugitive dust emissions from project construction would likely be somewhere near this level. In any case, State of Hawaii Air Pollution Control Regulations prohibit visible emissions of fugitive dust from construction activities at the property line. Thus, an effective dust control plan for the project construction phase should be prepared.

Adequate fugitive dust control can usually be accomplished by the establishment of a frequent watering program to keep demolition areas and bare-dirt surfaces in active construction areas from becoming significant sources of dust. On days without rainfall, construction areas should be watered at least twice during the workday to help keep dust to a minimum. Control regulations further stipulate that open-bodied trucks be covered at all times when in motion if they are transporting materials likely to give rise to airborne dust. Haul trucks tracking dirt onto paved streets from unpaved areas are oftentimes a significant source of dust in construction areas. Some means to alleviate this problem, such as tire washing or road cleaning, may be appropriate. Dust monitoring could be considered as a means to quantitatively evaluate the effectiveness of dust control measures.

On-site mobile and stationary construction equipment also will emit air pollutants from engine exhausts. The largest of this equipment is usually diesel-powered. Nitrogen oxides emissions from diesel engines can be relatively high compared to gasoline-powered equipment, but the standard for nitrogen dioxide is set on an annual basis and is not likely to be violated by short-term construction equipment emissions. Carbon monoxide emissions from diesel engines, on the other hand, are low and should be relatively insignificant compared to vehicular emissions on nearby roadways.

Indirectly, slow-moving construction vehicles on roadways leading to and from the project site could obstruct the normal flow of traffic to such an extent that overall vehicular emissions are increased. This impact can be mitigated by moving heavy construction equipment during periods of low traffic volume. Likewise, the schedules of commuting construction workers can be adjusted to avoid peak hours in the project vicinity.

After the period of construction, long-term impacts on air quality from motor vehicle exhausts can potentially occur at or near any project that attracts large volumes of motor vehicle traffic. Carbon monoxide emissions are usually the primary issue, and public areas near traffic-congested intersections are the main concern. Traffic associated with the proposed project will likely use Honoapiilani Highway and several nearby intersecting roadways. The project traffic study indicates that without the project in the year 2008 peak-hour traffic approach volumes at these intersections will range from about 1,000 to 3,000 vehicles per hour, with intersection traffic volumes decreasing toward the north, and that all intersections in the vicinity of the project have adequate level-of-service conditions. Traffic volumes with the project in the year 2008 are expected to decrease during the morning and afternoon peak periods when compared to the existing hotel use on the site, thus assisting in improving the overall operations of the study intersections.

Based on extensive experience in assessing traffic-related air quality impacts, traffic volume increases of less than about 5 percent or about 100 vehicles per hour and traffic approach volumes of less than about 1,000 vehicles per hour do not cause any significant impacts on air quality if adequate traffic level-of-service is provided. Considering the decrease in peak-hour traffic volumes that is expected and the adequate level-of-service at nearby intersections that is forecast with or without the project, the proposed project should have no significant long-term impacts on maximum air pollution levels in the project area. Although a detailed air quality modeling study could be performed to predict project impacts, such an analysis is probably unwarranted.

Please call me if you have any questions concerning the information presented herein or if you wish to discuss this matter further.

Very truly yours,

Barry D. Neal

Barry D. Neal
Certified Consulting
Meteorologist

cc: Tom Schnell (PBR Hawaii)

I

Preliminary Engineering & Drainage Report

Preliminary Engineering Report
Civil Infrastructure

Residences at Kapalua Bay

Kapalua, Maui, Hawaii
Tax Map Key: 4-2-004:027; 028; and 029

Prepared for:

WCIT Architecture
711 Kapiolani Boulevard, Suite 1290
Honolulu Hawaii 96813

Prepared by:

Wilson Okamoto Corporation
Engineers and Planners
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826
WOC Job No. 7332-01

April 2005

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APPENDICES

Appendix A Sewage Design Flow Calculations

Appendix B Potable Water Demands Calculations

Appendix C Preliminary Drainage Report

Appendix D Maui Electric Company, Ltd. (MECO) Letter

EXECUTIVE SUMMARY

A preliminary engineering assessment of the proposed Residences at Kapalua Bay was conducted to review the site infrastructure and utilities systems, identify possible constraints, and to describe proposed improvements to sanitary sewer, water systems, storm drainage, parking, roadway, electrical, telephone, cable, and data communications systems.

Sewer: sanitary sewer service is available to support the Residences and supporting amenities. Based on the expected sewage flows of approximately 61,425 gallons per day (gpd), the Kapalua Resort and the County of Maui collection system in the vicinity of the project site and the Lahaina Wastewater Reclamation Facility both have adequate capacity to collect and treat the expected flows from the development. Anticipated improvements include a new on-site sewer collection system consisting of sewer manholes and gravity sewerlines. The on-site sewer collection system will connect to the existing sewer system in the vicinity of the project site.

Water: potable water service from the Kapalua Resort private water system operated by the Kapalua Resort is available from the 12-inch water main which extends along the west/makai side of Lower Honoapiilani Road. The expected water demand is approximately 86,800 gallons per day (gpd) for the Residences and supporting amenities. Separate potable water service and fire protection lateral connections will be required to the existing 12-inch water main along Lower Honoapiilani Road. The new connection will also include new domestic meters for potable water system and detector check meters for the fire protection system. The expected non-potable demand is 55,000 gpd for landscape irrigation.

Site Grading, Flooding, and Storm Drainage: elevations within the project site range from approximately 100 feet mean sea level (msl) near the eastern corner of the property along Lower Honoapiilani Road, to approximately 20-feet near the moderately sloping lawn and pool area, to the shoreline of the western edge which has an abrupt drop ranging from 5 to 30 feet. Additional runoff generated as a result of site improvements will be stored on-site through the use of underground drainlines and catch basins, drywells, underground detention basins, or injection wells.

Parking and Roadway System: access to the project site will retain the existing driveway connection to Lower Honoapiilani Road, the two-lane road servicing resort traffic traveling in the east-west direction. This access road will also continue to service the public access parking lot located within the project site, the 141-unit Bay Villas condominium, and a private residence located on the former US Coast Guard parcel on Namalu Bay, both located outside of the project site. The portion of Lower Honoapiilani Road fronting the project site is privately maintained by Kapalua Resort. Parking for the Residences development will include approximately 395 parking stalls located in at-grade parking lots and in designated levels of the project structures.

Electrical, Telephone, Cable and Data Systems: electrical, telephone, and cable TV service, and data line access to the Internet for the project site are available and will be provided through Maui Electric Company, Verizon Hawaii, and Oceanic Time Warner Cable. New underground ductlines will be extended from the existing underground system located along Lower Honoapiilani Road.

1. INTRODUCTION

1.1 Report Purpose

Based on the Concept Design plans prepared by WCIT, this Preliminary Engineering Report presents the preliminary assessment of the infrastructure and utility systems on the project site. The objective of the report is to review existing infrastructure systems, determine project demands, identify possible constraints based on the projected demands, and describe proposed improvements relative to:

- sanitary sewer,
- water systems,
- storm drainage,
- parking and roadway,
- electrical system,
- telephone, cable, and data communication systems.

The proposed improvements are preliminary concepts and subject to change based on refinement of plans and availability of more detailed information.

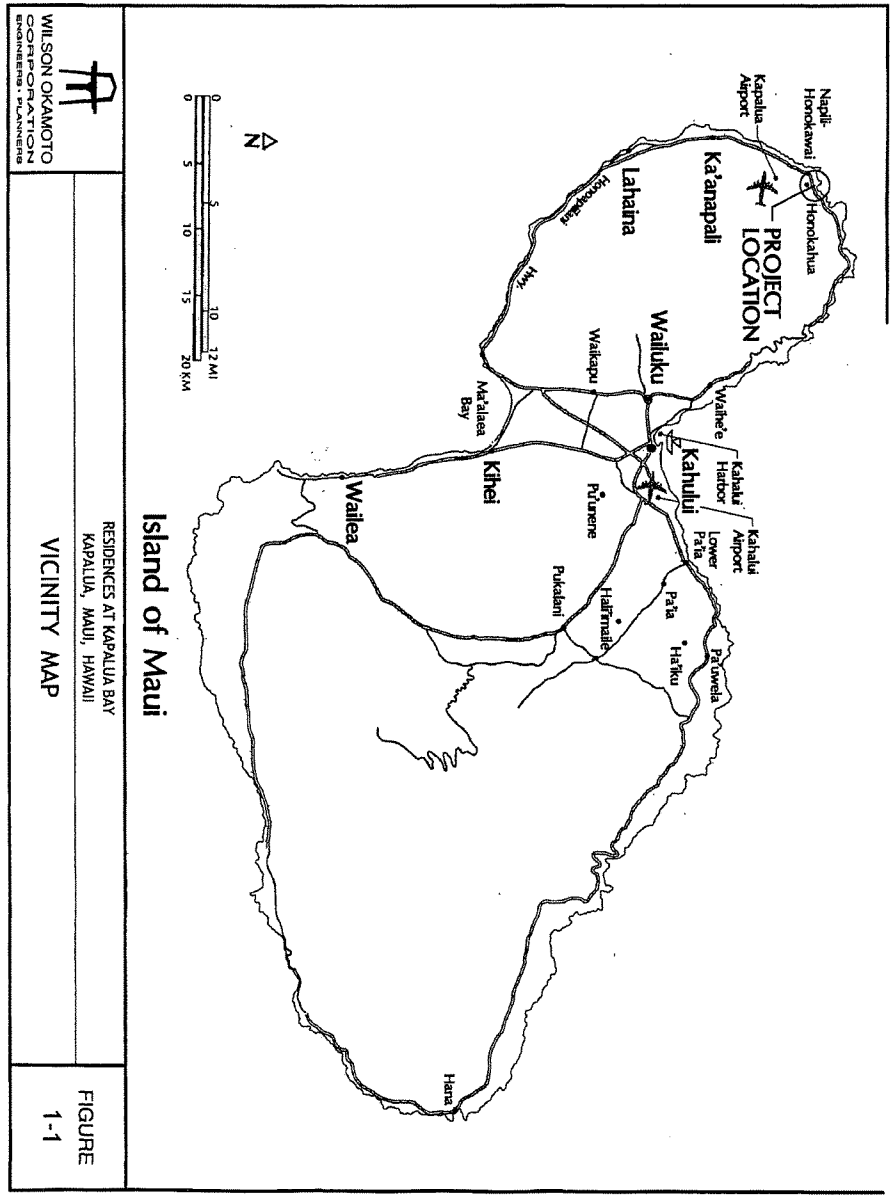
1.2 Project Information

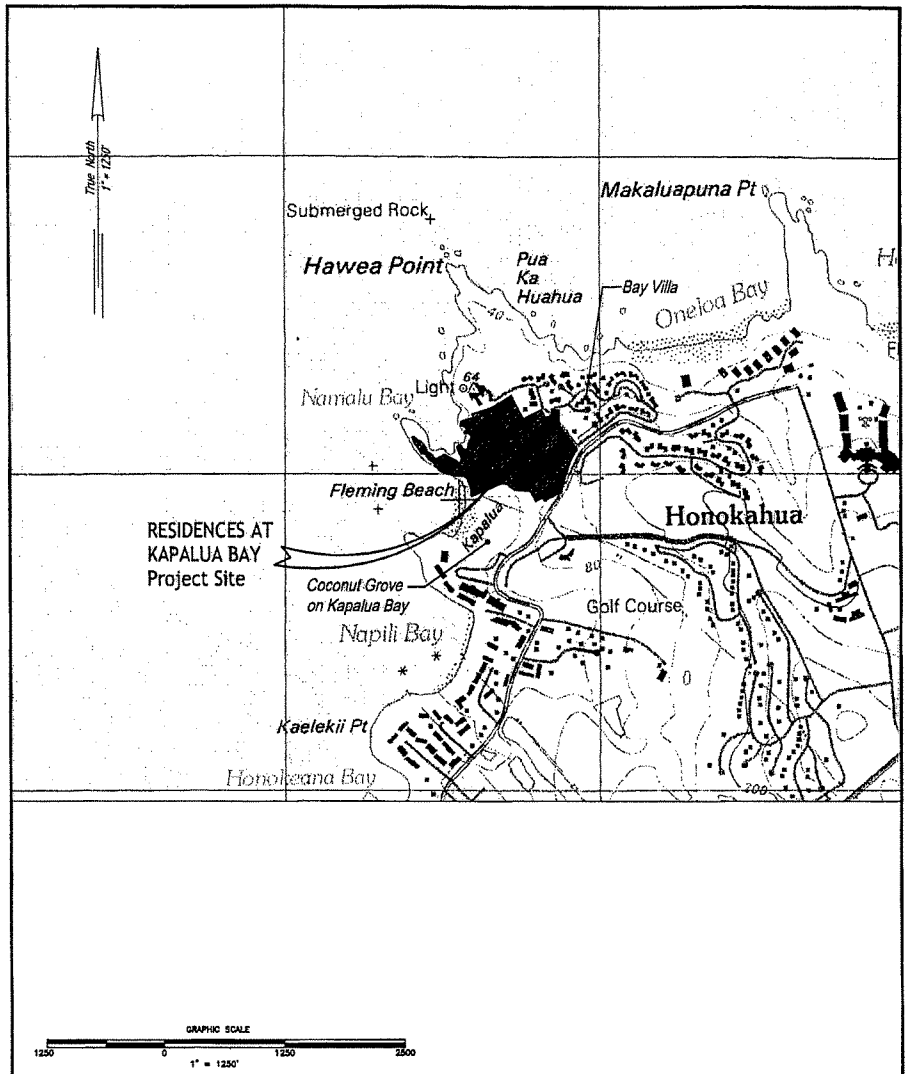
Kapalua Bay, LLC intends to demolish the existing Kapalua Bay Hotel (KBH) and develop the Residences at Kapalua Bay on the approximately 24-acre oceanfront property. The existing KBH consists of 196-hotel units and associated amenities. The Residences at Kapalua development is anticipated to consist of a total of approximately 155 units, composed of 90 whole-ownership residential units and 65 fractional units. Other improvements include associated amenities such as a spa, new activity pool area, restaurant, landscaped gardens, new water features, new parking facilities, and at-grade parking lot improvements.

The project site is bounded by the Pacific Ocean to the west, Lower Honoapiilani Road to east, the Coconut Grove residential development to the south, and the Bay Villas residential development and a private residence to the north. The project site occupies three parcels Tax Map Key: 4-2-004:027; 028; and 029, all located makai of Lower

Honoapiilani Road. The Shops at Kapalua Bay Hotel currently occupies TMK: 4-2-004:027; the Kapalua Bay Hotel, TMK: 4-2-004:028; and the hotel parking lot, TMK: 4-2-004:029. (See Figures 1-1, 1-2, and 1-3).

The preliminary site plan shows that access to the Residences at Kapalua Bay will be from the existing Kapalua Bay Hotel driveway connection to Lower Honoapiilani Road. No changes are anticipated to this existing access road connection to Lower Honoapiilani Road. Access will be maintained to the public access parking lot located within the project site and to the 141-unit Bay Villas condominium and to a private residence located on the former US Coast Guard parcel on Namalu Bay.





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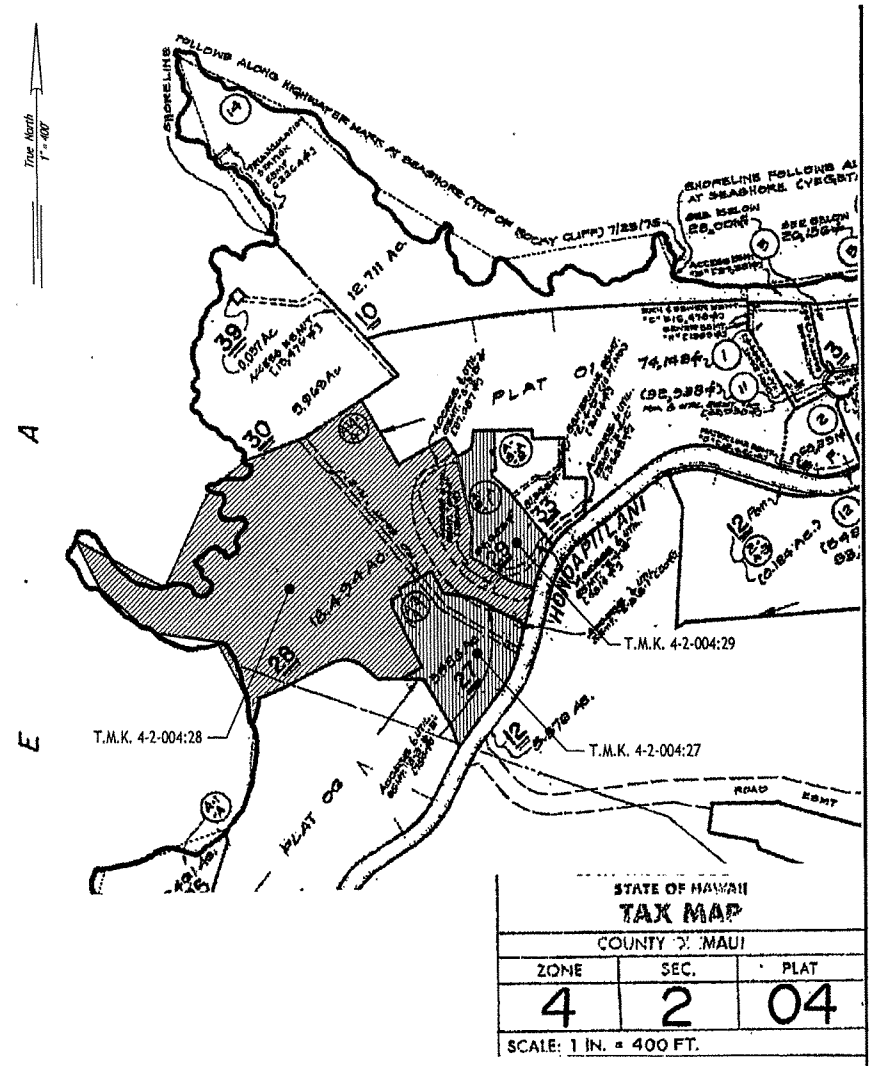
RESIDENCES AT KAPALUA BAY
KAPALUA, MAUI, HAWAII

LOCATION MAP

FIGURE 1-2



WILSON OKAMOTO CORPORATION ENGINEERS · PLANNERS

RESIDENCES AT KAPALUA BAY
KAPALUA, MAUI, HAWAII

TMK : 4-2-004 : 027, 028, & -29

FIGURE 1-3

2. SANITARY SEWER SYSTEM

2.1 Background

The Kapalua Resort's private sewer collection system provides sewer service for the project site. The private sewer collection system transports sewage flows to the County of Maui Wastewater Reclamation Division (WRD) collection system which provides sanitary sewer service for the area near the project site. Kapalua Resort engineers were consulted in January 2005 to determine appropriate tie in locations to the existing private sewer collection system. The Wastewater Reclamation Division was consulted in February 2005 to verify existing facility capacities and preliminary development plans.

2.2 Existing Conditions

Wastewater generated from portions of the Kapalua Resort is treated at the County of Maui Lahaina Wastewater Reclamation Facility (LWRF) located approximately 4-miles south of the project site on Honoapiilani Highway. The LWRF total treatment capacity is currently 9.0 million gallons per day (mgd), with 6.0 mgd for secondary treatment and 3.0 mgd for R-1 treatment. Presently, the facility treats about 5.3 mgd of wastewater. Approximately 1.0 mgd of the R-1 treated effluent is used to irrigate the Royal Kaanapali golf courses, the landscaped areas along Honoapiilani Highway, and the landscaped median of the Kaanapali Parkway. The remaining treated effluent (4.3 mgd) is disposed into four injection wells located within the facility. Under the conditions in the US Environmental Protection Agency (EPA) permit, the County is allowed to dispose a maximum flow of 6.7 mgd into the injection wells.

Kapalua Resort developed the wastewater collection system serving the resort. The existing sanitary sewer collection system in the vicinity of the project site consists of a privately-owned 15-inch gravity line located along the makai boundary of the Kapalua Bay Hotel. This 15-inch privately-owned gravity line also serves properties north of the project site, including the Ritz Carlton, the Ironwoods, the Bay Villas, and the private residence located on the former US Coast Guard parcel. The gravity collection system continues south beyond the project site where flows are collected from the Coconut Grove Condominium and the Bay Club, a restaurant, which is currently closed for renovation. A pump station located near the Bay Club then pumps the flows to the

County's Napili sewer pump station No. 6 from where the flows are transported via County-owned force mains and gravity sewerlines to the LWRF. (See Figure 2-1).

Discussion with the County indicated that the original discharge rate allocated to the Kapalua Resort was 219,000 gpd. According to County records, 185,340 gpd, or approximately 84% of the total, is currently unused.

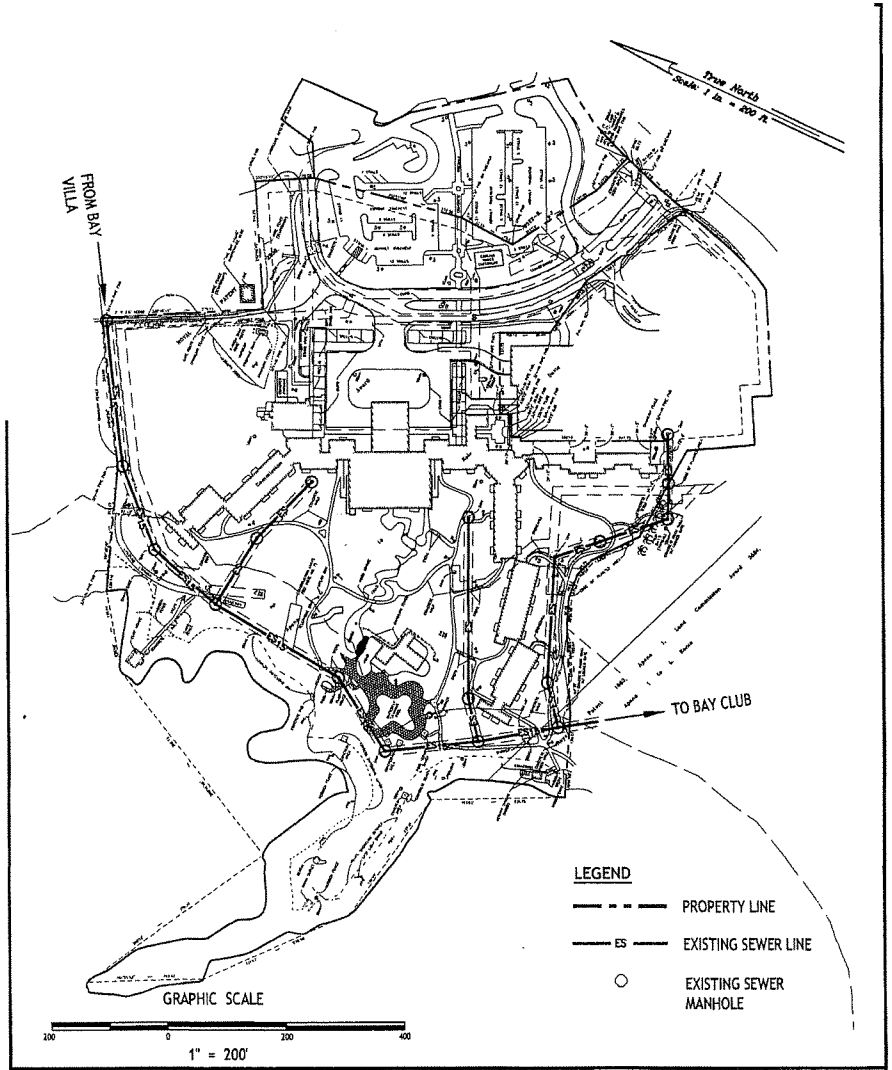
An average sanitary sewer volume of 71,100 gpd is calculated for the existing Kapalua Bay Hotel and associated uses, based on the County guidelines for wastewater contribution. (See Appendix A).

Discussions with KBH personnel indicate the existing sewer system has operated with relatively few problems. No capacity related problems were noted during the discussions. At one time, a blockage in the property sewer system occurred, but it was found to have been due to improperly discarded items in the sewer lines. The failure of the privately owned lift station near the Bay Club restaurant and related failure of the County system to re-route the flows caused a backup into the lower floor of the restaurant building. Subsequently, the system has operated without incidents.

2.3 Projected Demands

Sanitary sewer volumes for the project were derived using the project's program requirements provided by project architects WCIT and generalized simulation of projected demands for similar developments. Line sizes will be determined during the design phase of the project.

An average sanitary sewer volume of 61,425 gpd is projected for the Residences, based on County guidelines for wastewater contribution. This projected sewer volume is reduced approximately 14.0 percent compared to the existing volume of 71,100 gpd. (See Appendix A).



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RESIDENCES AT KAPALUA BAY
KAPALUA, MAUI, HAWAII

PROJECT SITE - EXISTING SANITARY SEWER SYSTEM

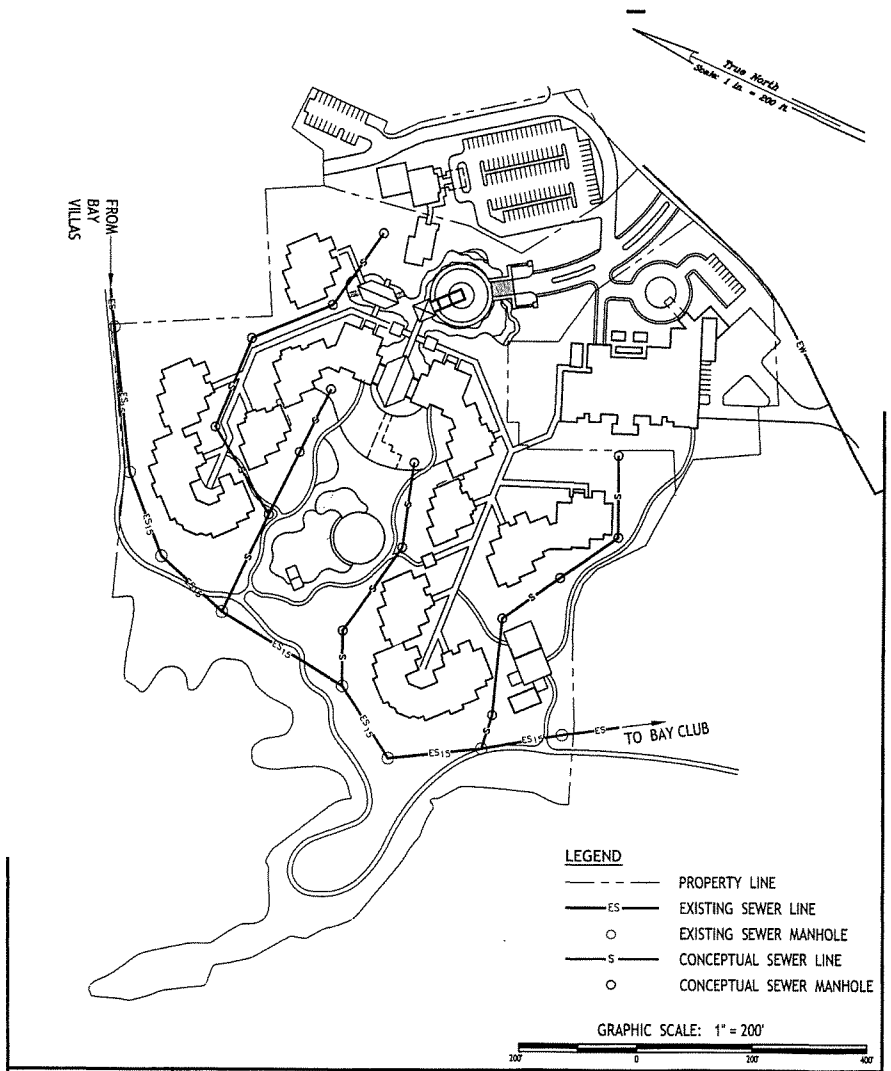
FIGURE 2-1

2.4 Proposed Improvements

Discussions with Kapalua Resort utility and WRD personnel indicate that, at this time, both the Kapalua and WRD systems in the area are sufficient with regard to gravity sewerlines, sewer pump stations, and treatment plant capacity to support the Residences at Kapalua Bay.

Sewer capacity for the project will be covered pursuant to the Lahaina Wastewater Reclamation Facility Expansion Agreement between the County of Maui and Maui Land & Pineapple Company, Inc. and Kapalua Waste Treatment Company, Ltd. dated November 18, 1993. Additional wastewater disposal capacity will not be required as the Residences will generate less wastewater than the existing use that will be taken out of service. The Lahaina Wastewater Reclamation Facility Expansion Agreement sets forth the basis for calculating the disposal capacity requirement in the table related to Improvement Wastewater Disposal Requirement. This table shows the average daily flow is 350 gallons per unit day (gpud) for hotels and 250 gpud for multi-family residential.

Removal of wastewater from the project site is anticipated to be via a connection to the existing 15-inch gravity sewer main located on the makai side of the project site. The proposed wastewater connection will likely consist of a new sewer connection into an existing sewer manhole. Other site improvements will consist of an underground sewer collection system to connect the various site structures to the existing 15-inch sewer main. Figure 2-2 shows the Conceptual Sanitary Sewer System Plan.



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RESIDENCES AT KAPALUA BAY
KAPALUA, MAUI, HAWAII

CONCEPTUAL SEWER SYSTEM

FIGURE 2-2

3. WATER SYSTEMS

3.1 Background

The Kapalua Water Company private water system provides water service for the project site. Resort engineers for the Kapalua Bay Hotel were consulted in February 2005 to collect information about the water system and to determine current water consumption for the existing Hotel.

3.2 Existing Conditions

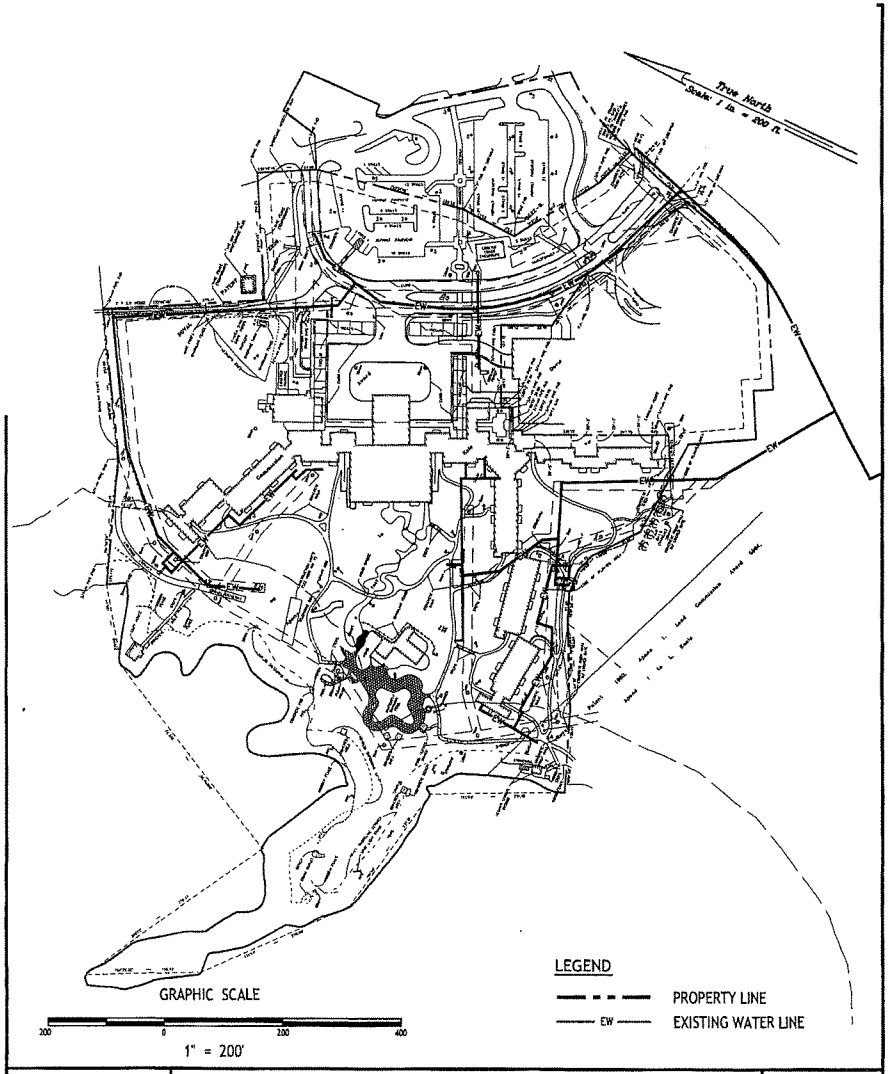
The Kapalua Bay Hotel is currently served by the privately operated Kapalua Water Company (KWC) dual water system which provides potable, fire protection, and non-potable irrigation water to the resort. Water to the project site is provided via KWC 12-inch distribution line located along Lower Honoapiilani Road. (See Figure 3-1)

The potable system that serves the project site uses a 1.0-million gallon tank at elevation 428 feet mean sea level (msl) located approximately 1.1 miles east of Honoapiilani Highway. Based on existing uses at the Kapalua Bay Hotel and the County of Maui Department of Water Standards, an average daily demand of 68,600 gpd was calculated for the Kapalua Bay Hotel (See Appendix B).

The non-potable (untreated irrigation water) system for the project site uses a 5.5-million gallon reservoir at elevation 650 feet msl located approximately 1.3 miles to the east (mauka) of Honoapiilani Highway. The monthly demand for non-potable water was obtained from the monthly billing records. The data showed monthly demand varied from a high of 3,582,000 gallons in July 2004 to a low of 579,800 gallons in March 2004. Based on the available information for the past two years, the average daily demand for non-potable water was approximately 56,000 gpd.

3.3 Projected Demands

Potable water demands were derived using the project's program requirements provided by WCIT and generalized simulation of projected demands for similar developments. Line sizes will be determined during the design phase of the project.



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RESIDENCES AT KAPALUA BAY
KAPALUA, MAUI, HAWAII

EXISTING WATER SYSTEM

FIGURE 3-1

An average daily demand of 86,800 gpd was determined for potable water for the Residences, based on the Department of Water Supply Water System Standards dated 2002. This average daily demand represents a 26.5 percent increase compared to the existing demand of 68,600 gpd. (See Appendix B).

The source of The Kapalua Resort's potable water is two deep wells located between elevations 768 and 796 feet above mean sea level (msl) approximately 1.5 miles southeast of the Residences site. These wells each have a capacity of 1.0 million gallons per day (MGD). Water from the wells is pumped into a 100,000-gallon glass-lined steel control tank at elevation 820 feet. It is then transmitted by gravity into a 1.0-million gallon reinforced concrete storage reservoir at elevation 428 msl. From this storage reservoir water is conveyed to Kapalua Resort by means of a 16-inch line that runs along Office Road and Kapalua Bay Drive. This line is augmented by a 12-inch line that runs along Village Road and Lower Honoapiilani Road. The water system is owned and operated by Maui Land & Pineapple Company, Inc., or its subsidiaries.

For the years 2002 to 2004, record show the average daily demand for the potable water system was approximately 578,000 gallons per day (gpd). For the first month in 2005, the average daily demand was approximately 490,000 gpd. Based on this analysis, there is available capacity in potable water sources to supply the Residences development.

The average daily demand for non-potable water is projected at 55,000 gpd for the Residences, with a peak demand of 70,000 gpd. This average daily demand represents a decrease of 1.8 percent compared to the existing non-potable water demand of 56,000 gpd.

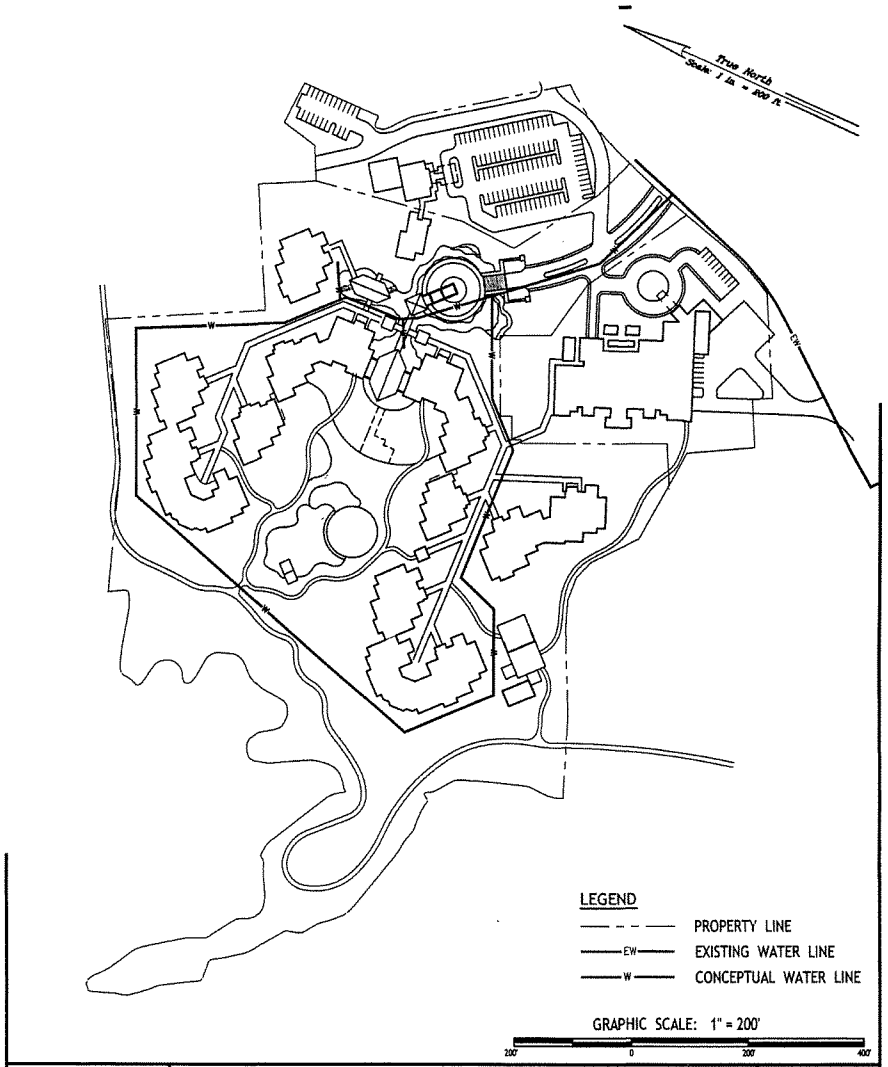
The Kapalua Water Company uses surface water for non-potable needs for the Kapalua area. For the years 2002 to 2004, the average daily demand for non-potable water was approximately 2.1 mgd. For the first month in 2005, the average daily demand was 0.98 mgd. Based on this analysis, there is available capacity in the non-potable water source to supply the Residences development.

3.4 Proposed Improvements

The potable water supply for the Residences at Kapalua Bay is anticipated to be via connection to the existing 12-inch water main located along Lower Honoapiilani Road. Standard improvements will consist of connection to the 12-inch water main, water meter vault, reduced pressure backflow prevention device, and necessary distribution waterline piping to the various site structures. (See Figure 3-2).

The fire protection water service lateral for the property will consist of a detector check meter and waterline extending to the various buildings. The site fire protection system will consist of waterlines extending around the Residences buildings with fire hydrants spaced at 250-foot intervals. The mechanical engineer will verify the need for a fire pump for the Residences buildings during the design phase of the project.

The non-potable water supply for the project is anticipated to be via connection to the existing non-potable water main located along Lower Honoapiilani Road.



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RESIDENCES AT KAPALUA BAY
KAPALUA, MAUI, HAWAII

CONCEPTUAL WATER SYSTEM

FIGURE 3-2

4. SITE GRADING, FLOODING, AND STORM DRAINAGE SYSTEM

4.1 Background

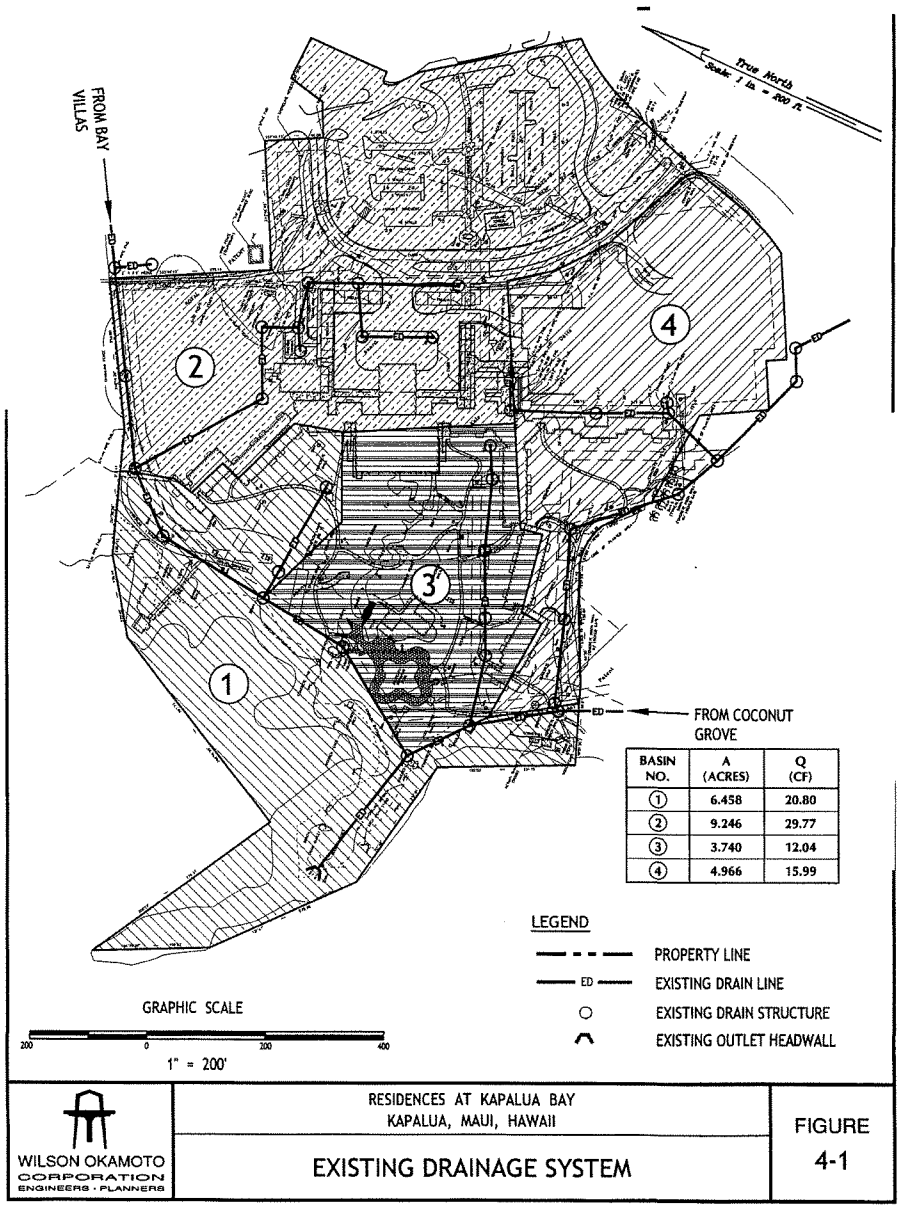
The site grading, flooding, and storm drainage system is based on a site investigation and discussions with resort engineers for the Kapalua Bay Hotel conducted in February 2005.

4.2 Existing Conditions

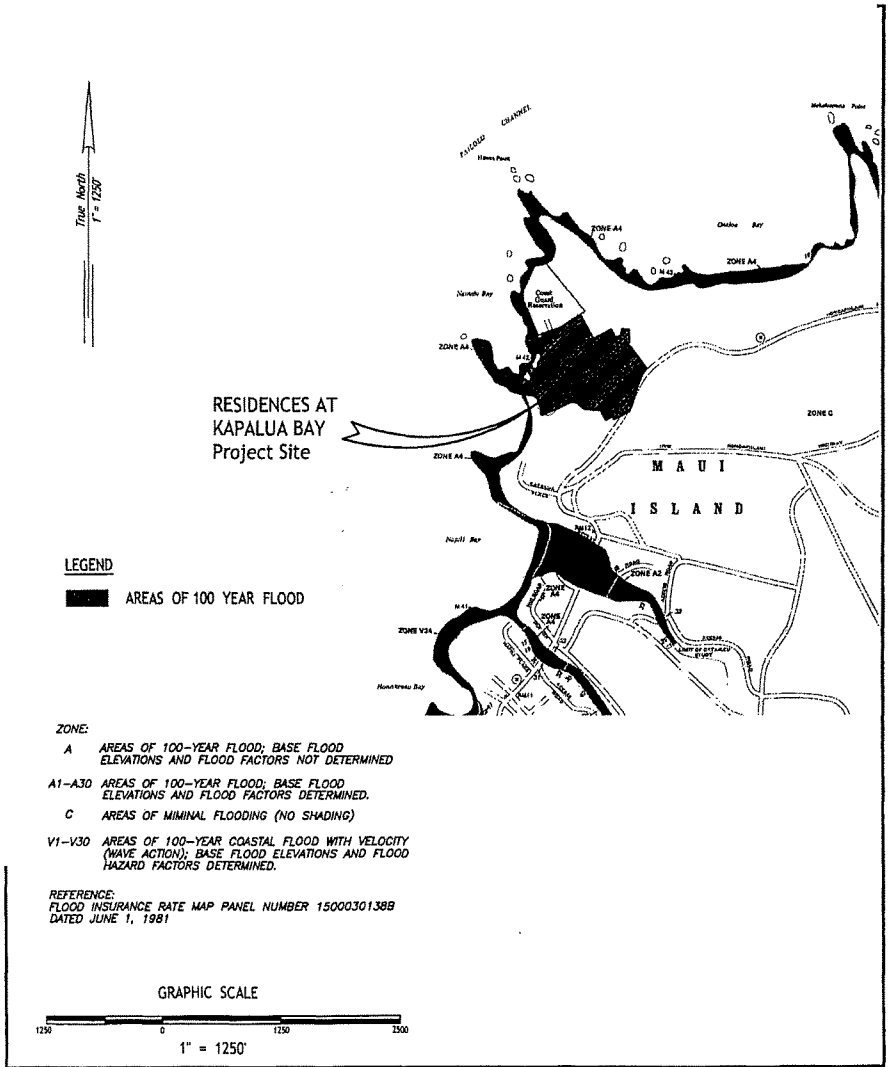
Elevations within the project site range from approximately 100 feet mean sea level (msl) near the eastern corner of the project site, along Lower Honoapiilani Road, to sea level along the west coast. From the east side of the property, the existing at-grade parking lot slopes moderately to the west toward the Kapalua Bay Hotel. A sloped landscaped area transitions the grades down to the entry driveway and porte cochere located approximately 8-feet lower in elevation. The porte cochere area is relatively flat. Continuing west, through the hotel, the grade steps down approximately 20-feet to the moderately sloping lawn and pool area. From the pool area to the shoreline, slopes vary and may be as steep as 30%. Near the shoreline, there is an abrupt drop ranging from 5 to 30 feet. Figure 4.1 shows the existing storm drain system.

Drainage for the existing Kapalua Bay Hotel is collected by a system of drainlines, drain inlets, catch basins, and storm drain manholes throughout the site. Flow from the site is conveyed to the main Kapalua Resort system along the shoreline of the property. The Kapalua Resort system enters the site along the shoreline entering from the north and the south. Both 54-inch drainlines combine and outflow to the ocean via a 60-inch drainline toward the west. (See Figure 4-1).

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Community Panel No: 150003 0138 B dated June 1, 1981 shows that the project site is located within two zones. The eastern majority of the project site is located in Zone C, identified as an area of minimal flooding. The western coastline of the project site is located in Zone A4, identified as an area affected by a 100-year flood event with base flood elevation +18.0 feet msl. (See Figure 4-2).



BASIN NO.	A (ACRES)	Q (CF)
1	6.458	20.80
2	9.246	29.77
3	3.740	12.04
4	4.966	15.99



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RESIDENCES AT KAPALUA BAY
KAPALUA, MAUI, HAWAII

FLOOD ZONE MAP

FIGURE 4-2

4.3 Projected Demands

Storm drainage volumes for the project site were derived using the Conceptual Layout Plans provided by WCIT and generalized simulation of projected demands for similar developments. Line sizes, inlet locations, drywell requirements and detention/retention requirements will be determined during the design phase of the project.

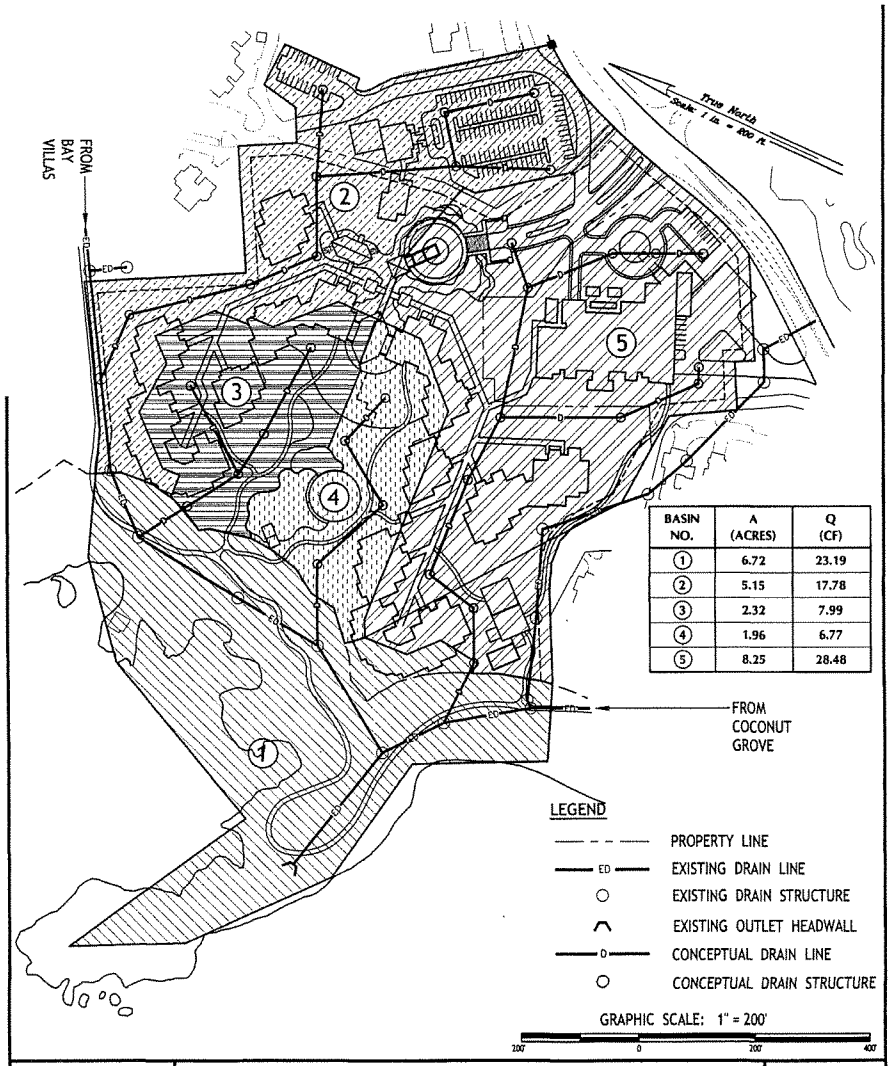
Estimated storm drainage flow rates for a 50-year, 1-hour rainfall event are 78.60 cubic feet per second (cfs) for existing conditions and 84.21 cfs for proposed conditions. The required storage volume for the increase in storm runoff based on a 50-year, 1-hour rainfall event is 13,300 cubic feet. (See Appendix C).

4.4 Proposed Improvements

The County requires all developments to include a site-specific Water Quality Management Plan, which will incorporates Best Management Practices (BMPs), in plans for the developed sites. The BMPs will include plans for both the construction and operational phases of the development. The BMPs will be created with guidelines from a number of sources including Hawaii's Coastal Nonpoint Pollution Control Program Management Plan, the West Maui Watershed Owners Manual Chapters 2 & 4, and Island Stewardship: Guide to Preventing Water Pollution for Maui's Homes and Businesses.

The project will also be required to prepare a site specific Water Quality Management Plan for both construction and operational phases of the proposed project.

The Residences at Kapalua Bay will also be required to retain on-site all increases in storm water runoff volumes for a 50-year 1-hour storm created by the new development. The proposed on-site storm drainage system is likely to consist of a combination of drain inlets, storm drain manholes, underground piping, underground storage and drywell systems. (See Figure 4-3).



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RESIDENCES AT KAPALUA BAY
KAPALUA, MAUI, HAWAII

CONCEPTUAL DRAINAGE SYSTEM

FIGURE 4-3

5. PARKING AND ROADWAY SYSTEM

5.1 Background

The review of the parking and roadway system is based on the review of the Conceptual Plan prepared by WCIT. A Traffic Assessment Report (TAR) was prepared to identify existing conditions and impacts from the Residences. This section will concentrate on on-site related parking and roadway system issues.

5.2 Existing Conditions

The project site lies west of Lower Honoapiilani Road, a two-lane roadway, a portion of which is owned and maintained by Kapalua Resort. Lower Honoapiilani Road provides roadway access to the project site and to other developments to in this western portion of Maui. About 0.5-mile north of the project site, Lower Honoapiilani Road terminates and becomes Office Road, which connects to Honoapiilani Highway, the main State highway for this portion of west Maui. The County-owned portion of Lower Honoapiilani Road terminates about 0.25 miles south of the project site.

Access to the project site is currently provided by a two-way access drive with a grass-planted center median. The intersection of the access drive and Lower Honoapiilani Road form a stop sign controlled intersection. The mauka section of the driveway provides access to an at-grade parking lot for hotel guests. The makai section of the driveway provides access to the hotel, the Shops at Kapalua Bay Hotel, the public access parking lot, the 141-unit Bay Villas condominium development, and the private residence located on the former Coast Guard parcel. A designated pathway for emergency vehicle access to the shoreline is located along the northern edge of the project site.

A second makai driveway provides direct access from Lower Honoapiilani Road to the parking structure located beneath the Shops at Kapalua Bay Hotel.

5.3 Project Demands

Vehicular parking requirements for the project are based on program information provided by WCIT. Parking will include 2 parking stalls per residential home and 1.5 parking stalls per fractional home. Parking for the beach club, pool bar & grille restaurant, and spa will be provided per Maui County requirements for each use. Based on the proposed number of homes and other uses, a total of 395 parking stalls will be provided, which is expected to exceed County of Maui requirements.

5.4 Proposed Improvements

Based on the Preliminary Concept Site Plan prepared by WCIT, the roadway system serving the Residences at Kapalua Bay will be connected to Lower Honoapiilani Road. In general, the roadway and entrance driveways to the proposed project appear to have adequate capacity to accommodate normal traffic. The access roadway will remain in service as it provides access to the public access parking lot, the Bay Villas condominium, and the private residence located on the former US Coast Guard parcel on Namalu Bay.

Emergency and fire truck vehicles will also utilize the access road to access the project site. A new 20-foot wide, grass block paved fire access lane is proposed along the northern boundary of the project site to provide emergency access to the project site and to the shoreline on the western portion of the parcel. The grass block paved road will be required to accommodate a 50,000 lb fire truck with either a hammerhead or cul-de-sac turnaround located near the terminus of the fire access lane. The turnaround area shall be designed for the fire truck's outside turning radius of 40.5-feet. In general, the roadway and entrance driveways to the Residences at Kapalua development appear to have adequate capacity to accommodate normal traffic.

The TAR examined AM and PM traffic conditions for the west Maui including the following five intersections with Honoapiilani Highway:

- Office Road,
- Napilihau Street,
- Hoohui Street,
- Akahele Street; and
- Lower Honoapiilani Road.

The TAR analysis included a number of other developments in west Maui which should be completed in 2008, the assumed year for completion of the Residences. The TAR concluded that the traffic generation would be lower for the Residences than the existing traffic generation from the Kapalua Bay Hotel. The TAR indicated the reduction in the number of units at the project site would reduce the level of traffic generation.

The TAR also concluded that increases in traffic in the west Maui area would be from the various developments proposed for construction in the general area of the project site.

6. ELECTRICAL, TELEPHONE, CABLE, AND DATA SYSTEMS

6.1 Background

Electrical service for the proposed project will be provided by Maui Electric Company, Ltd (MECO). MECO was consulted in February 2005 to determine service availability based on existing facility capacities and development plans.

Telephone service for the project will be provided by Verizon Hawaii. Internet and cable TV service for the project will be provided by Oceanic Time Warner Cable. Verizon Hawaii and Oceanic Time Warner Cable were consulted in February and March 2005 to determine service availability based on existing facility capacities and development plans.

6.2 Existing Conditions

The existing electric service to the project site is a 277/480V, 3-phase, 4-wire system which comes from the Napili substation located about 1,300 feet above Honoapiilani Highway across from the Pineapple Hill subdivision. The existing distribution line is located underground along the along the Kapalua Bay Hotel access road. It should be noted that MECO indicates service should not be a problem, but the electrical consultant should review the proposed plans with MECO at earliest convenience.

Telephone service to the project site and surrounding area is provided from the Verizon Hawaii system located along Lower Honoapiilani Road. Service enters the project site from the access road and continues through the project site to service The Bay Villas and private residences.

Cable service for the project site and surrounding area is provided by Oceanic Time Warner Cable from a main underground cable located along Lower Honoapiilani Road. Service to the project site comes from a cable along the existing Kapalua Bay Hotel access road. The main cable along Lower Honoapiilani Road is adequate to service the future development.

6.3 Projected Demands

Based on correspondence with MECO, dated February 23, 2005 (See Appendix D), MECO acknowledges that electrical service is available to serve the project site. However, MECO recommends that the electrical design consultants meet with MECO to verify demands required to service the future development.

6.4 Proposed Improvements

New underground ductlines for electrical, telephone, Internet, and cable service will be extended from existing underground ductlines along Lower Honoapiilani Road.

7. OTHER UTILITIES

7.1 Fuel Systems

The project site contains an existing propane system to provide fuel for the hotel and kitchen. The system consists of three above ground steel tanks located in the upper parking lot across from the hotel entry. The lines from the tanks run under the access roadway and connect to the service points.

In addition, the project site contains a 1,000-gallon underground storage tank (UST) which provides diesel fuel to the emergency generator located in the mechanical room. The underground storage tank is located adjacent to the access driveway leading from the hotel entry to the Shops at Kapalua Bay Hotel parking structure.

USTs are governed by Title 11 Hawaii Administrative Rules Department of Health (DOH) Chapter 281, Underground Storage Tanks. Subchapter 8 of Chapter 281 sets forth the requirements and procedures for closure and change-in-service for USTs. Subchapter 8 requires the DOH be notified prior to closure and a site assessment, including sampling for possible release of fuel, be conducted, if the UST is to be permanently closed. The DOH Solid and Hazardous Waste Branch, Underground Storage Tank Section manages the USTs in the state.

7.2 Grease Trap Tanks

The project site contains three underground grease trap tanks located on the north open lawn area near the sewer line. Grease from the kitchen flows via underground gravity lines to the holding tanks which have a combined capacity of 3,000 gallons. Service vehicles use the service road to access and service the grease traps

A call was made to the DOH Underground Storage Tank Section to determine the applicability Title 11 Chapter 281 to the underground grease trap tanks. The DOH indicated that the grease trap tanks are not regulated by Chapter 281, as the tanks would not contain toxic substances, as might be found in fuel tanks.

APPENDICES

Appendix A

Sewage Design Flow Calculations

Existing Sewage Design Flow Calculations

Average Daily Wastewater Flow Rate (ADWFR).
350 gallon per hotel unit per day[1]

Existing Sewage Design Flow Calculations

Existing Facility	Units	ADWFR (gallons per day per unit)	ADWF (gallons per day)
Main Hotel	196 hotel unit	350	68,600
Shops			2,500
		Total	71,100

The total Average Daily Wastewater Flow for the Kapalua Bay Hotel (including auxillary uses such as restaurants, lounge, and pool bar) and Shops is approximately 71,100 gpd.

[1] Lahaina Wastewater Reclamation Facility Expansion Agreement Between County of Maui and Maui Land & Pineapple Company, Inc. and Kapalua Waste Treatment Company, Ltd. Dated November 18, 1993

Proposed Sewage Design Flow Calculations

Average Daily Wastewater Flow Rate (ADWFR)
250 gallon per residence unit per day[1]
80 gallon per restaurant seat per day[2]
20 gallons per person per day[2]
15 gallon per resort employee per day[2]

Proposed Sewage Design Flow Calculations

Conceptual Facility	Units	ADWFR (gallons per day per unit)	ADWF (gallons per day)
Fractional ownership	65 resort unit	250	16,250
Residences	90 resort unit	250	22,500
Lounge	75 seats	80	6,000
Beach Club	75 seats	80	6,000
Bar & Grille (restaurant)	100 seats	80	8,000
Spa(retail-Shops)	40 person	20	800
Resort Employees	125 employees	15	1,875
		Total	61,425

The total Average Daily Wastewater Flow for the Residences at Kapalua project will be approximately 61,425 gpd.

[2] County of Maui Department of Public Works. *Wastewater Reclamation Division Policy / Guideline for Standards of Wastewater Contribution memo* dated Feb 4, 1991.

Appendix B

Water Demand Calculations

Existing Water Demands Calculations

Assumptions:
Average Daily Demand (ADD) rates are as follows[3]:
350 gpd per resort unit [1]

ADD =(ADD rate per resort unit) * (no. of resort units)

No. of resort units = 196 units

ADD = 350 * 196
= 68,600 gpd (domestic)

Total Existing Demand = 68,600 gal/day

Proposed Water Demands Calculations

Assumptions:
Average Daily Demand (ADD) rates are as follows[2]
560 gpd per multi-family low rise unit [1]

ADD =(ADD rate per multi-family unit) * (no. of multi-family units)

No. of multi-family low rise units = 155 units

ADD = 560 * 155
= 86,800 gpd (domestic)

Total Demand = 86,800 gal/day

The total increase in water demand is 86,800 – 68,600 = 18,200 gal/day.
18,200/68,600 = 26.5%

[1] *County of Maui Department of Water Supply.* Water System Standards. *2002.*

Appendix C

Preliminary Drainage Report

PRELIMINARY DRAINAGE STUDY

FOR THE

RESIDENCES AT KAPALUA BAY

TAX MAP KEY: 4-2-004: 027, 028, & 029

Prepared For:

WCIT Architecture
711 Kapiolani Boulevard Suite 1290
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1907 South Beretania Street, Suite 400
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WOC Job No. 7332-01

April 2005

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APPENDIX A

FIGURE 1 PROJECT SITE EXISTING CONDITION DRAINAGE PLAN
FIGURE 2 PROJECT SITE PROPOSED CONDITION DRAINAGE PLAN

APPENDIX B

TABLE 1 Flowrate Calculations
TABLE 2 Storage Design
Sample Calculations for Detention Basin

I. INTRODUCTION

A. Purpose

This hydrology study was conducted to:

1. Calculate storm runoff quantities occurring at the proposed Residences at Kapalua project site under existing and proposed conditions.

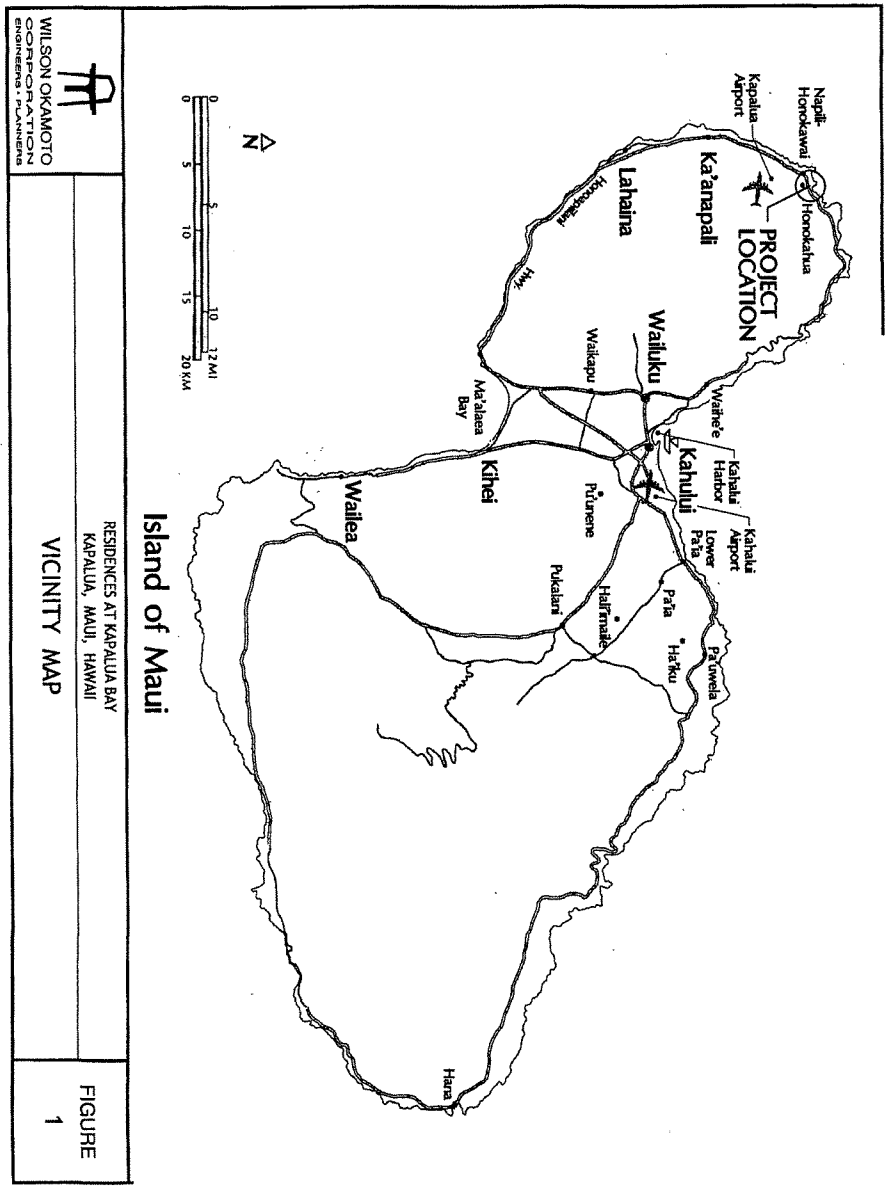
2. Determine required drainage improvements such as inlets, drywells, sub-drains, sump areas, and on-site and off-site detention basins.

3. Ensure compliance with the "Rules for the Design of Storm Drainage Facilities in the County of Maui", Department of Public Works and Waste Management, County of Maui, November 12, 1995. (Rules for Design).

B. Proposed Project Location and Description

The project site, identified by TMK: 4-2-004: 027, 028, and 029, is a 24-acre lot in Kapalua on the island of Maui. The project site is an irregular shaped parcel bound by Lower Honoapiilani Road to the east, the Pacific Ocean to the west, the Coconut Grove on Kapalua Bay complex to the south, and the Bay Villas condominium to the north. (See Figures 1 and 2).

The Residences project is to consist of 90 whole ownership residential units, 65 fractional units and associated amenities, such as activity pool area, landscaped gardens, water features, parking structure, and paved parking lots.



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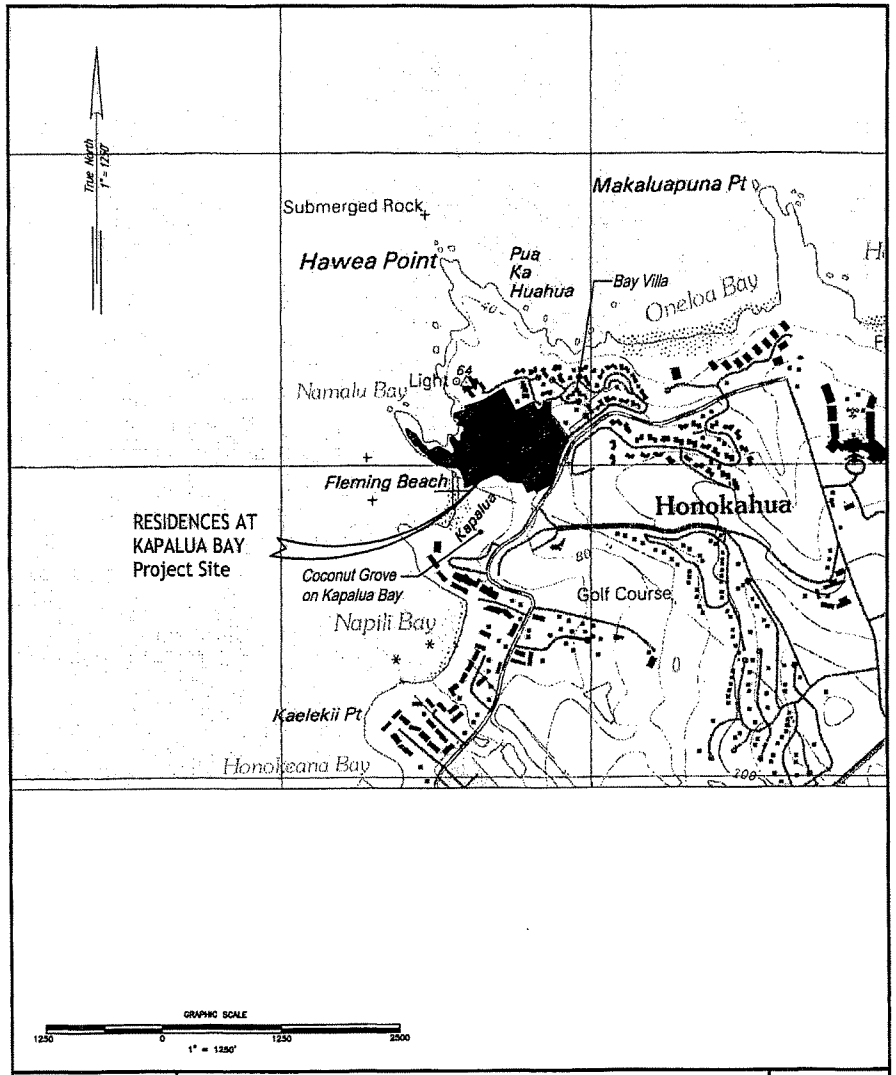
RESIDENCES AT KAPALUA BAY
KAPALUA, MAUI, HAWAII

VICINITY MAP

FIGURE 1



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RESIDENCES AT KAPALUA BAY
KAPALUA, MAUI, HAWAII

LOCATION MAP

FIGURE 2

C. Existing Topography

The proposed project area is located along the west coast of Maui in Kapalua. Elevations within the proposed project site range from approximately 100 feet mean sea level (msl) near the east property corner of the project site, along Lower Honoapiilani Road, to sea level along the west coast.

From the east side of the property, the existing at-grade parking lot slopes moderately to the west toward the KBH. A sloped landscaped area transitions the grades down to the entry driveway and porte cochere approximately 8-feet lower in elevation. The porte cochere area is relatively flat. Continuing west, through the hotel, the grade steps down approximately 20-feet to the moderately sloping lawn and pool area. From the pool area to the shoreline, slopes vary and may be as steep as 30%. Near the shoreline, there is an abrupt drop ranging from 5 to 30 feet.

D. Soils

Soil series and mapping units for the island of Maui are found in maps in the "Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii" dated August 1972, prepared by the U.S. Department of Agricultural, Soil Conservation Service (currently Natural Resources Conservation Services). The underlying soil within the Residences project site consists of the following (see Figure 3):

Beach Sand (BS)
The Beach Sand consists mainly of light-colored sands derived from coral and seashells and is highly suitable for resort development.

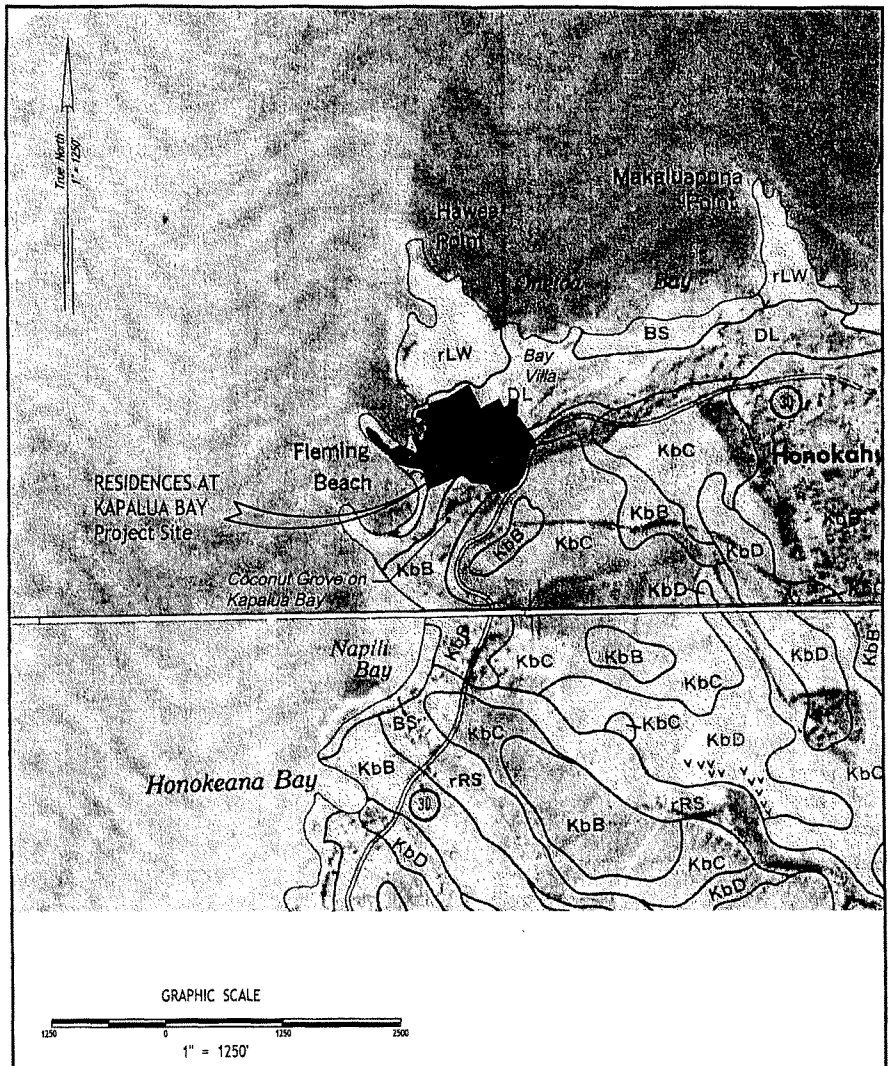
Dune Land(DL)
Dune Land consists of hills and ridges of sand size particles drifted and piled by wind. Ridges are actively shifting so no soil horizons have developed. Sand is dominantly from corals and seashells and occurs in coastal areas. Elevations range from sea level to 150 feet. Vegetation is sparse, but ironwood trees, koa

haole, tropical almond, kiawe, and mixed grasses have gained a foothold in places.

Kahana Silty Clay, 3 to 7 percent slopes(KbB)
The Kahana Silty Clay, of 3 to 7 percent slope, consists of well-drained soils in the upland areas. Areas are gently sloping to moderately steep. Elevations range from 100 to 1,200 feet. Runoff is slow, with erosion hazard being slight.

E. Vegetation

With the exception of the rocky shoreline area and developed areas, the existing landscaped areas of the project site are well covered with grass, and plants, and trees.



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RESIDENCES AT KAPALUA BAY
KAPALUA, MAUI, HAWAII

SOIL CLASSIFICATION MAP

FIGURE 3

II. EXISTING DRAINAGE CONDITIONS

A. Drainage

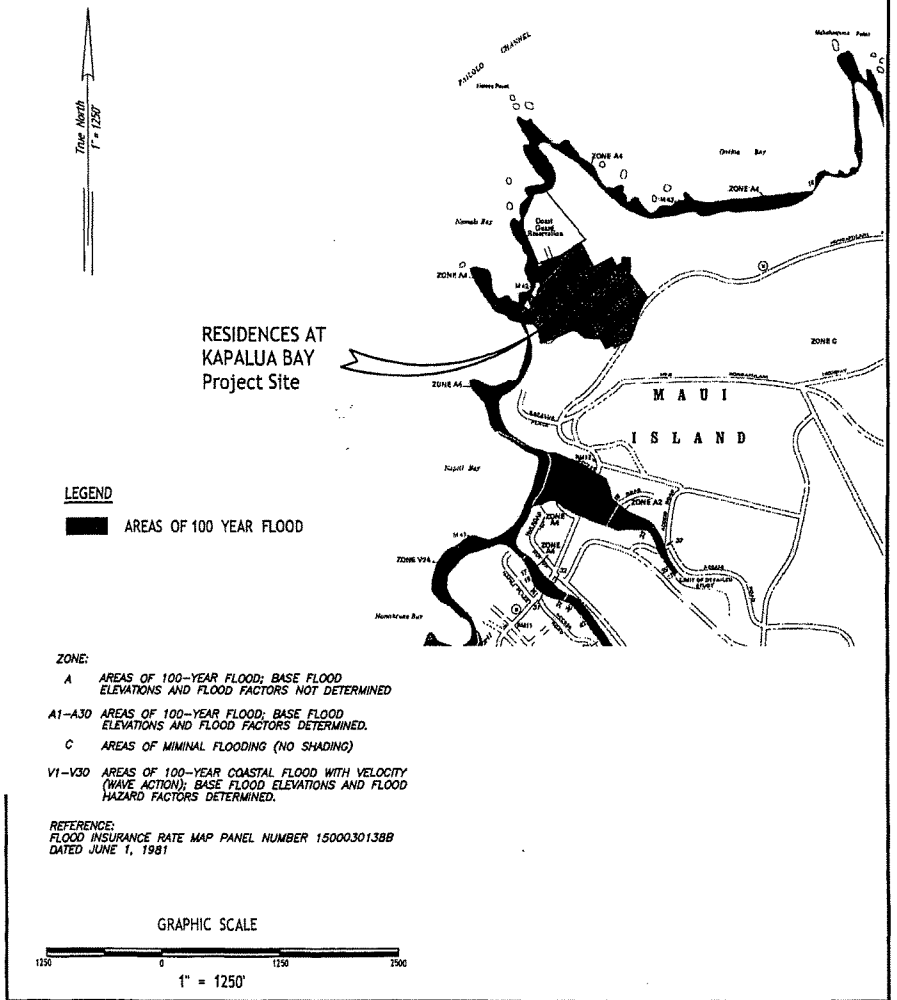
The Residences project site is currently occupied by the Kapalua Bay Hotel. The grounds are well maintained with groundcover throughout the site. Drainage for the existing KBH site is collected by a system of drainlines, drain inlets, catch basins, and storm drain manholes throughout the site. Flow from the site is conveyed to the main Kapalua Resort system along the shoreline of the property. The Kapalua Resort system enters the site along the shoreline entering from the north and the south. Both 54-inch drainlines combine and outflow to the ocean via a 60-inch drainline toward the west.

Based on the existing topography and drainage conditions, the project site contains 4 drainage basins contributing to the main Kapalua Resort drainage system. (See Figure A-1 of Appendix A).

B. Flood Hazard

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for Maui County, Panel Number 150003 0138B dated June 01, 1981 shows that the project site is located within two zones. The eastern majority of the project site is located in Zone C. The western coastline of the project site is located in Zone A4 (See Figure 4).

C: Areas of minimal flooding.
A4: Areas of 100-year flood, base flood elevations and flood factors determined to be at elevation 18.0.



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RESIDENCES AT KAPALUA BAY
KAPALUA, MAUI, HAWAII

FLOOD ZONE MAP

FIGURE 4

III. PROPOSED DRAINAGE CONDITIONS

A. Proposed On-Site Drainage

Proposed topography will be similar to that of the existing condition. Placement of the proposed drainage system is projected to define 5 drainage basins. (See Figure A-2 of Appendix A).

Proposed improvements will include the construction of a system of drainlines, drain inlets, catch basins, storm drain manholes, and underground detention basins. The proposed improvements will direct flow from the newly constructed drainlines to underground detention basins.

The detention system is designed to accommodate all increases in storm runoff volume from the site as a result of the proposed improvements, based on a 50-year, 1-hour storm event. The additional stormwater runoff, as a result of the proposed improvements, will be accommodated with underground detention basins located along the west property line near the shoreline setback.

The detention system will consist of continuous lengths of 3, 4, or 5-foot diameter perforated pipe. Each pipe will be centered atop a 1-foot bed of #3 filter gravel in a trench 2 feet wider than the pipe. Once in place, the remaining area will be backfilled with the same material to a depth of 1-foot above the top of the pipe. The stormwater entering the underground detention basins will be allowed to percolate into the ground. The required storage volume for the increase in storm runoff based on a 50-year, 1-hour rainfall event is 13,300 cubic feet. Current design provides approximately 16,000 cubic feet of storage (See Tables B-1 and B-2 of Appendix B).

IV. HYDROLOGY ANALYSIS

A. Rational Method

Design runoff flows were determined by the Rational Method expressed as:

$$Q = C * I * A$$

where:

Q = Flowrate in cubic feet per second (cfs)

C = Runoff coefficient

I = Rainfall intensity in inches per hour for a duration equal to the time of concentration.

A = Drainage area, in acres

Drainage Area (A)

Limits of the drainage basins were delineated based on topographic features. The total contributing drainage area was determined to be 24 acres.

Rainfall Intensity (I)

The concentration runoff time and design rainfall intensity were determined in accordance with plates 1 and 2 respectively, as shown in the Rules for Design. A 1-hour rainfall value of 3.0 inches/hour was used based on a 50-year 1-hour rainfall in the Kaanapali area.

Runoff Coefficient (C)

The Rules for Design was used to determine the runoff coefficient for the existing and proposed condition, respectively.

Ce = 0.70 for existing apartment dwelling areas
Cp = 0.75 for proposed apartment dwelling areas

Although the existing and proposed developments serve a similar purpose, the proposed development plans show a greater area of hardscape. Therefore, a runoff coefficient of greater value is used.

Results

Peak discharge or flowrate in cubic feet per second (cfs) as calculated by the Rational Method for both the existing and proposed conditions are shown in Table B-1 of Appendix B.

Based on a 50-year, 1-hour storm event, a discharge of 78.60 cfs was determined for the existing on-site runoff. A discharge of 84.21 cfs was determined for the proposed on-site runoff. The 5.61 cfs increase in storm runoff generated by the project site can be attributed to an increase in impervious areas due to the construction of the new buildings and paved surfaces.

V. CONCLUSION

As a requirement of the "Rules for the Design of Storm Drainage Facilities in the County of Maui", all increases in storm water runoff, based on a 50-year, 1-hour storm, will be stored on site. Retention of the storm runoff increase generated by the project site will be accomplished by construction of underground detention basin systems.

Since all increases in stormwater runoff generated as a result of the project improvements will be accommodated through underground storage basins, the project's storm drainage plan will not cause any adverse effects to Kapalua Resort drainage system or adjacent properties.

VI. REFERENCES

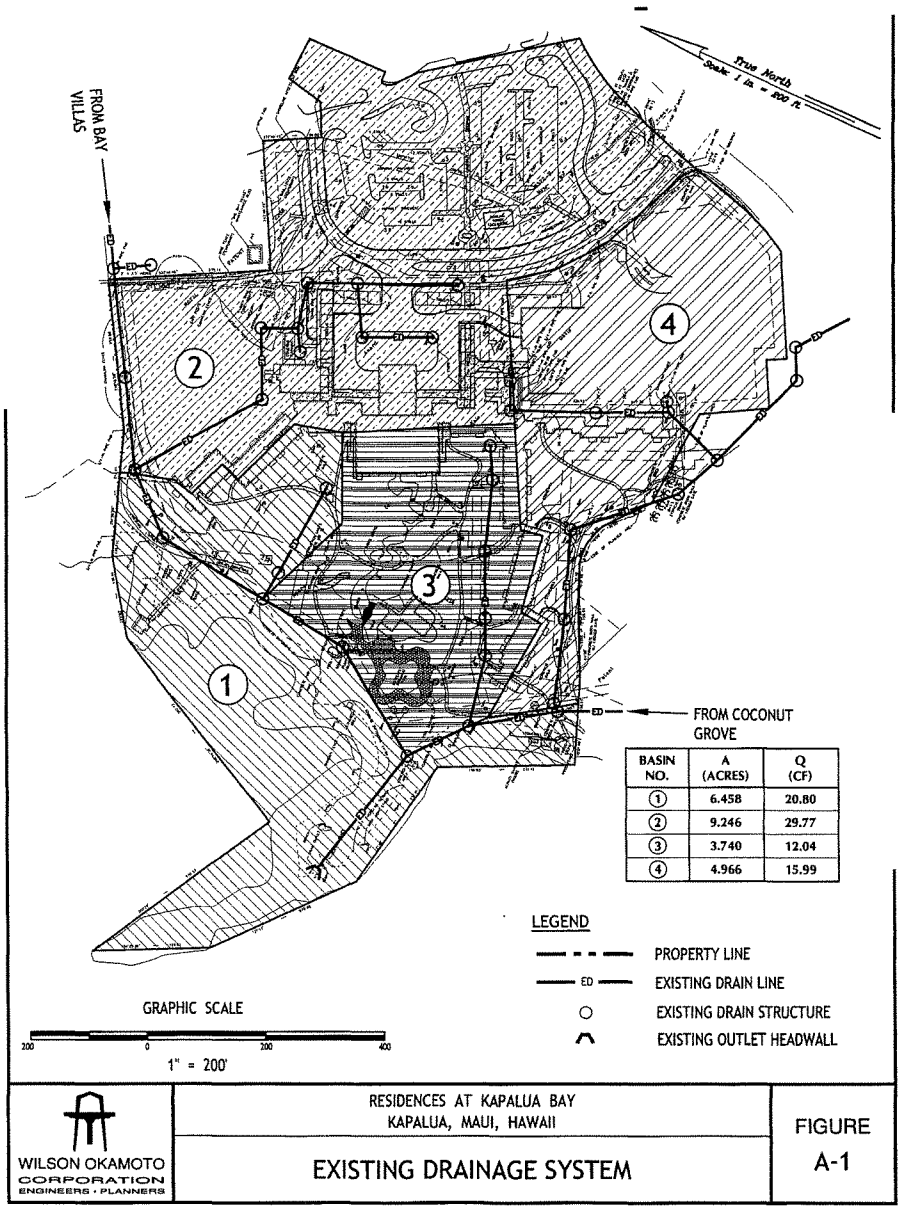
1. "Rules for the Design of Storm Drainage Facilities in the County of Maui", Department of Public Works and Waste Management, County of Maui, July 1995.

2. "Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii", United States Department of Agriculture Soil Conservation Service in cooperation with University of Hawaii Agricultural Experiment Station, August 1972.

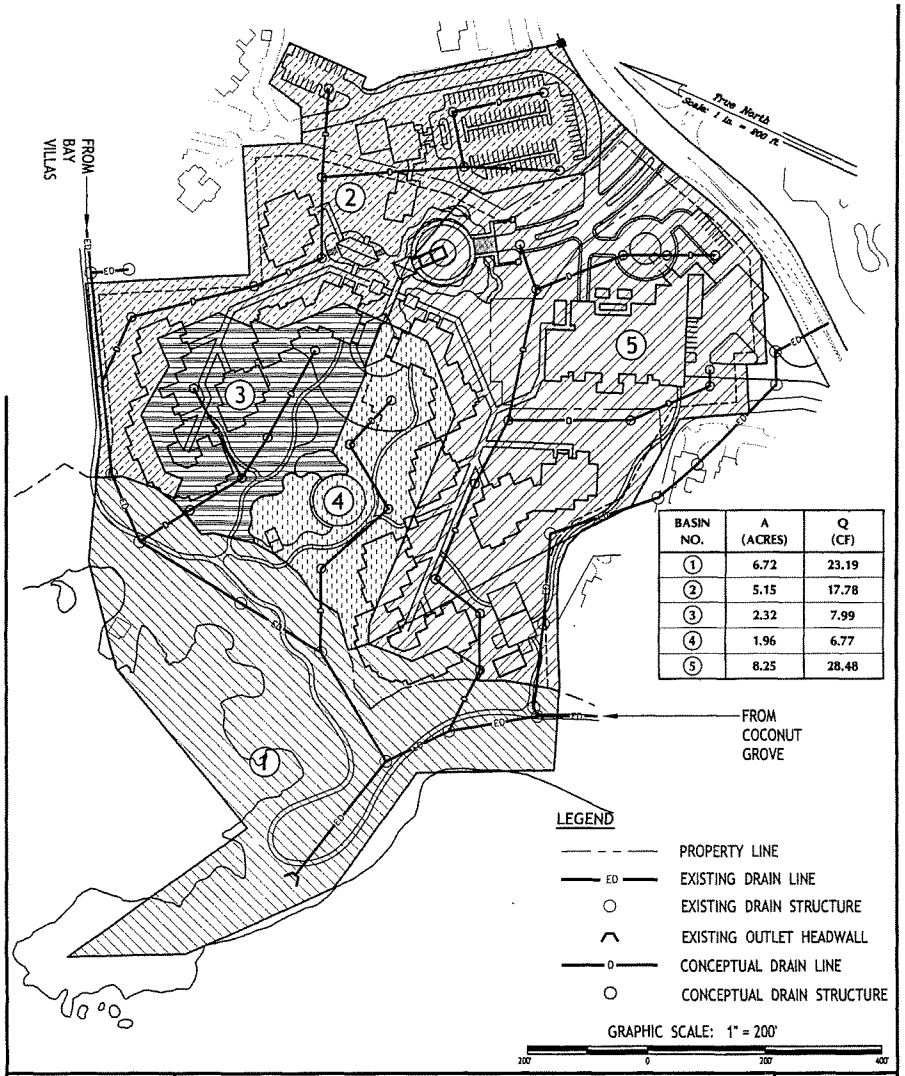
APPENDIX A

FIGURE A-1 PROJECT SITE - EXISTING CONDITION DRAINAGE PLAN

FIGURE A-2 PROJECT SITE - PROPOSED CONDITION DRAINAGE PLAN



BASIN NO.	A (ACRES)	Q (CF)
1	6.458	20.80
2	9.246	29.77
3	3.740	12.04
4	4.966	15.99



BASIN NO.	A (ACRES)	Q (CF)
1	6.72	23.19
2	5.15	17.78
3	2.32	7.99
4	1.96	6.77
5	8.25	28.48

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RESIDENCES AT KAPALUA BAY
KAPALUA, MAUI, HAWAII

CONCEPTUAL DRAINAGE SYSTEM

FIGURE A-2

APPENDIX B

TABLE B-1 Flowrate Calculations

TABLE B-2 Storage Design

Sample Calculations for Detention Basin

Table B-2

Storage Design - Lot 2								
Basin	Ce	Cp	ΔC	I50	Area (ac)	Required Storage Volume	Required Length of 5' 34.31	Length of 5' Diameter Pipe (+20%)
1	0.70	0.75	0.05	3.0	6.72	3,661	107	128
2	0.70	0.75	0.05	3.0	5.15	2,806	82	98
3	0.70	0.75	0.05	3.0	2.32	1,261	37	44
4	0.70	0.75	0.05	3.0	1.96	1,069	31	37
5	0.70	0.75	0.05	3.0	8.25	4,495	131	157
				TOTAL	24.41	13,292	387	465

Ce Runoff Coefficient, C, for existing conditions
Cp Runoff Coefficient, C, for proposed conditions
ΔC Change in C value
Required Storage Volume = (ΔC) x (I50) x (Area in acres)
Ref : Rainfall-Frequency Atlas of the Hawaiian Islands

Table B-1

Existing Condition - Lot 2 Project Site								
DRAINAGE BASIN	DRAINAGE AREA (sf)	DRAINAGE AREA (ac)	LENGTH (ft)	Tc	I'	I	C	Q (cfs)
1	281,315	6.46	500	25.0	3.0	4.6	0.70	20.80
2	402,772	9.25	500	25.0	3.0	4.6	0.70	29.77
3	162,926	3.74	250	25.0	3.0	4.6	0.70	12.04
4	216,327	4.97	500	25.0	3.0	4.6	0.70	15.99
	Total	**24.41**						**78.60**
	1,063,340							
Proposed Condition - Lot 2 Project Site								
DRAINAGE BASIN	DRAINAGE AREA (sf)	DRAINAGE AREA (ac)	LENGTH (ft)	Tc	I'	I	C	Q (cfs)
1	292,848	6.72	500	25.00	3.0	4.6	0.75	23.19
2	224,517	5.15	600	25.00	3.0	4.6	0.75	17.78
3	100,884	2.32	250	25.00	3.0	4.6	0.75	7.99
4	85,508	1.96	550	25.00	3.0	4.6	0.75	6.77
5	359,582	8.25	150	25.00	3.0	4.6	0.75	28.48
	Total	**24.41**						**84.21**

Sample Calculations for Detention Basin

The cross section of the detention basin is a square with a circle centered in the square. Storage volume will be calculated for a 100-foot long perforated pipe with a 5-foot diameter. In this instance, the calculation will be for a 7-foot square with a 5-foot circle centered in the square. The cross sectional area between the square and the circle will be filled with gravel as the cross sectional circular area is open for 100% storage capacity.

Assuming 50% voids in the gravel portion of the detention basin, the storage volume available within the site is shown below:

$Volume_{(total)}$ = $V_{(unit)}$ x Total length of perforated pipe.

$V_{(unit)}$ = $V_{(pipe)}$ + $V_{(gravel)}$

$V_{(pipe)}$ = $3.14 \times (5/2)^2 \times 1'$

= 19.635 cf

$V_{(gravel)}$ = $[(7^2 - 19.635) \times 1'] \times 50\%$

= $(49-19.635) \times 1' \times .5$

= 14.683 cubic feet of volume per 1'

= 14.683

$V_{(unit)}$ = 19.625 + 14.683

$V_{(unit)}$ = 34.31 cubic feet of capacity per 1-foot of detention basin.

Total length of perforated pipe = 100 feet

$Volume_{(total)}$ = 34.31 x 100

$Volume_{(total)}$ = 3,431 cubic feet of storage volume

Appendix D

Maui Electric Company, Ltd, (MECO) Letter

Maui Electric Company, Ltd. • 210 West Kamehameha Avenue • PO Box 398 • Kahului, Maui, HI 96733-6898 • (808) 871-8461

RECEIVED
FEB 28 2005
WILSON OKAMOTO CORPORATION

February 23, 2005

Mr. Roger Fong, P.E.
Wilson Okamoto Corporation
1907 S. Beretania St., Suite 400
Honolulu, HI 96826

Dear Mr. Fong:

Subject: Ritz Carlton Club and Residences at Kapalua Bay
TMK No. 4-2-004:27, 28 & 29

Thank you for allowing us to comment on the subject project.

The following is the information you requested in your letter dated February 4, 2005.

1. The substation servicing the area is the Napili Sub.
2. The substation is located approximately 1300 feet above the Honoapiilani Highway across from the Pineapple Hill Subdivision.
3. The existing service is 277/480V, 3 phase, 4 wire.
4. Electrical service is available for this project.
5. The existing distribution line is underground along the entry road to Kapalua Bay Resort.
6. There are no existing easements affecting the proposed project.

We encourage the developer's electrical consultant to meet with us as soon as practical to verify the electrical requirements for this project so that service can be provided on a timely basis. Also, if available, please provide a construction timeline for this project.

If you have any questions or concerns, please call Dan Takahata at 871-2385.

Sincerely,

Neal Shinyama
Manager, Engineering

NS/dt:lh